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THE
PHILADELPHIA MEDICAL JOURNAL

A WEEKLY JOURNAL OWNED AND PUBLISHED BY
THE PHILADELPHIA MEDICAL PUBLISHING COMPANY
AND CONDUCTED EXCLUSIVELY IN THE INTERESTS OF THE MEDICAL PROFESSION

GEORGE M. GOULD, M.D.
EDITOR

COLLABORATORS

JOSEPH SAILER, M.D.
DAVID LINN EDSALL, M.D.
DAVID RIESMAN, M.D.
J. M. SWAN, M.D.
GEO. B. WOOD, M.D.

MARTIN B. TINKER, M.D.
WILMER KRUSEN, M.D.
ALOYSIUS O. J. KELLY, M.D.
W. S. NEWCOMET, M.D.
A. A. STEVENS, M.D.

VOLUME VI
JULY-DECEMBER, 1900



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The Philadelphia Medical Journal

A Weekly Journal Owned and Published by The Philadelphia Medical Publishing Company and Conducted Exclusively in the Interests of the Medical Profession

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JOSEPH SAILER, M.D.
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Scientific Articles, Clinical Memoranda, News Items, etc., of interest to the profession are solicited for publication. Reprints (250) of Original Articles will be furnished gratis to Authors making the request.

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See Advertising Page 8.

VOL. VI, No. 1

JULY 7, 1900

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Dishonoring Military Medical Officers Dishonors the Nation.—Mr. Burdett-Coutts has been showing in Parliament the natural results of the contemptible contempt of army medical men. The English army officer and the War Office have habitually neglected the Army Medical Department. It has always been seriously undermanned, its members scarcely recognized as officers, usually excluded from mention in dispatches or public votes of thanks, with little facility for study, or leave for private research. As a consequence, there has been deplorable suffering of the sick and wounded in South Africa, and the people have another reason for indignation at the War Office. It is hard for men whose business is killing to have much respect for men whose business is only the little matter of saving life. This sin of our own services in the United States has not been so heinous as that of the Britisher, but it has been bad enough, especially in the Navy. If we had a united profession and a corporate voice, influence could soon remedy many abuses that now disgrace us. The encouragement of original research, the gathering and publication of medical experience, opportunities for postgraduate study, the supplying of the best medical journals and books to members of the corps—these and many such things are sadly needed.

The annual spring crop of honorary degrees gives some evidences that the best of our colleges and universities are awarding their honors in such a way as to make them worth having. We are glad to notice the names of two eminent medical men among others who have been honored: Professor William H. Welch, of Johns Hopkins University, received the honorary degree of Doctor of Law from Harvard, and the eminent surgeon Louis A. Stimson received the same honor from his alma mater, Yale. Among the smaller colleges the awards are much less discriminating, and hence honorary degrees have become so cheap as to be almost a disgrace in certain cases. Even among our better colleges and universities the proportion of politicians favored is strikingly large and the recipients of the honors are often of questionable character. Out of 17 honorary degrees by three of our leading universities four were awarded to politicians, four to college presidents, two each to ministers of the gospel, doctors, and eminent educators, and one to an eminent professor, one to a foreign ambassador, one to a well-

known writer. In the past the proportion of such awards to eminent medical men has been strikingly small, and makes it very evident that the medical profession is not the one to choose if we are seeking a prominent position in the eyes of the public. If awarded with proper care and discrimination the honorary degree takes the place, to some extent, of the honors which are conferred in foreign countries by the knighthood, etc., and they are not without some worth. The conferring of degrees on eminent scholars, other than their own alumni, by prominent institutions is an evidence of growing breadth and toleration; it tends to promote a friendly spirit between rival institutions and should become more general.

Anniversary and Memorial Publications in the United States.—Those to whom the method of honoring the life or the memory of a distinguished and beloved teacher, as illustrated in the *Festschrift*, prepared in honor of Drs. Jacobi and Welch, seems wholly new in this country, appear to be unaware of the fact that not less than seven years ago the "Wilder Quarter-Century Book," an octavo volume of 500 pages, containing a collection of original papers on physiologic subjects, was published by a number of former pupils of the distinguished professor of physiology, comparative anatomy, and zoology, in Cornell University, on the occasion of the quarter-centennial celebration of the opening of that university.

"Patent Medicine Profits."—Some illuminating facts are given publication in the prospectus of a new pharmaceutical company in which medical men are invited to become stockholders. The company has been organized for the purpose of manufacturing and selling a new anesthetic and other proprietary medicines. It is incorporated with a capital stock of 0, so many million dollars! "The operations of the company have been inaugurated on quite an extensive scale and the product is now being manufactured and has been placed on sale . . . and has been extensively advertised." "A large number of physicians, dentists, and professional nurses . . . as well as many prominent citizens" are said to be stockholders and to be prescribing and recommending this new remedy, which is recommended for the relief of some 30 painful conditions. One million dollars of preferred

stock is to be sold, and the proceeds are to be used to advertise the product and bring it extensively upon the market. Nowhere, however, is even the slightest hint given as to the nature or composition of this highly lauded product from whose sale, "if properly pushed," hope of "a princely fortune" is held out. The president of the company and the discoverer of the new remedy is said to be a professional man, and one of the directors attaches M.D. to his name. Testimonials as to the efficacy of the remedy are signed by lawyers, housewives, doctors, merchants, policemen, churchmen, manufacturers, reporters, dentists, and others. The following inducements are offered for engaging in the enterprise and are reproduced from the original, with the omission of names:

"Profits on proprietary medical preparations are larger than those in any other line of manufacture.

"The fortunes built up by successful patent medicine concerns are something enormous and in no other way can so much money be made so quickly and so easily.

"The annual profits of the M— remedies, for instance, are something enormous.

"Although Professor M— commenced their manufacture only a few years ago, he is known to have invested out of one year's profits alone nearly a quarter of a million dollars in Philadelphia real estate.

"On January 1, 1900, he gave away \$2,000,000 to the city of Philadelphia for an orphanage institution.

"Dr. R. V. P— has spread his remedies all over the world and is believed to have made over \$10,000,000.

"The manufacturers of a certain emulsion have made an immense fortune, notwithstanding the fact that their emulsion is a simple one, well known to physicians long before they commenced preparing it.

"It is stated on reliable authority that the two sons of Mrs. A— have an income of \$900,000 a year each from their share in the profits of a sarsaparilla.

"One of the principal owners of a laxative syrup started out with nothing at all and within 10 years became a millionaire."

The Etiology of the Infectious Diseases.—One of the most interesting papers read before the Section on Practice of Medicine at the Atlantic City meeting of the American Medical Association was that by Dr. Eugene Wasdin, of the United States Marine-Hospital Service, on Yellow Fever: Its Nature and Causes. The commission appointed by the Surgeon-General of the Marine-Hospital Service, of which Dr. Wasdin was the senior member, seems to have established the etiologic significance of the *Bacillus icteroides* for yellow fever; but more important than this, if possible, is the determination of the portal of entry of the microorganism into the system. By blowing lycopodium powder containing dried cultures of the *Bacillus icteroides* into the respiratory tracts of dogs, the author succeeded in producing typical yellow fever in the animals. The localization of the microorganism in the respiratory tract as its first nidus of development would explain the sterility of the bodies of patients that have died, early in the disease, of a toxemia, before the bacillus had an opportunity of entering the circulation. In the laboratory used by the commission the disease seems to have extended from the dogs infected in one room

through an open door, to healthy animals in an adjoining room, in which no insufflation experiments had been made. Dr. Wasdin made the statement at a later session of the section, while discussing a paper on typhoid fever, that, in his opinion, in the majority of cases the portal of entry for the bacillus of Eberth was through the respiratory tract. When asked by one of the members of the section how he accounted for the Plymouth, Pa., epidemic, Dr. Wasdin replied that when people drank water they also washed with water, and the microorganisms left after the water had dried were the infecting organisms. Dr. Wasdin admitted that infection through the intestinal tract was possible. In favor of the respiratory tract as the portal of entry, we may call attention to the earliest symptoms—pharyngitis and slight bronchial irritation, with, sometimes, a severe bronchitis, or even pneumonia. The epidemics that have been traced to contaminated milk as the cause and those due to the eating of raw oysters, however, point decidedly to infection through the alimentary tract. Again, the experiments of Paul Remlinger (*Ann. de l'Inst. Pasteur*, November, 1897), by which rats and rabbits fed on vegetables that had been artificially contaminated with Eberth's bacillus acquired an affection that presented the most marked analogies to human typhoid fever, both bacteriologically and anatomically, point also to the alimentary tract as the first area of infection in this disease. The entire subject, which has been considered definitely settled, thus seems to be opened again, and it is not unreasonable to suppose that further experiment will show that typhoid fever may begin as a respiratory-tract infection as well as an alimentary-tract infection.

Homeopathic Dogma and Practice.—In the city of Washington on June 21 the American Institute of Homeopathy unveiled with fitting ceremonies a monument of Samuel Hahnemann. President McKinley occupied the most prominent seat upon the platform, where sat also H. B. F. McFarland, Commissioner of the District, General John M. Wilson, and Mr. Cortellyou, Secretary to the President. Attorney-General Griggs delivered a short and spirited oration. The monument, very beautiful from an artistic standpoint, occupies one of the choicest positions in the city, facing the statues of General Winfield Scott and Daniel Webster.

Specialism, into which field the homeopaths have freely entered, occupied the greater part of the purely medical side of the week's transactions. The papers read did not differ materially in their points of view from papers upon similar subjects read before other medical bodies. It was at the meeting of the section on Materia Medica, "the backbone of homeopathy," as Dr. Charles Mohr of Philadelphia characterized this branch of medical science, that an idea of the present status of homeopathy could be formed. The four hours

to be devoted to *Materia Medica* were assigned to the last two days of the program. Owing to the time occupied in thanking the Monument Committee and the President of the United States, and to the intention of many members to leave before the scheduled time, exactly two hours were spent in reading and discussing papers. But four of the five papers upon heart-poisons were read. The first on the "Proving of *Crataegus Oxy*" was pronounced by a member, in the discussion which followed, to be "perfect nonsense." Dr. W. A. Dewey, of Ann Arbor, prefaced his short paper upon *Adonis vernalis* with the remark that he knew nothing of the drug, had never used it, and wrote only at the request of the chairman of the section.

In the discussion that followed two excellent papers upon the actions of *strophanthus* and *digitalis*, drugs not yet proved by the methods of Hahnemann, cases were reported successfully treated, the dose employed being the "orthodox" dose of the U. S. Pharmacopeia. The discussions were characterized throughout by the mutual misunderstanding of terms, by objections to the use of certain terms, *e. g.*, physiologic instead of pathogenetic action of drugs, and twice members were accused of treating patients "allopathically." The truth of these accusations was not denied.

The treatment of disease antipathically, in other words, "allopathically," was stated by Dr. E. C. Price, of Baltimore, to be right and proper under certain circumstances, *i. e.*, upon the failure of homeopathic remedies, "for Hahnemann says the first duty of a physician is to relieve the sick." Antipathic treatment, he also stated, was indicated in "emergency cases," and he advised the giving of stimulants, not depressants, to those suffering from nervous shock. Even Dr. Mohr, a homeopathist of the old school, while not admitting their "curative" power, makes use of the "palliative" properties of the orthodox doses of the "allopath."

Such doubts and disagreements with the principles of Hahnemann are, to use the words of a disciple present, "creeping into the journals, hospitals and colleges" of the homeopaths. Indeed the tendency of the whole meeting went to show that the term "homeopath" is but a trade designation and does not include adherence to the principle implied. And yet the "homeopaths" have raised in the capital of the United States a monument resembling an altar, upon the base of which are inscribed the words, "*Similia Similibus Curantur*."

All this in spite of the modified definition of the term "homeopathic physician," offered by Dr. T. Y. Kinne, and adopted after a debate of considerable length: "A homeopathic physician is one who adds to his general knowledge of medicine a special knowledge of homeopathic therapeutics and observes the law of *similia*."

The erection of the monument to Hahnemann is not

fully appreciated by the profession of the United States. Nothing could give homeopathy more dignity and importance than this. Except for the statue of Gross there is nothing in art in Washington that bears any relation to medical science. But now the founder of homeopathy will always be shown in eternal bronze to the visiting thousands.

It is highly regrettable that funds cannot be raised to pay for the Rush monument.

Medical Sermonets, No. 19. The Physician's Vacation.—With the coming of the vacation season every wise physician will seriously consider the duty of securing a period of rest and change. For him it is indeed a duty, because, of all members of the community, his usual work is most ceaseless. He alone of all may not have even the commanded one day in seven—for the most literal of theologians would not require that the sick should be neglected on Sunday. Hence, at least his Sundays may, as it were, be stored up for the greater part of the year and gathered and utilized in the lump when he can best secure the occasion for a holiday. It is perhaps true that, owing to the peculiarity of his work the longer vacation of weeks may be more easily taken than the short one of days. Among the minor advantages is possibly the better understanding and good feeling that follows the mutual care of another's practice by the colleague, and the return favor when his time of rest shall come.

But beyond all such minor reasons remains the fact that the physician's duty of holiday-taking is trebly advisable. He owes it first to his patients, because the strenuousness of his life is so great that without the occasional easing-up of the strain the best and most effective therapeutics and medical service is impossible. The problems we have to solve, the tension at which the intellect has to be kept, the endlessly repetitive drains upon the emotional and sympathetic nature that must be endured, will, without rest, reduce the keenness of mind and the special ability to a dulness and routine that is harmful to medical art. It is, therefore, for the patient's good that his doctor should go holidaying.

In the second place it is due his family, and in the equally important third place it is due himself. There is another nature besides human nature, and to know this is imperative upon one having so little time for that as the medical man. The charm of nature-love is inexhaustible, and its instruction many-sided. If solitude is well for others, it is peculiarly so for one whose daily life is always in close association with many persons and when suffering and trial are inevitable concomitants. To escape from it all and witness the play of manifold life hardly touched by disease is not less than a duty and a necessity. The distinctive blessedness of such solitude is that it teaches one to become better acquainted not only with wife and children, but with oneself. In the unrelenting call for outgoing and help one is likely to leave himself and the friendship with that self too far out of mind. The *persona* (or mask) leaves the personality out of sight and out of mind. In the social engine we may become only cogs in the great wheel of the objective, a bit of the mechanism grinding out the community's grist according to the demands of circumstance or fate. In the silences of the hills and the woods and the seashore we can leave all that, and rediscovering ourselves regain some of the freedom we should never forfeit and never be wholly without. Many, perhaps the vast majority, judging from the pitiable fashion of crowd seeking and crowd-loving, cannot endure the burden of themselves, but surely physicians are not of these, and they will therefore avoid noise and numbers and seek the healing of the woods and mountains.

Correspondence.

SIMULTANEOUS DISLOCATION OF BOTH SHOULDERS.

By S. VIRGIL MERRITT, M.D.,
of Fall River, N. Y.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

A FEW days ago I saw with Dr. D. E. Cone a rather unusual case, which I think deserves mention. A woman of 60, who weighed about 160 pounds, and had no history of previous injury, fell 3½ feet from a stepladder with both arms extended over her head. The resulting injury was a simultaneous dislocation of both shoulder-joints (subglenoid in each). The luxations were easily reduced under ether anesthesia. There was no other injury beyond a few bruises.

CONTAGION AND INFECTION.

By JOHN N. BELL, M.D.,
of Detroit.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IN the JOURNAL of June 2, Dr. L. F. Flick, in his excellent paper on "The Registration of Tuberculosis" speaks of the loose manner in which the words contagious and infectious are used in medical literature, and, as an exemplification of the difference between a contagious and an infectious disease cites smallpox and malaria. A little farther on in the same paper he says "malaria is purely contagious." It would appear from this that Dr. Flick is himself guilty of a little laxity in construction.

MENSTRUATION SOON AFTER BIRTH.

By ALBERT H. WALES, M.D.,
of Chicago.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

I HAD scarcely finished reading the communication of Dr. H. McVicker Smith in a recent number of your valuable journal, relative to his case of precocious menstruation, when it was my fortune to meet with a similar experience. The labor was perfectly physiologic and of short duration; 4 days later I was notified by the nurse that she had discovered a discharge of blood on the napkin. The flow gradually increased until it assumed the dignity of a free menstrual discharge; it slowly diminished and disappeared on the ninth day after birth.

PAN-AMERICAN MEDICAL CONGRESS.

By HENRY B. YOUNG, M.D.,
of Burlington, Iowa.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

APROPOS of the Pan-American Medical Congress which is scheduled to convene in Havana, Cuba, on December 26, 1900, I inquire if it is not possible to amend the schedule so that it will name a later date for the meeting? I do not know positively how it may be with others, but think many would like to attend, *provided* they could do so and not miss their Christmas at home. Then again, January 1, usually is settling day, the day when we have to pay our debts and expect others to pay us. To be absent from home at such a time creates a bad impression upon our creditors, and gives our debtors an excuse for delay. By all means let us have the date January 26, 1901 (or thereabouts), if possible. At that date those of us who live in the north will have an

extra inducement to go—and miss the disagreeable February weather.

COAL IN THE APPENDIX.

By WALTER LATHROP, M.D.,
of Hazleton, Pa.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

WE have heard at various times of foreign bodies in the appendix, but, aside from enteroliths, they are not common.

June 19 I operated on a young man who had a severe attack of appendicitis. I found dense adhesions from previous attacks, and after a considerable time succeeded in separating the adhesions, and removed the appendix, which was very large, but quite short, resembling a medium-sized date; upon inserting a probe I felt some hard substance, and after removing it, I found a piece of pure *anthracite coal*. How this got in the appendix is a mystery, but my assistant made the plausible suggestion, that this piece was an agglutination of coal dust, the man being a miner for a number of years. The specimen is flat, and about ¼ inch long, ⅛ inch thick.

The appendix was perforated at its cecal attachment, the coal lying just above the opening. The genuineness of this specimen was vouched for by seven physicians who were present at the operation, so that I think the case can stand as unique in the annals of foreign bodies in the appendix.

UNSCIENTIFIC ARGUMENTS.

By G. BETTON MASSEY, M.D.,
of Philadelphia.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IN the report of a meeting of the Pittsburg Academy of Medicine in the JOURNAL of June 16, page 1342, Dr. D. D. Simpson, if correctly reported, employed an ignoble weapon against the cataphoric treatment of malignant disease by remarking that "Massey had written much concerning electrical treatment in gynecologic cases, and claims remarkable results, but other men fail to get such results for some reason." This statement was unworthy of a place in scientific argument, for two reasons, one that it contained an insinuation against my honesty, for in no other light could his opinion of my work in gynecology bear upon the subject then under discussion, which was malignant disease. I care nothing for the gentleman's private opinion of my veracity, under the circumstances, but decidedly object to its public presentation. The other reason why such reckless statements should secure an equally public denial is the incorrectness of this opinion as to the value of electricity in gynecology in other hands than mine. Surely anyone who heard the eloquent advocacy of electricity in gynecology by so able a surgeon as Thaddeus A. Reamy, of Cincinnati, in the gynecological section at the Columbus meeting last year, would be differently impressed. I am in a position to prove by my correspondence and otherwise, that there is an increasing number of general practitioners using electricity in gynecologic practice, and that by this means they succeed in averting a large number of operations of the nature that Dr. Simpson was illustrating by a specimen that evening. This discussion at the Pittsburg Academy referred to the possible value of the cataphoric method in destroying malignant growths of the conjunctiva, and as this method can be most beautifully employed in small growths in that region, being bloodless and absolutely controllable, it is hoped that these extraneous matters will not be permitted to interfere with its usefulness.

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Airings for Children.—The charitable societies are trying to raise money to provide outings for the children of poor families. Enough applicants have been received by the Country Week Association to fill the country boarding-houses within a radius of 50 miles.

Headache Pills Cause Death.—On June 27 the dead body of an unknown man was found in a barn near Blue Ball, Lancaster County. A vial of "headache pills" found by his side caused the coroner's jury to pronounce death due to neuralgia of the heart caused by taking too many of the pills.

Pennsylvania College of Dental Surgery.—The chair of chemistry in the faculty of Pennsylvania College of Dental Surgery is vacant, owing to the retirement of Prof. Henry Leffmann. The Board of Corporators will meet July 16, and the matter of electing a professor will then be acted upon. Application should be made to Joseph Pettit, M.D., 1010 Land Title Building, Philadelphia.

The State Board of Medical Examiners held an examination in Industrial Hall, Philadelphia, June 26-29. It was conducted by Drs. Beates, McCormick, Hamaker, Ramsey and Hulshizer. At the same time an examination was conducted in Pittsburg by Drs. Foster and McConnell. The Philadelphia class numbered 210, of which 15 were women. The class at Pittsburg numbered 110, making a total of 320 applicants; of these 20 were reexamined.

Vital Statistics of Philadelphia for the week ended June 30, 1900:

Disease.	Cases.	Deaths.
Total mortality		497
Inflammation of appendix 1, colon 1, brain 13, bronchi 6, kidneys 14, heart 2, liver 1, lungs 18, pericardium 1, peritoneum 10, pleura 1, stomach and bowels 21, uterus 1, pharynx 1, tonsils 1		93
Cholera infantum 55, cholera morbus 1		56
Pulmonary tuberculosis		51
Marasmus 18, inanition 16, debility 5		39
Apoplexy 22, paralysis 7, softening of brain 5		34
Heart—disease of 29, fatty degeneration of 1, enlargement of 1		31
Casualties		20
Carcinoma of—breast 5, liver 4, neck 1, stomach 5, thigh 1, uterus 5		20
Convulsions 16, puerperal convulsions 2		18
Diphtheria	76	15
Bright's disease		12
Old age		10
Uremia		8
Typhoid fever	13	7
Brain—congestion of 4, hemorrhage of 1, dropsy of 2		7
Liver—cirrhosis of 4, disease of 1, abscess of 2		7
Teething		6
Lungs—abscess of 1, edema of 3		4
Diabetes		4
Suicide—carbolic acid 1, drowning 1, hydrocyanic acid 1, jumping from roof 1		4
Diarrhea		3
Drowned		3
Scarlet fever	63	3
Septicemia		3
Measles		3
Heart prostration		3
Anemia 3, obstruction of bowels 3, congestion of lungs 2, dysentery 2, ulceration of stomach 2, Coroner's cases 2, whooping-cough 2, alcoholism 1, atheroma 1, aneurysm of aorta 1, burns and scalds 1, cyanosis 1, erysipelas 1, gastric fever 1, gangrene 1, hemorrhage of stomach 1, influenza 1, insanity 1, arterial sclerosis 1, stricture of throat 1		

NEW YORK.

New York Medical College for Women.—The late Mrs. Schley, sister of ex-Governor Flower, bequeathed \$10,000 to this institution.

To Cleanse Chinese Quarters.—The Board of Estimate has appropriated \$20,000 for the Board of Health to use in fumigating the Chinese quarters in Manhattan, Brooklyn, and Coney Island.

Brooklyn Water Supply.—The shortage in Brooklyn's water supply is growing serious. The reserve supply in the storage reservoirs is at present less than half what it was in June of last year, and, according to the department, there is no relief in sight.

Outings for Poor Women and Children.—The first day excursion of the New York Association for Improving the Conditions of the Poor was sent to the seashore June 26. The association will have 5 such excursions each week until September 1. The average number taken is about 350.

Physicians Speculate.—A well known New York oculist, entering as a silent partner in a firm last January, put in \$200,000. Result, a total loss, the firm failing for \$500,000. Another specialist lost \$25,000 several times on Wall Street; he is now dealing in real estate along the Jersey Atlantic Coast. Some years ago a specialist lost two fortunes in patents and is now too old to make another.

A Novel Life-Insurance Complication.—When Howard C. Benham, of Batavia, was under sentence of death for the murder of his wife he held a life-insurance policy of \$6,000, and the company not desiring to carry a risk on its books of a man who had been executed, paid the policy in full. On the 21st, Benham, having obtained a new trial, was acquitted and is a free man. What action the company will take in the case has not yet been determined.

Life Insurance and Tuberculosis.—Local doctors admit that they have been reporting the secondary cause for deaths occurring as a result of tuberculosis for the purpose of obliging parents with marriageable daughters, and to enable relatives of the victims to pass examinations for life insurance. Insurance officials generally will share with the New York Health Department the anxiety caused by the discovery, that there has been great laxity in the matter of reporting cases of tuberculosis.

Health Commissioner Accused.—Effort is being made to remove Dr. W. T. Jenkins from his position as Health Commissioner, on the ground that he is using his official position for private gain. A long list of charges was presented to the Mayor and sworn to by Dr. Willard P. Worster. According to Dr. Worster, in 1896 Dr. Jenkins organized and had incorporated for his own benefit a society known as the "Merchant Marine Hospital Service and Dispensary" and represented to ship-owners that he will favor their crews through his office. Dr. Jenkins denies the charges and says his connection with the hospital began when he held no official position, and that one member of a board of 5 commissioners could have no power which could be used.

NEW ENGLAND.

The Caney Hospital of Boston received \$25,000 by the will of Julius Adams of that city.

Harvard Medical School.—Dr. Franklin Dexter has been appointed associate professor of anatomy.

The Harvard Medical School graduated 135 students this year, 51 of whom received their degree *cum laude*.

Yale University.—M. E. White, professor of pathology has resigned and will be succeeded by Charles Bartlett.

Tetanus.—Four cases of tetanus resulted in Boston from the use of explosives in celebration of Bunker Hill Day, June 17.

The Boston School Committee has passed this order: "Hereafter all school furniture purchased for new, permanent schoolhouses shall be adjustable."

Charles Sedgwick Minot, of Harvard Medical College, has been elected president of the council of the American Association for the Advancement of Science.

Members of the Profession Honored.—The degree of LL D. has been given to Dr. William Henry Welch, of Johns Hopkins, by Harvard and to Dr. Lewis A. Stimson, of Cornell Medical School, by Yale.

Republican Convention.—Dr. John F. Hill, of Augusta, Me., was nominated for governor this week by the largest Republican Convention ever gathered in the State. The Republican majority is so large that this nomination virtually guarantees an election.

School Sanitation.—More than \$500,000 is necessary to repair 100 school buildings in Boston which according to the Board of Health are in a dangerously unsanitary condition. Were they private property the Board would order their immediate repair or condemnation.

The Boston Floating Hospital made the first trip of the season on July 5. The trips will be taken daily until September 1. The hospital capacity has been increased so that 3 wards, including 55 beds, are available for permanent patients. All day patients who may be sent can be accommodated.

Free Baths for Lowell.—Free public baths received considerable attention in the Lowell city council meeting on June 26. It was said that if the Coburn land, near City Hall were purchased, enough money would be raised by popular subscription to erect a building, and that the Locks & Canal Company would furnish water free.

A Medical Leader.—In conferring the honorary degrees of LL D. upon Dr. William H. Welch, of Johns Hopkins University, President Eliot used the following words: "William Henry Welch, Professor of Pathology, Johns Hopkins University, who holds first place in the medical profession of the United States as teacher, pathologist, and organizer of medical progress."

Question of Clean Ice.—Dr. Hill, bacteriologist of the Board of Health, of Boston, has been making a personal investigation of the sources of supply of ice companies, with special reference to instances of pollution. Thus far the general condition has been found satisfactory. The Board reserves the right to refuse to let the ice from any polluted pond be sold in Boston.

Appropriation for Newton Hospital.—An order was passed recently by the Newton Aldermen appropriating \$35,000 for two new contagious wards at the Newton Hospital. It was stated that, at one time during the winter, the diphtheria ward was so crowded that 3 patients were placed in one bed, and that it was often the case that a patient having scarlet fever contracted diphtheria in addition, so impregnated with germs were the present wards.

The Harvard Medical School Association.—At a meeting on June 27, it was announced that after next year only college graduates will be admitted to the school, and the medical, dental and veterinary schools shall be merged into one department, under the guidance of a single body of trustees. For the use of this department 26 acres of land have been purchased by a syndicate and the university will buy it as soon as possible. The Apostle of the new methods in medical education was the subject of an address by William T. Councilman. He criticised present methods of teaching and favored 4 examinations a year rather than one. Clarence J. Blake, of Boston, was elected president of the association.

CHICAGO AND WESTERN STATES.

Rush Medical College.—Dr. Henry Favill has been appointed Professor of Therapeutics.

Chicagoan's Charitable Bequests.—The late T. B. Blackstone willed \$2,500 to the Passavant Hospital, \$2,500 to the Relief and Aid Association, \$2,500 to the Orphan Asylum, and \$25,000 to St. Luke's Hospital.

Child Labor.—The State officers of Wisconsin are rigidly enforcing the child labor law. Assistant Inspector J. J. Williams recently visited the large cities and took over 200 children from their employment and caused 18 arrests. The parents are the ones who wilfully violate the law.

Quarantine Raised in Honolulu.—A telegram was received in San Francisco June 21 from Surgeon General Wyman of the Marine-Hospital Service at Washington, D. C., to be forwarded to Assistant Surgeon Carmichael of the Marine-Hospital Service at Honolulu, directing that official to suspend all further quarantine against ships clearing from San Francisco, and in addition directing Dr. Carmichael to cease the fumigation of vessels hailing from that port.

Advertising Medicos Left Victim Penniless.—The dead body of Andrew Anderson was found in a well on the grounds of the McLean Hospital, San Francisco, on June 23. In his clothing were found two receipts, one for \$500 and another for \$30, given by a "medical" firm of advertising "specialists" in acknowledgment of his payment to them for treatment for an incurable disease. He is supposed to have committed suicide because of having been left penniless through this extortion.

A Novel Idea.—A physician in Chicago has provided for himself and family a noise-proof house as a protection against the street dins, which persist despite the recently announced intention to enforce the anti-noise ordinance. The problem was to exclude the noises and admit the air, and he solved it, he says, by stuffing all the cracks about the doors and windows with strips of rubber, perforated with zigzag holes. Through these air is admitted while the noise is deadened, the sound waves dying out in repeated reflections in the crooked passages.

The Ohio Medical Law.—A law governing the license to practice has recently been enacted in Ohio, similar to that of Pennsylvania and New York. It contains a reciprocity clause authorizing the registration of certificates issued by other States that enforce equally high requirements. The examinations shall be conducted under the direction of the State Board of Medical Registration and Examination, and shall be held simultaneously in Cincinnati, Cleveland, Columbus, and Toledo, the questions being the same at each place. The leading medical sects are all represented in one board. The osteopaths succeeded in securing a provision to the effect that the law should not apply to anyone of their craft holding a diploma from a legally chartered and regularly conducted school of osteopathy issued on the requirement of four annual five-month terms, provided he passed an examination by the board in anatomy, physiology, chemistry and physical diagnosis; but that he should not be permitted to administer drugs or perform major surgical operations. They failed to obtain the enactment of a bill providing for a State Board of Osteopathic Examiners with power to pass upon the qualifications of those who wish to practice that peculiar system of massage.

Diploma-Mill Men in Jail.—After 4 years of defiance of the State Board of Health of Illinois, the proprietors of the Metropolitan Medical College of Chicago have been arrested by United States Marshals on the charge of using the mails to defraud. The 4 members arrested and held in default of bail are: James Armstrong, president of the college, J. H. Randall, vice-president, Thomas Armstrong, secretary, and Charles M. Hovey, attorney. Complaints have come from all parts of the United States and Europe about the bogus diplomas, and many of the graduates are said to be practising in India. Texas is the home of many of those remaining in the United States. The diploma mill called the Metropolitan Medical College is a successor of the Independent Medical College which in turn had been a successor of the Illinois Health University. The State Board of Health with the assistance of the Governor of the State succeeded in passing a bill in 1899 which gave the attorney-general power to end the operation of such institutions. Learning that the promoters of the "college" were in possession of several additional charters under which they expected to conduct business as soon as the courts should deprive the Metropolitan of its power to issue degrees, the Board thought it best to place the proof obtained in the hands of the postal authorities. Inspector Guy T. Gould matriculated as a student and was expected to attend for about 10 days, but his advanced knowledge in the science of medicine was accepted by the faculty to warrant his being graduated in 3 days. The inspector in the course of a quiz was asked, "What would you do in a case of appendicitis?" "I'd get a doctor," he replied. "Well, you're all right" said the lecturer, "I think we can graduate you at once."

SOUTHERN STATES.

Johns Hopkins University.—Dr. F. S. Cullen and Dr. W. W. Russell have been appointed professors of gynecology.

The Kentucky School of Medicine.—At the annual commencement exercises of the Kentucky School of Medicine the doctorate address was delivered by Dr. Roswell Park, LL.D., of New York. Degrees were conferred upon 49 graduates, 14 of whom are postgraduates. The school is a direct descendant of the medical department of the Transylvania University.

Orleans Parish Medical Society.—At a meeting June 23, Dr. E. H. WALET reported a case of **Carbuncle of neck**, complicated with phlebitis and metastatic abscesses, exhibiting patient. Dr. S. P. DELAUP made a preliminary report of a case of **Ligation of the innominate artery**. The patient is a male negro, 57 years of age, married, laborer. Six years ago he suffered an attack of apoplexy which confined him to bed a month, the left side being paralyzed. General arterial sclerosis is present. Aneurysm was first noticed by patient about four months ago. Idiopathic aneurysm of third portion of subclavian artery was diagnosed. At the operation (June 14) another aneurysm was discovered at the bifurcation of the innominate and common carotid arteries. Three ligatures were applied to innominate artery—one-fourth of inch apart—2 of kangaroo tendon and 1 of corded silk. Pulsation reappeared in the tumors and at the wrist in 3 hours. The patient is now doing well.

CANADA.

University of New Brunswick, Fredericton.—At the recent centenary celebration the degree of Doctor of Laws was conferred among others upon the following members of the McGill University, Principal Peterson, Dr. A. Johnson, Dr. J. G. Adami.

Improvements at McGill University.—The enlargement of the present medical buildings at McGill is soon to become an accomplished fact. In order to interfere as little as possible with the work of teaching, it is intended to spread the repairs and improvements over a period of about 2 years. The changes contemplated were rendered possible by a donation of \$100,000 from Lord Strathcona and the Hon. Mrs. Howard, and will afford a much needed increase in accommodation.

Epidemic Smallpox.—During the past few months there has been an epidemic of smallpox in the province of Quebec and some few cases have developed in Montreal. Fortunately the measures adopted have been successful and the disease has been practically stamped out. About 500 cases altogether were found in Canada, 230 of which were in the province of Quebec. The type of the disease seems to have been the same as that of the epidemic occurring in the Central States. While it was very mild the infectivity seems to have been very great. The similarity to chickenpox was marked. Secondary fever rarely recurred. The eruption passed through all the typical stages, but dried up quickly.

Montreal Medico-Chirurgical Society.—At a meeting held June 22, Dr. JAMES STEWART showed an interesting case of **ankylosis of the cervical vertebra** due to old gonorrheal inflammation. Dr. ADAMI and JAS. BELL reported a very interesting case of **actinomycosis of the liver**. The patient was a farmer, aged 22. He had suffered for some weeks from irregular fever with, at intervals, expectoration of large quantities of very fetid pus. In the sputum no tubercle-bacilli were found. It was thought an empyema was present and aspiration of the chest was performed without result. Then the chest was opened, and on the upper surface of the diaphragm a white fungating mass was discovered, but no pus. The patient subsequently died, and at the autopsy, in the right lobe of the liver and extending from it down through the diaphragm, was found a large mass the size of an orange. In the pus from this area, the actinomyces were readily demonstrated. Multiple foci were also found in the lungs, spleen, and kidneys. The case deserves importance, as it is probably the first case reported in

Canada. Dr. G. E. ARMSTRONG read a paper on **Gastric ulcer** in which he reviewed the statistics of Keen and of Welch as to its site and frequency. The ulcer was most often found on the anterior surface near the cardiac and the lesser curvature. Under the most recent methods the mortality has been decreasing as the condition has been more promptly recognized of late by physicians. The rapid occurrence of a board-like resistance of the abdominal muscles was emphasized as a very important diagnostic feature.

McGill University.—The 67th annual session of the Medical Faculty came to an end on June 15. The total number of students in the faculty was 469. The graduating class numbered 95, of whom 75 received the degree of Doctor of Medicine. An interesting feature of the session was the inauguration of a Course in Public Health for graduates, this being the first course of the kind to be given in any university in America. The course embraced sanitary chemistry, bacteriology, chemical analysis, hygiene, and similar subjects. The course was intended to qualify its diplomates for the duties of public health-officers. At the convocation the diploma of Public Health was conferred upon Drs. W. W. Ford, J. E. Laberge, H. S. Shaw, and J. Allan Williams. The following promotions have been made in the Faculty: Dr. A. G. Nicholls to be lecturer in pathology; Dr. S. W. Stirling, lecturer in ophthalmology; Dr. D. J. Evans, lecturer in obstetrics; Dr. J. N. McCarthy, lecturer in anatomy.

MISCELLANY.

Yellow Fever Subsiding.—No new cases are reported at Quemados. All the nonimmunes are now confined in the detention camp at Marianao. At Santa Clara there have been no cases since the troops left the city.

Obituary.—GEORGE S. WARD, of Newark, June 26, aged 73.—SAMUEL C. LUCHSINGER, of Milwaukee, June 23, aged 28.—GEORGE GODFREY SAXE, of Madison, N. J., June 25.—LLOYD MORRIS HORWITZ, of Helena, Montana, June 22, aged 38.—J. T. M. CARDEZA, of Claymont, June 28, aged 80.—CARTER GRAY, formerly professor of neurology in the Long Island College Hospital, Brooklyn.—DR. FROTHINGHAM, late professor of ophthalmology in the Ann Arbor University, Michigan.—LOUIS ARCULARIUS, of New York, July 1, aged 62.—FESSENDEN NOTT OTIS, of New York, aged 75.

Condescension to the Educated Profession.—The Secretary of the State Board of Medical Examiners, in accordance with the action of the Twenty-eighth General Assembly, Iowa, holds the examination for medical certificates at the colleges. The reduction of the fee from \$20 to \$10 for examinations before the Board is also greatly appreciated. While the generosity of the people and of the Legislature allows the Faith Healers, Christian Scientists, Magnetic Healers, Weltmerites, Chiropractics and Five-yearites to practise without certificates or the annoyance and expense of examination or of previous medical study, the physician appreciates the concessions above referred to as granted by the late General Assembly.—*Iowa Health Bulletin*.

The International Medical Congress.—According to instructions from Dr. A. Chauffard, Secretary-General of the thirteenth International Medical Congress, no subscriptions to the Congress will be received after July 15, and the name of no subscriber will appear in the official program whose subscription was not received before June 15.

The publications of the Congress will consist of 17 volumes, one of which will be sent gratuitously to each subscriber; that is, the volume containing the papers of the section under which he has inscribed himself. The other 16 volumes may be purchased at 4 francs a volume, or 45 francs for the series.

Cuban Improvement.—Surgeon-Major Reed and Drs. Carroll, Agramonte, and Lazcar, the commission recently appointed by Secretary Root to investigate acute infectious diseases in Cuba, have begun operations at Quemados, where several cases of yellow fever have occurred during the last few weeks. The conservative portion of the local press heartily approves of the project. Besides yellow fever, they will investigate leprosy, acclimating fever, malaria, and, in

fact, everything infectious. The yellow-fever situation at Quemados shows much improvement. There have been only four deaths, two of which were Americans, including Major Frank H. Edmunds, acting inspector-general on the staff of General Fitzhugh Lee, who died June 18. General Lee refuses to leave his headquarters, though he has given permission to his staff if they desire to do so.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended June 29, 1900:

SMALLPOX—UNITED STATES.

DISTRICT OF	CASES.	DEATHS.
COLUMBIA: Washington . . . June 16-23 . . .	14	
ILLINOIS: Chicago . . . June 16-23 . . .	7	
INDIANA: Indianapolis . . . June 16-23 . . .	2	
KANSAS: Wichita . . . June 16-23 . . .	3	
KENTUCKY: Covington . . . June 16-23 . . .	12	1
LOUISIANA: New Orleans . . . June 16-23 . . .	16	7
" Shreveport . . . June 16-23 . . .	3	
MASSACHUSETTS: Fall River . . . June 16-23 . . .	5	
" Lowell . . . June 16-23 . . .	1	
MICHIGAN: Grand Rapids . . . June 16-23 . . .	1	
NEW HAMPSHIRE: Manchester . . . June 16-23 . . .	3	
NEW JERSEY: Jersey City . . . June 17-24 . . .	1	
" Newark . . . June 8-23 . . .	10	
NEW YORK: New York . . . June 16-23 . . .	4	
OHIO: Cleveland . . . June 16-23 . . .	12	
PENNSYLVANIA: Pittsburg . . . June 16-23 . . .	1	
TENNESSEE: Nashville . . . June 16-23 . . .	5	
WASHINGTON: Tacoma . . . June 8-16 . . .	1	
WEST VIRGINIA: Charlestown . . . June 19 . . .	14	
" Wheeling . . . June 22 . . .	1	

SMALLPOX—FOREIGN AND INSULAR.

AUSTRIA: Prague . . . June 2-9 . . .	8	
BELGIUM: Antwerp . . . May 26-June 2 . . .	1	
BRAZIL: Rio de Janeiro . . . May 11-18 . . .	7	5
CANADA: Province of Quebec, Bonaventure Co. . . . May 21-28 . . .	1	
CHINA: Hongkong . . . May 5-19 . . .	1	
ENGLAND: Liverpool . . . June 2-9 . . .	4	
" London . . . June 2-9 . . .	11	
" Southampton . . . June 2-16 . . .	2	
FRANCE: Lyons . . . May 19-26 . . .	3	
" Paris . . . June 2-9 . . .	3	
GIBRALTAR: . . . June 3-10 . . .	1	
GREECE: Athens . . . June 2-9 . . .	4	2
INDIA: Bombay . . . May 16-29 . . .	29	
" Calcutta . . . April 21-28 . . .	41	
" Kurrachee . . . May 13-27 . . .	61	48
" Madras . . . May 5-25 . . .	1	
MEXICO: Chihuahua . . . May 26-June 9 . . .	4	
" Vera Cruz . . . June 8-16 . . .	9	
PUERTO RICO: Ponce . . . June 4-11 . . .	2	
RUSSIA: Moscow . . . May 26-June 2 . . .	13	3
" Odessa . . . June 2-9 . . .	6	1
" St. Petersburg . . . May 26-June 2 . . .	47	8
" Warsaw . . . May 19-June 2 . . .	6	
SCOTLAND: Glasgow . . . June 15 . . .	1	
SPAIN: Corunna . . . June 2-9 . . .	1	
STRAITS SETTLEMENTS: Singapore . . . May 10-17 . . .	3	

YELLOW FEVER.

COLOMBIA: Barranquilla . . . June 2-9 . . .	4	3
" Panama . . . June 11-18 . . .	3	
CUBA: Havana . . . June 6-17 . . .	6	2
" Santa Clara . . . May 16-June 21 . . .	26	8
" Trinidad . . . June 19 . . .	1	
MEXICO: Progreso, Vera Cruz . . . June 8-16 . . .	15	

CHOLERA.

INDIA: Bombay . . . May 17-29 . . .	110
" Calcutta . . . April 21-28 . . .	92

PLAGUE.

ARABIA: Aden . . . May 12-June 2 . . .	170	100
CHINA: Amoy . . . June 23 . . .	Reported.	
" Hongkong . . . May 5-19 . . .	155	142
INDIA: Bombay . . . May 17-29 . . .	410	
" Calcutta . . . April 21-25 . . .	343	
" Kurrachee . . . May 13-27 . . .	154	115
JAPAN: Asaka . . . May 25-June 2 . . .	4	
" Shidzuoka Ken . . . May 25-June 2 . . .	5	
TURKEY: Smyrna . . . May 29 . . .	1	

Changes in the Medical Corps of the U. S. Army for the week ended June 30, 1900:

STONE, First Lieutenant J. HAMILTON, assistant surgeon, now on temporary duty at Santa Clara, Cuba, is relieved from all duty with the garrison at Matanzas, and assigned to station at Santa Clara Barracks, Santa Clara, Cuba.

McLAUGHLIN, W. B., acting assistant surgeon, will proceed from Matanzas to Sagua Barracks, Sagua-la-Grande, Cuba, for duty.

FORSYTHE, J. W., acting assistant surgeon, is relieved from duty at Sagua Barracks, Sagua-la-Grande, Cuba, will proceed to Matanzas, Cuba, for duty.

ECHVERRIA, Major RAFAEL, surgeon, relieved from duty as attending surgeon to quartermaster's employes, and will report to the commanding general, department of Havana and Pinar del Rio, for temporary duty.

DUCKER, Major ORLANDO, surgeon, is relieved from special duty in the office of the chief surgeon of the division of Cuba, and will report to the commanding general, department of Havana and Pinar del Rio, for temporary duty.

BARNET, E. B., acting assistant surgeon, in addition to his present duties, will attend the quartermaster's employes at the Corral, Havana, Cuba.

BALCH, Major LEWIS, surgeon, the orders of June 15, honorably discharging him from the service is revoked.

ANDERSON, CHARLES, acting assistant surgeon, will proceed from Santa Barbara, Cal., to Fort Brown, for duty.

CROSBY, Major WM. D., surgeon, U. S. Volunteers, captain and assistant surgeon, U. S. Army, is honorably discharged from the volunteer service, only, to take effect June 30.

DEVEREUX, JOHN R., acting assistant surgeon, now in Washington, D. C., will report at Washington Barracks for duty.

NOUEL, AUGUSTE A., acting assistant surgeon, will proceed from New York City to Havana, Cuba, and report to the commanding general, division of Cuba, for assignment to duty.

CRABTREE, GEORGE H., acting assistant surgeon, will proceed from Chicago, Ill., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

WOLFE, First Lieutenant EDWIN P., assistant surgeon, is relieved from duty at Puerto Principe, Cuba, and will proceed to Morro Castle, Santiago de Cuba, for duty.

DAY, JAMES L., acting assistant surgeon, now at Vancouver Barracks, will proceed with the necessary medicines to Seattle, Wash., for duty on the transport "Egbert."

POLHEMUS, Captain ADRIAN S., assistant surgeon, is granted leave for 7 days, to take effect after the completion of his duties as medical officer accompanying detachment of the Sixth Cavalry to San Francisco, Cal.

TAYLOR, RALPH L., acting assistant surgeon, is granted leave for one month, subject to his recall by telegraph in case his services are needed.

HARVEY, Major PHILIP F., surgeon, leave granted is extended one month.

A board of medical officers to consist of Major JOHN VAN R. HOFF, surgeon; Major PETER R. EGAN, surgeon; Captain GEORGE M. WELLS, assistant surgeon; First Lieutenant FREDERICK F. RUSSELL, assistant surgeon, is constituted to meet at headquarters, department of Puerto Rico, San Juan, P. R., for the examination of candidates for admission into the medical corps of the Army.

GIESCHING, FRED, hospital steward, now at the Post Hospital, Presidio, from the division of the Philippines, will be sent to Fort D. A. Russell for duty.

BUNGER, HENRY, hospital steward, is relieved from duty at Fort D. A. Russell, will be sent to Manila, P. I., for assignment to duty.

Changes in the U. S. Marine-Hospital Service, for the week ended June 28, 1900:

AUSTIN, H. W., surgeon, granted leave of absence for 1 month from August 2, 1900.

MAGRUDER, G. M., surgeon, granted leave of absence for 10 days.

SMITH, A. C., passed assistant surgeon, granted leave of absence for 7 days.

OAKLEY, J. H., passed assistant surgeon, granted leave of absence for 15 days.

SPRAGUE, E. K., passed assistant surgeon, granted leave of absence for 10 days.

WICKES, H. W., passed assistant surgeon, granted leave of absence for 15 days.

GRUBBS, S. B., assistant surgeon, granted leave of absence for 1 month from August 20.

ANDERSON, F. F., assistant surgeon, granted leave of absence for 10 days.

BILLINGS, W. C., assistant surgeon, granted leave of absence for 18 days from June 28.

WILSON, R. L., assistant surgeon, relieved from special temporary duty at San Francisco Quarantine, and directed to report to the medical officer in command at San Francisco for duty and assignment to quarters.

EARLE, B. H., assistant surgeon, is relieved from special temporary duty at San Francisco Quarantine and directed to report to the medical officer in command at San Francisco for duty and assignment to quarters.

LONG, J. D., assistant surgeon, upon being relieved from duty at New York, N. Y. (Stapleton), is to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for duty.

FRANCIS, EDWARD, assistant surgeon, will proceed to New York, N. Y. (Stapleton), and report to the medical officer in command for duty and assignment to quarters.

BAHRENBURG, L. P. H., assistant surgeon, will proceed to New York, N. Y., and report to Surgeon L. L. Williams, Immigration Depot, for duty.

BURKHALTER, J. T., assistant surgeon, to proceed to New York, N. Y. (Stapleton), and report to medical officer in command for duty and assignment to quarters.

BOGGESE, JOHN S., assistant surgeon, to proceed to Chicago, Ill., and report to medical officer in command for duty and assignment to quarters.

MCCOY, G. W., assistant surgeon, to proceed to St. Louis, Mo., and report to medical officer in command for duty and assignment to quarters.

PIERCE, C. C., assistant surgeon, to proceed to Mobile, Ala., and report to medical officer in command for duty and assignment to quarters.

WARREN, B. S., assistant surgeon, to report at Washington, D. C., for temporary duty.

ROWLES, J. A., acting assistant surgeon, granted leave of absence for 10 days from June 12.

SIBREE, H. C., acting assistant surgeon, granted leave of absence for 7 days.

ROEHRIG, A. M., hospital steward, upon being relieved from special temporary duty at the San Francisco Quarantine, to rejoin station at San Francisco, Cal.

HANRATH, F. R., hospital steward, relieved from duty at New York, N. Y. (Stapleton), and upon expiration of sick leave of absence, to proceed to Cleveland, Ohio, and report to medical officer in command for duty and assignment to quarters.

GIBSON, F. L., hospital steward, relieved from duty at Washington, D. C., and directed to proceed to Honolulu, Hawaii, and report to Surgeon D. A. Carmichael, for duty and assignment to quarters.

APPOINTMENTS.

EDWARD FRANCIS, of Ohio, LOUIS P. H. BAHRENBURG, of Ohio, JOHN T. BURKHALTER, of Georgia, JOHN S. BOGGESE, of Ohio, GEORGE W. MCCOY, of Tennessee, CLAUDE C. PIERCE, of Tennessee, and BENJAMIN S. WARREN, of Alabama, commissioned as assistant surgeons, June 22.

WALTER R. HICKS, of Michigan, appointed acting assistant surgeon, for duty at Menominee, Mich., June 23.

Changes in the Medical Corps of the U. S. Navy, for the week ended June 30, 1900:

FISKE, C. N., assistant surgeon, ordered to the Boston Navy Yard, June 22.

RUSH, W. H., surgeon, when discharged from treatment at the Naval Hospital, Mare Island, Cal., ordered to Washington, D. C., July 10, for examination for retirement, and then home and to wait orders.

EAKINS, O. M., assistant surgeon, detached from the "Buffalo," and ordered to the "Scindia."

STOKES, C. F., surgeon, promoted to surgeon from May 31.

Bacteriologic and Clinical Researches with Reference to Slight Elevations of Temperature during the Puerperium.—Franz (*Obstetrics*, May, 1900, translated from the *Centralblatt für Geburtshilfe und Gynäkologie*) has studied a series of 2,285 cases of labor, and from his clinical researches has undertaken to answer the following questions: 1. Is there any relation between the number of fever cases, and primiparity, multiparity, duration of labor, time at which the membranes are ruptured, duration of the stage of expulsion, and duration of the third stage? 2. What conclusions, positive, or at all events, probable, with reference to the origin of the bacteria, can be drawn from the omission of internal examinations, the number of examinations, the number of examiners, and the number of operations? These questions he answers in the following resumé: 1. Slight elevations of temperature during the puerperium are usually caused by saprophytes which gain access to the uterine cavity. 2. The saprophytes themselves do not cause fever. It develops only when the outflow of the bacteria-containing secretion is prevented. 3. The saprophytes which are found in the uterus in cases of slight elevation of the temperature are probably identical with the saprophytes of the vagina. 4. Internal examination is usually a factor in causing slight elevations of temperature, only in so far as it causes vaginal wounds which serve to further the development of the bacteria which are always present. 5. Slight elevations of temperature occur oftener by half in primiparas than multiparas. 6. Diminishing the duration of the third stage increases the number of slight elevations of temperature. 7. Long duration of labor, long duration of the expulsive stage, and premature rupture of the membranes, have but little influence in producing these cases. [W. K.]

foreign News and Notes.

GREAT BRITAIN.

The Royal Society is about to elect as a member Dr. Patrick Manson, physician to the colonial office.

University of Dublin.—Sir William MacCormac received the degrees of M.D., M.Ch., *honoris causa*, in the University of Dublin, June 28.

Royal College of Surgeons of England.—John H. Morgan has withdrawn his name from the list of candidates for a seat on the Council of the Royal College of Surgeons of England, J. A. Bloxam, senior surgeon to Charing-cross Hospital, having decided to become a candidate.

The Howard Medal.—The subject for the essays for the Howard Medal of the Royal Statistical Society, to be awarded in 1901, with £20 as heretofore, is the History and Statistics of Tropical Diseases, with especial reference to the bubonic plague. The essays should be sent in by June 19, 1901.

Epsom College.—On June 16, the Council of Epsom College awarded the Wakley prize to the Senior Prefect Colin Giffard. The prize is the result of a collection made by the friends of the late Thomas Wakley. The amount collected was invested and the dividends provide the funds for the prize, in perpetuation of the memory of the founder of the *Lancet*.

The Late Mrs. Gladstone.—To the late Mrs. Catherine Gladstone the medical profession owes a great debt in that she was the pioneer of the free convalescent home movement. The distress caused by the cholera epidemic of 1866 forced upon her attention the necessity of such institutions. She appealed to the public, and generous donations were sent in, including one of £1,000 from the Queen. The first home was opened at Snaresbrook, later transferred to Woodford.

Irish University Education.—At the annual meeting of the Assembly of the Presbyterian Church in Ireland, held in Dublin June 8, the convener of the Committee on Higher Education strongly commended as an equitable solution of the university question the nationalization of Trinity College, by which is meant that the theological degrees, as well as the degrees in medicine, law, and art, should become the property and privilege of the whole nation.

The Council of the Children's Country Holiday Fund has sent in one year over 33,000 children from the slums of London into the country for a fortnight's holiday. Mr. Treves attended the recent annual meeting of the subscribers to the fund, and is reported to have said that unless means could be devised whereby London children could from time to time see something of the country, he was afraid the condition of these children would never improve.

The Thames Conservancy.—The general report of the conservators of the river Thames for the year 1899 has recently been published. Probably none of the public bodies engaged in work bearing on the health of the people of London carries out the duties committed to it with more thoroughness than this Board. Few realize that the purification of the river is only one of the important duties which they have to perform, a great part of their work being the protection of the navigation of the river, both above and below London.

The officers of the Indian Medical Service held their annual dinner at Hotel Cecil, London, June 14, under the chairmanship of Sir Trevor Lawrence. After the usual loyal toasts had been proposed and honored, that of the "Sister Services" was given by Surgeon-General C. Sibthorpe, Sir Henry Noobury and J. Jameson responding. The Chairman proposed the toast of "The Guests" to which W. S. Church responded. The President of the Medical Society of London, Frederick Roberts, proposed "The Indian Medical Service," to which Sir Joseph Fayrer replied, referring to the early days of the service and the influence of Broughton and of Hamilton.

National Sanatorium for Consumption, Bournemouth.—The report presented to the annual general meeting of governors of this institution showed that there was a debt of £655 for the building of a new sanitary wing at a cost of £1,000, and that the ordinary annual expenses had been increased to the extent of about £200, due mainly to the expenditure requisite for efficiently carrying on the open-air treatment, and that this further sum would be required to meet the expenses of the present year.

Disease in South Africa.—The death of 538 men and 20 officers in the South African Field Force is reported for the fortnight ended June 9. The *Times* publishes daily detailed lists of the victims to disease. The report for the 6 days ended June 16 is typhoid fever 188, dysentery 13, pneumonia 5, various diseases 10; total 216. A disease in epidemic form called "veldt fever" is reported, which is attributed to infection from dead horses. The symptoms are those of ordinary epidemic influenza, and it is probably an old disease under a new name.

The World's Temperance Congress.—The British Medical Temperance Association recently entertained the scientific members of the World's Temperance Congress. The *Physician and Surgeon* believes that the methods of temperance reformers in general, and Dr. Ridge and Mr. Horsley in particular, can never achieve the ends they have in view. Dr. Archdall Reid declares that every scheme of temperance reform—total prohibition, local veto, the Gothenburg system, etc.—which depends on the abolition or diminution of the alcohol supply, is in effect a scheme for the promotion of ultimate drunkenness.

The Omagh (Ireland) Board of Guardians have referred a case of interest to medical officers, of Poor Law and other administrative bodies, to the Local Government Board. Dr. Hunter, of Carrickmoore, was summoned to give evidence in a case in Dublin. The call was imperative, and he felt himself justified in repairing to Dublin without first asking the consent of the Board of Guardians, whose medical officer he was. The liability for paying the fee of the *locum tenens* thus devolved on the guardians, they having through their relieving officer appointed a substitute. They allege that before leaving his dispensary derelict, Dr. Hunter was bound to apply to them for leave of absence, and they would have granted permission only on the condition that he provided and paid a substitute.

Overcrowding in London.—The recent debate in the House of Commons on a Government bill for the housing of the working classes revealed a very bad state of affairs, notwithstanding all that has been done. The London County Council has rehoused 8,928 persons, displacing 16,615, but meantime London rents have doubled with a fearful strain upon workingmen's means. Statistics showed 900,000 persons living in an illegally crowded condition. In Camberwell 17 persons were found living and sleeping in one room. In the East End beds were let out to 3 sets of occupants daily, for 8 hours each. The Public Health Act forbids this; but it was said, "Of what use is it to eject from houses those whose only other sleeping-place is the Thames Embankment under the open sky?" The death-rate from contagious diseases has gone up in the last 30 years from 101 and 160 to 270 to the 1,000. The bill authorized a County Council to provide houses outside of its own district—it being found impossible to rehouse in London, so long as slum property has to be bought up on the greedy owner's terms. Meanwhile the expense to the taxpayers of hospitals and other reliefs for the victims of overcrowding is said to be \$650,000 a year.

The Royal Society Annual Conversazione.—The exhibition held by the Royal Society on June 20 contained little of a novel character, yet fully maintained the high standard it has reached in recent years. An apparatus for the production of short electric waves and the study of electro-optic phenomena was shown by Dr. J. A. Fleming. A beam of electric radiation was produced by a radiator, the wave-length being about 8 inches. The receiver is of the Branly type and is connected with a relay and an electric bell to indicate the impact of electric waves. The spectra of the inert gases of the atmosphere were exhibited by Prof. W. Ramsay and Dr. M. W. Travers, who have now succeeded in

thoroughly separating 5 constituents from atmospheric nitrogen, viz., helium, neon, argon, krypton, and xenon. Dr. William J. S. Lockyer showed some clever photographs of bright and dark lightning flashes. The poisonous lotus of Egypt was shown by Prof. Wyndham Dunstan. This plant is very poisonous to animals in its living condition, but when dried becomes a useful fodder. Experiments were performed by Prof. Hele-Shaw and Mr. Hay on stream-line motion analogous to lines of magnetic induction. Two models of mosquitoes enlarged 28 times linear and models of human blood-corpuscles infested with the malaria parasite were shown by Prof. E. Ray Lankester.

CONTINENTAL EUROPE.

The Health of Paris.—An epidemic of typhoid is now raging in certain parts of Paris. The average number of cases reported in 4 years, 1895-98, was 1,315. In 1899 the number rose to 4,329 of which 398 were reported in the first 10 weeks. During the same period of 10 weeks in 1900 no less than 891 were reported. The cause has been traced by Drs. Thoinot, Martin, and Miquel to that portion of the water-supply derived from the River Vanne. It is said that the desire to keep these facts from being too well known resulted in Dr. Thoinot being removed from his office.

Physician Declined Challenge.—A physician at Freiburg recently had an altercation with one of his confrères. When provoked by the latter he declined to challenge him, alleging religious scruples. As each happened to be surgeon-major of reserves the military tribunal took up the case with the result that the physician who declined to fight has received the following order from the Emperor's cabinet: "You are dismissed from your rank as surgeon-major of the reserves, because, in spite of repeated invitations, made to you in demand, in conformity with the laws of honor, reparation for an insult, you have refrained from challenging your adversary."

University Appointments.—WÜRZBURG: Professor Hess of Marburg has been appointed to the chair of ophthalmology, vacated by the migration of Professor von Michel to Berlin.—ZÜRICH: Dr. Paul Ernst of Heidelberg has been appointed professor of pathology and general anatomy.—KÖNIGSBERG: Dr. Oscar Samter, *privat-docent* of surgery, has been made professor.—PRAGUE (Bohemian University): Dr. Kunta has been promoted to an extraordinary professorship of pathological anatomy; Dr. Carl Kuffner has been appointed professor of psychiatry and neuropathology.—GÖTTINGEN: Dr. A. Cramer has been appointed to the chair of psychiatry.—HEIDELBERG: Dr. Göppert has been appointed extraordinary professor of anatomy.—INNSBRUCK: Dr. Stephan Bernheimer of Vienna has been appointed professor of ophthalmology.

Alcoholism in Primary Schools.—The German authorities at Bonn, according to the *Medical Age*, had an investigation upon alcoholism among pupils in the primary schools, which shows a startling state of affairs. Out of 100 children, 16 did not drink milk, and absolutely refused to drink it because it had no savor. Of 237 pupils, 7 to 8 years of age, there was not one who had not drunk wine, beer, or whisky, although 23% had never tasted whisky, but habitually drank beer or wine. Of these children, 8% were given their glass of whisky every day by their parents that they might become strong. As a result of these investigations it was proved that children most accustomed to alcohol showed the least intelligence; children who had their morning glass of whisky and found no savor in milk showed it by great inattention during the morning hour. A curious fact shown by this investigation was that young girls who took whisky with their breakfasts were more numerous than young boys.

Experimental Treatment of Tuberculosis by Means of Raw Meat and Meat-Juice.—M. Richet and M. Héricourt, of Paris, according to the *Lancet*, inoculated a certain number of dogs with tuberculosis and separated them into 3 groups. The dogs composing the first group were fed upon ordinary food and died at the end of 3 or 4 weeks. Those in the second group were fed upon cooked meat and lived very little longer than did those in the first

group. Those in the third group were fed solely upon raw meat and remained in perfectly good health at the end of 6 months from the beginning of the experiment. The curative influence which a raw meat diet possesses over tuberculosis experimentally produced in dogs is thus established, for it is almost unknown for a tuberculous dog, living under ordinary conditions, to last for more than 3 months. Raw meat-juice appears to have the same action as that of raw meat. M. Richet and M. Héricourt have also ascertained that this effect of raw meat has a prophylactic as well as a curative action. Two dogs which had been fed for many months upon raw meat and meat-juice were inoculated and are alive at the present moment, despite the fact that after the inoculation they were taken off the special diet and put upon ordinary diet. Control dogs inoculated at the same time, but which had not been prepared by being fed upon the special diet beforehand, are dead long ago. The two observers have also investigated the dose necessary to obtain success, and consider that to preserve a dog from the effects of an inoculation of tubercle it must be given a minimal dose of from 10 to 12 grams to the kilo of body-weight every day. The active principle is evidently a soluble substance, for if the meat is chopped up and pressed to deprive it of its juice, a second pressing after moistening with water produces an absolute inactive fluid, even after the meat has been allowed to soak for 24 hours. These facts confirm the results formerly obtained by Malassez and Vignal who laid stress upon the importance of muscular "opotherapy" in tuberculosis. They had noticed that tubercle never developed in muscles and concluded that meat-juice contained some plasma inimical to the evolution of tubercle.

MISCELLANY.

Surgeon-General Y. Saneychsi, of the Imperial Japanese Navy, has been made a Baron.

Obituary.—THOMAS JONES, of Manchester, died at Springfield. —ALFRED FISHER, of Liverpool, June 17, aged 37. —FRIEDRICH BROSIN, of Dresden, aged 42. —WILHELM KÜHNE, of Heidelberg. —EDWARD MATTHEW SHIRTLIFF, of Newlands, aged 63. —PROF. JOSEPH GRUBER, of Vienna, aged 73.

Rains in Famine District.—The Viceroy of India cables that the monsoon has considerably improved the west coast. Six inches of rain has fallen in Bombay City, extending to Berar and the central provinces, while there have been frequent showers in the submontane districts and the north-western provinces.

Dr. Rudolf Amandus Philippi, of Santiago, 92 years of age, will soon celebrate the seventieth anniversary of receiving his doctor's degree from Berlin University. He is professor of botany in the Santiago University, and director of the Natural History Museum. He attended Alexander von Humboldt's lectures when a student.

The Famine in India.—Lady Curzon in a letter to the Famine Relief Committee of Chicago said that \$26,000,000 had been expended in direct relief by the Indian Government, \$10,000,000 in suspensions and remissions of land revenue, 6,000,000 for the purchase of seed and cattle, and \$5,000,000 in loans to the distressed states. The Relief Committee has, through various channels, disbursed \$2,500,000. This is to be met partly by reducing appropriations for military purposes from \$80,000,000 to less than \$72,000,000.

The Colonial Surgeons in Ashanti.—Of the 26 Europeans believed to have been surrounded in Coomassie on the west coast of Africa by the revolted Ashantis, 6 are in the Colonial Medical Service. The victims to duty are Patrick Joseph Garland, Edward Herbert Tweedy, Albert John Chalmers, William Medlycott Graham, J. B. Hay, and W. F. Macfarlane. The climate in which they live is one of the most fatal in the world to white men. At present they are in a critical condition, shut up in a native town far from the sea, with no immediate prospect of relief.

Antityphoid Serum Fails in India.—The experiment with the antityphoid serum in the army is, so far, disappointing, according to the *Medical Press and Circular*. "According to Surgeon-General Jameson, the inoculated officers seem to have suffered in a somewhat larger propor-

tion than the noninoculated, and to have exhibited a higher case-mortality, differing in this respect from the results of inoculation of the men. When, however, they did contract the disease the same high case-mortality was observed as among the officers. It is too early as yet to draw any far-reaching conclusions from this experiment on a large scale."

Fever at Bloemfontein.—The War Office has issued correspondence with Lord Roberts regarding the charges relating to inadequate hospital service at the seat of war. He suggested a committee of inquiry and said there had been an abnormal number of sick at Bloemfontein due to the exhausting march and to the terrible unsanitary condition of the camp at Paardeberg, where the only water available for drinking flowed from the Boer camp where the river contained many decomposing animals. There was also a large number of wounded after the fight on March 10. To accommodate 2,000 was no easy task, said Lord Roberts. No tents were carried and the public buildings had to be turned into hospitals. In 3 months 6,369 enteric fever patients were admitted, with 1,370 deaths—about 21%. If the rate was abnormal it was due to the exhausted state of the men and not to the neglect of the medical corps. The principal medical officer reported that the arrangements at Kroonstadt were in good order.

Rains Scant in India.—The Secretary of State for India received the following dispatch from the Viceroy of India, July 2: "Rainfalls have been fairly general during the past week, but the monsoon current continues weak, causing anxiety. Frequent showers have fallen in parts of the Central Provinces, Mysore, Bombay, the Decca, Madras, Berar, and Hyderabad, but the rainfall to date is insufficient for a general resumption of agricultural operations. Little or no rain has fallen in Northwestern India. In anticipation of the rainy season, work near villages and home gratuitous relief are being largely substituted for the large works, and Government advances are being freely given for the purchase of plows, bullocks, seeds, and subsistence. The poorer cultivators are receiving gifts from the famine fund. Even after abundant rain has fallen throughout the distressed districts, relief will be necessary on a large scale until the early crops ripen. The persons receiving relief number 5,803,000."

The Plague.—The mortality from plague in India generally is declining. Throughout all India only 746 deaths were reported for the week ending June 2, compared with 975 for the previous week. In the city of Bombay 205 deaths occurred from plague, being the largest number in any single town or province of India. Throughout the Bombay Presidency generally, exclusive of the city, 162 deaths from plague occurred. In the city of Calcutta 167 plague deaths occurred during the week ending June 2. June 13 a telegram from Brisbane was received in London to the effect that 2 deaths from plague had occurred there, and 1 death at Rockhampton. There has been no news of plague in South America for some time. It seems, however, that it has been more severe in Rio de Janeiro than the absence of news would have implied, for although it is stated to be declining, there were 27 cases of plague and 13 deaths from the disease during the first week of June, 1900.

Congenital Luxation of the Knee-joint.—Drehmann (*Zt. f. Orthop. Chir.*, vol. iii, 4th part) says that in these cases the capsular ligament is always intact, but is very slack and loose, and the patella is generally smaller and often absent. The conical ligament is stretched, but limits further dislocation of the joint. In 102 out of the 127 cases reported the tibia was displaced anteriorly, and in 54 of the 102 only one side was involved. The etiology of this deformity is explained as follows: early in the fetal life the foot becomes displaced upwards and engages in the chin, axilla or some such place, and is held there so that as the leg grows the joint is overextended, causing a displacement, and finally a slipping of the tibia out of its normal position follows. The prognosis is much more favorable than in cases of congenital hip-dislocation, and if the treatment is instituted early enough a cure should almost always result. The treatment consists in forcibly restoring the parts to their proper place, and fixing the limb in a flexed position for several weeks, at the end of which time healing should result. [G.B.W.]

Festschrift

CONTRIBUTIONS FROM THE WILLIAM PEPPER LABORATORY OF CLINICAL MEDICINE, UNIVERSITY OF PENNSYLVANIA.

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1. Two Cases of Muscular Dystrophy with Necropsy. WILLIAM G. SPILLER.
2. A Case of Amyotrophic Lateral Sclerosis in which Degeneration was Traced from the Cerebral Cortex to the Muscles. WILLIAM G. SPILLER.
3. A Contribution to the Study of (a) Iron Infiltration in the Ganglion Cells; (b) Forced Movements due to Cellular Degeneration of the Cerebellum following Rattlesnake Poisoning. D. J. MCCARTHY.
4. A Fatal Case of Sulfonal Poisoning. ALONZO ENGLEBERT TAYLOR and JOSEPH SAILER.
5. Melanotic Sarcoma of the Spinal Cord. JOSEPH SAILER.
6. Studies in Leukemia. ALONZO ENGLEBERT TAYLOR.
7. On the Pathology of the Erythrocyte. ALFRED STENGEL.
8. The Restitution of the Blood Plasma following Intravenous Saline Injections after Hemorrhage. A. E. TAYLOR and C. H. FRAZIER.
9. The Influence of Immoderate Water Drinking upon Metabolism and Absorption. D. L. EDSALL.
10. An Experimental Study of the Etiology of Appendicitis. C. H. FRAZIER.
11. Primary Endothelioma of the Left Superior Pulmonary Vein. JOSEPH SAILER.
12. A Clinical Method of the Estimation of Breast Milk Proteids. GEORGE WOODWARD.
13. The Etiology of Pertussis—The Bacillus of Czaplewski-Hensel. JOSEPH WALSH.

1.—From a study of the two cases reported in this paper and of the related literature the conclusion is reached that cases of **muscular atrophy** that present the well-known localizations regarded as characteristic of the different forms of muscular dystrophy. In the large majority of these cases the spinal cord and the peripheral nerves are normal. In other rare cases, presenting the clinical features of **muscular dystrophy**, the nervous system is more or less involved. The histologic changes in the muscles are not pathognomonic of any form of atrophy. Muscular dystrophy is to be regarded as a disease usually distinct from spinal muscular atrophy, but transitional forms connect the myopathic and myelopathic types of atrophy.

2.—In the case here reported **degenerated motor fibers** were traced throughout the central nervous system from the Rolandic area into the sacral region. Degeneration was found in the corpus callosum, the ulnar nerve and the muscles of an upper limb, and the degeneration of the cerebral cortex was employed to determine the extent of the cortical motor area in man.

3.—A woman, 63 years old, presenting left hemiplegia, was suddenly seized with symptoms of uremia, which terminated fatally. Postmortem examination disclosed in addition to marked interstitial nephritis, a large, flat tumor of the dura, extending over the right frontal lobe, encroaching somewhat on the motor area and on histologic investigation proving to be an **endothelioma** infiltrating the cerebral tissues. In sections of the cerebral cortex in the neighborhood of the tumor the coats of the vessels, especially the media, were greatly thickened. The ganglion-cells in the regions supplied by these vessels were not arranged normally in layers. Many of them were without nuclei, such of the latter as were present being displaced to the periphery. The cell-processes were few in number and often beaded and fractured, and the apical processes of the large pyramidal cells pointed in various directions. The latter cells presented further the microchemic reactions of **iron-infiltration**.

In a rabbit treated experimentally with rattlesnake venom there occurred rotation about the longitudinal axis of the animal, with arching of the spine, exaggeration of the reflexes and exophthalmos with ocular deviation. After death there were found chromatolysis and pigmentation of nearly all the cells of Purkinje in the cerebellum and slight pigmentation of the motor cells of the cerebral cortex.

From a consideration of the conditions found in these two cases the conclusion is reached that an infiltration of iron, associated with diseased arteries, may occur in ganglion-cells

from childhood to old age. An infiltration of a hemoglobinoid substance in the ganglion-cells is possible in connection with disintegrating processes of free blood in the tissues or of the blood within the vessels. The infiltration of both substances is associated with chromatolysis of the ganglion-cell. Symptoms of cerebellar disease may result in the lower animals from degeneration of the cell independently of any gross lesion.

4.—An unmarried woman, 52 years old, presenting hysteric symptoms, was discovered to be **addicted to the nightly use of 15 grains of sulfonal**. She promised to discontinue the practice, but several weeks later she developed symptoms of intoxication, with mental confusion, difficulty in speech, complete insomnia, with peculiar sighing dyspnea. The urine, withdrawn by catheter, exhibited a deep pink color. Stiffness of the legs developed, followed by paraplegia and loss of control of the sphincters. The reflexes were abolished, but sensibility was preserved. The paralysis rapidly spread upward and death resulted from heart-failure. Spectroscopic examination of both the urine and the blood disclosed the presence of hematoporphyrin. On histologic examination, degenerative changes were found in the liver, the kidney and the heart. The lungs were pigmented. The spleen was filled with greenish pigment, free and enclosed within cells; the fibrous trabeculae were greatly increased in size; the follicles were extremely well developed. The lymphatic glands were excessively pigmented. Histologic examination of the brain and spinal cord failed to disclose any noteworthy alteration.

5.—A man, 34 years old, had complained of stabbing pains in the legs for some time, the more marked on the left, with diffuse tenderness, especially pronounced over the nerve-trunks. The right lumbar region was the seat of continuous pain and tenderness with occasional attacks of sharp pain extending into the left lumbar region. Gait had been unsteady for 6 months. There was some stiffness of the joints and the left leg was thought to have become wasted. The knees were swollen and the feet edematous, especially the left foot. Prickling and tingling sensations also were present, but common sensibility was preserved. The knee-joints were absent. Micturition became frequent, and abdominal pain more severe. Death resulted from pulmonary edema. Upon postmortem examination a somewhat granular tumor, about 4 cm. long, 1 cm. in antero-posterior and 7 cm. in transverse measurement, was found lying upon the lumbar enlargement and the caudal nerves. In the lumbar region up to the first lumbar segment, the cord was much larger than usual in cross-section, but there was no evidence of infiltration of the cord by the new-growth. Sections of tumor stained with various dyes exhibited the appearances of a **melanotic sarcoma**.

6.—Careful examination of the blood was made in 16 cases of **leukemia**. Oligocythemia was found in all. As a rule the red cells appeared to contain less than the normal amount of coloring matter. Polychromatophilia occurred in nearly all of the cases. Vacuolation was sometimes observed in nucleated red cells, but this may have been factitious. Poikilocytosis was present in all cases. Nucleated red cells were present in all of the cases but one. The ameboid activity of the circulatory leukocytes appeared lessened. The polymorphonuclear cells were generally increased in the myelogenous or leukocyte cases, but not in those of lymphatic leukemia. The cells were quite variable in size in cases of leukocyte leukemia. They were frequently abnormal in shape. Changes in the neurophilic granules were frequent. The nuclei presented much irregularity. The acidophilic polymorphonuclear cells were increased in the large majority of leukocytic cases. The conditions were different in the lymphatic case. The ungranulated mononuclear leukocytes were greatly increased in number in all of the cases of leukocytic leukemia. The acidophilic mononuclear cells were present in all of the cases of leukocytic leukemia. The lymphocytes were increased in a few cases, but were in general normal as to nucleus and protoplasm. The mast-cells were present in excess in most cases of leukocytic leukemia. Circulatory mast-cells were present in but one case of lymphatic leukemia. The myelocytes were present in all cases of leukocytic leukemia, but none was found in 4 cases of lymphatic leukemia, although a large number were present in a case of acute lymphatic leukemia. In but one instance was cellular division by mitosis

observed. Leukocytic degeneration may be protoplasmic or nuclear, or both. In a few cases the intercellular glycogen seemed increased, but in the majority it seemed normal. Charcot-Leyden crystals were not observed. The fibronic network was normal in all cases. The urine was carefully studied in 2 cases and the uric acid estimated in 3 others. The phosphates and the uric acid were increased. On chemical study of the blood in two cases the specific gravity was found reduced on account of the oligocythemia, but the reduction was partially nullified by the excess of leukocytes. The specific gravity of the plasma was above the normal in one case and normal in the other. The dried residue of the total blood was nearly normal in one case and somewhat below normal in the other. The dried residue of the plasma was above the normal in one case and normal in the other. The plasma-proteid, and of course its nitrogen, were above the normal in one case, but scarcely normal in the other. The volume of cells in one case was 33.4, in the other 41.6. The nonproteid nitrogen of the plasma was increased tenfold in one case and doubled in the second. The alkalinity was the maximum normal in the first case, slightly reduced in the second, and notably increased in a third. Assuming the excess of dried residue beyond the sum of the plasma-proteids, the erythrocytic proteids; the plaques and the ash to consist largely of the leukocytes, and the excess in nitrogen to have been derived largely from the leukocytes, the nitrogen-content in one case was nearly double the best obtainable figures and entirely normal in the other.

The following summary of the **biologic relations of the human leukocytes is presented**: The circulating blood contains six types of lymph-cells; the large lymphocyte and its direct descendant, the small lymphocyte derived from the lymph-glands and nodes; the ungranulated, large, mononuclear leukocyte, probably derived from the marrow; the polymorphonuclear neutrophilic leukocyte, derived from the myelocyte; the polymorphonuclear eosinophile, probably derived solely from the marrow; and the polymorphonuclear basophile, probably derived solely from the marrow. These cells have the power of reproduction by division, but this is not a prominent phenomenon; and these cells are, for practical purposes, not reproduced in the circulating blood. These types are distinct and not interchangeable, the distinctions being based upon differences in size, shape and reactions of the nuclei; the quantity and quality of their protoplasm and of their granulations; their differences in mobility; their different reactions in the envelopment of foreign bodies; their varying relations to the functions of phagocytosis and bactericidal action; their different relations to clotting; and their widely distinct reactions to various disease processes, particularly to infections, blood-diseases, and experimental procedures. There is a differentiation in the leukocytic reaction to disease-processes in different parts of the body—the blood, the colonic tissues, the alimentary tract, and the skin. Lymph-tissues are derived only from lymph-tissues and produce no other tissue, either physiologic or pathologic.

The following varieties of leukocytosis are described: (1) General in type; (2) polymorphonuclear; (3) lymphocytosis; (4) mononuclear; (5) eosinophilic; (6) basophilic; (7) myelocytosis.

The alterations in the tissues in 2 cases of acute leukemia and in 10 cases of chronic leukocytic leukemia are described.

For the purpose of determining whether persistent leukocytosis is capable of inducing any of the circulatory or local cellular changes of leukemia, the spleen was removed from 3 dogs. Only temporary moderate lymphocytosis developed, and the lymphatic glands were not enlarged.

Leukemia is considered a peculiar variety of leukocytosis rather than a neoplastic condition. Its specific cause is not known. Two types and a mixed form occur, namely, lymphocytic leukemia, myelogenous or leukocytic leukemia and myelolymphocytic leukemia.

It was found that in cases of leukemia the use of arsenic tends to diminish the number of leukocytes, and to augment the number of red cells, although improvement in the objective symptoms does not always coincide with the beneficial effects upon the blood. In other cases, however, the drug has no action upon the blood or the symptoms.

7.—This paper discusses the **anomalies** that may be observed in the **red blood-corpuscles**, together with the de-

generations that can be induced by means of water, weak acids, saline solutions, poisons, pressure, heat, cold and blood-serum. The viscosity of the red cells, the occurrence of vacuolation, the presence of granular masses or streaks, the process of budding and fragmentation, total necrosis, irregular fragmentation, ameboid movements and polychromatophilia are also considered. Attention is devoted further to alterations in size, irregularity in shape, vacuolation, abnormal viscosity, shadow corpuscles, polychromatophilia and alterations in resistance. Some experiments in isotonicity are recorded, and the effects of cold, of hypotonic saline solutions, of saline solutions in the living body, of heat, of serum from cases of chlorosis, leukemia, pernicious anemia, disease of the heart, and of heterogenous corpuscles in the circulation are described. It was found that the first stage of degeneration is always a beginning resolution of the vital or chemic combination of the hemoglobin and the stroma, as exhibited in slight areas of decolorization or, in an earlier or more diffuse form, in slight irregularity of contour. Next the hemoglobin is completely altered and removed, leaving areas of decolorization, in which the hemoglobin may be seen as granular streaks and particles. Occasionally the hemoglobin separates without distinct decolorization of the corpuscles. Complete decolorization with the formation of shadow corpuscles is the last stage of this simple form of degeneration. Irregular contractions of the protoplasm may or may not attend this form, but it may occur independently; then, however, as a result of gross insults, such as by heat. Budding and marked poikilocytes are the results. A more general change may lead to poikilocytes by slow ameboid movements. Microcytes may be split off in either case; while macrocytes are found in some instances, probably as a result of inhibition of liquid. Complete or partial fragmentation may result from slight pressure or other mechanic causes in a corpuscle somewhat degenerated, though the same causes would leave a normal erythrocyte unaffected. Changes of color-reaction, chromatophilia, may or may not be seen in degenerated red corpuscles. All of the changes described may occur in the corpuscles of anemic diseases and indicate some causative influence from without, probably the serum. The discovery of changes in the red corpuscles in cases of anemia is therefore indicative of but one of the pathologic conditions and perhaps not the first. The underlying disorder is not improbably often chemic and connected with disturbances of metabolism or organic action. The altered serum changes the corpuscles. The presence of altered red cells is not always an indication of improper formation, but in many cases the alterations are the result of degeneration.

8.—As the result of an experimental investigation it was found that following severe hemorrhage in the dog the replacement by saline solution of the volume of blood lost is followed by a most rapid restitution of the sugar and the proteids of the plasma, probably derived from the tissues by direct lavage.

9.—An imperfectly nourished man, 38 years old, with a previous history of lead-poisoning, but without evidence of disease of the kidneys or of the circulatory organs, was subjected to **metabolism experiments** for a period of 10 days, throughout which water was given in large amounts. The results obtained were contrasted with those of a previous period of slight water-ingestion, the amount of nitrogen ingested and excreted being accurately determined. When water was given in large amounts the degree of nitrogen-retention was much diminished and metabolism was increased. It could not be determined that the use of large amounts of water had any distinct effect upon absorption.

10.—As the result of an experimental investigation upon rabbits it was found that of all the etiologic factors that enter into the **pathogenesis of appendicitis**, imperfect drainage of the organ plays the most conspicuous part. Whenever this is present and persists for even a brief period of time, there are bound to arise definite, and at times serious, consequences. As a direct result of the interference with drainage the innocuous *Bacillus coli communis* is converted into a virulent organism. It is this exalted virulence, as well as the inability of the organ by peristaltic action to rid itself of the organism themselves or of their toxins, that is directly responsible for the local lesions and the constitutional disturbance. The varying degrees of virulence, as attained by microorganisms under certain predisposing conditions—most

conspicuously that of imperfect drainage—suggest an explanation for the wide range of severity manifested in individual attacks. Next in importance to the parts played by insufficient drainage and microorganismal activity is the question of circulatory disturbances. The result of this is twofold: The tissues lose thereby in resistant power, and the virulence of the bacteria is increased. The insignificance attached to the presence of foreign bodies in the human appendix has been well borne out by experimental work.

11.—The patient was an unmarried white woman, 60 years old, deaf and lacking in intelligence, who appeared to be suffering from weakness and senility. The area of cardiac dullness extended one inch to the right of the sternum, and a systolic murmur was heard at the apex of the heart. Postmortem examination disclosed, in addition to **chronic obliterating phlebitis of the left superior pulmonary vein**, effusion into the left pleural cavity, moderate ascites, atelectasis of the superior lobe of the left lung, chronic fibrous myocarditis, chronic sclerotic endocarditis with mitral insufficiency, cirrhosis of the liver, chronic interstitial nephritis, general atheroma, and a calcareous fibroma of the uterus.

12.—See this JOURNAL, Vol. I, No. 21, p. 956.

13.—In cover-glass preparations of the sputum from 8 of 9 cases of **whooping-cough**, and from the trachea at autopsy in one case an organism believed to be the Czaplewski-Hensel bacillus was found in predominating numbers. The corresponding organism was found in cultures from the sputum in 7 cases. In several instances favorable results were obtained from the injection of blood-serum from individuals who had previously passed through attacks of whooping-cough.

Influenza with Four Distinct Pneumonic Attacks Accompanied by Otitis Media Purulenta, Cerebral Hyperemia, Colitis, Marasmus; Recovery.—At the meeting of the American Medical Association held at Atlantic City, June 5, 6, 7, 8, 1900, Ullman reported the case of a child, aged 20 months, in whom **influenza** was complicated by 4 distinct attacks of pneumonia, each of which ended by crisis. Acute purulent middle-ear disease accompanied by a purulent discharge from the left eye and nostril and cerebral hyperemia that produced attacks resembling meningitis in character also developed. As a result of colitis the patient was unable to assimilate the simplest food and consequently marasmus resulted. No bacteriologic examination was made because the child did not expectorate. Blood-examination showed secondary anemia and a leukocytosis of which 97% were lymphocytes and 3% polymorphonuclear leukocytes; there were also macrocytes, microcytes, and poikilocytes. The patient recovered. [J.M.S.]

Plantar Reflex and its Associated Phenomena, Particularly Babinsky's Phenomenon.—Walter and Paul (*Journal of Mental and Nervous Diseases*, June, 1900) contribute a valuable article. The latter they regard as characterized by a pronounced extension of the great toe with or without extension and separation of the other toes. In regard to the plantar reflex, studies upon young women apparently prove that it is not influenced by fatigue. It was present in 40 of 55 normal cases. In 5 cases it was absent and in 10 differed in the two feet. Similar studies of a great variety of patients gave about the same results. Some 200 cases of disease of the nervous system without lesion in the pyramidal tract were examined. In 65½% the reflex was normal; in 2% Babinsky's phenomenon was absent, but in these, implication of the pyramidal tract could not be excluded. In infants, the reflex movements of the toes could not be definitely determined, but dorsi-flexion of the foot seemed to be clearly constant. The authors then give their results in cases in which the pyramidal tract was distinctly involved. Babinsky's phenomenon was present in 7 of 9 hemiplegias, in 15 of 24 diaphragmias, and in all of another group of hemiplegias, and in 2 cases of spinal disease. About 200 cases were examined in which the pyramidal tract was diseased, and in 70% the Babinsky reflex was present. In a few cases, it was present when pyramidal disease apparently could be excluded. It was very much more constant than exaggeration of the patellar jerk or the Achillis tendon reflex, and apparently is the earliest symptom to appear in the pyramidal tract disease. [J.S.]

The Latest Literature.

British Medical Journal.

June 16, 1900. [No. 2059]

1. Remarks on Mauser Bullet Wounds and Amputation. SIR WILLIAM STOKES.
2. Two Lectures on Antenatal Diagnosis. W. BALLANTYNE.
3. Clinical Lectures on Pneumonia. JAMES BARR.
4. A Case Bearing on the Parasitic Nature of Mammary Cancer. MARMADUKE SHEILD.
5. Notes on Gastroenteritis, Dysentery, and Enteric Fever. J. W. WASHBOURN.
6. A Recent Observation on *Filaria Nocturna* in *Culex*; Probable Mode of Infection of Man. GEORGE C. LOW.
7. The Treatment of Pneumonia. A. DE WINTER BAKER.
8. An Easy Method of Mounting and Preserving Mosquitos. D. C. REES.
9. Neglected Point in the Treatment of Strangulated Hernia. C. HAMILTON WHITEFORD.
10. Cesarean Section and Embryotomy in the Same Patient. NATHAN RAW.
11. Perforating Wound of Abdomen; Gangrene of Omentum. CHARLES GIBBS.

1.—Stokes reports a number of cases which he believes somewhat refute the idea that the wounds made by **Mauser bullets** are "humane and harmless." His experience in the Boer war, acquired in the Maritzburg military hospital and in the General Hospital, Maori River, led him to believe that the character of the gunshot wounds in the early part of the campaign differs materially from those observed later, both as regards the gravity of the wound and the increased difficulty of keeping them aseptic. He believes that the Boers frequently used expanding bullets, and that another cause for the increased severity of wounds is that later in the war the range became much closer. He reports 8 cases in which amputation was necessary on account of the severity of the injury causing either splintering of the bone or extensive laceration of the soft parts. [G.B.W.]

2.—**Antenatal diagnosis** includes the discovery of normal pregnancy and of plural pregnancy, of fetal death, of diseases and monstrosities of the fetus, of hydramnios, and of morbid conditions of the placenta. All these matters must be kept in mind in examining a patient who may be pregnant, and in all of them there is at any rate an increasing probability that the diagnosis may be thoroughly well established under favorable circumstances and with care and skill. The making of the diagnosis of the antenatal morbid state during antenatal life will be best accomplished by taking up the following lines of investigation in order. First, the previous medical history of the woman, both general and sexual, must be inquired into; for there are certain circumstances which may be regarded as commonly preceding the development of morbid states in pregnancy; secondly, the past history and present state of the father, and the family history on both sides ought to be taken into account; for there are fetal diseases and embryonic deformities which appear to be hereditarily transmitted; thirdly the maternal symptomatology during the pregnancy which is in progress must be carefully investigated; fourthly, a very complete physical examination ought to be made of the maternal organs, and especially of the abdominal viscera; fifthly, the fetus should be fully examined by the hands, by the ear, by the cephalometer, by the Röntgen-rays, and by any other means of exact research that may yet be invented; and finally, the maternal urine and blood should be subjected to a chemical and microscopical investigation, as it is beginning to be realized that the condition of the fetus *in utero* is to some extent reflected in the composition and character of the maternal excretions. Ballantyne considers the mother's previous reproductive history is of much more immediate value in the diagnosis of antenatal morbid states than is her purely medical record. Therefore the menstrual habit and type ought to be ascertained and any abnormal conditions noted. The condition of the mother as to marriage must be inquired into, whether she married early or late in life and whether she married a near relative, as uncle or first cousin. The history of the previous pregnancies of the pa-

tient may yield information of the very greatest value in the making of a diagnosis. [W.K.]

3.—Barr does not believe in the cold-bath treatment of high temperatures in **pneumonia** because it involves the free administration of alcohol of which he does not approve and because it chills the extremities. He believes that a large moist poultice, if the patient is lightly clothed and evaporation is allowed to take place freely, removes a great amount of latent heat; the object is to cool the patient, not to keep the poultice warm. He also advocates the use of one or more large abdominal ice-bags to lower the temperature, to raise the general arterial pressure by the action of the cold on the splanchnic area, and to diminish the frequency and increase the depth of the respirations. This method must be adopted early in the disease or not at all. If the lung is in the stage of gray hepatization the use of the poultice will produce better cooling effects. Ice should not be used for very old or very fat people. Bleeding should never be adopted after the first 45 hours and never at any time if the pulse is small, feeble, and compressible. He advises the use of 10 minim doses of wine of antimony every 4 hours to an adult, never to be continued beyond the third day. Opium should be used to induce sleep; 2 or 3 10 grain doses of Dover's powder during the night often answer. In alcoholic subjects the combination of opium and antimony answer well. Where the lung is engorged and the right side of the heart is handicapped chloral is preferable to opium. The sick room in this disease should be well lighted, well ventilated, and the temperature should be about 65° F. Nausea and vomiting may be treated by washing with warm water or by a calomel purge. When the pulse is feeble and expectoration is difficult a mixture of ammonium carbonate, potassium citrate, or potassium nitrate, and citrated caffeine is advantageous. Cardiac failure may be met by strychnin, caffeine, and digitalis. Terebene is the best remedy in the late stages with profuse expectoration. During convalescence tonics are required. When the pulse is small and irregular and the vessels are rigid a small amount of alcohol may do good. In alcoholic cases with delirium, alcohol, atropin, and morphin are valuable; if necessary chloroform may be administered by inhalation for its quieting effect. The food should be liquid, light and nutritious. [J.M.S.]

5.—Gastroenteritis, enteric fever, and dysentery were common in the Imperial Yeomanry Base Hospital. Washbourn considers the alimentary canal the portal of entry for the microorganisms in each disease. As etiologic factors he places flies, dust, and water in the order mentioned. He thinks that the drinking of Modder River water and the use of fresh meat received from Capetown were responsible for many cases of **gastroenteritis**. In the treatment of **dysentery**, which was not very fatal, 2 cases out of 158, the author used ipecacuanha in 30 grain doses after abstinence from food and a dose of laudanum or chlorodyn. The dose was repeated in 4 hours. Magnesium sulfate was given in dram-doses every hour until the motions became fecal. He thinks that inoculation does not have a marked effect in mitigating the attacks of **enteric fever**; 2 patients who died of the disease had been inoculated. Several patients presented enteric fever after an attack of dysentery. There were cases in which the only diagnosis possible was simple continued fever. No case of **malaria** arising in South Africa has been seen. [J.M.S.]

6.—Low made sections of the **filariated mosquitos** of the **genus culex** after celloidin embedding. It was found that the young filaria, after reaching their highest stage of development in the insect, instead of lying passively in the thoracic muscles, leave that tissue and, in the vast majority of instances, travel forward in the direction of the head of the mosquito and pass into the loose cellular tissue which abounds in the prothorax in the neighborhood of the salivary glands. After a short sojourn in the prothorax the worms enter the lower part of the head and coil themselves up in the loose connective tissue immediately below the cephalic ganglion and the salivary duct. From the head they may be traced passing into the proboscis, making an independent passage through the base of the labium, and pushing forward along the proboscis between the labium and hypopharynx, among the stylets. These parasites then enter the human tissues when the mosquito next feeds on man. This statement could only be proved by a dangerous

experiment; but the evidence is strongly in favor of the hypothesis. [J.M.S.]

7.—Baker reports the case of a boy, aged 13, who was suffering from **pneumonia**. The patient was sleepless and delirious and the temperature rose to 104.4° F. Five grains of Dover's powder every 4 hours, later reduced to 2½ grains at like intervals, produced the most decidedly good results. The disease was complicated by severe earache due to the impaction of a plug of cotton. [J.M.S.]

8.—Rees advises the following method for the **preservation of mosquitos**. After killing the insect and separating the legs, place a large drop of thick xylol Canada balsam on a slide and invert it on the mosquito, which should be resting on its back. Then arrange the wings and legs again if necessary; pour on some thin balsam, which will straighten the proboscis and antennae. After hardening the excess of balsam is chipped off, a glass ring is put on the slide around the balsam, and the chamber is filled with balsam so that the upper surface is convex in order that when the cover-glass is applied no air-bubbles shall remain. [J.M.S.]

9.—Whiteford calls attention to the necessity in cases of **strangulated hernia** of emptying the bowel above the constriction, thus relieving not only the constipation, but relieving the patient of the accumulation of feces from which he has been absorbing various poisons. [G.B.W.]

10.—Raw reports a case of **cesarean section and embryotomy** on the same patient, whose greatest conjugate diameter was 2½ inches. She was short but well developed and very rickety, with spinal angular curvature. Surgical emphysema also complicated the condition. [W.K.]

Lancet.

June 16, 1900. [No. 4007.]

1. The Value of Tuberculin in Diagnosis and Treatment. T. McCALL ANDERSON.
2. Differentiation in Diabetes. F. W. PAVY.
3. Contribution to Our Knowledge of Uric-Acid Salts. F. W. TUNNICLIFFE and ROSENHEIM.
4. The Management of the Anesthetic in Cases in which Respiratory Impediment Exists. DUDLEY W. BUXTON.
5. Bilateral Dislocation of the Hip, Presumably Congenital. THOMAS PHILIP COWEN.
6. Three Cases of Puerperal Eclampsia. FREDERICK SPURR.
7. A Few Cases of Brain Injury Clinically Examined. EDMUND E. DYER.
8. Surgical Aspects of Constipation. S. L. WOOLMER.
9. Fractures of the Inferior Maxillæ Treated by a Modified Method of Wire Suture aided by the Electro-motor. T. S. CARTER.
10. Pyopneumothorax Due to Empyema Perforating the Lung; Recovery. F. PERCY ELLIOTT.
11. Note on a Case of Coccygodynia; Removal of the Coccyx; Recovery. MONTAGUE D. MAKUNA.
12. Hyperpyrexia in Acute Rheumatism. HERBERT R. C. NEWMAN.
13. A Case of Lymphatic Leukemia or Lymphocythema Treated Surgically by the Establishment of a Collateral Circulation. W. MURRELL and WALTER SPENCER.
14. A Case of Strangulated Femoral Hernia in which Gangrene was Precipitated by an Intraabdominal Volvulus. R. LAW FORD KNAGGS.

1.—Anderson gives case-histories of patients who have been benefited by **tuberculin treatment** and of those in whom the **use of tuberculin** has served to **clear the diagnosis**, otherwise obscure. He believes that if used with reasonable care the tuberculin is both efficient and safe in the human subject. Cases of external tuberculosis are the best for studying the effects of the treatment by this substance. Thirty-five patients suffering from lupus vulgaris, 7 from scrofuloderma, and 3 from lupus erythematoses were treated, all except one with the old tuberculin. The excepted patient received tuberculin (T. R.). The only other treatment was 2 to 3 ounces of cod-liver oil daily and generous diet. Statistics concerning the result or the treatment are given. The author is of opinion that the local inflammatory action of the remedy effects the improvement. The treatment must always be accompanied by hygienic measures. He thinks tuberculin (T. R.) is the safer of the two forms of tuberculin.

He gives tables for diluting the tuberculin for administration. [J.M.S.]

2.—In the alimentary form of **diabetes** the erroneous state observed in connection with the urine consists in the abnormal presence of dextrose. As a result, when the urine is examined quantitatively by cupric oxid reduction and the polarimeter, the figures given by the 2 methods are in accord. In contrast to this **simple form of diabetes** there is a class of the affection in which the dextrose in the urine is derived from a two-fold source. It is present as the result of a faulty carbohydrate assimilation and as the result of an abnormal proteid disintegration. This is also attended by other abnormal degenerative products, and it is these substances that produce the diabetic coma. Pavy proposes the term **composite diabetes** for this latter variety of the complaint in contradistinction to the simple alimentary form. In the composite form the chain of associated products of faulty proteid disintegration includes B oxybutyric acid, diacetic acid, and acetone. The amount of these products may serve as an indication of the degree of abnormal disintegration taking place within the economy. The existence of ammonia in combination with sulphuric or phosphoric acid in the urine of a diabetic patient is also evidence of abnormal proteid destruction. The article is continued. [J.M.S.]

3.—From a study of the **uric-acid salts**, Tunnicliffe and Rosenheim conclude: 1. That there is no evidence of the existence of quadriurates either in the artificial or the natural amorphous urinary deposits or in the fluids of the body. Under these circumstances it is advisable to discontinue the use of the term quadriurate. 2. That the substances obtained artificially under the conditions supposed to produce quadriurates consist of mixtures in varying proportions of uric acid and biurates or of pure uric acid or pure biurates alone. 3. That the natural amorphous urinary deposits consist of a mixture of uric acid with urates of sodium, ammonium, potassium, calcium and magnesium, (containing, in the majority of cases, phosphoric acid in addition). 4. That the property of some natural and artificial amorphous urates of showing the formation of uric-acid crystals under the influence of water is due to the dissolving out of the more soluble biurate moiety and a change in physical state of the remaining uric acid. 5. That any theory concerning the pathology or treatment of gout or the uric-acid diathesis built upon the assumption of the existence of quadriurates requires reconsideration. 6. That the existence of two forms of uric acid (the tautomonic lactane and the lactine form) may explain the variation in the physical and physiologic behavior of this acid and its salts. [J.M.S.]

4.—In considering the **management of the anesthetic in cases in which respiratory impediment exists**, Buxton first defines primary circulatory failure as a depression of the circulation which is preceded by no interference with respiration; and secondary circulatory failure as a circulatory depression consequent upon and causally related to interference with the functions of respiration. The pulmonary circulation is materially assisted or hindered according (1) as the thoracic movements are maintained and are competent, and (2) as the gaseous composition of the blood is maintained at its physiologic standard. Obstructed breathing, due to blocking in the upper air-passages, commonly arises from enlarged tonsils, pharyngeal abscess, enlarged tongue, or old adhesions between the posterior wall of the pharynx and the tissues of the faucial arches. Goiter, angina of Ludovic, lymphadenoma, lymphadenitis render anesthesia difficult and dangerous. Patients with emphysema, and very fat persons also, offer mechanic obstacles to the respiratory function. The position of the patient for operations in the dorsal region offers a serious obstacle to surgical anesthesia. Operations on the thorax also present many difficulties to the anesthetist. [J.M.S.]

5.—Cowen reports the case of a man, aged 30 years, suffering from mania with incoherence who presented an **old dorsal dislocation of both hip-joints**. In spite of the fact that the friends of the patient asserted that the condition was due to a severe thrashing received at the hands of a drunken man when the patient was 7 years of age, and that the patient did not limp or present deformity before that time, the author believes the condition to be **congenital**. Progression was accompanied by a marked rolling, waddling gait. [J.M.S.]

6.—Probably the most generally accepted view is that **puerperal eclampsia** is due to a toxemia of a urinary nature, toxic substances being retained in the blood which should have been excreted by the kidneys, and the frequent association of albuminuria with eclampsia certainly supports this theory. It has been stated that one pregnant woman in 40 is albuminuric, and that of these one out of every 4 develops eclampsia; that eclampsia without albuminuria is of rare occurrence—one case in 10. From these facts the practical conclusion is drawn that albuminuria should always be looked for in pregnant women, and actively treated during pregnancy when detected. As regards treatment, there can be no doubt that the chief indication is to eliminate the toxic matter from the circulation, or, failing this, to dilute it as much as possible. With this object in view purgatives, diuretics, and diaphoretics are given, and Dr. R. Jardine has recently strongly advocated the use of saline injections. Spurr reports 3 cases of puerperal eclampsia, in 2 of which he relied on calomel and croton oil respectively as purgatives, in each instance with very satisfactory results; but in any future case he would feel more inclined to resort to the more rapid and certain method of emptying the lower bowel with copious and repeated enemas. The second indication must be to counteract or modify the effects of the poison in the system and for this purpose numerous drugs have been recommended—morphia, chloral hydrate, bromids, chloroform, veratrum viride, etc. After the experience gained in the 3 cases reported, Spurr would never hesitate to place entire reliance on the mixture of chloral hydrate and bromid, supplemented if need be by the prolonged administration of chloroform; but in a disease of such gravity, arising from a toxin, whatever its nature, of such virulence, it is absolutely necessary to give these counteracting drugs in full doses, and above all to persevere in the line of treatment adopted and that even in cases apparently hopeless. [W.K.]

7.—A man of 20 was operated upon for compound **fracture of the skull**. The symptoms of depression which had previously existed were relieved and his condition gradually improved for several days; then a rise of temperature and mental dulness developed, and death followed 28 days after the injury. Necropsy revealed a **brain-abscess** at the site of the injury. In a second case, a man of 56 entered the hospital with right hemiplegia. His condition was such that no definite history could be obtained; convulsions developed, and the man died on the twenty-fourth day after the injury. The necropsy showed the brain-tissue to be much softened, and three large clots were found—one high up just inside the central fissure, a second lower down inside the middle frontal convolution, and a smaller clot in the occipital region. In the third case, a boy received an injury of the head so severe that it was possible to insert a probe by its own weight $2\frac{1}{2}$ inches into the brain. The hemorrhage was arrested and an antiseptic pad was applied; without further intervention recovery followed in 3 weeks. [M.B.T.]

8.—A man of 28 had suffered from **constipation** for 4 years, relieving himself only by enemas and purges. Celiotomy was performed and the sigmoid flexure was found dilated to the size of a stomach and filled with fecal matter; this portion of the intestine was cyst-like in structure; it was emptied and sutured to the abdominal wall, and since this time the patient's bowels act normally. In a second case, a man of 42 had suffered from constipation for 8 or 10 years; his condition had been worse for the previous year and symptoms of acute intestinal obstruction had occasionally developed. Treatment by purgatives was ineffectual. On opening the abdomen the **sigmoid flexure** was found **enormously dilated**, extending into the pelvis; it was opened and sutured to the abdominal wall; uninterrupted recovery followed. The bowel movements have since then been normal and the patient has gained much in weight. [M.B.T.]

9.—In the treatment of **fractures of the lower jaw** Carter advises wiring; he prefers to use the dental engine in drilling the holes and then inserts an annealed silver-plated copper wire which is stronger and more ductile than silver, the wound should be well irrigated and the parts dusted with iodoform and boric acid; for some time no conversation should be allowed and mastication is forbidden for several weeks. [M.B.T.]

10.—Elliott reports the case of a woman, aged 44 years,

who presented no family nor personal tuberculous history. The patient's husband had died of pulmonary tuberculosis 3 years before her own illness and the patient had slept with him nearly to the end of his life. Suddenly, in 1894, the patient experienced a sharp pain in the right breast which soon became worse, and was accompanied by dyspnea and cough. Soon a pleural effusion was discovered which was followed by the development of hectic symptoms. Before aspiration was done the patient had a violent fit of coughing and expectorated about 3 pints of greenish-yellow pus, which toward the end of the paroxysm was mixed with blood. The next examination of the chest showed the presence of air and fluid. Seven weeks after the commencement of the illness the symptoms had disappeared, and in 3 months the patient was able to take up her duties as a monthly nurse. The patient was perfectly well 2½ years later with only a slight pleural friction on deep inspiration as the remains of the **pyopneumothorax**. [J.M.S.]

11.—A boy of 10 years had severe pain in the sacral region which made it impossible for him to sleep or assume the sitting posture. On rectal examination it was found that the 2 lower segments of the sacrum were tilted inward and that the continuity of the sacral curve was lost. The coccyx was removed and since then the boy is free from pain and able to sit comfortably. [M.B.T.]

12.—Newman reports the case of a woman, aged 30 years, who was suffering from **acute rheumatism**. On the twenty-first day of the disease the temperature rose to 107.8° and the pulse was 174, weak and irregular. The **hyperthermia** continued for about 24 hours. Sponging with water at 48° F. reduced the temperature in that time, and thermometer subsequently did not register above 102°. A soft mitral systolic murmur was heard near the end of the attack. [J.M.S.]

13.—A girl of 19 had suffered from anemia and amenorrhea for 2 years; pills of the dried sulfate of iron were administered with some improvement. This was temporary, however, and later a large amount of fluid developed in the abdomen; the latter increased in size until the patient suffered decided discomfort and became very feeble. An incision was made and about 8 pints of blood-stained fluid were drawn off and a drainage tube was inserted; the fluid reaccumulated and the patient's condition became very unsatisfactory. An attempt was made to establish collateral circulation by suturing a piece of omentum about 2 inches square to the abdominal wall. The superficial abdominal veins soon began to enlarge and the patient improved in health and strength and is now reported to be in excellent condition. The trouble is believed to have been due to **lymphatic leukemia**. [M.B.T.]

14.—A woman of 61 was admitted to the hospital with symptoms of a strangulated left **femoral hernia** of 6 days' duration. Herniotomy was immediately performed, the sac was gangrenous and infiltrated with pus; it contained a loop of intestine which had become twisted, forming a small **volvulus**, the neck of which lay just within the abdominal cavity close up against the femoral ring. The gangrenous loop was removed and anastomosis was performed with the aid of a Robson's bobbin; death followed 26 hours after the operation. [M.B.T.]

New York Medical Journal.

June 30, 1900. [Vol. lxxi, No. 26]

1. Influenza in Children. A Contribution to the Study of Influenza in Children, with Special Reference to its Treatment with Sodium Benzoate. HERMAN B. SHEFFIELD.
2. Are there Veritable Valves in the Rectum? WILLIAM BODENHAMER.
3. The Treatment of Puerperal Infection. J. B. KILLEBREW.
4. Formalin as an Antiseptic in General Surgery, Gynecology, and Obstetrics. G. E. CRAWFORD.
5. The Closure of a Cleft Palate by Lingual Implantation; A Preliminary Report. CARL BECK.
6. The Laryngeal Manifestations of Typhoid Fever. LORENZO B. LOCKARD.
7. The Role of Purulent Rhinitis of Childhood in the Production of Atrophic Rhinitis. RICHMOND MCKINNEY.

1.—Sheffield is of opinion that the digestive system is

affected in **influenza** by the patient's swallowing saliva which contains the bacillus of Pfeiffer. He agrees with the generally accepted idea that the germs gain entrance into the system primarily through the respiratory tract. The influence of this disease upon the respiratory, digestive, and nervous systems is discussed. Both croupous and bronchopneumonia, meningitis, otitis, mastoiditis and nephritis are complications or sequels. Sheffield is of opinion that the same prophylaxis should be employed to prevent the spread of influenza as is for measles, scarlatina, etc. Isolated cases are not easy to diagnosticate, but the following will aid in the diagnosis: (1) The invariable presence of the bacillus of Pfeiffer in the expectoration; (2), the simultaneous development of respiratory, digestive, and, at times, nervous phenomena; (3), early and pronounced prostration, incommensurate with the severity and duration of the attack. **Sodium benzoate** is the very best drug in this disease, as it meets all the requirements. [J.M.S.]

2.—Bodenhamer opposes the view taken by Martin that there are **valves in the rectum**. He says the corrugated condition of the mucous membrane of the rectum is caused solely by the tonic contraction of the involuntary muscular fibers. Plicae of similar kind are caused by the tonic contraction of the sphincter ani externus. All the corrugations and plicae may be temporarily obliterated by mechanically distending the rectum. This could not be done if they were true valves. They are composed solely of mucous membrane. Their function, like that of the curves of the rectum, is to prevent a too rapid descent of the contents of the bowel, not as valves, but as a brake. The arrangement of these plicae and corrugations is never constant, and the latter do not oppose each other so as to completely close the lumen, as a valve would do. Within the margin of the anus are a number of sacculi, or lacunae, but they are in no sense valves. No valves are needed by the rectum, as the sphincter muscles are sufficient for all its needs. [J.M.S.]

3.—Killebrew believes that greater regard should be paid to **asepsis in obstetrical cases**. However, even with the strictest precautions some cases will become infected. He regards puerperal infection as a surgical disease and believes it should be treated surgically. If the infecting bacteria have penetrated deeper the walls of the uterus or invaded the peritoneal structures, curettage and opening of Douglas's cul-de-sac, with the proper application of antiseptic dressings must be resorted to. If the case is seen early, treatment should be begun by giving intrauterine irrigations or normal salt solution or saturated solution of boric acid. [W.K.]

4.—Crawford believes that **formalin** has not received that consideration at the hands of surgeons and obstetricians which it merits. He says it comes nearer meeting all the requirements for a perfect disinfectant than any other substance yet employed. It ranks with the best germicides. It is both an antiseptic and a deodorant. It is less irritating to both hands and wound than any other efficient drug. It does not injure instruments, and is practically innocuous; even the peritoneal cavity may be irrigated with it, and a considerable amount may be left in that cavity to be absorbed. Formalin is to be differentiated from formaldehyd, as the latter is 2½ times as strong as the former. For washing the hand and surface of the body a ½% solution of formalin is used for cavities, a ¼% or ⅓% is sufficiently strong. For gynecologic work it is almost an ideal disinfectant, also in operation for appendicitis, particularly when there is pus and irrigation is necessary. It is particularly useful for packing and draining pus-cavities, being far superior to iodoform. It meets all the requirements in obstetric practice. Another advantage is its cheapness. One dram of formalin added to 3 pints of water makes a ¼% solution. [J.M.S.]

5.—In a case of **cleft palate** in which the Langenbeck and Davis-Colley operation had failed to close the immense defect, Beck utilized a lateral flap from near the base of the tongue which was united with the freshened edge of the palate. The gaping wound margins of the side of the tongue were accurately united, the floor of the mouth was packed with iodoform gauze and a mild solution of boric acid was sprayed through the nostrils every 15 minutes for 9 days; the base of the flap was divided, and one week later the flap was united with the opposite margin of the cleft. This operation was suggested by the ease with which extensive resection of the tongue is tolerated by carcinomatous patients. [M.B.T.]

6.—Lockard quotes Rokitsky's theory that the **laryngeal phenomena in typhoid fever** are manifestations of the general disease, a true metastasis of the poison to parts of the laryngeal structure. This the writer considers true in the main. Typhoid is not a disease of the intestines alone, but of the entire lymphatic system. The lesions in the larynx are separated into those due to the toxins, specific lesions, and those due to malnutrition. The specific lesions begin by swelling of the more prominent adenoid masses found in the sinus pyriformis and at the base of the arytenoids. It appears that their further progress is similar to the typhoid ulcers of the intestine. The laryngeal ulcers are usually from 2 to 6 in number, round or oval, sharply circumscribed, and generally appear at the end of the second week. The presence of these ulcers makes the prognosis much graver. Purulent perichondritis may develop. A case is reported by the author where a man of 35 had a laryngeal ulcer during an attack of typhoid. Dyspnea was so great that tracheotomy had to be performed. Pus was evacuated and recovery followed. Landgraf maintains that the larynx is involved in 11% of all fatal cases. [J.M.S.]

7.—McKinney, while unwilling to accept the arbitrary dictum of Bosworth, that **atrophic rhinitis** is a sequence to chronic purulent rhinitis of childhood, leans strongly to the main proposition of Bosworth's belief. He cites several cases whose history inclines him to this view. [J.M.S.]

Medical Record.

June 30, 1900. [Vol. 57, No. 26.]

1. Concerning the Peritoneum and the Treatment of Exudative Peritonitis. ALBERT A. BERG.
2. The Treatment of Typhoid Fever. D. E. ENGLISH.
3. The Uselessness of the Pituitary Body as a Therapeutic Agent. WILLIAM M. LESZYNSKY.
4. A Preliminary Note on a Simple and New Method of Repeatedly Sterilizing Sponges by Boiling. CHARLES A. ELSBERG.
5. A Reminder for the Care of Children During the Summer. S. HENRY DESSAU.

1.—Berg considers: 1. That the introduction of **pyogenic bacteria into the normal peritoneal cavity** produces no evil results, provided they are not mixed with caustic or irritating substances. 2. The introduction of nonpyogenic organisms into the normal peritoneal cavity produces different results, depending on whether the organisms injected cause decomposition of albumin. In the latter case even considerable amounts of bacteria and fluid are absorbed, without evil consequences, while in the former general sepsis, but not purulent peritonitis, results. He discusses at length the methods by which the peritoneum absorbs substances from the peritoneal cavity and concludes that: "In order that bacteria should develop on the peritoneum and produce a bacterial peritonitis, there must be already a mechanical or chemical peritonitis. A primary bacteria peritonitis is not a possibility, because the normal serosa, by its resorptive property, absorbs the implanted bacteria, or else it does not respond by inflammation to those bacteria." He believes so long as peritoneum is peritoneum, so to speak, drainage is superfluous and objectionable. When, however, a region has been denuded of its peritoneal covering, this area must be drained, for these parts no longer possess their rapid absorbing power. Berg protests against the too active handling of this most delicate tissue. The pendulum of our activity is gradually swinging the other way, and we are commencing to recognize that gauze packing, irrigation, evisceration, not only injure the delicate nervous mechanism of the peritoneum, but also favor, by interfering with the activity of the cellular process, the local sedimentation of bacteria with their consequent local development and deleterious effects. The peritoneum has been endowed with its own protective attribute, which is not heightened by manipulation or the introduction of foreign material. If we supplement the internist's treatment of peritonitis, by a removal of the cause of the inflammation and cease to abuse and injure this delicate membrane we will meet with most gratifying results. [W.K.]

2.—English's treatment for **typhoid fever** is first to give quinin to exclude malaria, then to give calomel. Afterward he keeps the bowel as empty as possible. For this pur-

pose he gives aloin and podophyllin, and for the purpose of keeping the bowel as nearly aseptic as possible he gives carbolated camphor in doses of 10 to 12 drops every 2 hours for 48 hours, then decreasing the dose. He gives large amounts of water as a diuretic and diaphoretic. He watches carefully for tympanites, and so far as possible prevents it by the measures previously described, and if heart-failure occurs he gives digitalis and whisky. The food which he relies upon is dissolved beef during the first 2 weeks; after this he adds some milk, and he especially recommends "egglemon," which consists of an egg beaten up with the juice of one lemon and a little sugar. [D.L.E.]

3.—Two cases of **akromegaly** are reported in which pituitary tablets were given for several months with no improvement in the symptoms. In one case there had been bitemporal hemianopsia resulting from the pressure of an enlarged prehypophysis upon the optic chiasm. The vision was progressively lost, indicating that the hypophysis had continued to enlarge. Leszynsky thinks that it is practically established that akromegaly is not due to obliteration of the glandular structure of the hypophysis. He considers that there are no rational grounds for the administration of pituitary extract in akromegaly. [D.L.E.]

4.—Elsberg recommends the following method of repeated **sterilizing of sponges** by boiling: The sponges are freed from calcareous matter by immersion for 24 hours in 8% muriatic acid solution, and are then thoroughly washed in water. They are then boiled 15 minutes or longer in the following solution: Potassium hydrate, 1 part; tannic acid, 3 parts; water, 100 parts. They are washed in water, carbolic acid, or sublimate solution until all of the potassium hydrate-tannic-acid mixture (which is of a dark brown color) is removed. The sponges are preserved in 5% carbolic-acid solution. Sponges that have been used can be resterilized by washing them in water, and then boiling them once more in the solution, etc. The solution can be used any number of times, as it does not deteriorate by boiling or by age. Sponges prepared in this manner are absolutely sterile, and they will be found to have retained all their physical qualities—size, softness, elasticity, power of absorption, etc. [M.B.T.]

Medical News.

June 30, 1900. [Vol. lxxvi, No. 26.]

1. The Prevention of Dystocia Due to Fetal and Pelvic Disproportion. EDWARD A. AYERS.
2. The Treatment of Tumors Complicating Pregnancy. BROOKS H. WELLS.
3. The Indications for Premature Delivery, with Special Reference to Eclampsia and the Preeclamptic State. S. MARX.
4. When Is It Proper to Interfere in Apparently Difficult or Delayed Cases of Labor, Especially in Primiparas. MALCOLM MCLEAN.

1.—Ayres is profoundly impressed with the importance of the subject of **dystocia due to fetal and pelvic disproportion**, and believes that more careful consideration should be given this subject. It should be considered briefly in two divisions; first, to what extent can we foresee the outcome of fetal passage through the maternal pelvis? secondly, to what extent can we, by means of such foresight, prevent the evils that threaten? In multiparas, we have as aids to prognosis the previous history of labors, and in both classes paternal characteristics, pelvimetry, fetal palpation, cephalometry and tentative engagement of the fetal head. He thinks that in studying the physical characters of the parents the bones are the most important point to be considered in forming a prognosis of fetal size at birth. The heaviest children are usually born of parents of large bone. If with large-boned parents there is a mutual family history of high intellectual development, we may expect large head-diameters in children at birth. When the parents are of opposite types, he believes the **mother's character will predominate**. Excess of fat in the mother increases the amount of soft tissue in the pelvic canal, but more materially causes dystocia, in that the dynamic force in expulsion is weak. Anemia, chlorosis, or other weakening conditions may cause loss of *vis a tergo*. Pelvimetry, abdominal palpation and cephalometry should

be the methods used in determining the relations between the fetal and maternal parts, and any practical results from the above carefully-applied efforts to make early diagnosis of dystocia must obtain in either the restrictions of fetal growth, the induction of labor, or preparedness for obstructions in labor. The diet recommended by Rowbotham, of confining the patient largely to vegetable acids, with the intention of preventing the formation of earthy salts, is valuable. If induction of labor is decided upon, the best methods are: (1) The sterile, solid, flexible bougie; (2) the small Barnes bag, used very slowly to excitation of pains only; and (3) the tampon—any of these to be preceded by the administration of a full dose of castor-oil. [W.K.]

2.—Considering the dangers incident to the **complication of pregnancy** by various new growths involving the uterus and pelvis, Wells believes that in all cases of cancer the extremely gloomy prognosis for both mother and child warrants the physician in making the radical operation until at least the sixth month of pregnancy. When the conditions are favorable vaginal hysterectomy is best. When the disease is more advanced or the body of the uterus is larger, Werder's method is advisable. Here the ovarian and uterine arteries are tied through an abdominal incision and the uterus freed from the bladder and broad ligament without cutting through the vaginal wall. The vagina is then freed from its attachments by blunt dissection as far down as is thought advisable, and the uterus drawn down and out through the vulva by stout traction forceps. The peritoneum is then united over the fundus, the abdominal wound closed, and the operation completed by removing the uterus after dividing the vagina at the point selected. This method avoids any contamination of the peritoneal cavity or of any cut surface by septic or cancerous matter. When the fetus is viable at later stages of pregnancy cesarean section with immediate removal of uterus and vagina is indicated. In cases of ovarian cysts, fibroids, or other obstructions, Wells is of the opinion that cesarean section by modern methods will save more lives than forcible dragging of the child through the pelvis. If discovered early in the pregnancy these growths should be removed, for his experience is that during pregnancy abdominal operations in general are well borne and, because of the elasticity and succulence of the tissues, are not as difficult as would be supposed. When possible, see that the excretory organs are put in the best possible condition, avoid all unnecessary hemorrhage, and, particularly, use the most rigid precautions against any septic infection. [W.K.]

3.—Marks considers that too much stress is laid upon examining the urine for albumin as an **indication of eclampsia**. He has seen many women go to term with albuminuria without symptoms referable to toxemia. Urea is always found markedly diminished in these so-called true toxemias of pregnancy, or urinemias. He makes a strong plea for a regular and methodic course of urea estimation in all cases instead of, or relegating to secondary importance, the time-honored examination for albumin. In regard to disproportion between the fetal head and the maternal pelvis he believes the only positive indication for interference is the failure of the head to engage. [W.K.]

4.—McLean thinks that **interference with labor** in primiparas is responsible for many serious conditions. The greater duration of labor in primiparas is due to that peculiar physiologic softening-down and relaxation of the soft parts, which occupies many more hours in its accomplishment than in the case of multiparas. If, however, when the forces are apparently normal, the presenting part is arrested at any given point, say, for over half an hour, or, if the soft parts of the mother having once been relaxed and thoroughly moistened with mucus, are becoming hot, edematous, and discolored, the indications are clear for early and efficient assistance. [W.K.]

Boston Medical and Surgical Journal.

June 28, 1900. [Vol. cxlii, No. 26.]

1. A Study of Twenty-four Cases of Typhoid Fever with Symptoms of Peritoneal Infection; Laparotomy. GEORGE B. SHATTUCK, J. COLLINS WARREN, and FARRAR COBB.
2. Separation of the Epiphysis of the Olecranon. F. J. COTTON.

1.—Shattuck, Warren, and Cobb give a detailed analysis of 24 cases of **typhoid fever in which peritonitis occurred and was treated by laparotomy**. They also give the histories of 3 additional cases in which either peritonitis was apparently not present or the case was not certainly typhoid. The article is quite long, but exceedingly valuable. The cases are reported in detail at the end. The early portion consists of the conclusions drawn from them, which are summarized as follows: In many cases, infection cannot be diagnosed until it has become widely spread, and must necessarily be fatal. In these cases abdominal operation is almost hopeless. If the case is mild and the general condition fair, an abdominal operation is readily borne provided no peritoneal infection is present. In a few cases of mild typhoid there may be sudden perforation with severe symptoms, but the symptoms and the process are both localized, although severe, and if immediate operation is performed the chances are good, although general infection may occur in from 1 to 5 hours, and the spontaneous walling off of the diseased process by protecting adhesions is too rare to be worthy of consideration. In most mild cases whether there be perforation or not, the initial symptoms are usually slight, and consist of local pains, tenderness, and spasm, and leukocytosis. These always demand serious consideration. In any case of typhoid fever, abdominal pain should always lead to suspicion of commencing infection of the peritoneum. In all cases of typhoid, particularly in cases of abdominal pain, the leukocytes should be counted frequently, and in the latter condition at least once an hour. When there is rise of white blood-count with pain and local tenderness and muscular spasm, operation is usually indicated and should in all cases be considered. The authors call attention to the fact that in many of the cases they report an operation should have been performed some hours earlier than it actually was. In their statistics at the beginning, they call attention to a few interesting points. Only 17 of the 24 actual cases were due to perforation. One of the others was due to a rupture of a mesenteric gland. Most of the cases were males and nearly all occurred in early adult life. Complications of various kinds were present, but appeared to have little influence upon the course of the disease. In 7 of the cases the symptoms occurred suddenly without any premonitory symptoms. In 14 they came on gradually. In one case a chill was present. The great majority of the cases were imperfectly studied. The leukocytes were not counted, or only counted once, and the records of the physical examinations are extremely unsatisfactory. Bacteriologic investigations were incomplete, and it is not certain that the results, when they implicated the colon-bacillus, were always accurate. Six cases recovered, but in 3 of these no infection was found at the operation. These prove that an abdominal operation in slight or moderately severe cases of typhoid fever is not very fatal. [J.S.]

2.—Cotton reports two cases of **separation of the epiphysis of the olecranon**. In both cases the injuring force seemed to be purely muscular action. The insertion of the triceps is largely on the epiphysis, but a few of the fibers of the tendinous expansion run beyond the epiphyseal line, and it is due to this fact that there was no more considerable separation of the fragments in these cases. In making a diagnosis of this injury, it is to be remembered that the form of the epiphysis differs greatly in different individuals and that the older the patient the proportionately smaller will be the separated fragment. The treatment consists in fixation of the arm in partial extension with massage for 6 or 7 weeks and then cautious, passive and active motion. There is little liability of involvement of the joint, and union of the fragment with the shaft with complete restoration of function should result when proper treatment has been carried out. [G.B.W.]

Journal American Medical Association.

June 30, 1900. [Vol. xxxiv, No. 26.]

1. Abdominal vs. Vaginal Hysterectomy for Uterine Carcinoma. JOHN B. DEEVER.
2. Intracranial Pressure. Relief in Nontraumatic Cases without Localizing Symptoms. WILLIAM N. BULLARD.
3. Typhoid Fever. J. H. SACKRIDER.
4. Should the Dental Student be Educated Independently of General Medicine? G. V. I. BROWN.

5. Practical Value of a Medical Education to the Student of Dentistry. WARREN BROWN HILL.
6. Is Medical Education a Necessary Qualification for Dental Practice? R. R. ANDREWS.
7. Hemorrhage After Confinement and its Treatment. HERMAN E. HAYD.
8. Iritus Senum. ALBERT B. HALE.

1.—Deaver believes that the general surgeon is equally as well equipped to perform every operation of gynecology as is the specialist himself, and he urges the application of the principles of general surgery, particularly the extirpation of carcinomatous glands, in the operation of **hysterectomy**. In the majority of cases he favors the abdominal operation; this is the only way in which the diseased glands can be reached, for the superficial lymphatics of the uterus empty into the lumbar glands, while the lymphatics of the lower part of the uterus terminates in the internal iliac glands. It also gives better access for complete removal of all diseased tissue, it lessens the risks of immediate or subsequent hemorrhage, for the hemorrhage can be seen and definitely located, which is not the case if the vaginal route is chosen. Catheterization of the ureters is not an essential part of the operation. The abdominal route also lessens the danger of infection. Deaver doubts the possibility of sterilizing any vagina. Vaginal hysterectomy is applicable only in cases in which the disease is confined strictly to the vaginal portion of the cervix, the cervical or uterine canal, and in which the uterus is freely movable. In cases in which there are adhesions fixing the organ, or in which there has been inflammation or fixation of the appendages, the abdominal operation is safer, easier and a more rational procedure. Any enlargement of the uterus increases the difficulties of the operation and offers another objection to vaginal hysterectomy. [M.B.T.]

2.—In closing, Bullard draws the following conclusions: There exist certain nontraumatic cases of **increased intracranial pressure** of unknown or doubtful origin. Whenever such an excess of intracranial pressure exists as to cause serious symptoms, the question of its relief by opening the cranium and cutting the dura should always be considered. This is also true in cases of acute severe optic neuritis of unknown origin. In certain non-traumatic cases of excessive intracranial pressure, more or less permanent relief—or even cure—may be obtained by proper surgical intervention. [M.B.T.]

3.—Sackrider gives some excellent suggestions with regards to the management of **typhoid fever**, without adding anything specially new. He advocates the early use of intestinal antiseptics and reduces temperature by the use of cold water enemas and cold sponging. [M.B.T.]

Annals of Surgery.

May, 1900. [Vol. xxxi, No. 5.]

1. Two Cases of Esophageal Diverticulum, with Remarks. MAURICE H. RICHARDSON.
2. Postdiphtheritic Stenosis of the Larynx (Retained Intubation Instruments and Retained Tracheal Canula). JOHN ROGERS.
3. A Contribution to the Surgery of the Stomach, including Wounds, Gastrostomy, Gastroenterostomy, and Gastrectomy. H. BEECKMAN DELATOUR.
4. Report of a Case of Recovery after Ligation of the First Portion of the Right Subclavian Artery for Aneurysm of the Third Portion. A. E. HALSTEAD.
5. Complete External Dislocation at the Elbow. RANDOLPH WINSLOW.
6. Report of a Case of Actinomycosis Hominis of the Lungs. JAMES B. BULLITT.
7. Report of a Case of Superficial Bilateral Gangrene with Asymmetrical Lesions. GEORGE F. WILSON.
8. Dislocation at the Shoulder Complicated by Fracture through the Anatomical Neck of the Humerus. CHARLES BROOKS BRIGHAM.

1.—A man of 58 had suffered for about 9 years with some difficulty in swallowing, caused by an **esophageal pouch**. This filled with the first food swallowed at a meal, but could be partly emptied by muscular effort after eating. In 3

years it had doubled its capacity and operation was decided on. Atropia was given hypodermically to keep the mouth and throat dry and it acted admirably; the esophagus was exposed by a 4-inch incision along the anterior border of the sternomastoid muscle. After blunt dissection between the esophagus and vertebra, the attachments of the pouch were found and separated. In order to locate the opening definitely a probang was passed into the pharynx; the fundus of the pouch was opened and spread by hemostatic forceps; the pouch seemed to be a prolongation of the mucous membrane through the muscular fibers of the pharynx and esophagus; it was removed by cutting the isthmus close to the pharyngeal opening and the mucous membrane was inverted and sutured with interrupted catgut sutures. Discomfort from expectoration of mucus and pain from swallowing gradually disappeared and on the tenth day the wound was entirely healed. In a second case a woman of 54 complained of difficulty in swallowing and regurgitated her food, sometimes several hours after eating; she had lost considerably in flesh and strength. A probang was arrested 7 inches from the incisor teeth; no tumor could be detected in the neck. The sac was dissected out through a 5-inch incision along the anterior border of the left sternomastoid muscle; the base of the pouch was attached to the posterior surface of the esophagus and lower border of the pharynx. The pouch was about the size of half a hen's egg and had an opening which easily admitted the tip of the index finger; there was constriction at the site of the pouch. To enlarge the constricted esophagus a considerable circular margin was left about the opening of the sac, the lower portion of the margin was brought downward, placed in the gap made by the divided posterior surface of the narrowed esophagus. The mouth of the pouch was then closed by interrupted Lembert sutures. At first, after the operation leakage occurred of about half the quantity of food swallowed, but the wound closed slowly and the woman is now in perfect health. [M.B.T.]

2.—Rogers believes that **stenosis of the larynx** after diphtheria is less likely to follow intubation than tracheotomy. The etiology, according to O'Dwyer, is very careless or unskilful insertion of poorly constructed or improperly fitting tubes. Rogers considers this incorrect, however, and he believes that the most common cause of stenosis is hypertrophy of the subglottic tissue accompanied by chronic inflammation; intubation is in no way the cause of this, as it occurs irrespective of the operation; less often there is ulcer and subsequent formation of cicatricial tissue; this is unavoidable in certain instances. In the treatment of this condition tracheotomy may be necessary and then the larynx may be dilated with sounds passed from below upward. A tube is then inserted and it is increased in size as soon as the tissue has yielded. Whether stenosis is dependent upon hypertrophy or cicatricial tissue, whether it originally accompanied intubation or not, marked improvement may be expected and a cure may result in from 5 to 6 weeks. Metal tubes can not be used as they soon become roughened and may cause ulceration. Hard rubber tubes are the ideal and they may be worn for an almost indefinite time. Rogers believes that as diphtheria antitoxin comes into earlier and more general use the need of intubation for acute stenosis will gradually disappear. [M.B.T.]

3.—A **perforation** of the anterior wall of the **stomach** resulted from a gunshot wound just at the left of the ensiform cartilage. On opening the abdomen another perforation was found in the posterior wall along the greater curvature near the pylorus and also one in the hepatic flexure of the colon. The wounds of stomach and intestine were closed by Lembert sutures. Delirium tremens developed and the patient died. The abdomen was found perfectly free from inflammation at the necropsy and the wounds firmly united. In a second case a stab wound resulted in perforation 2 inches long in the anterior wall of the stomach; the wound was closed, the abdomen was cleansed and drainage was provided, but the patient never rallied and died 12 hours later. In a third case, a woman of 32 was suffering from spasmodic stricture with secondary esophageal dilation. By the use of bismuth solution an x-ray photograph was taken which showed that the esophagus was elongated and dilated with a horizontal portion resting upon the diaphragm. On opening the abdomen, the stomach was found much diminished in size and there were between 3 and 4 inches of esophagus below the

diaphragm. **Gastrostomy** was performed by the Sabana-jew-Frank method. Six weeks later the external opening constricted from development of a keloid; this was dissected away, but recurred and was again removed. The patient is now in good general health and has not suffered since the time of operation. In a fourth case a boy drank caustic potash solution by mistake and a few days later difficulty in swallowing resulted. An unsuccessful attempt was made to dilate, but as the patient lost flesh and strength rapidly gastrostomy was performed. The boy has since gained considerably in flesh and strength and can swallow semisolid food. In a fifth case a man of 45 had suffered from severe gastric symptoms for 18 months, he was much reduced in flesh and weak, a nodular tumor involved the region of the pylorus and on opening the abdomen it was found that the mesenteric glands were affected. Anterior **gastroduodenostomy** was performed. After the operation there was rapid improvement and the patient returned to his work; he failed and died as the result of extension of the disease 18 months later. In a sixth operation of the same character as the previous one, the patient survived the operation only 6 weeks, vomiting and loss of strength, resulting from regurgitation of intestinal contents. In a seventh case a woman of 26 entered the hospital complaining of pain in the epigastric region, with rapid loss of flesh and strength. Vomiting followed within a few hours after taking food, and she had become reduced almost to a skeleton. A median incision was made; the tumor was freely movable, and as there was no evident involvement of surrounding structures, **gastrectomy** was decided on. The pylorus was clamped and divided, and the esophageal opening was also divided close to the cardia, after ligating the omental attachments along the curvatures in small sections. End-to-end anastomosis was then performed with interrupted sutures. The operation lasted 50 minutes and was followed by slight shock. Rectal feeding was given for 5 days, progressive improvement followed, and the patient gained between 30 and 40 pounds in 6 months after the operation. A little over a year after the operation she gave birth to a healthy child; during her pregnancy there was evidence of abdominal trouble, and after recovery from confinement an exploratory operation was performed. The gallbladder and transverse colon were found involved by recurrence of the carcinoma and death followed from this cause, 21 months after the operation. [M.B.T.]

4.—A woman of 44 had noticed numbness and tingling in the ring and little finger of the right hand 9 months previously; a soft globular tumor, about the size of a hen's egg, was found in the neck. Expansile pulsation synchronous with the heart-beat and a distinct bruit gave the diagnosis of **aneurysm**. A curved incision was made with the convexity downward just above the suprasternal notch and ending about 2 cm. above the deltoid tubercle of the clavicle; **ligation of the first portion of the right subclavian** was then performed with the use of 3 formaldehyd catgut sutures. The aneurysm involved the entire third portion of the artery slightly encroaching on the second portion. An anomalous position of the subclavian vein above the artery throughout its whole course gave rise to some difficulty; the vein was torn while endeavoring to retract it downward and some time was lost in controlling the hemorrhage. Primary union followed the operation and the pain in the arm and hand completely disappeared. [M.B.T.]

5.—A man of 63 years, while riding in a spring wagon, was thrown to the ground by the wheel sinking into a rut: he fell on his right elbow, and after the injury great increase in the breadth of the elbow was noticed; the olecranon could be felt to the outer side of the external condyle, the condyles and articular surfaces of the humerus could be felt downward and to the inner side of the radius and ulnar. A **complete outward dislocation of the elbow** was diagnosed and confirmed by x-ray photograph. Attempts at reduction were unsuccessful until the muscles had been separated from the external condyle and the triceps was cut across, when the bones easily resumed their natural relation. The arm was put up in a slightly flexed position, and suspended. The patient returned home in 4 weeks with a limb in a useful position with a considerable range of passive motion, but without much active motion. [M.B.T.]

6.—A woman of 25 complained of a severe pain in the left shoulder-blade, with cough and profuse expectoration. There appeared to be a collection of pus on the left side and

on incision a considerable quantity was evacuated. Diseased bone was found and scraped and a discharging sinus resulted; from the sinus escaped pus which contained small granules, and on microscopic examination **actinomycosis** was diagnosed. Death resulted some months later. At necropsy the right **lung** was found adherent laterally to the chest-wall, left lung was adherent posteriorly and at the apex anteriorly. On breaking up adhesions the sinuses were found to connect with the lungs. A careful pathologic report by Professor Flexner is given. [M.B.T.]

7.—A young woman fell down stairs scratching the inside of the right thigh. A few nights later she awakened with severe pain in the leg and discovered a black spot in the skin. She entered a hospital and was treated for 3 months, during which time several spots appeared on the same leg. No change in the condition was noticeable 10 months after the beginning of the trouble. The areas broke down and ulcerated and then would heal; the attacks generally began with an outcrop of vesicles which coalesced and resulted in death of the tissue. During one year there were 31 such attacks. Iodid of potassium, mixed treatment, nutritive tonics, nervous sedatives, and antiuric acid treatment were all tried without avail. The pelvic contents were examined without finding any cause of **reflex irritation**; skin grafting was followed by a good result, but the new skin soon lost its vitality. Nerve-stretching of the anterior crural nerve was tried and later resection; all these measures were without favorable results. Amputation at the hip-joint was done, but 2 months later a slough appeared on the left thigh over the patella and on the stump. No pathologic explanation seemed possible and the disease is believed to be of central origin. [M.B.T.]

8.—A physician, 34 years old, was thrown from his wagon in a runaway and fell, striking the left hand. A dislocation of the left shoulder was reduced under anesthesia, but pain along the entire length of the arm was continuous, and on rotating the arm with the finger in the axilla, a splintered piece of bone could be felt near the inner tuberosity. A diagnosis of **fracture of the anatomic neck of the humerus** was confirmed by the x-ray photograph. The pressure of the head of the bone caused irritation of the circumflex and musculo-spiral nerves, thus accounting for the pain. The bone was removed under anesthesia and rapid recovery followed. [M.B.T.]

Edinburgh Medical Journal.

June, 1900. [Vol. 7, No. 6.]

1. Has Antitoxin Reduced the Death-rate from Diphtheria in our Large Towns? LOUIS COBBETT.
2. The Theory and Practice of the Treatment of Ringworm of the Scalp. W. ALLAN JAMIESON.
3. Cross-Infection, so-called, in Fever Hospitals. CLAUDE B. KER.
4. On Some Medical Superstitions. J. L. BUNCH.
5. I. Points of Practical Interest in Surgical Gynecology.—II. Some Pitfalls in Gynecologic Diagnosis. H. MAC-NAUGHTON JONES.
6. A Case of Cerebrospinal Fever—Purpuric Variety. WILLIAM FREW.

1.—Cobbett gives interesting tables in his article that show the relation of notifications of and **deaths from diphtheria** from 1889 to 1899, before and after the **introduction of antitoxin**. The statistics are taken from the health-reports of London, Edinburgh, Glasgow, Liverpool, Manchester, Birmingham, Leeds, Bristol, Newcastle-on-Tyne, Paris, and Berlin. The tables show that there has been a remarkable fall, both in the diphtheria death-rate and case-mortality since 1898. The commencement of this fall was coincident with the introduction of antitoxin. The fact that diphtheria is not spread by bad drains and unsanitary surroundings, as was formerly thought, but by direct transference of the bacillus from mouth to mouth, needs to be forcibly impressed upon all. As measures designed to stamp out the disease the author recommends: 1. The bacteriologic examination of all suspicious cases of sore throat and the throats of all persons who come in contact with patients suffering from the disease. All persons in whom the diph-

theria-bacillus is found should be isolated until the cultures give negative results. 2. All persons recovering from diphtheria should be isolated until the specific microorganism has disappeared from their throats. 3. Whenever diphtheria breaks out in an institution of any kind all the inmates should be submitted to the bacteriologic test, and those that give positive results should be isolated. 4. Every effort should be made to prevent mouth-to-mouth infection in schools. 5. Every town should have a competent bacteriologist. [J.M.S.]

2.—In the **treatment of ringworm of the scalp** Jamieson gives the following details: 1. The hair must be kept shaved or cut from the entire scalp until the cure is complete. 2. The scalp must be kept rigorously clean by washing twice a day with superfatted potash soap and warm water. 3. The following application may be used: 1 dram of precipitated sulphur, 10 grains each of salicylic acid, Beta-naphthol and ammoniated mercury, and 1 ounce of lanolin. This ointment should be rubbed into the scalp slowly and carefully for 10 minutes twice daily. [J.M.S.]

3.—By the term **cross-infection** we usually understand the contraction of a second infectious disease by a patient already under treatment for one of the other diseases of the same class. In the City Fever Hospital of Edinburgh during 1899, Ker noted that 367% of the 1,034 patients suffering from scarlet fever contracted measles, and that 0.38% contracted varicella. Out of 331 patients suffering from measles 24% contracted scarlet fever, and out of 147 patients sick with diphtheria 27% took scarlet fever. These cases of so-called cross-infection do not originate in the hospitals but are imported infections. The condition may arise from the fact that a wrong diagnosis was made before entrance to the hospital; because the patient was suffering from two diseases when admitted, only one of which had been diagnosed; or because a patient was admitted with one disease while incubating another. [J.M.S.]

5.—Jones discusses the **pitfalls in gynecologic diagnosis**. In pelvic and abdominal surgery we have not only to satisfy ourselves as to the presence of some gross lesion in any particular organ, but we must also determine before operation, if such be decided upon, the nature and extent of the complications that may seriously affect or impede it. He emphasizes the point that pain, in affections of the adnexa as of the uterus, is a symptom which is most deceptive, both in diagnosis and prognosis. The various errors liable to be made in diagnosis are noted. We are liable to mistake other tumors or swellings for mobile kidneys. There are two conditions which may complicate the presence of an abdominal tumor and considerably increase the difficulty of diagnosis—the presence of ascites and pregnancy. Another not uncommon and yet most serious error is that of mistaking the earlier symptoms of appendicitis for inflammation of the adnexa and pelvic peritonitis. Fatal errors have arisen from this mistake, with the consequence that perforation occurred from a fulminating appendicitis before operation was proposed. Perhaps no form of pelvic disease opens so many possibilities of error to both physician and surgeon as ovarian cystoma. Even assuming that we are correct in our differentiation of a true ovarian cyst, apart from a simple cyst of the parovarian, we have in our preliminary examination to decide as to its nature, whether unilocular or multilocular, whether benign or malignant. This assumption, however, removes at once some 50 or more abdominal conditions, each of which so far simulates ovarian cystoma as to have led to operative errors as a consequence. These are the more frequently occurring complications to be determined: ascites, pregnancy, ectopic gestation, cystic or other disease in the kidney, spleen, or liver, uterine myoma, supuration in the cyst, and extensive adhesions. [W.K.]

6.—Frew reports the case of a girl, aged 8 years and 4 months, who was found in collapse in bed one morning after having been ill for about 3 days with sore throat and fever. The patient was restless, had a dazed and stupid look, and a general ghastly appearance. There was a copious purpuric eruption over the face, legs and arms. The patient vomited, passed urine involuntarily, and at one time presented a temperature of 106°. Later, the head became retracted, the vertebral column was curved in a position of opisthotonos, there were coma and delirium. The patient recovered under treatment. A diagnosis of cerebrospinal fever, of purpuric variety, was made. [J.M.S.]

Münchener medicinische Wochenschrift.

April 3, 1900. [47. Jahrg., No. 14.]

1. The Cause of Hemorrhage at the Climacteric. A. THEILHABER.
2. Embolus of the Mesenteric Arteries. OTT.
3. The Demonstration of Bile Pigments in the Feces and the Clinical Significance of the Appearance of Bilirubin in the Feces. RUDOLF SCHORLEMMER.
4. The Influence of Ichtbalbin on Tissue Changes and the Intestinal Function of the Child. ROLLY and SAAM.
5. The Effect of Dormiol; a New Hypnotic. PETERS.
6. Tannopin as an Intestinal Astringent. EUGEN DOERNBERGER.
7. Epileptic Convulsions. ERNST SCHULTZE.
8. A Journey in Famine-Stricken Russia. C. A. LEHMANN.

1.—Well-recognized causes of **climacteric hemorrhage** are carcinoma of the portio, of the cervical mucous membrane, or of the body of the uterus; more rarely, the presence of polyps, or sarcoma of the uterus. But when none of these causes are present there may occur persistent hemorrhage. This has been ascribed by some authors to "hyperplasia uteri" preclimacteric, by others to the softening of the uterine tissue and obstruction in the vicinity of the vena cava ascendens, or to the atheromatous condition of the bloodvessels. Theilhaber, however, is of the opinion that in many cases of preclimacteric hemorrhage the cause is not the condition of the mucous membrane, nor the changed constitution of the bloodvessels, nor abnormal function of the ovaries; but is the abnormal condition of the uterine muscle which, through greater or less relaxation, will not contract sufficiently to counteract the hemorrhage. At the menopause, or in the postclimacteric period, there is present an atrophy of the muscles and a considerable stenosis of the vessels, hence the uterine muscle is not in a condition to counteract the hyperemia, and there occurs in consequence of the atony of the uterine muscles an overflow of blood and persistent menorrhagia, a condition analagous to "subinvolution uteri postpuerperalis." To this same cause, the atony of the muscles, may be due the menorrhagia of the young, in whom the uterine muscle is not yet fully developed; also hemorrhage in the chlorotic, or those convalescent from severe illness. [W.K.]

2.—Ott reports 2 cases of **embolism of the mesenteric arteries**. The first patient was a man 42 years old, suffering from mitral regurgitation. The embolism occurred with prolonged chill, preceded by vomiting and accompanied by severe pain in the abdomen, cyanosis, and extremely rapid pulse. Diarrhea set in, the stools containing mucus and blood. About $\frac{1}{4}$ of a liter of blood was discharged by the bowel. There were also symptoms of pulmonary infarction—dulness, rales, bronchophony, and slight friction. Characteristic sputum did not, however, develop. The patient gradually improved. In the second patient, a man of 50, who had no heart lesion, but a left-sided hemiplegia, severe pain developed in the hypogastric region. The stools contained blood in large amounts. The hemiplegia gradually improved, as did the other symptoms, the blood disappearing from the motions after a few days. The author believes that in the first patient the embolism was due to the **dislodgment of an intracardiac thrombus**, thrombus in the heart-chambers having been favored by the very poor heart-action. In the second patient the source of the embolus was not clear. There was no evidence of Bright's disease, but clear indications of arteriosclerosis. The embolism was ascribed to the atheroma of the aorta and large vessels. Gerhart and Kussmaul consider as diagnostic of mesenteric embolism demonstration of the source of the emboli, hemorrhage from the intestine, sinking of the body temperature, severe abdominal pain, distention and tympanitis of the abdomen, a possible exudate in the peritoneal cavity, antecedent or contemporaneous embolism in other parts of the body, and the discovery of distended mesenteric folds through the abdominal wall on palpation. The author believes that the fall of temperature is not important and that the infarcted mesentery cannot generally be felt. Regarding treatment, in the first case, in which an insufficiency of the heart-muscle was the cause of the embolism, the vessels being intact, the chief indication was to increase the arterial pressure in order, if possible, to overcome the

obstruction. This was done with camphor and digitalis. In the second case, an account of the condition of the vessels caution was necessary. Stimulants were used, but only in the quantity requisite; a little sherry was all that was given. The use of cold to the abdomen is usually inadvisable, as it may stimulate peristalsis, but it may at times be employed. [D.R.]

3.—Schmidt's test for bile which Schorlemmer employed in his investigation is performed as follows: Two or three particles of fresh feces are rubbed up with concentrated watery solution of corrosive sublimate in a glass dish. After standing covered for 24 hours the material is examined macroscopically and microscopically for the presence of greenish particles. Bilirubin is colored green by this test; hydrobilirubin, red. Nothnagel had postulated the statement that the presence of unaltered bile-pigment in the feces in disease points to the participation of the small intestine in the morbid process. Schmidt examined a large number of normal and pathologic feces, and came to a different conclusion. He found that even in disease limited to the colon bile could be present in the feces. The bile was usually attached to mucous particles of different kinds, more rarely to muscle remains, shreds of fibrous tissue, etc. Nothnagel considered the presence of certain forms of mucus in the feces, particularly the so-called yellow mucous particles, as characteristic of catarrh of the small bowel. Schmidt, however, found that these yellow particles did not consist of mucus, but of albuminous substance, and that therefore they had no significance. In disease of the small intestine it is only the very tiny particles and shreds intimately mixed with the feces that are of importance diagnostically. Many of these are demonstrable only with the microscope. At times they are seen to be partly-digested cells. It is the presence of such **partly-digested cells** that is more indicative of origin from the small bowel than are bile-stained particles. [D.R.]

4.—Ichthalbin is a compound of albumin and ichthyol. It exerts a favorable influence upon nitrogenous metabolism, and is a valuable intestinal antiseptic. It may be given to children in place of calomel when an antiseptic action is desired, without accompanying purgation. [D.R.]

5.—Dormiol is a compound of chloral and amylene hydrate. It is a valuable, low-priced hypnotic. Its initial dose is .5 gram ($7\frac{1}{2}$ gr.). Its soporific effect manifests itself in from half an hour to an hour after administration. [D.R.]

6.—Tannopin (tannon) is a condensation product of tannic acid and urotropin. It is a useful astringent in acute diarrheas. It is tasteless, but its great disadvantage is its high cost. The dose for children is .5 gram ($7\frac{1}{2}$ gr.); for adults, 1 gram (15 gr.). [D.R.]

7.—The patient whose case was described in the last number of this JOURNAL also had attacks of vertigo and diplopia, the attack lasting no longer than a minute, and apparently due to paralysis of the right external rectus. Schultze looks upon the condition as a periodic abducens-palsy, considers it an **epileptic equivalent**. Another interesting case is cited—the patient, a young girl, was subject to typical epileptic attacks—some of them were preceded by peculiar actions. She would lift her clothes and expose her person without the slightest sense of shame, and would try to devour excrement if within reach. Some attacks were inaugurated by another type of *dura*—a brief period during which she indulged in religious or metaphysical speculation. Why is there a God? Is there a God, a heaven, a hell? At times these peculiar phenomena occurred without leading to a convulsive seizure. They are under such circumstances true equivalents of attacks. A third patient, who also had typical epilepsy, was liable to attacks, during which she suddenly grew pale and passed urine involuntarily. She was conscious of what was happening. At times the condition was followed by a typical convulsion, after which the patient remembered neither the *dura* nor the attack. Another patient, of neurotic stock, shot himself through the skull in the temporal region in a suicidal attempt. Speech was at first affected, but improved gradually. Later he developed typical epileptic attacks. After one of the first seizures he complained of a peculiar sensation in the face, and it was proved that the regions of the first and second branches of the left trigeminus were entirely anesthetic. This anesthesia lasted a few hours, and would occasionally precede the convulsion. Schultze believes that the bullet injured the affected branches of the

fifth nerve. Whether the epilepsy is to be viewed as reflex, or as itself of traumatic origin, or whether the epilepsy is idiopathic, the author is unable to decide. The patient also suffered from folie de toucher. [D.R.]

April 10, 1900. [47. Jahrg., No. 15.]

1. The Latest Experience with Regard to Gunshot Wounds. V. BRUNS.
2. Tendon Transplantation for Paralysis. FRITZ LANGE.
3. The Treatment of Pes Valgus. A. HOFFA.
4. Asepsis and Antisepsis. OTTO LANZ.
5. The Limitation of the Aseptic Field of Operation. G. VALCHER.
6. Materials for Sutures and Ligatures. H. BRAUN.
7. The Catgut Question. CARL LAUENSTEIN.
8. The Bacteriology of Mechanical and Chemic Disinfection of the Hands. FERDINAND SCHENK and GUSTAV ZAUFAL.
9. A Pocket Sterilizing Apparatus. BOFINGER.
10. The Determination of the True Size of Objects by Means of the X-ray. MORITZ.

1.—v. Bruns says that the prognosis of **wounds made by modern small caliber rifles** is much more favorable than is the case with the older weapons, and that the treatment should be of a conservative nature. This is especially true of perforating wounds of the abdomen, in which rest and expective treatment generally results in a cure, but laparotomy, conducted under such circumstances as are always present at the field hospital, is almost invariably accompanied by a fatal result. [G.B.W.]

2.—See editorial columns, June 16.

3.—Pes valgus is characterized by the foot returning to its normal form as soon as the weight of the body is taken off. It differs from flat-foot in that the arch of the foot is still retained even when the weight of the body is thrown on it. The deformity consists in marked pronation and abduction of the anterior part with extreme prominence of the internal malleolus, a condition which simply is an exaggeration of the normal position of the foot when supporting the weight of the body. The symptoms produced by this condition are rapid tiring on walking, often accompanied by more or less severe pain in almost any part of the foot. The development of pes valgus is in the great majority of cases due to badly-shaped shoes and especially to high heels. There is present in these cases a weakening of the tibialis posticus muscle and very often an actual passive lengthening of the tendon. Hoffa reports a case in which he shortened this tendon and obtained a brilliant result. [G.B.W.]

4.—In a previous paper Lanz has shown, by making cultures from wounds, some treated aseptically and others antiseptically, that better results can be obtained by the **aseptic methods**. However, even the very best of aseptic technic at times will be followed by some infection and only the utmost efforts on the part of the surgeon will be rewarded with continued success. The three sources of trouble are the hands of the surgeon, the skin of the patient and the ligature and suture material; the instruments, dressings, dishes, etc., can all be absolutely sterilized by heat. Therefore, Lanz employs only silk sutures and ligatures put up in small glass balls from which they can be used directly without coming in contact with anything except the hands of the surgeon, and uses in septic cases long rubber gloves so that his hands will not become infected with virulent organisms. He ends by stating that he has had a run of 100 cases without the occurrence of a single stitch-abscess or other suppuration, and in these cases only silk was used for the sutures and ligatures. [G.B.W.]

5.—Walcher calls attention to the possibility of operators who practise asepsis, getting so accustomed to considering all their armentarium sterile that they forget that infection may be produced by contamination of the once sterile gowns and dressings. This contamination may occur either by the touching of some septic object such as a table or chair, or by the settling of germs out of the air or through some carelessness of the nurse or assistant. As a remedy for this possible evil he proposes the **limiting of the aseptic field**; that is, to consider everything aseptic except the towels surrounding the wound, the instruments, the hands of the surgeon and his assistants and the dressings, and when one of

the sterile objects comes in contact with a septic one, either it must be recleansed or discarded. [G.B.W.]

6.—Braun says that silk and other **sutures** made of permeable material, if not removed at an early date cause the stitch-wound to become reddened, and when left in long enough, to suppurate. This infection is not the result of using septic material, but is due to the bacteria traveling down the thread as though it were a drain, subsequent to the operation. Therefore the use of wire suture material and silkwormgut is not followed by nearly as many stitch-abscesses. The best wire for suturing is the aluminum bronze, because of its malleability and its strength, allowing the use of thin wire and the tying of knots as though it was thread. However, the best of all suture material is linen thread permeated with some substance to destroy its absorbing properties. Pagenstecher uses celluloid for this purpose. Braun has during the past year used collodion, preparing the sutures himself, and is very much gratified with the results. His method is as follows: Boil and then dry thoroughly, place in ether for 24 hours, then for a few days in a thin solution of collodion, next in a thick solution for the same length of time. It is then drawn through a slit in a cork to remove the excess and wound around a suitable form on which it is allowed to dry. [G.B.W.]

7.—Lauenstein says that during the past 20 years the question of sterilizing **catgut** has been definitely settled, as there have been a number of methods introduced whereby an absolutely sterile catgut can be produced. If after the use of such sterile catgut infection follows, it must be a secondary one due to contamination from the hands or air before the operation or afterwards from the tissues of the patient, either the skin or mucous membrane. Therefore, it is essential that the greatest care be exercised in the preparation of the gut and that in its use the most rigid asepsis be practised. Both from a scientific and practical standpoint the gut prepared with some antiseptic is better than the purely aseptic material. Now that we are certain that catgut can be made sterile, its property of being absorbed by living tissues makes it the material par excellence for buried sutures and ligatures, and for this purpose it will be superseded only by some absorbable substance which also has the advantage of not being a good soil for development of bacteria and does not swell when moistened. [G.B.W.]

8.—In a large number of experiments Schenk and Zaufal have shown that mechanical **disinfection** with Schleich's soap alone will not render the hands free from germs, so that it is essential that the washing be followed by some chemical disinfectant. Better results can be obtained when the hands are scrubbed with sand soap as suggested by Sängner and then immersed in a hot 1:1000 solution of corrosive sublimate. The sand soap does not cause any irritation of the skin. The brushes used in scrubbing the hands should be sterilized by boiling in a 1% soda solution each time they are used. The best disinfectant for following the cleansing is a 1:1000 solution of bichlorid as hot as the hands can bear. When heated the germicidal action is much accelerated. [G.B.W.]

10.—Moritz briefly describes a method for ascertaining the proper size of objects subject to diagnosis by the x-rays. It is based on the production of parallel rays by the continued motion of the x-ray tube through a limited area. [G.B.W.]

Revue de Chirurgie.

April 10, 1900. [20me Année, No. 4.]

1. Epithelioma of Both Breasts Coincident with Tuberculous Peritonitis. A. LEDENTU and H. MORESTEIN.
2. Excision of the Scapula with Conservation of the Upper Extremity in Malignant Tumors of this Bone. L. PICQUÉ and DARTIGUES.
3. Multiple Pedunculated Uterine Fibroma. F. TERRIER and E. REYMOND.
4. Resection of the Hip. ROSCHET.
5. The Pathology and Anatomy of Carcinoma of the Stomach. B. CUNÉO.

1. A case of **carcinoma** of both breasts is reported occurring in a woman 27 years old; 12 years previously she

had had a general inflammation of both breasts, and when she first came under observation it was thought she might be suffering from tuberculosis of the breasts from the fact that there was, at the same time, evidence of tuberculous peritonitis. There was no enlargement of the axillary glands. Laparotomy was performed, and her condition was temporarily considerably improved. She refused to have the breast excised or even to allow a small specimen to be cut for examination. Death resulted a few months later. Examination by 2 competent pathologists showed that the growth was a cylindrical epithelioma. [M.B.T.]

2.—A woman of 25 had been taken, about 4 months previously, with severe pain in the right arm accompanied by formication in the hand. After a month the pain disappeared completely, but reappeared 3 or 4 weeks later. About this time the patient noticed a tumor of the shoulder; when first examined this tumor had the size of a fetal head, it was hemispherical and the skin over it was a violet color, it seemed to be limited to the posterior surface of the scapula. A diagnosis of **osteosarcoma** was made and the operation of **excision of the scapula** was performed. Pathologic examination proved the growth to be sarcoma. A good recovery followed. At present, as a matter of course, all movement of abduction, extension, and flexion of the arm are impossible, but nearly all movements of the forearm, the hand, and the fingers are possible; the external and internal heads of the triceps also prove sufficient for extension of the forearm. The patient is able to write and to do ordinary work even of some delicacy. The methods of operating are quite thoroughly discussed and a table is given of 77 cases in which the operation has been performed; in 36 cases the extirpation was partial, 35 total, and in 6 it was carried out in combination with resection of the head of the humerus. The entire mortality was 15 or about 18%; death resulted from infection in 5 cases; from primary hemorrhage in 5 other cases; as the result of opening the pleura in 1 case; and from bronchitis, aggravated by chloroform in 1 case; in 1 case death resulted from a metastatic growth in the lungs 14 days after operation. [M.B.T.]

3.—A successful case of supravaginal hysterectomy for fibroid uterus is reported and thorough study is given of the pathologic conditions which were found. [M.B.T.]

4.—Rochet advocates **resection of the hip** by the **anterior route** according to the method suggested by Ollier. From a comparative study of patients operated upon by this method and by the posterior method it appears that healing results more rapidly, and that ankylosis results in a more favorable position. This route also offers better facilities for drainage and the chances of secondary infection are lessened. In a great majority of cases the operation was for suppurative diseases of the hip joint. [M.B.T.]

5.—Cunéo reports the results of studies as to the mode of local extension of **carcinoma of the stomach** and the involvement of the lymphatic glands. He finds that the disease, particularly in the case of carcinoma of the pylorus, presents 3 peculiarities of great practical importance; the early and extensive involvement of the submucosa, the tendency of carcinoma to invade the lesser curvature and the general preservation of the integrity of the duodenum. The early invasion of the submucosa shows that it is absolutely insufficient to make the incision only a centimeter from the apparent limits of the growth, as tissue which is apparently healthy may have been already considerably infected through the submucosa. The section should be made as near as possible to the cardia because of the tendency to extend along the lesser curvature; this is desirable even when the lesser curvature appears to be perfectly healthy. The habitually healthy condition of the duodenum makes it unnecessary to remove more than 2 or 3 centimeters. The lymphatics are affected in the proportion of about 84%; the coronary chain is affected early and more frequently than the subpyloric glands. When possible the tumor and the perigastric glands should be removed altogether. The only means of extirpating the coronary glands consists in the greatest possible resection of the lesser curvature; the removal of the subpyloric glands does not generally present any difficulty. In certain patients these glands may be perfectly imperceptible if they are of small size and situated far enough from the greater curvature. As much as possible of the gastrocolic ligament should be removed, taking with it the glands and their afferent lymphatics. [M.B.T.]

Practical Therapeutics.

Under the charge of

A. A. STEVENS, A.M., M.D.

Mitral Stenosis.—Broadbent (*Heart Disease*, 1900.) writes: When the symptoms are very urgent, venesection may be of striking service, and in certain cases there is no other treatment that will take its place and avert a speedy, fatal termination. The contrast between the powerful right ventricle impulse and the small, weak, irregular pulse, is very striking, and is one of the most important indications for venesection. Venesection does not, however, dispense with the necessity for relieving the portal circulation by purgation. Stimulants which without these measures afford no relief, and may indeed do harm, will then be of the greatest service, and digitalis, and like remedies, will find their opportunity. When the symptoms are less urgent or venesection is objected to, seven or eight leeches applied over the liver may be of service. The administration of digitalis in early stages of the disease is seldom if ever called for; it is only when there are symptoms of right ventricle failure, and then only after free purgation and, if necessary, venesection have been employed, that it should be prescribed. Up to a certain point in such cases its influence is often most beneficial, but sometimes it fails to relieve, and even appears to aggravate the symptoms. If continued too long in cases where it has been of signal service, unfavorable effects may supervene, marked by slowing of the pulse, a sense of precordial oppression and by coupled heart-beats, the first of which alone reaches the wrist, the second being unaccompanied by an aortic second-sound. Digitalis, therefore, must be employed with caution in mitral stenosis and its effects should be carefully watched. Under no circumstances should it be prescribed unless the patient is under observation, and it should rarely be given for a long period of time. Nitroglycerin and other vasodilators may sometimes be given with good effect for many weeks or even months, in conjunction with general tonics, such as iron, quinin and nuxvomica.

Pruritus Ani.—According to the *Practitioner* the following formula is useful:

R.—Sodium hyposulfite	30 parts.
Carbolic acid	5 parts.
Glycerin	50 parts.
Water	450 parts.

Compresses wet with the solution are to be applied frequently.

Cough in Phthisis.—The *Journal des Praticiens* recommends:

R.—Terpin hydrate.....	15 grains.
Codein	1½ grains.
Extract of belladonna.....	1½ grains.
Extract of hyoscyamus	¾ grain.
Mass of cynoglossum	8 grains.

Make into 10 pills. One four times daily between meals.

The Danger in the Administration of Chloroform in the Presence of a Flame.—According to the *Medical Review* (April, 1900), Maurange (*Gaz. Hebdom. de Med. et de Chirurg.*, December 31, 1899) states that the risk of poisoning by the products of decomposition of chloroform administered in the presence of a flame is now admitted. The degree of poisoning is very variable and depends on the decomposition of the vapor which is greater the more prolonged the operation, the larger the number of lighted gas jets, and the more defective the ventilation of the room.

The writer, who has suffered on several occasions, thus describes his sensations. Soon after the administration of chloroform is begun in a close room lit by several gas jets, those present are conscious of a tingling in the conjunctivae, nose, and back of the throat, which rapidly invades the respiratory passages and produces a dry, noisy cough. This cough is not paroxysmal, but is repeated and aggravated at each inspiration till more or less severe dyspnea results, which may make it necessary to interrupt the operation and ventilate the room. The patient appears to suffer less than

others present, and the writer was able by inhaling a few whiffs of chloroform to slightly relieve his dyspnea; this leads him to believe that the action of phosgene on the mucous membrane may be calmed for the moment by chloroform.

The discomfort does not disappear immediately after returning to the fresh air, but an acrid sensation at the back of the throat may remain for the rest of the day, or even the following night. This resembles the sensations experienced after exposure to sulphurous acid or nitrous fumes. Another symptom is marked general lassitude which persists during the day.

In the cases observed by the writer the duration of anesthesia was relatively short—in five cases from 10 to 15 minutes, and in another 25 minutes.

[The product formed from the decomposition chloroform in the presence of a flame has been found to be carbonyl chlorid. Sir Humphrey Davy first described this body and called it phosgene. Its inhalation has in a number of cases excited severe and even fatal pneumonia.]

Organic Silver-Salts in Chronic Suppuration of the Middle Ear.—Gleason (*Laryngoscope*, March, 1900) writes that the most popular of the organic silver-salts are argonin and protargol. As in solution the former is somewhat unstable and when partially decomposed is said to be irritating, his experience has been confined to the latter. In various forms of conjunctivitis, with but few exceptions, he finds that protargol yields excellent results when applied to the palpebral conjunctiva in 5% solution. Solutions of 10% and even 20% may be used in the eye without producing more than transient irritation. In 4 cases of prolonged otorrhea a hypodermic syringe full of a 5% solution of protargol by means of a Blake's canula, was injected as high up into the attic as possible. The parts were then massaged with Siegle's pneumatic speculum in order to force a portion of the solution into more distant parts than could be reached with the syringe. The ear was then carefully dried with cotton. The cures were so speedy in 3 of the cases as to indicate that we have in protargol an antiseptic and astringent superior to any now used in the treatment of chronic middle-ear suppuration, and much more easy of application than any of the powders. Gleason has used the 5% solution in the auditory canal, the atrium, and the pharynx with success in decreasing inflammation and modifying secretion. Unlike silver-nitrate solutions it is nonirritating to the posterior pharyngeal wall. It does not sear the tissues, and hence penetrates more deeply than silver-nitrate solutions, but produces no stain upon the mucous membrane or skin. For controlling hemorrhage, or searing the stump of an aural polypus, protargol is greatly inferior to silver nitrate.

Picric Acid in Chancres.—Hawthorn (*La Semaine Médicale*, No. 13, 1900) has obtained excellent results from the local application of picric acid to chancres both hard and soft. He reports 12 cases in which the action of the remedy was uniformly favorable. He first washes the sore with a camphorated solution of carbolic acid and then applies a moist dressing of a saturated solution of picric acid. The healthy skin must be protected from the application or otherwise an eczematous inflammation is excited. Cicatrization begins in 4 or 5 days, and is completed within a month.

"Chelsea Pensioner."—The following is the formula of the time-honored remedy for chronic rheumatism, which a correspondent has requested us to publish:

R.—Gum guaiac	1 dram.
Powdered rhubarb.....	2 drams.
Potassium bitartrate.	1 ounce.
Washed sulphur	1 ounce.
Nutmeg	1.
Honey.....	1 pint.

A tablespoonful night and morning.

The formula received its name from the fact that it was originally given by a Chelsea pensioner to Lord Amherst, who is said to have experienced a complete cure from its use.

The Treatment of Exophthalmic Goiter.—Herrick (*New York Medical Journal*, June 16, 1900) states that hyoscin hydrobromate ($\frac{1}{80}$ grain) given over a considerable period of time, and of picrotoxin ($\frac{1}{20}$ to $\frac{1}{10}$ grain) have proved useful.

Original Articles.

TOTAL EXCISION OF THE SCAPULA ALONE, AND
WITH THE ARM (INTERSCAPULOTHORACIC AM-
PUTATION): PARTIAL EXCISION OF THE SCAP-
ULA FOR TUMOR.

By J. J. BUCHANAN, M.D.,

of Pittsburg, Pa.

Surgeon to Mercy Hospital.

GENERAL CONSIDERATIONS.—Excision of the scapula, either alone or combined with removal of the arm, is an operation which has been performed only in the present century. Avulsion of the scapula, with the arm, however, according to published records, occurred twice during the last century, and in both instances the patient recovered. The first of these cases was that of a miller, named Samuel Wood, whose *arm and scapula were torn completely from his body* by a rope attached to his mill-wheel and wound around his arm. The accident occurred on the fifteenth day of August, 1737. The following day he was removed to St. Thomas' Hospital, London, where he recovered under simple dressings. The case was reported by Mr. Ferne, who had it in charge, and was recorded by Cheselden, in his work on anatomy.¹

Notwithstanding this exhibition of the toleration of this severe traumatism, more than seventy years passed before any surgeon took courage to remove the entire scapula either for accident or disease.

In the year 1808, Ralph Cuming, an English naval surgeon, stationed at Antigua, *removed the arm, scapula and clavicle* for gunshot wound. The patient recovered and was examined in England, at the Greenwich Hospital, by Copland Hutchinson, by whom the first record of the case was made.²

There is no account extant of any attempt to remove a part of the scapula for new-growth till 1811, when Philip von Walther, after repeated trials on the cadaver, undertook to remove the subspinous portion of the body of the bone for a spongy growth. After uncovering the growth, ligating numerous vessels and exposing the lower angle of the bone, he was obliged to abandon the operation on account of the collapsed condition of the patient, who died 14 days later of purulent infection and exhaustion.

The first completed operation for *removal of a considerable part of the scapula for morbid growth* was performed by Liston, of Edinburgh, in 1819. The growth was malignant and was removed successfully, together with the inner two-thirds of the bone. On account of a rapid recurrence, Mr. Liston proposed to extirpate the remainder of the scapula and the arm, but could not get the sanction of any of his colleagues to this procedure, and, therefore, desisted, and the patient died a few months later.

The first operation for *removal of the entire scapula together with the arm, for morbid growth*, was successfully performed in 1836, at the village of Plymouth, N. H., by Dixie Crosby, then resident of a town now known as Laconia, of the same State.

The first *total excision of the scapula, subsequent to disarticulation at the shoulder*, was made by Mussey, of Hanover, N. H., in 1837. This case has been frequently quoted as an instance of the success of repeated operations in malignant disease. Nineteen years before this operation, the patient had had a metacarpal bone

removed; and six years before had undergone a disarticulation at the shoulder for a recurrence. Thirty years after the removal of his scapula and clavicle, this man was living and free from recurrence.

After Liston's operation, in 1819, a number of partial excisions for tumor were performed, including Skey's operation in 1830, in which the entire bone was removed, with the exception of the glenoid process.

Till the year 1847, no one seems to have considered it possible to remove the entire scapula and preserve the usefulness of the arm. In this year, Reid, of Jena, urged the propriety of removing the entire scapula in proper cases and preserving the arm, but no case suitable for operation presented itself in his practice.

It remained for von Langenbeck, in 1855, to make the first *total excision of the scapula, preserving the arm*. His patient, a boy of 12 years, the subject of malignant disease, died about three and a half months later of recurrence, and there is no record of the usefulness of his limb during that period.

The second total extirpation of the scapula with preservation of the arm was made in 1856 by James Syme, of Edinburgh, without previous knowledge of the case of von Langenbeck. Syme's patient, a woman of 70 years, died of senile decay two months after operation.

These are the cases which mark epochs in the development of scapular excision, an operation whose history is almost coeval with the present century, in the first half of which the principles and limitations of the operation were established, in the second half of which these principles have been modified and the operation extensively practised.

LITERATURE.—The literature of operations on the scapula is very extensive and is largely made up of German and French inaugural theses and reports of cases. The first important statistical paper on the subject was written by Dr. Stephen Rogers, of New York,³ and has been justly praised by many who have since written. The most valuable and exhaustive contribution yet made to this literature is the paper of Dr. George F. B. Adelman, of Dorpat,⁴ read before the Seventh Congress of German Surgeons in 1878. This paper is a marvel of research and accuracy, and was supplemented by another by the same author on June 4, 1888, just 11 days before his death.⁵ The most complete work yet written on removal of the scapula together with the arm is by Paul Berger, of Paris.⁶ This monograph has received uniform commendation from every subsequent writer on the subject, and is remarkable for its historical accuracy, its logical arrangement and the formulation of rules of operative procedure which have been almost universally observed since its publication.

A reference to the bibliographic column of the tables in the present paper will show the very large number of articles that have been written on excision of the scapula. Most of these have had for a motive the recording of cases personal to the authors, to which has been added in many instances a more or less complete statistical history of the operation.

CLASSIFICATION OF CASES.—Authors differ widely in their grouping of scapular excisions. The following arrangement of cases seems most natural and satisfactory:

I. Total excision of the scapula with simultaneous removal of the arm. (Interscapulo-thoracic amputation.)

II. Total excision of the scapula subsequent to disarticulation at the shoulder-joint.

III. Total excision of the scapula, at one operation, with preservation of the arm.

IV. Total excision of the scapula, at two or more operations, with preservation of the arm.

V. Partial excision of the scapula, for tumor.

VI. Partial excision of the scapula with simultaneous removal of the arm.

A chronological order has been observed in all except group V. The cases in this group differ so widely from each other that no satisfactory deductions could be made were they arranged merely according to date. They have therefore been grouped according to the amount of bone removed, with a subgrouping according to priority of occurrence.

Those operations only have been considered total excisions in which the entire bone with all its processes has been removed. This is contrary to the custom of most writers, who have included among the total excisions all cases in which the bone was nearly all removed.

Partial excision for causes other than morbid growth have not been considered. This will account for the omission of a considerable number of operations for injury, necrosis and tuberculosis, recorded by nearly all writers as total excisions, but in which one or more processes or cartilaginous borders were left behind.

GROUP I.

GENERAL REMARKS.—Total excision of the scapula with simultaneous removal of the arm has received a variety of names: Extirpation of the scapula and arm (Veit); total ablation of the upper extremity with scapula (Sambucy); amputation of the upper extremity in the contiguity of the trunk (Berger); interscapulo-thoracic amputation (French writers); removal of the entire upper extremity (Chavasse); amputation of the entire upper extremity (Treves); operative removal of the bony breast-girdle (v. Adelman); removal of half of the shoulder-girdle (v. Eiselsberg); extirpation of the shoulder-girdle (Küster); extirpation of the shoulder (Nasse); extirpation of the scapula and humerus (Doll and Keller); exarticulation of the arm with the shoulder-girdle (Kocher); amputation of the fore-quarter (Paton).

The first operation of this kind is generally attributed to Ralph Cuming (1808); the question of its authenticity has been touched on in the first part of the present paper. No similar operation was performed thereafter till 1836, when Dixie Crosby, Professor in Dartmouth Medical College, successfully removed the arm, scapula, and clavicle (or perhaps a portion of it) for a malignant growth, 37 inches in circumference, in a patient worn down by suffering and emaciated to the last degree. The details of this case were collected and a complete record of it made by the operator's son and successor, Prof. A. B. Crosby.⁷ This patient was exhibited in June, 1836, before the New Hampshire State Medical Society. To the publicity given to this case was no doubt due the performance of the next operation of the same kind, by Dr. Amos Twitchell, of Keene, N. H., two years later, as well as Mussey's operation for removal of the scapula subsequent to disarticulation at the shoulder, also the first one of its kind.

It is an interesting fact that both Drs. Twitchell and Mussey had been consulted by Crosby's patient and had advised against the operation, considering it impracticable.

The operation of Twitchell was followed in a very few months by that of McClellan, of Philadelphia; and these three American surgeons had no followers in the performance of this operation for malignant disease during the next 24 years.

During this time, the operation was performed six times for injury, in different countries. This brings its history down to the year 1862, with a record, during the preceding 54 years, of 10 cases.

During the next 20 years, or until the general advent of successful antisepsis with corrosive sublimate, in 1881, 19 new cases were added to the list (14 for growth and 5 for injury). Of the 29 operations done in the 74 years prior to the beginning of successful antisepsis, 11 patients died, (38% mortality). The effect of antiseptic practice during the next six years became apparent in the increased number of cases (28) and the greatly lessened mortality; 5 patients died (18%).

At this period (1887), was published the monograph of Paul Berger, of Paris, a most admirable and exhaustive treatise. In it he recorded at length the operation which he had performed in 1882, gave a full account of all previous operations and formulated definite rules of procedure. So succinct, definite, and valuable were the rules laid down by him, that the operative method he advised has been generally and very properly called by his name. It should, however, be stated that no part of his operation is original, every act of the procedure having been employed by earlier operators. But Berger's work has given a remarkable impetus to the operation and the advent of asepsis, applied to the definite procedure he advocated, has made it wonderfully successful in its immediate results.

In the 13 years since the publication of Berger's monograph, there have been recorded 124 operations, with 13 deaths (10.5% mortality), and for an operation of this magnitude, this is certainly a very satisfactory showing.

INDICATIONS.—Total excision of the scapula with simultaneous removal of the arm has been performed for a variety of indications:

1. *For injury*, by shot wounds, from pieces of small and large caliber, by explosions, by avulsions, by crushing accidents, especially on railways, by burns, and in one case by the bite of a wild beast.

2. *For neoplasm*, sarcoma, chondroma, and carcinoma. By far the most common growth for which this operation has been performed is sarcoma, periosteal or medullary, springing from the upper part of the humerus or originating from the scapula and involving the humerus or the soft parts (especially the vessels) of the axilla, or implicating the shoulder to such an extent as to preclude the possibility of saving the limb and at the same time extirpating all diseased tissue.

Several operations of this kind have been done for carcinoma, recurrent in the axilla after excision of the breast for cancer, the purpose of the operation being chiefly palliative, to relieve pain and rid the patient of the burden of an edematous limb.

3. *For necrosis following injury*.

4. *For tuberculosis*.

5. *For progressive phlegmon*.

6. *For painful cicatricial stump*.

7. *For gangrene of arm*.

RELATIVE INDICATIONS.—Malignant growth of the upper end of the humerus has been set down above as a positive indication for total extirpation of the scapula with the arm. This is a matter for discussion, as a dis-

articulation at the shoulder-joint might be done, or even a resection of the upper part of the humerus⁸.

The choice between disarticulation at the shoulder-joint and interscapulothoracic amputation in malignant growths of the upper part of the humerus cannot be definitely made till a fair comparison shall have been instituted between the remote results of the two operations in a large number of cases. It is very desirable that this should be done, but it would probably be difficult at present to secure records of many shoulder-joint amputations, for the reason that they are not usually considered of sufficient importance to report. In the absence of satisfactory statistics it may be said for the interscapulothoracic amputation:

1. That the lymphatic vessels and veins are removed at a higher level.

2. That the shoulder muscles, especially the deltoid, and the scapulo-humeral muscles are entirely removed and that they are frequent sites of secondary infection in growths originating in the humerus.

3. That the glands and fat in the axillary and subclavicular region are more accessible and more thoroughly cleared.

4. That the resulting wound is much more favorable for primary union than is the stump containing the overhanging acromion and the retreating glenoid fossa.

5. That it is extremely improbable that the statistics of shoulder-joint amputation would show a lower general mortality than appears in Table I, in which the mortality of the last 124 operations was but 10.5%.

6. That the difference in the resulting deformity is insignificant.

7. That an examination of the cases in Table II will show that in a number of instances a disarticulation has been followed by recurrence in the scapula or its muscles, and that in these cases, at least, an interscapulothoracic amputation at first would have been preferable.

These reasons appear to the writer to be sufficient to justify the removal of the scapula and part of the clavicle in every case of malignant tumor requiring amputation at the shoulder.

In considering the treatment of malignant growths involving the bone or soft tissues below the level of the shoulder-joint there must be borne in mind

1. That the arm, being such an important member, no amputation should be considered if there is a fair probability of completely extirpating all diseased tissue without destroying the usefulness of the forearm and hand.

2. That, therefore, early and complete excision is to be advised in every growth of the upper extremity.

3. That malignant growths of any part of the humerus (except possibly the less malignant giant-cell sarcomata) require removal of the entire bone and

4. That, therefore, in all such cases an interscapulothoracic amputation should be performed.

5. That an arm amputated at or above the elbow is of but little service and

6. That, therefore, in every case of malignant disease (except the giant-cell sarcoma) requiring amputation at or above the elbow, an interscapulo-thoracic amputation should be made as a primary operation.

7. That, considering the great usefulness of a forearm stump and the probability of recurrence under any circumstances, no amputation should be made above the middle third of the forearm unless both bones are diseased or the soft parts infiltrated.

In this connection the opinion of Professor Nicholas Senn should be well considered. In reporting two cases of transscapular amputation at the Chicago Medical Society,⁹ in one of which recurrence had appeared only after 12 years of health, he spoke as follows: "I have for a long time thought that, in the complete removal of the upper extremity, surgeons for many years have gone too far, that is, insisting upon removing the entire or part of the clavicle and the entire scapula. . . . These cases ought to satisfy the members of the Society that, in the future, we must draw a distinct line in performing serious operations between cases in which it is absolutely necessary to remove the entire scapula and part of the clavicle and those in which we can confidently expect to perform a radical operation by resorting to transscapular amputation."

METHOD OF OPERATION.—Berger's method is as follows:

1. Make an incision over the outer two-thirds of the clavicle through all structures, including the periosteum.

2. Separate the periosteum from the middle third of the clavicle.

3. Excise the middle third of the bone.

4. Isolate the subclavian artery as it passes under the bed of the clavicle, tie it at two points and cut between.

5. Elevate the limb and isolate, tie and cut the subclavian vein in the same manner.

6. Start an anterior incision at the middle of the one already made and extend it downward and outward to the anterior fold of the axilla; continue it backward across the inner surface of the arm at the level of the axilla and extend it downward to the lower angle of the scapula. During this portion of the operation the arm should be kept at a right angle to the body.

7. Deepen this incision in front, severing both pectoral muscles and exposing the contents of the axilla.

8. Sever the cords of the brachial plexus at the level of the upper stumps of the vessels.

9. Start a posterior incision at the outer end of the clavicular incision and extend it directly downward over the spine of the scapula and prolong it till it meets the anterior incision at the lower angle of the scapula.

10. Dissect the skin and subcutaneous tissue backward to expose the muscles at the upper and inner borders of the scapula.

11. Cut the attachments of the trapezius muscle, the omohyoid, the levator anguli scapulae, the rhomboidei and serratus magnus, drawing the scapula out from the chest and passing the fingers under the muscles wherever possible as they are cut, controlling with forceps the vessels as they appear, the most important of which is the transversalis colli. This is easily done, as the muscles to which they are attached are held between the thumb and fingers as they are cut.

12. The bone can now be drawn away from the chest, and the entire limb removed by severing such attachments as remain.

13. Tie or twist all vessels.

14. Make one or more counter-openings for drainage tubes.

15. Suture accurately.

The above directions are for typical cases, where the conditions present will permit of following the method exactly. It often happens, however, that the location of a morbid growth, the loss or devitalization of tissue from injury or the position of sinuses and suppurative areas in necrotic and tuberculous cases renders neces-

sary more or less extensive changes in the direction of incisions and the formation of flaps.

The essential elements of Berger's method are preliminary ligation of the great vessels and the formation of anterior and posterior flaps. von Bergmann's procedure differs only in the early steps. He ligates the subclavian artery at the outer side of the scalenus anticus muscle. He then saws through the clavicle at the point of ligation, making but a single sawcut through the bone.

In the two personal operations recorded in the present paper, a slight modification of Berger's method was made. The primary incision was made and the middle third of the clavicle removed. A portion of the anterior incision was then made from the middle of the clavicular incision downward and outward over the anterior axillary fold to the inner surface of the arm at the level of the axilla. This incision was at once deepened, severing both pectoral muscles and exposing the axillary vessels and nerves for a considerable distance.

The surface of the vessels was then cleared upward till the level of the clavicle was reached. They were then cut between ligatures at this level. The advantage of this modification is that there is no difficulty whatever in isolating the vessels; for the wound is a long one, is almost parallel with their course and they are completely and widely exposed by the section of the overlying pectoral muscles.

Embarrassment from hemorrhage in securing the vessels by Berger's method has been noted by Keen, Chavasse, and Macnamara. This cannot occur if the vessels are exposed first below and cleared upward to the point of ligation. It is true that in some cases this cannot be done, by reason of the overlying tumor; but it is advisable to do it whenever the conditions are favorable.

DR. BUCHANAN'S CASE I.—*Interscapulothoracic Amputation for Recurring Sarcoma of Upper Arm. Recovery.*

Philip L., aged 69 years at time of operation, was referred to the writer by Dr. J. C. Hierholzer of Allegheny, in July, 1898. He had then a soft, globular growth about 16 inches (40 cm.) in circumference with a comparatively broad base, springing from the neighborhood of the insertion of the deltoid muscle. A diagnosis of sarcoma was made and the removal of the limb advised, provided it should be found to involve the bone. He declined the operation on these conditions, but finally consented, with the understanding that amputation was to be done only as a last resort. On August 7, 1898, the growth was excised and was found to have its origin in a small area of periosteum about the insertion of the deltoid. A portion of this muscle was involved and was removed, together with a large area of integument—about one-half the circumference of the arm and about 4 inches (10 cm.) in length.

Operations for recurrence were done on December 17, 1898, and February 25 and April 18, 1899, the last taking away the entire biceps below the seat of the original growth and most of the coraco-brachialis. The rapid and extensive recurrence finally convinced the patient that nothing short of the loss of his arm would give him any chance for his life, and he consented to lose the arm, together with the scapula and its muscles, which as yet showed no sign of involvement.

Accordingly, on August 7, 1899, he was anesthetized with chloroform at the Mercy Hospital, and the operation of Berger performed, with two slight modifications: (1) The anterior incision was made before the ligation of the subclavian vessels, and the vessels were exposed under the severed pectoralis muscles and followed up from below to the point of ligation; and (2) the posterior incision was made to follow the spine of the scapula to about its middle before turning down to meet the anterior at the lower angle of the bone.

The former of these modifications is to be recommended;

but the latter, while it has the advantage of removing a greater area of integument, has the disadvantage of making a more complicated suture line.

The loss of blood was trifling and the shock unnoticeable. Glass drains were inserted at two points. Primary union was secured throughout. On the third day the patient was dressed and walking about the corridors, and at the end of the sixth day he attended church in Allegheny (about 2 miles from the hospital). He was dismissed from the hospital on the tenth day and has since remained well.

Nature of the Growth.—Dr. J. DeVinne Singley made the following report of the primary growth removed August 6, 1898: "The tissue is composed of large round connective tissue cells, for the most part, with a few spindle cells. There is considerable intercellular substance present. Pathologic diagnosis—large round-celled sarcoma."

DR. BUCHANAN'S CASE II.—*Interscapulothoracic Amputation for Recurring Sarcoma of Upper Arm. Recovery. Recurrence in Lung and Death in 5 Months.*

David L., aged 42 years at time of this operation, first noticed a dull aching in his left arm about 4 years before, which he attributed to the strain of heavy lifting. Eight or nine months later he noticed a small growth about the position of the insertion of the deltoid. Three months after its appearance he had it excised. It soon recurred, and 5 months after the first operation it was again excised by another surgeon. After this it was excised three times by myself, once by my colleague, Dr. R. W. Stewart, and once by a well known surgeon in New York. During the three years since his first operation, the growth was excised seven times.

Prior to his admission for the radical operation he had a cough, and, suspecting metastatic deposits in the lungs, I requested my colleague, Dr. I. J. Moyer, also to examine these organs. Dr. J. H. Reynolds, of Bellevue, made a physical examination, and to neither of these gentlemen were any signs of metastasis clearly evident.

The operation of Berger was performed on September 19, 1899, at the Mercy Hospital. Chloroform was first given and alarming signs of collapse soon appeared. Stimulation was given and ether substituted. This was but little improvement, and throughout the operation the pulse was feeble and the breathing shallow and irregular. So much difficulty was experienced with the anesthesia that much of the operation was done with the patient in a semiconscious condition.

The only variation from Berger's plan was in exposing the vessels below and laying them bare upward to the clavicle, as in the other case.

Primary union resulted throughout the wound and the patient left the hospital for his home in Uniontown with his wound completely healed on the eleventh day.

Metastatic deposits in the lungs soon made themselves evident to physical exploration, and he died on February 27, 1900, a little more than 5 months after operation.

Nature of the Growth.—Microscopical examination of the growth each time it was excised was made by Dr. John DeVinne Singley, pathologist to the hospital, who found it to be a round-celled sarcoma.

REFERENCES AND BIBLIOGRAPHY.

- 1 W. Cheselden: "The Anatomy of the Human Body." Ninth Edition, with 40 copperplates. 1768. P. 321.
- 2 Although the case of Cuming has been accepted, apparently without question, by all later authors, its authenticity does not seem to be beyond dispute. The first and apparently the only record of it, is in a letter written by Copland Hutchinson to the *London Medical Gazette*, 1830, 273, apropos of the discussion of Mr. Luke's case of partial excision. Hutchinson states that in 1808 (22 years before), he had examined a patient from whom Ralph Cuming had amputated the arm, scapula and clavicle. It seems strange that Cuming, the author of at least one surgical work and many journal articles, should fail to record an operation of such importance, and that it should go unpublished for 22 years. The authenticity of the case was questioned by a correspondent of the same journal shortly afterward, but no proof to the contrary was adduced.
- 3 *American Journal of the Medical Sciences*, 1868 lvi, 359.
- 4 Zur Geschichte und Statistik der theilweisen und vollständigen Schulterblattresektionen.
- 5 Die operative Entfernung des knöchernen Brustgürtels. v. Langenbeck's *Archiv*, Bd. xxxvii, Heft 4.
- 6 L'Amputation du Membre superieur dans la contiguïté du Trouc, Paris, 1887.
- 7 *Medical Record*, 1875, x, 753.
- 8 That cases of myeloid or giant-cell sarcoma of the humerus may be successfully treated by excision of the affected portion of the bone is established by operations such as that of Mr. N. C. Macnamara, of London, who excised the head and neck of the humerus in 1887 for a myeloid sarcoma about as large as an orange. A personal communication, kindly sent by Mr. Macnamara, states that the patient is still (March 14, 1900) free from recurrence and has good use of his limb.
- 9 *Chicago Medical Recorder*, 1898, xiv, 333.

TABLE I.—TOTAL EXCISION OF THE SCAPULA WITH SIMULTANEOUS REMOVAL OF THE ARM.

NO.	OPERATOR.	DATE OF OPERATION.	SEX AND AGE.	CONDITION REQUIRING OPERATION.	RESULT.	SUBSEQUENT HISTORY.	REMARKS.	PLACE OF RECORD.
1	Cuning, R., of Antigua.	1808.	M., 21.	Shot wound.	Recovery.	.....	Clavicle also removed.	* <i>London Med. Gaz.</i> , 1830, v, 273.
2	Crosby, D., of Laconia, N. H.	March, 1836.	M., 30.	Malignant growth.	Recovery.	Two secondary operations, recurrence, and death in 2 years and 4 months.	Tumor size of water-pail, involving humerus clavicle and scapula. Vessels tied before division.	* <i>Medical Record</i> , 1875, x, 753.
3	Twitchell, A., of Keene, N. H.	Spring, 1838.	.....	Malignant growth.	Recovery.	Recurrence and death in 6 months.	Not published by the operator. Facts secured for publication by his nephew, Dr. Geo. B. Twitchell.	* <i>Medical Record</i> , 1875, x, 753.
4	McClellan, G., of Philadelphia.	April 12, 1838.	M., 17.	Encephaloma.	Recovery.	Recurrence and death in 6 months.	Tumor extended from lower part of arm to shoulder and involved scapula and clavicle. Mass comprised nearly one quarter of his body.	* <i>Princ. and Pract. of Surg.</i> , Phila., 1848, 412.
5	Gactani-bey, of Cairo.	Dec. 31, 1838.	M., 14.	Injury.	Recovery.	.....	Explosion of a loaded cannon in the melting-pot. Multiple fractures. Testicle also injured and excised.	<i>Mem. de l'Acad. de Med.</i> , 1841, ix, 96.
6	Lewis, W., of Boston.	1845.	M.	Injury.	Death.	.....	Machine injury. Death from shock same day.	* <i>N. Y. Med. Jour.</i> , 1868, viii, 436.
7	Pirondi, S., of Marseilles.	June 21, 1855.	M., 39.	Injury.	Death.	.....	Crush by fall of a building stone. Lung also injured. Death from shock.	* <i>Rev. Med.-Chir. de Par.</i> , 1855, xviii, 49.
8	Parise, M., of Lille.	Aug. 26, 1856.	M., 16.	Injury.	Recovery.	.....	Crushing injury. Scapula fractured and soft parts above clavicle lacerated. Vessels tied before amputation.	* <i>Trevelot: L'Amputation de l'Omoplate</i> , Paris, 1885, p. 18.
9	Parise, M., of Lille.	.....	M., 14.	Injury.	Death.	.....	Machine injury. Arm and shoulder crushed.	* <i>Bull. de l'Acad. de Med.</i> , 1864-5, xxx, 723.
10	Niepee, of Avellard.	Dec. 17, 1860.	M., 32.	Injury.	Recovery.	.....	Machine injury. Comminution of scapula and clavicle.	* <i>Lancet</i> , 1874, i, 819.
11	Whishaw, J. C., of Fyzabad.	1862.	M., 8.	Encephaloma.	Recovery.	No recurrence several months later.	Growth involved clavicle, shoulder joint and scapular region.	* <i>Excision of the Scapula</i> . Edinburgh, 1864, 30.
12	Syme, J., of Edinburgh.	May 7, 1863.	M., 40.	Osteo-cancer.	Recovery.	In good health 26 years later.	Growth began in head of humerus. Large growth of scapula. Two previous operations—one a resection of head of humerus.	* <i>Lancet</i> , 1865, ii, 233 and 592.
13	Ferguson, W., of London.	Nov. 11, 1865.	F., 19.	Sarcoma.	Recovery.	No recurrence 2 years later.	Tumor present 4 years. Subspinous part of scapula removed 10 months before. Clavicle also removed.	* <i>Edinburgh Med. Jour.</i> , 1869, xv, 567.
14	McLeod, K., of Calcutta.	June 30, 1867.	M., 2.	Medullary growth.	Death.	.....	Tumor involved elbow and subspinous fossa and was 17 inches in circumference. Patient very weak. Death from shock soon after.	* <i>Lancet</i> , 1867, ii, 552.
15	Ferguson, W., of London.	Oct. 19, 1867.	M., 40.	Sarcoma.	Death.	.....	Fall on shoulder 2 years before, followed by growth. Growth very large, involving shoulder joint and scapula. Death 4 days later.	* <i>Edinburgh Med. Jour.</i> , 1869, xv, 124.
16	Watson, P. H., of Edinburgh.	March 27, 1869.	M., 13.	Injury.	Recovery.	.....	Arm caught between pinion-wheels and severed at insertion of deltoid. Skin stripped up.	* <i>Birch-Hirsch. Arch. der Heilk.</i> , 1869, x, 468.
17	Thiersch, C., of Leipzig.	Sept. 2, 1869.	M., 34.	Enchondroma.	Death.	.....	Growth noticed 1 year. Began in humerus. Size nearly of man's head. Symptoms of edema of lungs and death in 5 days. Enchondroma found in chest at autopsy.	* <i>Edinburgh Med. Jour.</i> , 1869, clxxiv, 549.
18	Annandale, T., of Edinburgh.	1869.	M., Ad'th.	Injury.	Death.	.....	Machine injury.	* <i>Med. Record</i> , 1871, vi, 141.
19	Hamilton, F., of New York.	Dec. 12, 1870.	M.	Colloid growth.	Recovery.	.....	Anterior border of scapula removed, February 15, 1865.	* <i>Med.-Chir. Trans.</i> , 1890, lxxviii, 93.
20	Barwell, R., of London.	Dec. 1870.	M., 47.	Sarcoma.	Recovery.	Recurrence in lungs and death in 2 years.	Growth of scapula involving head of humerus. Arm first disarticulated; scapula and part of clavicle then removed.	* <i>Brit. Med. Jour.</i> , January 3, 1874.
21	Jessop, T. R., of Leeds.	April 28, 1873.	M., 14.	Injury.	Recovery.	.....	Arm nearly torn from body.	* <i>Veit: Eastirp. von Schulterblatt und Arm</i> , Berlin, 1874.
22	v. Langenbeck, R., of Berlin.	Dec. 19, 1873.	M., 17.	Sarcoma.	Death.	.....	Growth involved entire shoulder and had been noticed 15 months. Death on fifth day, from hemorrhage.	* <i>Heydenreich: Ueber Eastirp. der Scapula</i> . Kiel, 1874.
23	Esmarch, F., of Kiel.	July 8, 1874.	M., 50.	Myxosarcoma.	Recovery.	.....	Growth involved axilla and periosteum of scapula.	* <i>Allgm. Wien. Med. Zeit.</i> , 1878, 23, 116.
24	Weinlechner.	July 20, 1876.	M., 16.	Injury.	Recovery.	.....	Machine injury.	* <i>Am. Jour. Med. Sci.</i> , 1878, lxxvi, 98.
25	Gundrum, F., of Ionia, Mich.	Jan. 26, 1877.	M., Y'th.	Neerosis.	Recovery.	.....	Gunshot wound with gangrene. Amputation through upper arm 6 weeks before.	* <i>Lancet</i> , 1878, i, 669.
26	Maenamar, N. C., of London.	March 27, 1878.	F., 24.	Sarcoma.	Death.	.....	Growth of 4 years. Scapula, axilla and pectorals involved. Arm edematous. Preliminary ligation of subclavian impossible. Great loss of blood. Death next day.	* <i>Brit. Med. Jour.</i> , 1880, ii, 617, and personal communication.
27	Lund, E., of Manchester.	Oct. 3, 1879.	M., 20.	Sarcoma.	Recovery.	Recurrence in chest and abdomen and death in 3 years.	Growth of upper end of humerus of four months' standing, following a sprain.	* <i>Brit. Med. Jour.</i> , 1880, ii, 702.
28	McGill, A. F., of Leeds.	May, 1880.	F., 58.	Malignant growth.	Death.	.....	Tumor of rapid growth, scapula and axilla involved. Death from infection on sixth day.	* <i>Chavasse: Med. Chir. Trans.</i> , 1890, lxxii, 94.
29	Whitehead, W., of Manchester.	Jan. 26, 1881.	M., 24.	Sarcoma.	Death.	.....	Injury 11 years before. Part of scapula previously removed. Now, remainder of scapula, arm, and one-third of clavicle.	* <i>Langenham: Tumours Solides du Scapulum</i> , Paris, 1883.
30	Despres, A., of Paris.	June 21, 1882.	M., 22.	Sarcoma.	Recovery.	Recurrence and death in 7 months.	Enormous tumor of upper end of humerus.	* <i>L'Amputation du Membre Supérieur dans la Contiguité du Tronc</i> , Paris, 1887.
31	Berger, P., of Paris.	Oct. 28, 1882.	M., 27.	Enchondroma.	Recovery.	No recurrence 16 years later. (<i>Rev. de Chir.</i> , 1898.)	Enormous growth of upper end of humerus, slightly encroaching on scapula.	* <i>Med. Times and Gaz.</i> , 1884, i, 301.
32	Heath, C., of London.	July 4, 1883.	M., 16.	Sarcoma.	Recovery.	Two subsequent operations for recurrence and death in 8 years. (Personal communication.)		* <i>Lancet</i> , 1896, i, 847, and personal communication.
33	McLeod, K., of Calcutta.	July 28, 1883.	M., 20.	Sarcoma.	Death.	.....	Arm, shoulder, and axilla involved.	.....

34	Verneuil, of Paris.	Nov. 2, 1883.	M., 23.	Sarcoma.	Recovery.	Recurrence and death in a few months.	Tumor of head of humerus invading scapula; size of fetus at term.	* Sambucy: <i>De l'ablation totale du membre supérieur</i> , Paris, 1888.
35	Watson, P. H., of Edinburgh.	Dec. 17, 1883.	M., 50.	Enchondroma.	Recovery.	.....	Patient had had enchondromata of hands for many years. Growth of shoulder began 18 months before operation and was enormous.	* <i>Trans. Med. Chir. Soc. Edinb.</i> , 1883-4, iii, 56.
36	Berenger-Feraud, of Loriet.	May 20, 1884.	M., 23.	Necrosis.	Recovery.	.....	Scapula and humerus affected.	* <i>Bull. Gen. de Ther., Med. Chir. et Obs.</i> , 1885, 490.
37	Lucas Championniere, of Paris.	June 30, 1884.	M., 38.	Injury.	Recovery.	.....	Machine injury. Arm torn off at upper third; much skin lost above. Amputation on fourth day.	* Trevelot: <i>Quelques consid. sur l'Amp. de l'Omoplate</i> , Paris, 1885.
38	Czerny, J., of Heidelberg.	July 15, 1884.	M., 41.	Sarcoma.	Recovery.	Died of pneumolaryngeal phthisis 5 months later.	Sarcoma of axilla had been excised 18 months before.	* Doll: <i>Arch. f. kl. Chir.</i> , 1888, xxxvii, 144.
39	Ollier, of Lyons.	Oct. 29, 1884.	M., 51.	Sarcoma.	Recovery.	No recurrence 18 months later.		* <i>Lyon Med.</i> , 1885, xviii, 135.
40	Morissan, D., of Naples.	March 15, 1885.	F., 54.	Carcinoma.	Death.	.....	Carcinoma of breast, axilla, and shoulder-joint. Noticed 16 years before. Ribs also resected. Death from shock in 4 hours.	* <i>Il Morgagni Napoli</i> , 1885, xxvii, 505.
41	v. Bergmann, E., of Berlin.	March 23, 1885.	M., 28.	Sarcoma.	Recovery.	Death subsequently; cause not known.	Sarcoma of humerus.	* Bramesfeld: <i>Ueber Schulter-Exstirp.</i> , 1888.
42	Bell, J., of Edinburgh.	May, 1885.	M., 10.	Sarcoma.	Recovery.	Recurred in brain within a year. (Personal communication.)	Tumor noticed several months. Tumor in scapular region and axilla. Skewer control of hemorrhage. Clavicle also removed.	* <i>Edinburgh Med. Jour.</i> , 1885, August, 168.
43	Schmidt, E., of Chicago.	July 28, 1885.	M., 7.	Injury.	Recovery.	.....	Railroad injury.	* <i>Med. Press of W. N. Y.</i> , 1885-6, i, 101.
44	Huizinga, T. G., of Zealand, Neth.	Sept. 19, 1885.	M., 37.	Injury.	Recovery.			* <i>Trans. Mich. Med. Soc.</i> , 1886, 218.
45	Maling, E. A.	Jan. 22, 1886.	M., 50.	Sarcoma.	Recovery.	Recurrence and death. (Chavasse).		* <i>Brit. Med. Jour.</i> , 1886, ii, 1161.
46	Ohalinski, A., of Krakau.	Feb. 6, 1886.	F., 22.	Sarcoma.	Recovery.	Recurrence in pleura and death in 3½ months.	Growth noticed 12 months; involved humerus, scapula, and triceps. Tumor 12 inches by 7 inches.	* <i>Wien. Med. Presse</i> , 1887, xxviii, 650.
47	v. Bergmann, E., of Berlin.	July 15, 1886.	M., 44.	Sarcoma.	Recovery.	Recurrence in lung and death in 13 months.	Growth of humerus; scapula and glands involved.	* Bramesfeld, <i>loc. cit.</i>
48	Mazzoni, G., of Rome.	July 24, 1886.	M., 18.	Injury.	Death.	.....	Crush.	* A. Paci: <i>Lo Sperimentale</i> , 1887, Nov., 490.
49	Poggi, A., of Bologna.	Oct. 13, 1886.	M., 27.	Sarcoma.	Recovery.	No recurrence 3 months later.	Large tumor; began in scapula; noticed about one year.	* <i>Bull. de Soc. Med. di Bologna</i> , 1888, xxi, 66.
50	Madelung, of Rostock.	Dec. 9, 1886.	M., 48.	Enchondroma.	Recovery.	No recurrence and in excellent health January 25, 1900. (Personal communication.)	A similar growth with the head of the humerus had been removed 6 years before by Prof. Trendelenberg. Growth followed a blow.	* Grisson: <i>Deutsche Zeit. f. Chir.</i> , 1888, xxvii, 288.
51	v. Bergmann, E., of Berlin.	Jan. 24, 1887.	M., 20.	Sarcoma.	Recovery.	Recurrence in lung and death in 11 months.	Forcarm amputated 14 months before.	* Bramesfeld, <i>loc. cit.</i>
52	Reyher, C., of St. Petersburg.	Feb. 5, 1887.	M., 53.	Sarcoma.	Recovery.	.....	Growth noticed 11 months before. Removed in July, 1886. Recurred in October. Shoulder involved at time of last operation.	* <i>Bull. et Mem. Soc. de Chir.</i> , Paris, 1888, xiv, 484.
53	Jeannel, M., of Toulouse.	May 25, 1887.	M., 26.	Bite of lion.	Death.	.....	Operation on the day after injury. Death 2½ hours later.	* <i>Annals of Surgery</i> , 1888, viii, 434.
54	May, B., of Birmingham.	June, 1887.	F., 21.	Sarcoma.	Recovery.	Recurrence and death in 1 year.	Growth of humerus size of cocoanut; tumors in axilla and above clavicle.	* <i>Bull. et Mem. Soc. de Chir.</i> , Paris, 1888, xiv, 481.
55	van Iterson, J. E., of Leyden.	Aug. 26, 1887.	M., 49.	Sarcoma.	Recovery.	Death from acute disease of lung — probably acute sarcomatosis — 21 months later. (Personal communication.)	Central sarcoma of humerus and shoulder.	* <i>Gaz. des Hopitaux</i> , 1887, 1009.
56	Kirmisson, E., of Paris.	1887.	M., Adlt.	Shot wound.	Death.	.....	Operation one hour after injury.	Personal communication.
57	Wheelhouse, C. G., of Leeds.	Before 1888.	M., 14.	R. R. injury.	Recovery.	.....	.....	* Bramesfeld: <i>loc. cit.</i>
58	v. Bergmann, E., of Berlin.	Jan. 24, 1888.	F., 34.	Sarcoma.	Recovery.	In good health 15 months later.	Growth of humerus; spontaneous fracture.	* <i>Gaz. des Hopitaux</i> , 1888, lxi, 334.
59	Bourgougnon, of Mont richard.	Jan. 25, 1888.	M., 13.	Injury.	Recovery.	.....	Arm caught in belt and torn from body at surgical neck of humerus. Scapula splintered.	* <i>Wien. med. Woch.</i> , 1889, xxxix, 1121.
60	Sondermayer, R., of Krakau.	March 23, 1888.	F., 44.	Sarcoma.	Recovery.	No recurrence 9 months later.	Sarcoma of humerus.	* <i>Annals of Surgery</i> , 1888, viii, 434.
61	May, B., of Birmingham.	April, 1888.	M., 17.	Sarcoma.	Recovery.	Recurrence in lungs and death in 15 months. (Personal communication.)	Growth of upper end of humerus of large size. Duration, 6 months.	* <i>Memphis Jour. Med. Sci.</i> , 1889, i, 174.
62	Russell, L. E.	May 13, 1888.	M., 22.	Injury.	Recovery.	.....	.....	* Keller: <i>Ueber die Erst. der Scap.</i> , Bonn, 1889.
63	Trendelenberg, H., of Bonn.	May 30, 1888.	M., 47.	Sarcoma.	Death.	.....	Growth of scapula, size of man's head. Patient leukemic. Death next day.	* Nasse: <i>Arch. f. klin. Chir.</i> , xxxix, Heft 4.
64	v. Bergmann, E., of Berlin.	July 24, 1888.	F., 10.	Sarcoma.	Recovery.	Recurrence in thorax and death in 11 months.	Tumor of upper half of humerus, size of child's head.	* <i>Jour. Am. Med. Assoc.</i> , 1889, xli, 295.
65	Parkes, C. T., of Chicago.	Dec. 10, 1888.	M., 18.	Sarcoma.	Recovery.	No recurrence 18 months later.	Tumor of head of humerus.	* <i>Jour. Am. Med. Assoc.</i> , 1889, xli, 295.
66	Parkes, C. T., of Chicago.	Jan. 14, 1889.	M., 37.	Malignant growth.	Death.	.....	Tumor, size of cocoanut, grew from shoulder-joint. Exploratory operation 3 weeks before. Death on third day.	* <i>Lancet</i> , 1890, i, 131.
67	Chavasse, T. F., of Birmingham.	Jan., 1889.	M., 40.	Enchondroma.	Recovery.	Well in January, 1900. (Personal communication.)	Tumor of 10 years' duration. Growth of upper end of humerus; weighed 18 pounds. Secondary hemorrhage.	* Finkelstein: <i>Ein Fall von Exstirp. des Schulterg.</i> , Berlin, 1889.
68	Küster, E., of Berlin.	Feb. 19, 1889.	F., 29.	Sarcoma.	Recovery.	Recurrence in pleura and lung and death on July 22, 1899. (Personal communication.)	Fracture of humerus 10 years before. Sarcoma of humerus and scapula. Ankylosis.	* <i>Annals of Surgery</i> , 1890, xi, 88.
69	Lewis, E. A., of Brooklyn.	April 29, 1889.	M., 47.	Sarcoma.	Recovery.	Recurrence internally and death in 2 years. (Personal communication.)	Injury of shoulder 17 months before. Ligation of subclavian artery difficult.	

TABLE I.—TOTAL EXCISION OF THE SCAPULA WITH SIMULTANEOUS REMOVAL OF THE ARM.—CONTINUED.

NO.	OPERATOR.	DATE OF OPERA- TION.	SEX AND AGE.	CONDITION REQUIRING OPERATION.	RESULT.	SUBSEQUENT HISTORY.	REMARKS.	PLACE OF RECORD.
70	v. Bergmann, E., of Berlin.	July 2, 1889.	F., 36.	Sarcoma.	Death.	.....	Tumor began in humerus. Resection of first rib and part of sternum and ligature of superior vena cava. Death in 2 hours. Fell on shoulder 3 months before. Growth from subscapular fossa.	* Nassè: <i>loc. cit.</i>
71	Southam, F. A., of Manchester.	Aug. 25, 1889.	F., 11.	Sarcoma.	Recovery.	Recurrence and death in 5 months. (Chavasse.)	Tramway fracture of humerus, scapula and clavicle. No necrosis.	* <i>Brit. Med. Jour.</i> , 1889, ii, 1334.
72	v. Elsberg, F., of Vienna.	Dec. 1, 1889.	M., 63.	Injury.	Recovery.	.....	Railroad injury.	* <i>Wien. klin. Woch.</i> , 1890, No. 13, 253.
73	Park, R., of Buffalo.	.....	M., 14.	Injury.	Recovery.	.....	Burn of upper arm and shoulder, extending to bone.	Personal communication.
74	v. Bergmann, E., of Berlin.	.....	.....	Burn.	Recovery.	.....	.....	* Schultz: <i>Deutsche Zeit. f. Chir.</i> , 1896, xliii, 458.
75	Cecil, A., of Genoa.	May 28, 1890.	M., 29.	Sarcoma.	Recovery.	Death from cystitis 5 months later. No autopsy.	.....	* Costa: <i>Arch. di Ortop.</i> , Anno X, 22.
76	Wyeth, J. A., of New York.	Oct. 14, 1890.	M., 54.	Sarcoma.	Recovery.	Recurrence and death within a year. (Personal communication.)	Growth removed from long head of triceps 9 months before. Nodule removed from under chin 3 weeks after operation. Edema of arm. All of clavicle removed.	* <i>N. Y. Med. Jour.</i> , 1891, liii, 57.
77	Helferich, H., of Greifswald.	Oct. 31, 1890.	F., 19.	Sarcoma.	Recovery.	No recurrence in 1899. (Personal communication.)	Tumor, size of child's head; appeared 2 years before. Clavicle resected; vessels tied; arm disarticulated; scapula removed.	* Jacobsohn: Inaug. Dissert., Freiburg, 1890.
78	Scun, N., of Chicago.	.....	M., 35.	Sarcoma.	Recovery.	No known recurrence 6 years later.	Sarcoma of humerus yet encapsulated.	Personal communication.
79	v. Bergmann, E., of Berlin.	.....	.....	Sarcoma.	Recovery.	No recurrence 3½ years later.	.....	* Schultz: <i>loc. cit.</i>
80	Monod, E., of Bordeaux.	Feb., 1891.	M., 20.	Sarcoma.	Recovery.	Recurrence in lungs and death in 3 months.	Growth of humerus extending into axilla and under scapula.	* <i>Le Mercredi Med.</i> , 1891, 93.
81	McLeod, K., of Calcutta.	Mar. 23, 1891.	F., 15.	Sarcoma.	Recovery.	No recurrence as far as known. (Personal communication.)	Very large tumor of 3 months' growth. Hemorrhage prevented by elastic cord and skewers.	* <i>Lancet</i> , 1891, ii, 117.
82	Körte, W., of Berlin.	May 31, 1891.	M., 6.	Sarcoma.	Recovery.	Recurrence in lungs, brain, and neck; death in 3 months.	Sarcoma of scapula.	* <i>Deutsche med. Woch.</i> , 1892, No. 12, 265.
83	Treves, F., of London.	June 5, 1891.	F., 43.	Sarcoma.	Recovery.	.....	Central sarcoma of upper part of humerus involving shoulder-joint and deltoid.	* <i>Lancet</i> , 1891, ii, 1159.
84	Treves, F., of London.	July 3, 1891.	F., 57.	Carcinoma.	Recovery.	.....	Recurrent carcinoma of breast. Arm hugely edematous. Subclavian vein obliterated. Operation done to relieve pain.	* <i>Ibid.</i>
85	Poncet, A., of Lyons.	July 21, 1891.	M., 34.	Sarcoma.	Recovery.	Recurrence in lungs and death in 14 months.	Growth began in scapula and extended toward axilla. Voluminous.	* <i>Arch. Prov. de Chir.</i> , 1893, ii, 255.
86	Ochsner, A. J., of Chicago.	Aug., 1891.	F., 19.	Sarcoma.	Recovery.	Patient since married. In good health in January, 1900. (Personal communication.)	Growth started in humerus and extended to tissues of shoulder.	* <i>Annals of Surg.</i> , 1895, xxii, 736.
87	Polaillon, of Paris.	Dec. 1, 1891.	M., 46.	Sarcoma.	Death.	.....	Sarcoma of radius and scapula. Death from shock soon after operation.	* <i>Le Mercredi Med.</i> , 1891, 613.
88	Park, R., of Buffalo.	.....	M., 39.	Epithelioma.	Recovery.	Recurrence and death in January, 1900.	Enormous epithelioma on a surface burned years ago.	Personal communication.
89	v. Bergmann, E., of Berlin.	Before 1892.	.....	Sarcoma.	Recovery.	Recurrence and death.	Sarcoma of humerus invading the shoulder-muscles.	* Schultz: <i>loc. cit.</i>
90	v. Bergmann, E., of Berlin.	Before 1892.	.....	Sarcoma.	Recovery.	.....	Arm muscles and vein filled with growth, which began in humerus.	* <i>Ibid.</i>
91	Delorme, of Paris.	March, 1892.	M., 20.	Sarcoma.	Recovery.	.....	Caused by a blow 2 years before. Sarcoma of upper end of humerus. Soft parts infiltrated.	* <i>Bull. et Mem. Soc. Chir. Par.</i> , 1892 xviii, 446.
92	Chavasse, T. F., of Birmingham.	May 20, 1892.	M., 21.	Sarcoma.	Recovery.	Well in April, 1897; not seen since. (Personal communication.)	Large growth over scapula and filling axilla. First noticed 5 weeks before. No preceding trauma.	* <i>Lancet</i> , 1892, ii, 471.
93	Shepherd, F. J., of Montreal.	June 17, 1892.	F., 32.	Chondrosarcoma.	Recovery.	Recurrence in lung and death in 2 years. (Personal communication.)	Tumor noticed in March, 1890. Growth from humerus and scapula, 30 inches around. Result of injury 4 years before.	* <i>Maritime Med. News</i> , 1894, vi, 394.
94	Helferich, H., of Greifswald.	Dec. 30, 1892.	M., 47.	Progressive phlegmon.	Death.	.....	Progressive phlegmon of arm; edema of thorax. Subclavian vessels tied; arm disarticulated; scapula removed. Death same day.	* Frank: <i>Ueber die Abtrag. der Oberen Ext. sammt der Scap.</i> , Greifswald, 1895.
95	v. Bergmann, E., of Berlin.	.....	.....	Sarcoma.	Recovery.	Patient has since died; cause unknown.	Sarcoma of upper end of humerus. Cystic degeneration. Spontaneous fracture.	* Schultz: <i>loc. cit.</i>
96	v. Bergmann, E., of Berlin.	.....	.....	Sarcoma.	Recovery.	No recurrence one year later.	Sarcoma of upper end of humerus.	* <i>Ibid.</i>
97	v. Bergmann, E., of Berlin.	.....	.....	Necrosis.	Recovery.	.....	Necrosis of humerus and scapula. Suppuration of elbow and shoulder-joints.	* <i>Ibid.</i>
98	Frank, R., of Vienna.	Feb. 1, 1893.	M., 45.	Enchondroma.	Recovery.	.....	Tumor of scapula. Five operations made between 1884 and 1892.	* <i>Inter. klin. Rundschau</i> , 1893, vii, 447.
99	Kümmell, H., of Hamburg.	Mar. 13, 1893.	M., Ad'lt.	Sarcoma.	Recovery.			* <i>Deutsche med. Woch.</i> , 1893, xix, 1187.
100	Mackenzie, K. A. J., of Portland.	Aug., 1893.	M., 69.	Carcinoma.	Recovery.	No recurrence 6 years later. (Personal communication.)	Ulcerating growth of shoulder, probably originating in joint.	* <i>Medical Sentinel</i> , 1895, iii, 386.
101	Guermont, of Lille.	Oct. 21, 1893.	M., 46.	Sarcoma.	Recovery.	.....	Sarcoma of head of humerus, involving joint. Edema of arm. Humerus first disarticulated; scapula then removed.	* <i>Bull. Soc. Anat. Clin. Lille</i> , 1893, viii, 140.
102	Keen, W. W., of Philadelphia.	Nov. 20, 1893.	F., 20.	Sarcoma.	Recovery.	Patient perfectly well in January, 1900. (Personal communication.)	Humerus in volved upper arm, shoulder-joint, and scapula. Great trouble in securing subclavian vein.	* <i>Ann. Jour. Med. Sci.</i> , 1894, cvii, 680.
103	Roth, of Lübeck.	Nov. 2, 1893.	M., 45.	Sarcoma.	Recovery.	Patient perfectly well and without sign of recurrence on April 4, 1900. (Personal communication.)	Tumor previously excised. Sarcoma of upper end of humerus.	* <i>Centralbl. f. Chir.</i> , 1895, 966.
104	v. Bergmann, E., of Berlin.	.....	.....	Malignant growth.	Recovery.	Recurring growth excised from shoulder the next year.	Growth of humerus. Muscles not yet invaded. Noticed only a month.	* Schultz: <i>loc. cit.</i>

105	Ochsner, A. J., of Chicago.	June 1, 1894.	M., Adlt.	Chondrosarcoma.	Recovery.	No recurrence in January, 1900. (Personal communication.)	Growth in suprascapular, serratus magnus and over clavicle. Tumor of 4 months' growth.	* <i>Annals of Surgery</i> , 1895, xxii, 736. Personal communication.
106	Patterson, A., of Glasgow.	June 14, 1894.	F., 51.	Sarcoma.	Recovery.	Recurrence in lungs and death in 10 months.	Largo growth of the scapula; appeared 8 months before.	
107	Dubar, L., of Lille.	July 11, 1894.	M., 27.	Sarcoma.	Recovery.	Recurrence. Small secondary growth removed. Relief considered only temporary.	Growth of upper part of humerus and scapula.	* <i>Bull. Med. du Nord</i> , 1895, xxxiv, 1.
108	Spencer, G. W., of London.	Sept. 14, 1894.	M., 21.	Lymphosarcoma.	Recovery.	No recurrence 6 months later.	Began after a contusion 5 years before. Large growth of scapula and neck. Flap from upper arm.	* <i>Trans. London Clin. Soc.</i> , 1895, xxviii.
109	Keen, W. W., of Philadelphia.	Dec. 26, 1894.	M., 21.	Sarcoma.	Recovery.	Died 15 months later of recurrence in cheek. (Personal communication.)	Growth followed fracture of clavicle. Clavicle also removed. Toxins had been previously tried.	* <i>Kansas City Med. Index</i> , 1895, xvi, 105.
110	Armstrong, G. E., of Montreal.	Jan. 12, 1895.	F., 34.	Sarcoma.	Recovery.	In January, 1900, she had pulmonary tuberculosis. No recurrence. (Personal communication.)	Fracture 2 years before in eclampsia. Tumor appeared 2 months before operation and involved humerus and neck of scapula.	* <i>Montreal Med. Jour.</i> , 1896, xxiv, 666.
111	Boeckel, J., of Strasbourg.	March 20, 1895.	F., 24.	Sarcoma.	Recovery.	Recurrence <i>in loco</i> and in lungs and death 5 months later.	Excision of growth with upper two-thirds of humerus 3 months before.	* <i>Gaz. Med. de Strasbourg</i> , 1896, xxv, 73.
112	Jeannel, M., of Toulouse.	March 30, 1895.	M., 17.	Sarcoma.	Recovery.	Recurrence in lungs and death in 5 or 6 months. (Personal communication.)	Tumor of scapula involving shoulder-joint.	* <i>Arch. Med. de Toulouse</i> , 1897, iii, 145.
113	Chavasse, T. F., of Birmingham.	May 7, 1895.	M., 32.	Injury.	Recovery.	Perfectly well in January, 1900, doing field work on a farm. (Personal communication.)	Skin stripped to acromion. Arm torn off below elbow. Operation within an hour of accident.	* <i>Annals of Surgery</i> , 1896, xxiv, 182.
114	Houzel, G., of Boulogne.	July 25, 1895.	F., 33.	Sarcoma.	Recovery.	.....	Sarcoma of humerus, overlapping acromion and clavicle.	* <i>Arch. Prov. de Chir.</i> , 1896, v, 13.
115	Direksen, of Berlin.	Aug. 23, 1895.	M., 34.	Myxosarcoma.	Recovery.	.....	Fluctuating tumor of humerus, size of child's head. Edema of arm. Spontaneous fracture of humerus. Fracture of humerus in January, 1895.	* <i>Berliner klin. Woch.</i> , 1895, 1044.
116	Roth, of Lübeck.	Aug. 27, 1895.	M., 65.	Sarcoma.	Recovery.	Patient remained free from recurrence and died of influenza pneumonia, February, 1899. (Personal communication.)	Sarcoma of upper end of humerus.	* <i>Centralbl. f. Chir.</i> , 1895, 966.
117	Wanach, R., of St. Petersburg.	Sept. 27, 1895.	M., 45.	Sarcoma.	Recovery.	No recurrence 14 months later.	Angioma of shoulder of 10 years' standing. Trauma one year before operation. Sarcoma of scapula size of child's head.	* <i>St. Petersburg Med. Woch.</i> , 1897, xiv, 215.
118	Cavazzani, G., of Paoli.	Oct. 3, 1895.	F., 47.	Sarcoma.	Recovery.	.....	Tumor of pectoral region removed September, 1890. Fourteen recurrences operated in 5 years.	* <i>Rivista Venet. di Sci. Med.</i> , 1896, xxiv, 211.
119	v. Bergmann, E., of Berlin.	Nov. 7, 1895.	.....	Sarcoma.	Recovery.	.....	Sarcoma of upper end of humerus.	* Schultz: <i>loc. cit.</i>
120	Fowler, G. R., of Brooklyn.	Dec. 7, 1895.	M., 55.	Burn.	Death.	.....	Deep burns of arm and forearm 3 weeks before. Death on fourth day from pneumonia.	* <i>Annals of Surgery</i> , 1900, xxxi, 211.
121	Seun, N., of Chicago.	.....	F., 25.	Tuberculosis.	Death.	.....	Shoulder joint previously resected.	Personal communication.
122	Senn, N., of Chicago.	.....	M., 25.	Sarcoma.	Death.	.....	.....	Personal communication.
123	Steele, D. A. K., of Chicago.	.....	F., 3.	Sarcoma.	Recovery.	Recurrence in scar and neck. Excision 5 weeks after primary operation.	Tumor began in scapula 7 weeks before and extended into axilla.	* <i>P. & S. Plexus</i> , Chicago, 1895, i, 19.
124	Hall, G. C., of Allahabad.	Before 1896.	M., Adlt.	Tumor.	Recovery.	.....	Tumor originated in humerus and weighed 33 pounds. Dissection from behind.	* <i>Indian Med. Record</i> , 1896, x, 10.
125	Sapiezhko, K. M., of Kiev.	Jan., 1896.	F., Adlt.	Carcinoma.	Recovery.	.....	Recurrence after excision of breast and axillary glands.	* <i>Wanach, St. Petersburg Med. Woch.</i> , xiv, 216.
126	Cabot, A. T., of Boston.	Feb. 12, 1896.	M., 12.	Sarcoma.	Recovery.	Metastasis and death in about 6 months.	Growth of scapula size of cocoon; followed a blow.	* <i>Boston M. & S. Jour.</i> , 1896, cxxxv, 411.
127	Keen, W. W., of Philadelphia.	March 19, 1896.	M., 49.	Sarcoma.	Death.	.....	Death from anuria 4 days later.	Personal communication.
128	Cameron, H. C., of Glasgow.	March 1896.	M., Adlt.	Sarcoma.	Recovery.	.....	Neuroma afterwards formed in stump of brachial plexus. Growth noticed 13 months.	* <i>Trans. Glasg. Path. & Clin. Soc.</i> , 1897, vi, 95.
129	Graves, S. C., of Grand Rapids.	April 10, 1896.	M., 32.	Tuberculosis.	Recovery.	.....	Excision of head of humerus. August 22, 1895.	* <i>Trans. Mich. Med. Soc.</i> , 1897, 421.
130	Kirmisson, E., of Paris.	April 27, 1896.	M., 10.	Sarcoma.	Recovery.	Recurrence in lungs and death in 7 months.	Very large sarcoma of upper end of humerus.	* <i>Rev. de Chir.</i> , 1898, xviii, 861.
131	Magnüsson, G., of Reykjavik.	April 29, 1896.	M., 21.	Tuberculosis.	Recovery.	.....	.....	Hosp. Tid. Kjöbenhavn, 1897, 4 R, v, 598.
132	Elliot, E. F., of Southampton.	May 31, 1896.	F., 75.	Myxosarcoma.	Recovery.	Four operations for local recurrence and death in 2 years. (Personal communication.)	Disease began over 4 years before in region of scapula. Excision practised 12 times.	* <i>Lancet</i> , 1896, ii, 1304.
133	Stonham, C., of London.	June 2, 1896.	M., 37.	Chondrosarcoma.	Recovery.	Died in March, 1898, with symptoms of internal recurrence. (Personal communication from Mr. E. Percy Paton.)	Growth of scapula, noticed for one year. Tumor about the size of a melon.	* <i>Westminster Hosp. Rep.</i> , London, 1897, x, 156.
134	Posadas, A., of Buenos Ayres.	June 12, 1896.	F., 15 mos.	Sarcoma.	Recovery.	No recurrence 7 months later.	Tumor of humerus larger around than child's thorax. Growth noticed 6 months.	* <i>Rev. de Chir.</i> , 1897, xvii, 805.
135	Bishop, W., of New York.	Aug. 6, 1896.	M., 52.	Necrosis.	Recovery.	.....	Necrosis the result of injury 18 months before.	* <i>Hahnemann. Monthly</i> , 1897, xxxiii, 43.
136	Lenger, of Liege.	Aug. 26, 1896.	M., 34.	Sarcoma.	Recovery.	Recurrence <i>in loco</i> and in other shoulder and death in 11 months.	Sarcoma of humerus.	* <i>Annals Soc. Belge de Chir.</i> , 1899, vii, 125.
137	Lloyd J., of Birmingham.	August, 1896.	F., 52.	Edema of arm.	Death.	.....	Solid edema of whole limb following excision of breast for cancer. Enlarged glands above clavicle. Death on third day.	Personal communication.

TABLE I.—TOTAL EXCISION OF THE SCAPULA WITH SIMULTANEOUS REMOVAL OF THE ARM.—CONTINUED.

NO.	OPERATOR.	DATE OF OPERA- TION.	SEX AND AGE.	CONDITION REQUIRING OPERATION.	RESULT.	SUBSEQUENT HISTORY.	REMARKS.	PLACE OF RECORD.
138	Kölliker, T., of Leipzig.	Oct. 30, 1896.	M., 50.	Sarcoma.	Recovery.	Recurrence in brain and death in about 2 years. (<i>Münch. Med. Woch.</i> , No. 2, 1900.)	Tumor of scapula, size of child's head.	* <i>Münch. med. Woch.</i> , 1897, xliv, 536.
139	Bowker, R. S., of Syd- ney.	Nov. 15 1896.	M., 16.	Sarcoma.	Recovery.	Recurrence in lung and death in 16 months. (Personal communi- cation.)	Upper arm and shoulder involved. History of repeated blows. Growth noticed 4 months.	* <i>Australas. Med. Gaz.</i> , 1897, xvi, 13.
140	Schwartz.	1896.	F., 20.	Chondrofibroma.	Recovery.	Known to remain well for many months.	Enormous growth of upper end of humerus of 9 years' duration.	<i>Bull. et Mem. Soc. Chir. Par.</i> , 1896, xxii, 830.
141	Marsh, F., of Birming- ham.	Feb. 1, 1897.	F., 10.	Sarcoma.	Recovery.	Recurrence in lung and death in 7 months.	No previous injury. Growth began in head of humerus; patho- logical fracture.	<i>Birmingham Med. Rev.</i> , April, 1897, 37.
142	Barling, G., of Birming- ham.	Feb. 8, 1897.	M., 53.	Sarcoma.	Recovery.	Multiple recurrences. Six months later, patient evidently had but a short time to live.	Fracture 3½ years before. Enlargement began 2½ years before in upper arm and tumor had become enormous.	* <i>Trans. Lond. Clin. Soc.</i> , 1898, xxxi.
143	Barling, G., of Birming- ham.	Feb. 19, 1897.	M., 37.	Sarcoma.	Recovery.	No recurrence in January, 1900, and in robust health. (Personal communication.)	Pain in upper arm for 8 months; swelling for 2 months. Periosteal growth of humerus and shoulder-joint.	* <i>Ibid.</i>
144	Berger P., of Paris.	Mar. 10, 1897.	M., 28.	Myxochondroma.	Recovery.	No recurrence January 21, 1900. (Personal communication.)	Growth began in medulla of humerus. Enlargement noticed 2½ months. No traumatism. Tumor size of turkey egg.	* <i>Le Bull. Med.</i> , Paris, 1897, xi, 549.
145	Quenu, of Paris.	Mar. 19, 1897.	M., 67.	Sarcoma.	Recovery.	Death 4 months later. (Berger.)	Sarcoma of humerus. Axillary glands enlarged.	* <i>Bull. Soc. Anat. Par.</i> , 1897, lxii, 287.
146	Djem l Pachta, of Con- stantinople.	Mar. 21, 1897.	M., 60.	Sarcoma.	Recovery.	Recurrence in lungs and death in 2 months.	Tumor of upper third of humerus.	* <i>Gaz. Med. d'Orient</i> , 1898, xlii, 319.
147	Häckel, of Stettin.	April 30, 1897.	F., 28.	Sarcoma.	Recovery.	No recurrence 20 months later.	Pain and swelling of shoulder began in August, 1896. Spontane- ous fracture in February, 1897. Upper part of humerus destroyed by growth.	* Köntzner: <i>Deutsche Zeit. f. Chir.</i> , 1899, 594.
148	Hahn, E., of Berlin.	May 31, 1897.	M., 20.	Sarcoma.	Recovery.	.....	Growth removed from upper end of humerus March 7. Scapula and soft parts now involved.	* <i>Deutsch. med. Woch.</i> , 1898, xxiv, 109.
149	Häckel, of Stettin.	July 28, 1897.	M., 41.	Tuberculosis.	Recovery.	.....	Shoulder-joint, chest-wall, and flexor tendons of forearm affected. Conservative operation done one week before.	* Köntzner: <i>loc. cit.</i>
150	Djemil Pachta, of Con- stantinople.	Sept. 7, 1897.	M., 50.	Sarcoma.	Recovery.	No recurrence 3 months later.	Tumor in deltoid region size of adult head.	* <i>Gaz. Med. d'Orient</i> , 1898, xlii, 319.
151	Deut, C. T., of London.	Oct. 22, 1897.	F., 56.	Carcinoma.	Recovery.	Secondary visceral growths in 5 months.	Recurrent carcinoma of axilla. Breast removed 3 years before. Arm swollen; pain severe.	<i>Brit. Med. Jour.</i> , 1898, i, 690.
152	Häckel, of Stettin.	Nov. 12, 1897.	F., 63.	Sarcoma.	Death.	.....	Pain and swelling of shoulder for 3 months. Tumor began in scapula and perforated shoulder joint. Autopsy showed involve- ment of liver. Death in 3 hours.	* Köntzner: <i>loc. cit.</i>
153	Rochet, V., of Lyons.	Dec. 10, 1897.	M., 28.	Sarcoma.	Recovery.	.....	Sarcoma of humerus.	<i>La Prov. Med.</i> , 1898, xlii, 77.
154	Dejardin, F., of Liege.	Jan. 28, 1898.	M., 16.	Injury.	Recovery.	.....	Arm almost torn off by railroad accident. Clavicle and scapula fractured.	<i>Annals Soc. Belge de Chir.</i> , 1898, vi, 55.
155	Porter, C. B., of Boston.	Jan. 29, 1898.	M., Ad'l't.	Malignant growth.	Recovery.	.....	Disease began in thumb 19 years before. Forearm previously am- putated. Pectoral muscles also removed.	* <i>Boston Med. and Surg. Jour.</i> , 1898, cxxxix, 389.
156	Boyd, S., of London.	Mar. 19, 1898.	M., 26.	Malignant growth.	Recovery.	Recurrence in liver and death in 2½ months.	Growth in axilla and scapular muscles. Duration 3 months. Exploratory operation February 21.	Personal communication.
157	Robson, A. W. M., of Leeds.	March 23, 1898.	M., 31.	Tuberculosis.	Recovery.	.....	Tuberculosis of body of scapula, shoulder and elbow; osteomye- litis of humerus. Frequently operated on during 3 years before.	<i>Lancet</i> , 1899, i, 273.
158	Chavasse, T. F., of Birm- ingham.	March 24, 1898.	M., 19.	Painful stump.	Recovery.	.....	In 1896, arm amputated at upper third for railway crush, which fractured clavicle and scapula, and caused sloughing of axillary soft parts. Result, a painful cicatricial stump, bound down to chest.	Personal communication.
159	Lenger, of Liege.	March 25, 1898.	M., 33.	Sarcoma.	Recovery.	Recurrence <i>in loco</i> and death in 11 months.	Sarcoma of head of humerus.	<i>Ann. Soc. Belge de Chir.</i> , 1899, vii, 125.
160	Dollinger, G., of Buda- pest.	May 11, 1898.	M., 17.	Sarcoma.	Recovery.	Secondary operations at scar in September and January following.	Medullary growth of scapula.	Orvosi hetilap. szen., 1899, xxvi, 274.
161	Keen, W. W., of Phila- delphia.	May 21, 1898.	F., 15.	Sarcoma.	Recovery.	Recurrence and death in 10 months.	.....	Personal communication.
162	Robson, A. W. M., of Leeds.	June 19, 1898.	M., 38.	Sarcoma.	Recovery.	Death, February 18, 1899, from some other cause quite independ- ent of the disease for which operation had been done. (Per- sonal communication.)	Growth began on hand in 1895. Excised from hand three times and from axilla once. Present growth involved axillary vessels and neck of scapula.	<i>Lancet</i> , 1899, i, 273.
163	Keen, W. W., of Phila- delphia.	July 21, 1898.	M., 39.	Sarcoma.	Recovery.	Fourteen months later was thought to have an internal recurrence.	.....	Personal communication.
164	Fowler, R. S., of Brook- lyn.	July 23, 1898.	F., 52.	Sarcoma.	Recovery.	No recurrence more than one year later.	No history of injury. Tumor began 18 months before, above elbow. Growth previously excised. Triceps involved.	* <i>Annals of Surgery</i> , 1900, xxxi, 54.
165	Jeannel, M., of Toulouse.	Oct. 13, 1898.	M., 30.	Sarcoma.	Recovery.	Recurrence in 2 months.	Growth began in humerus 1 year before.	<i>Archiv. Med. Par.</i> , 1899, 115.
166	Häckel, of Stettin.	Oct. 25, 1898.	M., 50.	Sarcoma.	Recovery.	Recurrence in scar and in lung, and death in 5 months.	Tumor of deltoid axilla and breast; bones not involved.	Köntzner: <i>loc. cit.</i>
167	Sonnenberg, of Berlin.	.....	.....	Sarcoma.	Recovery.	.....	Growth of humerus.	<i>Centralbl. f. Chir.</i> , 1899, No. 9.

168	Häckel, of Stettin.	Jan. 1899.	5,	F., 12.	Sarcoma.	Recovery.	Recurrence in chest and death in 8 months.	Injury to upper arm by being thrown down 6 weeks before. Tumor of upper arm, size of child's head.	* Köntzer: <i>loc. cit.</i>
169	Kölliker, T., of Leipzig.	Feb. 1899.	9,	F., 56.	Sarcoma.	Recovery.	No recurrence 6 months later.	Tumor noticed 1 month; size of apple; grew from spine of scapula in supraspinous fossa, involving joint of shoulder. Axillary glands involved.	* <i>Münch. med. Woch.</i> , No. 2, 1900.
170	Le Conte, R. G., of Philadelphia.	April 1899.	12,	M., 49.	Malignant growth.	Recovery.	.....	Small growth appeared on shoulder 3½ years before. Growth with acromion and part of clavicle removed about 2 years before.	* <i>Annals of Surg.</i> , 1899, xxx, 260.
171	Fowler, G. R., of Brooklyn.	June 1899.	19,	M., 75.	Carcinoma.	Death.	.....	Tumor large and fungoid. Entire clavicle removed.	* <i>Annals of Surg.</i> , 1900, xxxi, 57.
172	Buchanan, J. J., of Pittsburgh.	Aug. 1899.	7,	M., 69.	Sarcoma.	Recovery.	No recurrence in April, 1900.	No history of injury. Pain in elbow and shoulder for 1 year. Swelling for 3 months. Excision of growth 6 days before operation.	In body of present paper.
173	Buchanan, J. J., of Pittsburgh.	Sept. 1899.	19,	M., 42.	Sarcoma.	Recovery.	Recurrence in lungs and death in 5 months.	Tumor originated in upper arm. Four previous operations for excision of growth.	<i>Ibid.</i>
174	Verrall, T. J.	.....	.....	F., 39.	Sarcoma.	Recovery.	No recurrence 10 months later.	Growth noticed about 3 years before in upper arm. Seven operations for excision.	<i>Lancet</i> , February 12, 1900.
175	Hamilton, W. D., of Columbus.	Nov. 1899.	15,	M., 32.	Sarcoma.	Recovery.	.....	Three injuries to shoulder in previous year. Head of humerus, glenoid process and scapular muscles invaded. Entire clavicle removed by choice.	* PHILADELPHIA MEDICAL JOURNAL, 1900, v, 464.
176	Cushing, H., of Baltimore.	Dec. 1899.	26,	F., 41.	Sarcoma.	Recovery.	.....	Large growth involving vessels and nerves of axilla. Pectoral muscles also removed.	Personal communication.
177	Ziegler.	.....	.....	.....	Gangrene of arm.	Recovery.	.....	Laceration of axillary artery.	<i>Deutsche med. Woch.</i> , 1899, March 16.
178	Cushing, H., of Baltimore.	Jan. 1900.	2,	M., 32.	Sarcoma.	Recovery.	.....	Large growth of upper end of humerus, involving head of scapula. Pathological fracture.	Personal communication.
179	van Iterson, J. E., of Leyden.	Jan. 1900.	29,	M., 16.	Sarcoma.	Recovery.	.....	Sarcoma of humerus, infiltrating soft parts of shoulder.	Personal communication.
180	Fowler, G. R., of Brooklyn.	Jan., 1900.	.....	.....	Progressive phlegmon.	Death.	.....	Extensive streptococcus infection of entire arm and shoulder region with septopyemia.	Personal communication.
181	Fowler, G. R., of Brooklyn.	March 1900.	2,	M., 19.	Sarcoma.	Recovery.	.....	.....	<i>Ibid.</i>



Dr. Buchanan's Case I. (6th day.)

SUMMARY OF TABLE I.

INTERSCAPULOTHORACIC AMPUTATIONS.

For malignant growths	131
For semi-malignant and doubtful growths	10
For injury	24
For necrosis	4
For tuberculosis	5
For burn	2
For phlegmonous inflammation	2
For cicatricial stump	1
For edema of arm	1
For gangrene of arm	1
Total.....	181

Malignant growths: 2, 3, 4, 11, 12, 13, 14, 15, 20, 22, 23, 26, 27, 28, 29, 30, 32, 33, 34, 38, 39, 40, 41, 42, 45, 46, 47, 49, 51, 52, 54, 55, 58, 60, 61, 63, 64, 65, 66, 68, 69, 70, 71, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 95, 96, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 114, 115, 116, 117, 118, 119, 122, 123, 125, 126, 127, 128, 130, 132, 133, 134, 136, 138, 139, 141, 142, 143, 145, 146, 147, 148, 150, 151, 152, 153, 155, 156, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 178, 179, 181.

Semi malignant and doubtful growths: 17, 19, 31, 35, 50, 67, 98, 124, 140, 144.

Injury: 1, 5, 6, 7, 8, 9, 10, 16, 18, 21, 24, 37, 43, 44, 48, 53, 56, 57, 59, 62, 72, 73, 113, 154.

Necrosis: 25, 36, 97, 135.

Tuberculosis: 121, 129, 131, 149, 157.

Burn: 74, 120.

Phlegmonous inflammation: 94, 180.

Cicatricial stump: 158.

Edema of arm: 137.

Gangrene of arm: 177.

SEX OF PATIENTS AMPUTATED FOR NEOPLASM.

Males	92
Females	38
Not stated	11
Total.....	141

CLASSIFICATION OF GROWTHS.

Sarcoma	112
Carcinoma	7
"Malignant growths"	12
Enchondroma	8
Not stated	2
Total.....	141

OPERATIVE MORTALITY.

For all cases, 29 deaths in 181 operations	16%
For neoplasm, 17 deaths in 141 operations	12%
For neoplasm, before antiseptis (1881-2) 7 deaths in 17 operations	41%
For neoplasm, since antiseptis (1881-2) 10 deaths in 124 operations	8%
For injury, 7 deaths in 24 operations	29%
For necrosis, 4 cases	No mortality.
For tuberculosis, 1 death in 5 operations	20%
For burn, 1 death in 2 operations	50%
For phlegmon, 2 fatal cases	100%
For cicatricial stump, 1 case	No mortality.
For edema of arm, 1 fatal case	100%
For gangrene of arm, 1 case	No mortality.

REMOTE RESULTS OF INTERSCAPULOTHORACIC AMPUTATION
FOR NEOPLASM.

Malignant Growths.

Death from operation	16
Undetermined cases operated less than 3 years ago	16
Cases without record beyond 3 years	24
Death from intercurrent or unknown causes	5
Later recurrence, but final result not reported	8
Death from recurrence	49
Free from recurrence for 3 years or more	13

Total..... 131

Of these 70 cases (8+49+13), in which the remote result is known, 13 remained free from recurrence for 3 years or more, *i. e.*, 18.6% cured beyond the 3-year limit.

MALIGNANT GROWTHS.

Died from operation : 14, 15, 22, 26, 28, 29, 33, 40, 63, 66, 70, 87, 122, 127, 152, 171.

Undetermined cases operated less than 3 years ago : 147, 148, 150, 153, 155, 164, 167, 169, 170, 172, 174, 175, 176, 178, 179, 181.

Cases without record beyond 3 years : 11, 13, 23, 39, 49, 58, 60, 65, 78, 81, 83, 84, 91, 96, 99, 101, 108, 115, 117, 118, 119, 124, 128, 134.

Died from intercurrent or unknown causes : 38, 41, 75, 95, 162.

Later recurrence, but final result not reported : 104, 107, 123, 142, 151, 160, 163, 165.

Died from recurrence : 2, 3, 4, 20, 27, 30, 32, 34, 42, 45, 46, 47, 51, 52, 54, 55, 61, 64, 68, 69, 71, 76, 80, 82, 85, 88, 89, 90, 93, 106, 109, 111, 112, 126, 130, 132, 133, 136, 138, 139, 141, 145, 146, 156, 159, 161, 166, 168, 173.

Free from recurrence for 3 years or more : 12, 77, 79, 86, 92, 100, 102, 103, 105, 110, 114, 116, 143.

ENCHONDROMATA.

Death from operation	1
Cases without record beyond 3 years	3
Free from recurrence for 3 years or more	4

Of these 4 cases in which the subsequent history is known, *all were cured beyond the 3 year limit.*

Enchondromata : 17, 31, 35, 50, 67, 98, 140, 144.

INTERSCAPULOTHORACIC AMPUTATIONS FOR MORBID GROWTH,
IN WHICH IT WOULD APPEAR TO HAVE BEEN POSSIBLE TO
EXTIRPATE ALL THE TISSUES EVIDENTLY DISEASED BY DIS-
ARTICULATING AT THE SHOULDER-JOINT :

27, 31, 41, 58, 60, 61, 64, 67, 79, 84, 91, 95, 96, 103, 104, 115, 116, 119, 130, 134, 136, 140, 144, 145, 146, 147, 153, 159, 164, 165, 167, 168, 172, 173. *All of these 34 cases recovered.*

Cases of enchondroma free from recurrence for 3 years or more	3
Cases of enchondroma without record beyond 3 years ...	1
Cases of sarcoma without record beyond 3 years	13
Cases of sarcoma dead later from unknown causes	2
Cases of sarcoma with later recurrence, but final result not reported	2
Cases of sarcoma dead from recurrence	10
Cases of sarcoma free from recurrence for 3 years or more	3

34

Of the 15 cases of sarcoma (2+10+3) in which the remote result is known, 3 remained free from recurrence for 3 years or more, *i. e.*, 20% cured beyond the 3-year limit.



Dr. Buchanan's Case II. Taken on seventh day
after operation.

SUMMARY OF CASES IN TABLE II.

Malignant growth	23
Enchondroma	4
Infective bone-diseases	4
	31

Immediate mortality : 4 cases in 31, or 13%.

Immediate mortality in cases of neoplasm : 4 cases in 27, or 15%.

REMOTE RESULTS IN CASES OF NEOPLASM.

Malignant Cases.

Died from operation	3
Died from pneumonia (?) in several weeks	1
No record beyond one year	3
Died from recurrence	15
Died from typhus 6 years later	1
	23

Of these 16 cases, recovered from operation and with known history, *one** was known to remain free from recurrence beyond 3 years, *i. e.*, 6.25% of ultimate cures.

Enchondroma.

Of 4 cases of enchondroma, one patient died after operation, one died from recurrence and two remained cured beyond 3 years.

*This is the case of Busch, of Bonn, operated in 1861. Owing to my inability to consult the original report of this case, I am uncertain whether this was a case of sarcoma, verified by microscopic examination, or merely a "fleshy tumor," to all which at that time the name "sarcoma" was applied by many writers.

TABLE II.—TOTAL EXCISION OF THE SCAPULA SUBSEQUENT TO DISARTICULATION AT THE SHOULDER JOINT.

NO.	OPERATOR.	DATE OF OPERATION.	AGE AND SEX.	CONDITION REQUIRING OPERATION.	RESULT.	SUBSEQUENT HISTORY.	REMARKS.	PLACE OF RECORD.
1	Mussey, R. D., of Hanover, N. H.	Sept. 28, 1837.	M., 45.	Enchondroma.	Recovery.	No recurrence 30 years later.	Amputation of part of hand 19 years before. Disarticulation at shoulder 6 years before. Clavicle also removed.	* <i>Am. Jour. Med. Sci.</i> , 1837-8, xxi, 390.
2	Pignaud, of Strasbourg.	May 1843.	M., 51.	Osteochondroma.	Recovery.	No recurrence 3 years later.	Disarticulation at shoulder 8 months before.	* <i>Extr. du Scap. en Tol.</i> , Strasb., 1850.
3	Fergusson, W., of Edinburgh.	Feb. 1847.	M., 32.	Caries.	Recovery.	.....	Disarticulation at shoulder 7 years before.	* <i>Med. Times</i> , London, 1846-7, xv, 392.
4	Soupart, F., of Ghent.	April 21, 1857.	M., 40.	Sarcoma.	Recovery.	Recurrence and death in 82 days.	Acromion, glenoid, and lower border had been removed with the arm.	* <i>Ann. Soc. de Med. de Gand.</i> , 1858, xxxvi, 57.
5	v. Langenbeck, B., of Berlin.	April 14, 1860.	M., 23.	Fibrochondroma.	Recovery.	Recurrence in lungs and death in 18 months.	Disarticulation at shoulder 5 months before.	* <i>Deutsche Klin.</i> , Berlin, 1860, 217.
6	Busch, W., of Bonn.	May 1861.	F., 16.	Sarcoma.	Recovery.	Died of typhus 6 years later. (v. Adelnann)	Primary growth in humerus.	* <i>Allgem. Med. Centr. Ztg.</i> , 1861, 560.
7	Deroubaux, of Brussels.	Before 1864.	.....	Malignant growth.	Recovery.	Recurrence in lungs and death in several months.	Resection of head of humerus; removal of arm.	* <i>Gaz. Med. de Par.</i> , 1866, 217.
8	Buck, G., of New York.	1864.	Male, adult.	Malignant growth.	Recovery.	Recurrence and death in a few months.		* <i>N. Y. Med. Jour.</i> , 1869, viii, 410.
9	Krakowizer, E., of New York.	1868.	.....	Enchondroma.	Death.	.....	Disarticulation at shoulder 5 years before. Death 7 days after operation.	* <i>N. Y. Med. Jour.</i> , 1869, viii, 434.
10	Stimson, D. M., of New York.	Oct. 20, 1872.	M., 44.	Sarcoma.	Recovery.	Recurrence and death in 16 months. (Personal communication.)		* <i>Med. Record</i> , 1872, vii, 578.
11	Jeaffreson, C. S., of New-Castle-on-Tyne.	Dec. 1873.	F., 20.	Encephaloid.	Recovery.	Rapid recurrence and death.	Rapid growth of upper end of humerus. Disarticulation at shoulder 4 months before.	* <i>Lancet</i> , 1874, i, 759.
12	d'Ambrosio, A.	Nov. 14, 1879.	F., 16.	Myxosarcoma.	Death.	.....	Tumor present 6 months before first operation, size of child's head.	* <i>Movimento Napoli</i> , 1880, xii, 321.
13	Wood, J.	May, 1881.	F., 17.	Sarcoma.	Death.	.....	Arm removed 11 months before. Death from infection in 18 days. Growth of humerus 3 months before first operation. Disarticulation 5 months before. Recurrence in scapula. Death same evening from shock.	* <i>Lancet</i> , 1881, ii, 145.
14	Conklin, W. J., of Dayton.	Aug. 30, 1882.	F., 37.	Sarcoma.	Recovery.	Recurrence in lung and death in 2 years. (Personal communication.)	Original growth began just below insertion of deltoid 6 years before. Disarticulation 6 months before.	* <i>Am. Jour. Med. Sci.</i> , 1883, elxix, 102.
15	Fornari, F.	Oct. 1882.	M., 21.	Necrosis.	Recovery.	.....	Shot-wound caused necrosis. Scapula removed the day after disarticulation at shoulder.	* <i>Raceog. Med.</i> , 1883, Apr., 358.
16	Swain, P., of Plymouth.	April 24, 1886.	M., 18.	Sarcoma.	Recovery.	Death from pneumonia several weeks after convalescence.	Disarticulation 2 months before. Recurrence in scapula in 1 month.	* <i>Lancet</i> , 1887, i, 20.
17	Poucet, of Paris.	April 23, 1887.	F., 26.	Caries.	Recovery.	.....	Resection of head of humerus in 1885. Disarticulation at shoulder in 1886.	* <i>Rev. de Chir.</i> , 1887, 996.
18	Watts, H., of London.	May 1888.	M., 14.	Sarcoma.	Recovery.	Local and general recurrence and death in 4 months.	Growth began in humerus. Disarticulation 7 weeks before.	* <i>St. Barthol. Hosp. Rep.</i> , 1888, 207.
19	Watts, H., of London.	June 8, 1888.	M., 31.	Sarcoma.	Recovery.	Recurrence in other scapula, clavicle and femur, and death.	Growth began in humerus. Primary operation 3 months before.	* <i>Ibid.</i>
20	Lauge, F., of New York.	Oct. 1888.	F., 34.	Sarcoma.	Recovery.	Recurrence in chest and death in 6 or 8 months. (Personal communication.)	Recurrence in scapula.	* <i>N. Y. Med. Jour.</i> , 1889, xlix, 215.
21	v. Eiselsberg, F., of Vienna.	Aug. 26, 1889.	M., 40.	Chondrosarcoma.	Recovery.	No recurrence 6 months later.	Tumor twice the size of man's head. Disarticulation at shoulder 2 years before.	* <i>Wien. klin. Woch.</i> , 1890, No. 13, 254.
22	Jessett, F. B., of London.	1889.	M., 22.	Sarcoma.	Recovery.	No recurrence 12 months later. Patient then lost sight of. (Personal communication.)	Disarticulation 4 months before.	* <i>Lancet</i> , 1890, i, 131.
23	Rosenberger, of Würzburg.	Dec. 11, 1890.	F., 39.	Sarcoma.	Recovery.	Recurrence and death in 22 months.	.....	* Simon: <i>Tol. Exst. Scap.</i> , Würzb., 1894.
24	v. Bergmann, E., of Berlin.	Before 1892.	.....	Sarcoma.	Recovery.	Recurrence and death.	.....	* Nasse: <i>Samml. klin. Vortr.</i> , 86, 1893.
25	Clavasse, T. F., of Birmingham.	Feb. 16, 1892.	M., 52.	Sarcoma.	Death.			* <i>Lancet</i> , 1892, ii, 471.
26	Jordan, of Heidelberg.	Aug. 15, 1893.	M., 20.	Chondrosarcoma.	Recovery.	Recurrence <i>in situ</i> and lungs 9 months later.	Disarticulation at shoulder 5 months before.	* <i>Beitr. zur klin. Chir.</i> , 1897, xviii, 769.
27	Czerny, J., of Heidelberg.	March 8, 1897.	M., 23.	Sarcoma.	Recovery.	Recurrence in 2 months and death soon after.	Small tumor removed from deltoid 10 months before. Disarticulation 3 months before.	* <i>Ibid.</i>
28	Quenu, of Paris.	1897.	F., 22.	Sarcoma.	Recovery.	Generalization and death in 5 or 6 months.	Young girl; sarcoma of humerus. Disarticulation 1 year before.	Personal communication.
29	Marten, R. H., of Adelaide.	Aug. 23, 1897.	F., 26.	Sarcoma.	Recovery.	Recurrence in chest and death in 1 year.	Sarcoma originated in humerus. Arm removed one year before. Pregnant 6 months at time of death. One of patient's children lost eye from sarcoma.	* <i>Intercolonial Med. Jour.</i> , 1898, iii, 482.
30	van Iterson, J. E., of Leyden.	April 14, 1899.	M., 45.	Sarcoma.	Recovery.	Quite well on Feb. 20, 1900.	Disarticulation 3 months before for sarcoma of humerus.	Personal communication.
31	Fowler, G. R., of Brooklyn.	Dec. 5, 1899.	M., 39.	Osteomyelitis.	Recovery.	.....	Primary condition an osteomyelitis of humerus.	* <i>Annals of Surg.</i> , 1900, xxxi, 207.

[To be concluded.]

A CASE OF PRIMARY ADENOCARCINOMA OF THE GALLBLADDER WITH SECONDARIES IN BOTH ADRENALS, MELANOSIS OF SKIN (ADDISON'S DISEASE?), VITILIGO, AND HYPERTROPHY OF THE PANCREAS.

BY ALDRED SCOTT WARTHIN, M.D., PH.D.,
of Ann Arbor, Mich.

Assistant Professor in Pathology, University of Michigan.

THE report of this case of primary adenocarcinoma of the gallbladder is of interest, not only because of the relative rarity of this condition, but also for the unusual combination of other pathologic changes which it presents. One of these, vitiligo, is a disease which has been studied histologically but rarely, while hypertrophy of the pancreas is a condition almost unknown in the literature of the pathology of this organ.

History of the Case.—Mr. J. P. B., aged 45, was admitted to the University Hospital on October 6, 1899. At the time of admission he exhibited marked jaundice, and was on this account assigned to Dr. Dock's clinic.

His family history was negative. He was unmarried and an ice dealer by occupation. No history of previous illness was given. He had been a hard drinker, but denied venereal disease.

The present illness was stated to have begun 15 weeks before the time of admission. He had first noticed that his skin was becoming yellow, and very soon after this he began to have pains under his left shoulder-blade. The yellow color of his skin gradually deepened. Two weeks after the appearance of the first symptoms the backs of his hands began to turn brown, appearing as if deeply tanned; the brownish pigmentation extended to the finger-tips. At the same time a brownish coloration appeared over face and neck. Later, white patches began to appear over the fingers and backs of hands. These patches became paler, while the surrounding pigmented skin appeared to grow darker.¹

There was constipation from the beginning; the stools at first were normal in color, but gradually became pale clay-colored. The urine was dark from the first. His appetite had been poor throughout; he had vomited but twice during the entire course of his illness. He had lost about 50 pounds in weight. There had been no pain in the liver region, but that which was felt under the left shoulder had at times extended to the right side. No history of colic or of the passing of gallstones could be obtained. Two weeks before admission he had been delirious at times.

The physical examination made on the day after entrance is condensed as follows: The patient appears very ill, apathetic; lies in passive dorsal position; sleeps with mouth open. His mind is very dull, and speech thick. (Has been taking codein.)

Height, 5 feet 7 inches; fairly well built. Musculature medium; muscles soft and flabby. There is very small amount of panniculus. The skin is dry and inelastic. It is of a dark saffron color over the trunk and upper portions of the extremities. The hands and wrists are dark brown with irregular patches of leukoderma over the fingers and backs of hands. The lower portion of the face is a very dark brown with yellowish tinge. Over the abdomen are irregular brownish-green patches (blister-scars). The sclerae are very dark yellow. The tongue is dry and cracked, and the gums are swollen. Ankles are puffed, but pit very slightly on pressure.

The liver-dulness begins in the fourth intercostal space in the right parasternal line, and is at the same height in the nipple and axillary lines. It extends to the left to within half an inch of the left nipple line. Traube's space is tympanitic. In the right nipple line the lower border of liver-dulness is 3½ inches below the edge of the ribs; in the right parasternal line 2½ inches below; and in the middle line it reaches just to the tip of the ensiform. The liver cannot be felt.

The splenic dulness is not enlarged. The spleen is not palpable.

The abdomen is distended about ½ inch above the level of the ribs. In the horizontal position there is dulness as high up as the parasternal lines, where a tympanitic sound is obtained. There is no fluctuation.

The examination of heart is negative. The pulse is 88, small, of low tension, and regular.

Otherwise the physical examination is negative.

Urine.—(24 hours), 500 cc., dark brown in color with yellow foam; specific gravity, 1.014. All tests for albumin negative. Good bile-pigment reaction with nitric acid. Moderate test for indican. Acetone test negative. The diazo test gave a reddish ring, brown liquid, and dirty foam. No reduction of Fehling's. The sediment contained an excess of leukocytes and a few cylindroids.

Blood.—Is of a dark color, flows slowly. The red blood-cells are 4,800,000, leukocytes 10,200, hemoglobin 85%.

Sputum.—Small amount of thin watery brownish sputum. Negative.

Stools.—Small in amount, not formed, colorless, and foul.

The weakness and apathy of the patient rapidly increased during the first few days after admission. He had occasional attacks of delirium and in one of these wandered from his bed. Albumin and bile-stained casts appeared in his urine on the third day after entrance and increased constantly in amount and numbers until the day of death. The physical signs remained about the same; the jaundice did not change. The abdomen became more distended. No tumor was ever felt. The edema of lower extremities gradually increased. The temperature ranged from normal to 100°, 2 days before death falling to the range of 96°–94°. The pulse at entrance was 80 to 90, once reaching 102, but gradually decreased to 65, where it remained until 3 hours before death when it went to 101. Became impalpable an hour before death. The respiratory rate was usually 24–28, but on the day of death was 15 and very labored.

On the morning of October 15 the patient was unconscious, with labored breathing and impalpable pulse. Death occurred at 11 35 A. M.

A clinical diagnosis of obstructive jaundice (malignant?) was given. The autopsy was performed by me at 8 P. M. of the same day. The postmortem findings are taken in a condensed form from the laboratory protocol.

Autopsy Protocol.—Body below average height, fairly well built. Fair amount of panniculus. The muscles are small. Rigor mortis is present throughout. The body heat is absent. There is moderate edema over the lower extremities, slight over the thorax. The skin is icteric throughout, of a brownish-yellow to a dark grayish-green over the trunk, grayish-green over the upper part of the face, dark brownish-green over chin and neck. The hands, wrists, and lower half of forearms are irregularly pigmented, dark-brown patches alternating with lighter ones. The pigmentation appears darkest around the light areas, which are pale grayish-white in color and are smoother and more translucent than the surrounding pigmented skin. The light areas are largest and most numerous over the dorsum of the first and second phalanges. The skin over the flexor surfaces and genitals is much more heavily pigmented than over the remaining portions of the body. Over the thorax there are blister-marks showing a deep brownish green pigmentation. There is desquamation of the epidermis over these areas. The sclerae are dark lemon-yellow. Throughout the skin, especially over the thighs, there are numerous punctate ecchymoses. There is moderate hypostasis over the back. The mucous membrane of the mouth is grayish-brown. The examination of the teeth is negative. There is a very offensive odor from mouth and nose.

The examination of the brain is negative.

The spinal cord not examined.

The diaphragm on the right reaches to the lower border of the fourth rib; on the left to the lower border of the fifth rib.

Heart.—The pericardial sac contains about 50 cc. of brownish fluid. There is a small 'soldier's spot' on the anterior wall of the left ventricle. The auricles are much dilated and filled with white clots. The mitral and aortic flaps are slightly thickened. Otherwise the examination of the heart is negative.

Lungs.—There are about 200 cc. of dark brownish fluid in the

¹ Dr. Dock at first thought that the pigmentation might be the intensification of a previously-acquired tan which is so frequently seen in severe icterus. Careful inquiry showed that the patient had not been tanned, and that the pigmentation was of recent development. This is also borne out by the microscopical appearances.

left pleural cavity. The left pleurae are free, with the exception of a few adhesions at base. The right pleurae are adherent throughout. No fluid in the right pleural cavity. The left lung is voluminous. It is heavily pigmented. The lower lobe shows marked hypostasis. The pleural surface is clear, shining, and smooth. Everywhere throughout the surface are small, flattened, grayish nodules, varying in size from a pinhead to a bean. They are firm and show no umbilication. They are subpleural, have no hyperemic zone, but each little nodule is outlined by a narrow ring of anthracosis. On section the upper lobe is grayish-pink, the lower one dark red. On slight pressure an abundant foamy fluid exudes. All through the parenchyma are scattered small grayish nodules. They are most abundant in the lower lobe. The right lung is covered with stringy adhesions, and the pleura is thickened throughout. Beneath the pleura are numerous small nodules resembling those in the pleura of the left lung. The nodules are not so numerous but are larger, one as large as a five-cent piece.

The bronchi, trachea, and esophagus are filled with a foul-smelling brownish-red fluid. The thyroid gland is enlarged and cystic. The examination of the thoracic duct is negative.

Abdominal Cavity.—This contains about $1\frac{1}{2}$ liters of dark brown bile-stained fluid which has no odor. The omentum is moderately rich in fat. It is rolled up to the level of the umbilicus, and is filled with tumor nodules which on section are grayish in color and of a firm consistency. It is adherent to the anterior abdominal wall and to the liver. These adhesions are about as thick as a thumb and contain tumor nodules.

Liver.—The liver is adherent by numerous adhesions to the omentum, stomach, colon, and along its lower edge to the anterior abdominal wall. It is enlarged, its anteroposterior diameter being greatly increased, so that its shape is almost round. It weighs about 5 pounds (The exact weight could not be determined as the specimen was prepared for museum purposes with other organs attached.) Its capsule is thickened and in many places covered with stringy adhesions. Through the capsule can be seen many nodules of new growth, varying in size from a pea to a quarter of a dollar. The large nodules show distinct umbilication, and possess hyperemic borders. The small ones are grayish or creamy in color. On section the liver-parenchyma is bronze-green; scattered through it are many grayish-yellow tumor nodules, the largest about the size of a dollar. The cut surface of these nodules is almost homogeneous, of fairly firm consistency, but yields an abundant exudate on scraping. Some of the largest nodules contain colloid areas. The majority of the nodules are in the branches of Glisson's capsule, around the portal veins. The cut surface of the liver is dull-shining or cloudy. The lobules are increased in size, their outlines are distinct. The center of the lobules is dark green or bronze, the periphery a pale grayish green. The larger bile ducts are filled with thick bile. The blood-vessels are only moderately filled with blood.

Gallbladder.—The gallbladder can not be seen, as the omentum and colon are adherent to the edge of the liver at its site. On separating the omentum by tearing the adhesions which are not very firm the colon is found to cover up the site of the gallbladder. The colon is next opened longitudinally. At the location of the adhesions between the colon and the liver there is in the mucosa of the colon a firm reddish elevation about the size of a five-cent piece. The mucosa over the elevation appears intact. The colon is then carefully separated from the liver by tearing the adhesions which are not very firm. The gallbladder is then found to be greatly retracted within the liver-substance, and is surrounded by a nodular mass of new growth. A vertical incision is now made through the liver and gallbladder. The latter is found to consist of a cavity about the size of a pigeon's egg, containing a thick, dark reddish-brown fluid. The wall of the cavity is thick, firm, grayish-yellow in color, and passes insensibly into the nodular mass of new growth surrounding it. This new growth extends upwards, tree-like, along the bile-vessels into the liver. The inner surface of the cavity is polypoid. No distinct bladder-wall can be made out, its structure being replaced by a diffuse new growth. Just above the site of the gallbladder and directly continuous with the wall of its cavity is a mass of growth of the size of a silver dollar. It is firm, shows abundant stroma, and contains small colloid areas. On scraping a rich cellular

exudate is obtained. The cystic duct is patent for about one inch but has no communications. The common duct is surrounded by a mass of adhesions containing nodules of new growth. In this tissue near the gallbladder are two small irregular calculi of bile-pigment firmly encysted in the connective tissue. The lumen of the common duct is completely obliterated. The papilla is enlarged, firm; there is no opening into the common duct, but the pancreatic duct is patent. The portal vein is surrounded by a mass of connective tissue through which run strands of new growth. There is no narrowing of its lumen.

Adrenals.—The right adrenal is surrounded by a thick mass of connective tissue which unites it firmly to the liver and the gallbladder. In this tissue a small irregular calculus of bile-pigment about the size of a pea is encysted. The adrenal is of normal size, firm, and shows no postmortem change in its medullary portion. The left adrenal is of normal size; its medullary portion grayish and firm, showing no postmortem change (To the naked eye neither adrenal gave any appearance of the presence of new growth.)

Pancreas.—The pancreas is shorter than normal, its length being 18 cm., but is much thicker, 6 cm. Its breadth is also increased so that its shape is almost round (cylindrical). It weighs 200 grms. Its consistency is very firm, its color pale ochre-yellow. On section the lobules are increased in size, their outline distinct. The cut surface is shining, homogeneous and of a dull ochre color. The interlobular fat is in small amount. In many of the interlobular septums there are reddish areas of congestion or hemorrhage. The large bloodvessels are empty. The duct of Wirsung is patent. No nodules of new growth are observed in the organ.

Lymph-glands.—The mesenteric and retroperitoneal lymph-glands contain nodules of new growth similar to those in liver and omentum.

Spleen.—The spleen is slightly enlarged, weighs 246 grms. Its consistency is decreased. No nodules of new growth are seen in it.

Kidneys.—Both kidneys are enlarged and swollen, being much plumper than normal. The capsule strips off very easily. The surface of the cortex is smooth, grayish-green in color. On section the cut surface is bright gray green with reddish stripes and points. The cortex is 12 mm. in thickness, and is of a dull, cloudy appearance. The straight tubules of the medulla appear as bright grass-green stripes. The pelvis shows no change.

The examination of the ureters, bladder, and genital organs is negative.

Appendix.—This is surrounded by old adhesions. It is short and much narrowed above. Near the tip is a firm nodule of the size of a small hazel-nut.

Rectum.—The mucosa of the rectum shows numerous small ulcerations and hemorrhages. The large and small intestines contain foul, colorless, soft or semifluid fecal material.

The examination of remaining portions of body is negative except that all tissues are stained with bile-pigment.

MICROSCOPIC EXAMINATION.—The sections from the primary growth in the wall of the gallbladder show the structure of an adenocarcinoma. In the peripheral portions of the tumor the adenomatous character of the growth is more marked than in the older areas where it bears more of the character of a medullary carcinoma. The connective tissue spaces are filled with polymorphous cells of varying sizes; the cells immediately lining the walls of the spaces are distinctly columnar. In many of the spaces the cells have undergone mucous degeneration or simple necrosis, so that the resulting appearance is that of a gland lumen filled with mucus or granular debris. Some areas of limited extent show a more marked mucous change (colloid areas). The cells immediately lining the alveolar spaces are everywhere distinctly columnar and possess round or oval nuclei which are two to three times as large as the nucleus of a liver-cell, and stain a very bright deep blue with hematoxylin. The tumor cells are larger than the columnar cells of the bile-ducts and their nuclei are also larger and more deeply staining. The loose cells in the lumen of the spaces are irregular in size and form, their nuclei present varying stages of degeneration and necrosis. Cell-division figures are found in the peripheral cells. No trace of the structure of the gallbladder wall found.

Liver.—The liver lobules are atrophic, the connective

tissue is increased. The liver-cells are atrophic, but show marked cloudy swelling in the central portion of the lobules. Many show hypertrophic nuclei. There is much bile-pigment in and between the liver-cells, especially in the central portion of the lobule. The larger bile-ducts are distended with golden yellow pigment. The central veins are congested. The tumor nodules found throughout the liver show the same structure as the gallbladder tumor. The majority of the nodules arise in Glisson's capsule, and small nests of tumor-cells are found in the periportal connective-tissue in every part of the liver. The metastasis is chiefly lymphatic, through the periportal lymph-spaces, but there is also direct extension or retrograde metastasis through the larger bile-ducts, some of which contain tumor masses. In other cases there is a hematogenous metastasis through the branches of the portal, but this is limited. Though the majority of the nodules arise in Glisson's capsule and have infiltrated only the peripheral portions of the neighboring lobules, the largest ones extend through the lobules to the central vein, in some instances completely replacing a number of lobules.

Lung.—The nodules found throughout the lung and beneath the pleurae are of the same type of growth as those in the liver and gallbladder. They are found everywhere throughout both lungs, the metastases being both lymphogenous and hematogenous. Numerous small hemorrhagic infarcts are also found, and there is extreme congestion and edema. The bronchial lymph-glands contain tumor nodules of similar structure.

Omentum.—The nodules found in the omentum and in the mesenteric and retroperitoneal lymph-glands are the same type of new growth as those found in gallbladder, liver, and lung. The adenomatous character of the growth is well-preserved.

Adrenals.—In the adhesions surrounding the right adrenal there are numerous small nests of tumor-cells filling up the lymph-spaces. These can be traced through the capsule of the right adrenal and along the bloodvessels into the medullary portion of the organ. This is almost completely replaced by tumor growth of the same type as that in the gallbladder. Throughout the cortex of the adrenal there are a number of small nests of tumor cells. The left adrenal shows a similar condition, the medullary portion being almost completely replaced by new growth of the same type as that found elsewhere. A few small scattered nests are also found in the cortex. There is excessive pigmentation (hemosiderin) of the cortical cells in both adrenals. Nests of tumor-cells are found in the connective tissue about one of the ganglia of the capsule of the right adrenal. There is also a slight leukocyte infiltration in and about this ganglion. The lymph-spaces about the semilunar ganglion also contain nests of tumor-cells and the surrounding tissue shows small foci of leukocyte infiltration.

Colon.—Sections of the wall of the colon made at the point of adhesion to the gallbladder-tumor show an infiltration of the wall of the intestine by carcinoma cells of the same type as those of the gallbladder tumor. The growth extends entirely through the muscularis and mucosa, presenting an ulcerating surface (not perceptible in the gross specimen).

Appendix.—The small nodule in the appendix consists of tumor growth of the same character as that found in the other organs. The lumen of the appendix is entirely obliterated above the tumor nodule, being replaced by scar-tissue.

Pancreas.—There is hypertrophy of the lobules with marked hypertrophy of some of the areas of Langerhans. The interlobular connective tissue is edematous and contains numerous areas of leukocyte-infiltration associated with marked congestion and small hemorrhages. No new growth is found in any part of the organ. (See below.)

Kidneys.—Sections of the kidneys show extreme cloudy swelling of the cells of the convoluted tubules. These are deeply stained with bile-pigment. The straight tubules are for the most part filled with greenish-yellow casts of bile-pigment. There are scattered areas of connective tissue increase throughout the cortex containing a few obliterated glomeruli. In the lymph-spaces of the subpelvic connective tissue and around the main branches of the renal vessels there are small nests of tumor-cells of the same type as found elsewhere.

Skin.—Sections taken from the skin of the dorsum of the

fingers show areas of excessive melanosis of the rete alternating with areas in which the rete contains no pigment. In these nonpigmented areas the epidermis is thinner and there is a complete disappearance of the papillae of the dermis. (See below)

Spleen.—Sections of the spleen show chronic congestion and atrophy. No tumor secondaries found.

Heart.—The sections show brown atrophy. Throughout the heart-muscle there are scattered areas of leukocyte-infiltration.

Pathologic Diagnosis.—From the postmortem findings and the microscopic study the following pathologic diagnosis is obtained.

Primary adenocarcinoma of the gallbladder with secondaries in liver, lungs, adrenals, omentum, colon, appendix, kidneys, mesenteric, and retroperitoneal lymph-glands; obstructive jaundice, cholelithiasis, parenchymatous degeneration of liver and kidneys; hypertrophy and inflammation of pancreas; edema, congestion, and hemorrhagic infarction of lungs; brown atrophy of heart; chronic congestion of spleen; melanosis of skin (Addison's); vitiligo.

[To be concluded.]

THE ACTION OF RENNIN UPON MILK-DIGESTION.

By I. H. CORIAT,

of Boston, Mass.

Assistant in Medical Chemistry, Tufts College Medical School, Boston.

[From the Chemical Laboratory of Tufts College Medical School.]

FROM time immemorial the curdling of milk in the manufacture of cheese by rennet, or what was formerly used, the infusion from a calf's stomach, which contained the coagulating enzyme, has been known. In the Bible it is several times alluded to, while in the making of cheese this action was a process well known to the ancients. It was also observed, that when milk became sour, a curd was formed, which curd and souring process was considered formed by an action analogous to, if not exactly identical with, that produced by the rennet enzyme. In fact, the identity of the two processes was strongly and positively argued and defended by many eminent chemists, even of the present century. It was not, however, until modern physiologic chemistry had begun to be built upon its present basis, and overthrown timeworn ideas, that the existence of a separate coagulating enzyme in the gastric contents, apart from pepsin, began to be suspected.

Berzelius, the Swedish chemist, in 1840, was one of the first to distinguish the souring of milk from the action of the rennin enzyme.¹ He believed, however, that this enzyme acted by changing the lactose into lactic acid—and, in virtue of this acid reaction, the casein was precipitated as a curd.

Selmi,² Lehmann³ and Heintz⁴ showed, however, that this reaction was independent of any acid formation. Voelcher⁵ found that rennet could curdle milk that had been made distinctly alkaline, and that after separation of the curd, the whey would be distinctly alkaline, thus showing that the formation of lactic acid was entirely unnecessary. Sohxlet⁶ defended the lactic acid theory, and claimed that the only difference between coagulation by rennet and spontaneous coagulation, was, that with the former lactic acid was formed more quickly. Hallier thought that the organisms in a calf's stomach were the cause of coagulation, and that the penicillium would curdle milk as quickly as rennet. Liebig believed that as soon as a decomposition of the stomach mucous membrane had begun, lactose was changed into lactic acid, which would neutralize the alkali which kept the casein dissolved, and precipitate it as an insol-

uble curd. Deschamps⁷ was the first one to obtain the active principle of rennet extracts, which he termed chymosin. This isolation, impure and crude as it was, was a step in the right direction.

But it remained for Hammarsten to show that the curdling power of the gastric juice was due to as true an independent enzyme as pepsin—that as truly as pepsin was proteolytic, this enzyme was coagulating—and that the coagulating process was entirely independent of any change of the lactose, or any acid production. In three masterly papers⁸ his results were published. In his first paper (1872) he showed that not only was the action entirely independent of lactose and affected the casein alone—but that it was independent of any acid formation—and that no change in reaction took place during the curdling process. He succeeded in separating the active principle from its contamination with pepsin—and called this enzyme lab. Later (1874) he investigated the nature of the chemical action of this lab—enzyme—showing that it split casein into a soluble and an insoluble portion. He also proved that the presence of calcium salts—preferably calcium phosphate—was necessary for coagulation. In the third paper (1877) he obtained the enzyme in an absolutely pure state—and showed that other salts could take the place of calcium. He believed that the curdling of milk was a process analogous to the clotting of blood. The matter practically rests here; for since then, other observers have simply confirmed Hammarsten's views, adding a little now and then, as the results of original investigation.

It has long been known that milk would curdle when it became "sour"—the curdling being due to the acid reaction of fermentation lactic acid derived from lactose, by specific organized ferments. Milk may also be coagulated by the direct action of certain microorganisms, *i. e.*, the *Bacillus acidi lactici*, which produces lactic acid from lactose—and the *Bacillus butyricus*—the microorganism of butyric acid fermentation. As the pathogenic bacteria produce soluble poisonous chemical enzymes (diphtheria and tetanus), so Duclaux removed the coagulating bacteria from their growth in culture media by filtering through unglazed porcelain, and obtained a filtrate that was bacteria-free. This filtrate was very active in curdling milk. The plant kingdom contains enzymes that coagulate milk, some by virtue of their acidity, and some *per se*. Among these may be mentioned the leaves of the artichoke, the seeds of black pepper, the juice of the figtree and pineapple.

Friedburg, however, has doubted that the coagulating action of animal and vegetable enzymes is the same,⁹ but further on in this paper an effort will be made to establish their identity. An enzyme also has been found in the human pancreas and in that of certain herbivora, which causes the coagulation of neutral or alkaline milk. This action, however, is seldom called into play, except under certain pathologic conditions, as the rennin of the stomach has already performed its function before the milk reaches the duodenum.

Milk may then be coagulated:

1. By direct bacterial action.
2. By indirect bacterial action producing lactic and butyric acids.
3. By the addition of acids.
4. By soluble bacterial enzymes, in solutions free from bacteria.
5. By vegetable coagulating enzymes.
6. By animal coagulating enzymes.

Rennin, then, is a true animal enzyme, as absolute and independent as pepsin, and like pepsin and trypsin it exists preformed in the cells as a proenzyme (Labzymozen). This proenzyme itself has no action on milk, but on the addition of acids, especially HCl, it is converted into the active enzyme. It is formed in the stomach by the glands of the fundus and pylorus. It is never absent in strictly physiologic conditions, but the fasting human stomach contains less rennin than when it is digesting. In animals the opposite holds true.¹⁰ Pathologically it is absent in atrophy of the gastric mucosa, in chronic mucous gastritis and in gastric cancer.

According to Hammarsten pure rennin (lab) gives the following reactions:

Xantho-proteic	negative.
Alcohol	no pp.
HNO ₃	no pp.
Tannin	no pp.
Iodin	no pp.
Normal lead acetate.....	no pp.
Basic lead acetate	pp.

Impure rennin is precipitated by the above reagents. Rennin, like pepsin, when in a pure state does not respond to the ordinary proteid reactions. It is soluble in water, but the watery solution does not coagulate on boiling. It is destroyed by alcohol and by long digestion in acid solutions, while on the contrary, a short contact with acid makes the action more energetic. It acts in the presence of almost any acid—hydrochloric acting best, while lactic, acetic, sulfuric, and phosphoric acids come next in the order named.¹¹ Fixed caustic alkalies have a powerful destructive action—it is also destroyed by a 0.5 to 1% solution Na₂CO₃—and the action is hindered in the presence of disodium phosphate. Like all enzymes, the action of rennin is destroyed by boiling.

The principal differences between rennin and pepsin is best shown by a table:

TABLE I.

<i>Rennin.</i>	<i>Pepsin.</i>
1. Coagulates milk and pure solutions of casein free from lactose.	1. Does not, when pure, coagulate milk.
2. No digestive effect on proteids.	2. Digests proteids, changing them to albumose-peptone.
3. Acts in neutral, alkaline, or acid solutions.	3. Acts only in acid solutions.
4. Precipitates casein, but does not digest it.	4. Digests casein, but does not precipitate it.
5. Splits casein into a soluble whey proteid, and an insoluble paracasein.	5. Splits casein into a soluble albumin, easily digested—and an insoluble pseudonuclein, digested with difficulty.
6. Calcium salts must be present for rennin action.	6. The presence of calcium salts is indifferent.
7. Destroyed in the presence of 3 p.m. HCl at 37 to 40° C. for 24 hours.	7. Not destroyed under the same conditions.
8. Incompletely precipitated by magnesium carbonate.	8. Completely precipitated by magnesium carbonate.

If milk be treated with dilute acids (*i. e.*, acetic)—the casein is precipitated as such—the precipitate being soluble in an excess of the acid. This precipitate, as also the commercial preparations of dry, powdered casein which are made by acid precipitation—may be redissolved in slightly alkaline solutions, or by the aid of neutral or alkaline salts. These solutions can be

curdled with rennin. This shows that the curd formed by the action of dilute acids differs in composition from the curd formed by rennin.

The curdling of milk by rennin seems to be a process analogous to the clotting of blood—for rennin or its proenzyme, needs, like the fibrin enzyme or its antecedent prothrombin,—the presence of calcium salts. In fact, milk from which the calcium salts have been precipitated by ammonium oxalate will not curdle at all. The chemical process of rennin coagulation seems to show that the casein is split partly into a difficultly soluble body paracasein, which resembles casein in composition, and partly into a soluble albumose-like body—whey proteid. The resulting curd carries down with it large amounts of calcium phosphate and the milk fat. Casein is a protein substance, belonging to the nucleo-albumins, and differs from most proteins by containing phosphorus and iron. In casein-digestion by pepsin—hydrochloric acid an insoluble residue of pseudonuclein remains behind, while the albuminous molecule goes through the ordinary steps of digestion, forming eventually albumose-peptone. Trypsin, however, can digest the casein pseudonuclein.

We have thus far seen that rennin is an independent enzyme, distinct from pepsin, and that it possesses a definite action on solutions of casein, or on casein in milk, precipitating it as a definite insoluble chemical compound or curd. We have also seen that enzymes exist in the plant kingdom, and also bacterial enzymes, which possess a coagulating action, almost, if not exactly identical with that of rennin. Casein and milk alone can be digested without rennin being present, or, in other words, the curdling of milk is not necessary for its digestion. The question now arises, why then, does rennin exist if milk (or casein) can be digested without its aid, or in other words, if pepsin alone can split up casein into albumen and pseudonuclein, how does rennin-action contribute to the further conversion into soluble proteids? Some reason must be necessary for this curd-formation, and it occurred to the writer that probably this precipitation had something to do with peptone production. To this end the following experiments were undertaken, with pepsin and pancreatin—in each case both with and without the addition of rennin. The samples of milk used were the same in all experiments.

FIRST SERIES.

Milk-digestion with pepsin alone.

The following solutions were made up:

- No. 1.
100 cc. digestive HCl (2.5 per M.)
10 cc. milk.
 $\frac{1}{10}$ gm. pepsin
Digested for 24 hours at 40° C.
- No. 2.
100 cc. digestive HCl.
20 cc. milk.
 $\frac{1}{2}$ gm. pepsin.
Digested for 24 hours at 40° C.

Each of these solutions was placed in a flask, and digested for 24 hours at 40° C. At the end of that time the solutions were made alkaline with sodium carbonate and warmed over a water bath, to remove the undigested acid albumin and nuclein, and to stop all further action of the enzymes. The solution was then filtered, the precipitate washed with water, and the filtrate concentrated to about 10 cc. This filtrate contained the digested albumin as albumose-peptone, while the undigested acid albumin and the pseudonuclein remained behind on the filter paper. No effort was made to determine the amount of digested lactalbumin

separately from the casein. This, however, was no source of error in the determination of total digested proteid as the increase would bear the same ratio to the casein in all the determinations, both with and without rennin. The nitrogen was then estimated in the filtrate according to Kjeldahl's method, and the result multiplied by the factor 6.38, the product being the amount of digested proteid.

RESULTS.

- No. 1.
Amount of nitrogen .0476 gm.
 $.0476 \times 6.38 = .3036$ gm. digested casein, as albumose-peptone.
- No. 2.
Amount of nitrogen .0644 gm.
 $.0644 \times 6.38 = .4108$ gm. digested casein, as albumose-peptone.

SECOND SERIES.

Milk digested with pepsin and rennin.

The same experiments were repeated as above, under exactly the same conditions of amounts, temperature, and time—but with the addition of rennin. The rennin used was in liquid form.

- No. 3.
100 cc. digestive HCl.
 $\frac{1}{10}$ gm. pepsin.
10 cc. milk.
1 cc. rennin.
Digested at 40° C. for 24 hours.
- No. 4.
100 cc. digestive HCl.
 $\frac{1}{2}$ gm. pepsin.
20 cc. milk.
2 cc. rennin.
Digested at 40° C. for 24 hours.

RESULTS.

- No. 3.
Amount of nitrogen .049 gm.
 $.049 \times 6.38 = .3126$ gm. digested casein, as albumose-peptone.
- No. 4.
Amount of nitrogen .126 gm.
 $.126 \times 6.38 = .8038$ gm. digested casein as albumose-peptone.

As one proteolytic enzyme gave such favorable results in increased peptone-production with rennin, it was deemed advisable to try the casein-digesting power of pancreatin, with and without rennin, under the like conditions of amounts, temperature and time.

THIRD SERIES.

Milk digested with pancreatin alone.

- No. 5.
100 cc. water.
1 cc. saturated Na_2CO_3 sol.
 $\frac{1}{10}$ gram pancreatin.
10 cc. milk.
Digested at 40°C for 24 hours.
- No. 6.
100 cc. water.
2 cc. saturated Na_2CO_3 sol.
 $\frac{1}{2}$ gram pancreatin.
20 cc. milk.
Digested at 40°C for 24 hours.

At the end of digestion, the undigested alkali albumin and pseudonuclein was precipitated by acetic acid and warming, the same as for pepsin,—filtered, and the filtrate concentrated to about 10 cc. as above. The nitrogen was estimated by Kjeldahl's method.

RESULTS.

- No. 5.
Amount of nitrogen —.042 grams.
 $.042 \times 6.38 = .2679$ grams digested casein as albumose-peptone.

No. 6.
Amount of nitrogen—.1036 grams.
 $.1036 \times 6.36 = .6609$ grams digested casein as albumose-peptone.

FOURTH SERIES.

Milk digested with pancreatin and rennin.

No. 7.
100 cc. water.
1 cc. saturated Na_2CO_3 sol.
 $\frac{1}{10}$ gram pancreatin.
1 cc. rennin.
10 cc. milk.
Digested at 40°C for 24 hours.

No. 8.
100 cc. water.
2 cc. saturated Na_2CO_3 sol.
 $\frac{1}{2}$ gram pancreatin.
2 cc. rennin.
20 cc. milk.

RESULTS.

No. 7.
Amount of nitrogen—.0504 gms.
 $.0504 \times 6.38 = .3215$ gms. digested casein as albumose peptone.

No. 8.
Amount of nitrogen—.1246 gms.
 $.1246 \times 6.38 = .7949$ gms. digested casein as albumose-peptone.

The results of the above experiments may be thus tabulated :

TABLE II.
Without Rennin.

Enzyme.		Nitrogen.	Albumose-peptone.
Pepsin.....	No. 1	.0476 gm.	.3036 gm.
Pepsin.....	No. 2	.0644 gm.	.4108 gm.
Pancreatin.....	No. 5	.042 gm.	.2679 gm.
Pancreatin.....	No. 6	.1036 gm.	.6609 gm.

TABLE III.
With Rennin.

Enzyme.		Nitrogen.	Albumose-peptone.
Pepsin.....	No. 3	.049 gm.	.3126 gm.
Pepsin.....	No. 4	.126 gm.	.8038 gm.
Pancreatin.....	No. 7	.0504 gm.	.3125 gm.
Pancreatin.....	No. 8	.1246 gm.	.7949 gm.

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[To be concluded.]

A CASE OF MYOMA OF THE BLADDER.

By OTTO G. RAMSAY, M.D.,
of Baltimore, Md.

Instructor in Gynecology, Johns Hopkins University.

NEW growths of the bladder, and especially myomata of this organ, are of such comparative rarity that it seems the duty of each one of us, if we have an opportunity, to add any such cases to the literature of the subject. The following case operated upon by Dr. H. A. Kelly in the Gynecological Clinic of the Johns Hopkins Hospital merits for this reason a report in full as illustrating a typical example of pure myoma of the bladder.

Mrs. E. I., white, aged 38, was admitted to the Gynecological Department of the Hospital on October 26, 1898, suffering with frequent and painful micturition and general weakness. She gave no family history of neoplasms or tuberculosis, and she herself has never had any serious illness before the present one.

During the past two years she has complained of bladder symptoms, consisting of frequent micturition, vesical tenesmus and pain, occurring at irregular intervals and lasting one or two weeks.

Only since March, 1898, have these symptoms been severe, and since this time the severity of the pain has increased greatly, becoming like labor-pains in character. In July, 1898, a suprapubic cystotomy was done, but the tumor discovered in the bladder was not removed. Following this the patient has had almost constant severe pain due to the violent efforts to extrude the tumor. She has suffered also from a purulent cystitis, and has had three distinct vesical hemorrhages, losing at least a quart of blood in each one. The patient had always been of a nervous temperament, but showed no signs of mental excitement until three weeks before admission, when her friends noticed that she was getting queer. This "queerness" increased, and on the day of admission to the hospital she became much excited and harbored delusions of various kinds.

On examination a marked bulging of the whole anterior vaginal wall was discovered, and a rounded tumor about the size of a baseball could be felt by bimanual palpation lying in the bladder. A male sound passed into the bladder demonstrated the tumor to be attached to the left vesical hemisphere by a broad base, covering an area 5 by 6 cm. in diameter. The neck of the bladder and urethra were obliterated from the violent efforts to expel the tumor, and the sound entered directly into the bladder from the external urethral orifice.

The urine was of a yellow color, with thick dirty-white precipitate. Specific gravity 1015, acid in reaction, and containing much albumin. The microscope showed masses of pus-cells and numberless red blood-corpuscles.

Operation.—The first operation consisted in the formation of a vesicovaginal fistula both to facilitate drainage and to allow a more thorough irrigation as a preparation for later enucleation. To do this an incision 3 cm. long was made through the vesicovaginal septum and the vesical mucosa stitched to the vaginal mucosa, giving good drainage and allowing the escape of several large blood-clots and considerable bloody urine. On palpating the tumor through this opening it was found elastic, edematous, and everywhere smooth, with a sessile base, as previously outlined by the bladder sound.

Two days later the whole tumor was removed through the vesicovaginal fistula. Strong morcellation forceps were introduced into the bladder through the vesicovaginal fistula and the tumor grasped. By firm traction it was drawn through the fistula into the vagina, and then delivered outside of the vulva, practically turning the bladder inside out for the time being. The capsule was incised and dissected off, several large vessels being cut and tied during this process. Several large vessels were also found at the point of attachment, which was broad but distinctly pedunculated. Oozing in this area was easily controlled by passing several catgut sutures through the vesical tissues.

After the tumor was removed the bladder was thoroughly irrigated and one piece of iodoform gauze introduced into it through the vesicovaginal fistula which was left open. The duration of the operation was 32 minutes, and the condition of the patient after its completion was better than it was before the anesthesia was begun.

Following the operation much difficulty was experienced in managing the patient, who was absolutely irresponsible, refusing all nourishment and requiring to be fed with stomach tube. For hours she would not speak, simply lying with eyes turned toward the ceiling, at other times she was perfectly intractable. The temperature remained normal throughout the convalescence, the pulse rate ranged between 100 and 140, and the vesicovaginal fistula slowly closed, though on her discharge there was still some incontinence.

A note was made on her discharge that she was much improved in every way; later a letter from her family advised us of her death, though no cause was given.

Pathologic Description.—The specimen removed consists of a tumor 9 x 8 x 5 cm. Its surface is slightly lobulated and roughened, presenting tags of tissue where it was separated from its capsule. On one surface is an area 5 x 3.5 cm. covered by bladder mucosa. On section the cut surfaces of the tumor have a transparent appearance and consist of coarse fibers which show a definite concentric arrangement.

Microscopic Examination.—The tumor is composed of bundles of smooth muscle, cut transversely and longitudinally. These are separated from one another by a small amount of fibrillated tissue which contains a few blood-vessels of moderate size. In many places the myomatous tissue shows commencing hyalin degeneration and areas of edema. Toward the free surface of the tumor the hyalin degeneration is more marked and there is a slight, small round-cell infiltration of the tissues. There is also a considerable deposit of yellow granular pigment which is both intracellular and extracellular. The surface epithelium of the bladder mucous membrane has for the most part been destroyed, the mucosa presenting a granulating surface consisting of newly-formed blood-cells, young connective tissue cells, polymorphonuclear cells, and in the depths numerous small round cells.

Anatomic Diagnosis.—Myoma of the bladder-wall. Chronic cystitis with localized ulceration.

Several surgeons have reported on myomas of the bladder, and there are also a few single cases appearing in the literature of various countries, and from these in connection with our own case an idea of the general course of this new growth may be obtained.

These tumors appear to take origin from the unstriped muscle-tissue of the bladder-wall, and in their histologic structure are almost exactly similar to the common myomas of the uterus.

Their mode of origin is still a question of conjecture, and there must certainly be some special influence determining their development. This is indicated by their extreme rarity, which points to some rare influence acting but seldom, or to some abnormal condition of the bladder-wall. The possibility of their origin from a partially atrophied displaced Müller's duct has been discussed, but they show no glandular tissue as do the myomas of the uterus which are attributed to this duct. Another possible source of origin has been suggested in the uterus masculinus, but this cannot be the true point of origin, both because of their varied disposition in the bladder-wall, and more important, because they are also found in females in whom the uterus masculinus is not present, nor is there in the female bladder or urethra any organ of similar structure. The effects of chronic inflammation acting as an irritant to induce an hypertrophy of the vesical muscle must also be left out of consideration, as in most of the cases the cystitis is a late symptom. We are therefore forced to concede our want of knowledge in this direction, and conclude that the cause of origin is probably some unexplained congenital abnormality or that the neoplasm is due to the action of an unknown nervous or other influence.

The situation of the myoma in the bladder and the direction of growth vary, and we find two distinct varieties, namely, the tumor may project into the cavity of the bladder as a sessile or pedunculate mass, or it may, on the other hand, project from the outer surface of the bladder into the peritoneal cavity, covered by the peritoneum, or, in simpler words, they are either submucous or subserous.

There is also a third method of growth, a diffuse infiltration of a greater or less portion of the bladder-wall by the myomatous tissue, though probably this form is always amyosarcoma and not a pure myoma.

The portion of the bladder most frequently the seat of the growth is, according to Terrier and Hartmann,¹ the trigonum, which was the site in 6 cases out of 15. Terrier and Hartmann's figures must however be considered somewhat carefully, for though they claim to eliminate all cases which are not pure myomas in a series collected by them, they include several which, from the pathologic structure, as well as the tendency to return after removal, should be classed rather as sarcomas than as the benign myomas. Next in frequency is the anterior vesical wall, then the posterior and lateral walls.

Terrier and Hartmann quote 4 cases out of 16 in which the growth was subserous, extending into the peritoneal cavity, or into the cellular tissue around the bladder, and to this must be added a case reported by Verhoogen,² in which the tumor was attached by a wide base in the area between the seminal vesicles and filled almost entirely the bony pelvis, extending upward nearly to umbilicus.

Histology.—These tumors, as their name imports, are made up chiefly of unstriped muscle-tissue, lying in interlacing bands, held together by a variable amount of connective tissue, in which are found a number of small bloodvessels. They are usually rounded in shape, and perhaps divided by shallow sulci into lobules, and in the submucous variety are covered by the mucous membrane of the bladder. The base or pedicle varies greatly in size and the muscle-fibers composing it can generally be traced directly into the muscular fibers of the vesical wall proper. Several quite large vessels are usually found entering the tumor at this spot, though, fortunately, the blood-supply of these growths, like the uterine myomas, is generally scanty. On section they are pinkish or whitish in color and have a peculiar translucent appearance and appear to be made up of concentric or irregularly placed coarse bands of muscle. Hyaline degeneration of portions of the growth are often described, as well as localized edema. Calcification has also occurred, Socin³ reporting a splendid example of this form of degeneration, in which a myoma the size of a large nut was found as a calcified mass.

On microscopic examination the picture is usually simply of numerous bands of smooth muscle-fibers, running in various directions, and therefore showing in the microscopic field under observation, muscle-cells cut in various directions—transversely, obliquely, etc. These bands are held together by a varying amount of fibrillated connective tissue in which lie several bloodvessels. If there is any cystitis or inflammation of the surrounding structures the growth may show a round-cell infiltration. Areas of hyaline degeneration appear as homogeneously staining spots in which the individual cells are not to be differentiated. This is the appearance of the myomas, and serves to differentiate the benign tumor from sarcomas, which in this region often takes the form of myosarcomas. In the case of the myosarcomas, the muscle-cells are larger and more irregular in form and arrangement, and there are clumps or irregular areas of round cells, among which are quite numerous bloodvessels. Giant cells or round cells of extremely irregular shape and size are also apt to be present.

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[To be concluded.]

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GEORGE M. GOULD, M.D., *Editor*

Collaborators

JOSEPH SAILER, M.D.
D. L. EDSALL, M.D.
D. RIESMAN, M.D.
J. M. SWAN, M.D.

M. B. TINKER, M.D.
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The Medical Missionaries in China.—The many relatives and friends of the medical missionaries in China—some of whom are from this city and vicinity—have been enduring that hope deferred that maketh the heart sick. At this writing this devoted band of young men and women are in grave peril or already massacred. The anxiety and love of friends are even overshadowed by the apprehensions felt by the whole country that when this ominous veil of Chinese duplicity is lifted, the hideous reality may be too bad to tell. Let us hope in the name of a common humanity that some force has been found great enough to stay the hand of the Chinese avenger.

The medical work of most foreign missions has become an important factor in their success. It is no longer a mere evangel upon which the missionary relies, but he seeks (and wisely seeks) the cooperation of scientific medicine. It is this, far more than the abstract teachings of theology, that appeals to the poor native while it holds out to him the hand of a material help which he can readily understand. The Christian missions in this respect are true to the traditions of their faith, for Christianity from its earliest days has always sought to identify itself with healing. In recognizing scientific medicine, and deferring to it, and still more by associating some of its earnest and talented practitioners with them in their work, the missionaries have shown that they themselves are capable of true progress and are not likely to be, as some of them in an older generation were, the victims of strange delusions. This work of the medical missionary cannot be other than salutary not only to the cause of his church but also of his profession. Whither he goes, there we may be sure will go a measure of light and benevolence and good work and real science that will be indeed for the uplifting of the nations. Some of these medical men in foreign fields have already done important scientific work, and they have always been evangelists of health and morality. To the prejudice and opposition—not unnatural—of natives, tenacious of their own creeds, they present the teachings and the practice of Christendom in their most alluring shapes. In this grave crisis in the far East their profession will watch for news of them with the greatest concern.

The Legality of Compulsory Vaccination for School Children.—After hearing argument as to the

merits of vaccination and as to the right of the Legislature and the Board of Education to make regulations requiring pupils in the public schools to be vaccinated, two learned and honored judges of the Court of Common Pleas of Philadelphia, after mature deliberation, in a suit by a citizen seeking to compel the admission of his unvaccinated child into school, have decided in favor of the legality of the law. This victory for preventive medicine is of no small import. It means that those who have studied the question of vaccination intelligently, including in the present instance Legislature, Board of Education, school principal, and justices at law, have been able to reach but one conclusion, namely, that the procedure is a beneficent one, whose enforcement is essential for the preservation of the health of the community, and that those who will not or cannot recognize the force of this proposition shall not be permitted to jeopardize the health and the happiness of those who seek the protection conferred by a simple and inoffensive device against what was at one time one of the most destructive diseases known to man.

Dr. John Ashhurst.—Philadelphia loses one of her best citizens and the medical profession one of its most eminent members in the death of Professor Ashhurst. He represented many things, both in his attainments and in his personality, which are not often found associated in such a high degree in one and the same individual. Dr. Ashhurst was both a surgeon and a scholar; both a scientist and a humanist, as well as a distinguished professor and a Christian gentleman. He was one of the rapidly diminishing group of really great doctors who found their earliest opportunities in the great Civil War, and in a peculiar and forceful way he represented all the honorable traditions and culture which we are apt to associate with the older generation. With all this he has died when little past his prime and while still, in the ordinary course, he might for many years have continued to stand in the foremost rank among the teachers of his day. As an author he had a high repute; as a teacher, a close following; as an operator, a large measure of success; and as a consultant, a universal respect. In numerous circles, both within and without the profession, his loss will be deplored, for he filled many stations and adorned them all. In these latter

days of shifting theory and exigent practice he stood for what was perennial and best in both the intellectual and the professional life, and he will long be remembered as an exemplar of the ideal which places the highest good in a man's career in the attainment of character rather than in the mere achievement of success.

The Question of Rapid Operating.—Several of our correspondents have taken exception to certain statements made in these columns with regard to this subject. The following letter seems to include most of the objections which are brought forward to the editorial just mentioned:

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

Perhaps you do not know yourself the immense influence you wield or you would not have written an editorial about "Rapid Operating Craze." You have given a strong weapon into the hands of the slow, slovenly, and incompetent. They refer to you as authority and claim perfect right to operate slowly and deliberately, keeping the patient under the influence of anesthetic for hours. There are a good many who operate who are not surgeons, they are simply *dissectors*; they cut and cut and cut without accomplishing anything. Many have no proper instruments. They do not know what they are going to do, and they are not prepared. They do not have the instruments, nor ligatures, nor needles, nor dressing. They are always looking around for something, and have to wait until it is found and sterilized, and thus operate for hours when they could do it in 10 or 15 minutes. The result, in short, is shock, heart clot, and septic infection. You certainly should know and have thought of this before. For to endorse slow and slovenly operations is wrong. What is necessary is to make the diagnosis beforehand, know what is going to be done, then have everything ready before the start; as soon as the patient is under chloroform operate quickly, do not cogitate so long or discuss what is best to be done, that ought to be worked out beforehand. When the first incision is made there ought to be quick and uninterrupted work, but by being quick is not said that any important detail should be neglected. You very correctly say that in trying to break a record, carelessness in controlling the blood supply or asepsis may cause trouble. This is perfectly right all will agree with you, as no matter how rapidly a surgeon operates he should be thorough and pay attention to the minutest detail.

I have seen a great many surgeons operate and the successful ones were always the men who operate quickly, the men who had a mechanical hand; who thought rapidly and met emergencies promptly; who would do what was to be done when something unexpected arose, before a slow operator would notice that there was anything out of the way. The surgeon who neglects thoroughness for speed is certainly not to be trusted as you say, but a surgeon who waits and is so thorough and so slow that the patient often dies on the table, or soon after, is also not to be trusted. What you want is the *greatest possible speed* with the most perfect thoroughness. I am sure you will agree with this. What induced me to write this communication is the enclosed slip taken from a secular paper, and is a copy of your editorial, and which shows the influence of your journal and the danger of the enunciating of such doctrines when the general public has access to them.

Yours truly,

J. H. CARSTENS.

Evidently many of our readers have misinterpreted entirely the intention of the original editorial—certainly many of the criticisms are not called for in answer to any statements which it contained. We had no excuse to offer, nor have we now, for those surgeons who are ignorant, not equipped with suitable instruments, and careless with regard to preparation for operation. We

fail to see in what way the statements which we made with regard to careful dissection and manipulation and thoroughness of antisepsis and hemostasis are an endorsement of slow and slovenly operations. We would by no means encourage unnecessary prolongation of operations, but we still hold that the operator who is striving to make a record for rapidity is unlikely to distinguish himself for carefulness or thoroughness in his work. We regret that it is possible for the public or members of our own profession to criticise certain dangerous tendencies, but the only way to overcome such tendencies is to recognize them clearly. The profession now generally admits that there was, a few years ago, a craze for the operation of ovariectomy, and that many women were unsexed by operators who were anxious to make records for the number of their operations and who were not entirely scrupulous as regards the cases in which they operated. No doubt there will always be some who will take greater pride in the number of their operations or the rapidity with which they are performed than on their judgment in the selection of the cases for operation and the results which they obtain. Probably our correspondent has not seen many of the really greatest surgeons operate or he would not say "the successful ones were always the men who operated quickly." Certainly a man who is extremely slow and clumsy can never hope to attain a very high position as a surgeon, but many of the most successful surgeons in this country and abroad are far from rapid operators. This is a matter of common remark, on the part of Americans who, for the first time, witness operations by some of the most eminent and celebrated German surgeons. We agree that the greatest possible speed consistent with perfect thoroughness is desirable, but the thoroughness should, in every case, be the first consideration.

The increase in deaths from cancer is receiving considerable attention both in this country and abroad. Statistics are presented by which it is shown that for the last two or three decades the fatalities from malignant growths have rapidly multiplied. Various scientific reasons have been advanced, and the State of New York has, for several years, made large appropriations to enable scientific men, selected for their special knowledge of the subject, to carry on research in this direction. This work is being done in one of the laboratories of the University of Buffalo, and its results will be eagerly awaited by the entire scientific world.

However, the discussions which have been held on the subject of late, have added considerable to the interest. It is questionable whether the number of malignant growths has actually increased to the extent frequently contended for it. Many diseases which are now properly classified in reliable death-records were formerly vaguely or indefinitely recorded. Undertakers or other laymen filed certificates of death in which any

cause of death was acceptable so long as it was a cause. It is, therefore, not surprising to find tumors, swellings, ulcers, chronic obstruction, swelling of glands, piles, hemorrhage, and other similar terms, gravely inserted as the cause of death, while other certificates contain still more Solomonic wisdom when the cause is given as "don't know." In view of this knowledge of the past, it is hardly fair to make a comparison with the present.

The American Medico-Psychological Association.

—At the recent annual meeting of this association, held in Richmond, Virginia, a committee was appointed to open communication with the American Medical Congress with a view of establishing relations with this latter organization. The American Medico-Psychological Association is composed, as is well known, of the leading medical superintendents of American hospitals for the insane, and this announcement will especially interest those members of the profession who seem to think that the asylum doctors are indifferent to an affiliation with the other representative medical societies. For ourselves we do not believe that feelings of indifference or estrangement exist, to any great extent, either within or without the asylums, and we welcome this announcement with pleasure. The asylum physicians have sometimes been taxed with being indifferent to the advancement of pure science within their own specialty; on the other side, they themselves have possibly felt that the profession at large was not sufficiently appreciative of the immense work they are doing in the practical care of the insane. We do not hesitate to say that the immense value of this work cannot be overestimated, and that it constitutes of necessity, and always will constitute, a distinct field of activity, which is just as much entitled to recognition as the rather more aggressive specialty of pathological anatomy. It is a practical clinical field of the widest scope and is quite distinct from the work of the laboratory. The trouble has been that these two departments of medical activity in this country have not always worked in complete unison, and this has evidently been largely due to the conditions under which the asylums pursue their work. Many of them, from the necessities of their environment, are not prepared to enter upon extensive pathologic projects, and it is unjust to expect them to do so. The fact that they have been subject to criticism for this has doubtless caused some resentment, but the recent move of the Medico-Psychological Association is a proof that the medical superintendents are desirous of coming into closer touch with the other medical bodies whose aims are more purely scientific. This is most satisfactory, and will doubtless be advantageous all round. There is ample evidence of a growing desire among asylum physicians to advance the cause of scientific psychiatry, while at the same time supporting the claims of their practical administrative work to a wider recognition. We be-

lieve that their affiliation with the Congress will be a step towards a better mutual understanding, and a more successful cultivation of the science of psychiatry in this country.

Pistols and Coffee for Doctors.—We have it on the authority of the *British Medical Journal* that a duel was recently fought by M. Pozzi, the distinguished French surgeon, and a Dr. Devillers, who is not so distinguished. We congratulate the principals (or shall we call them *primates*?) that they saved their honors out of the wreck. Unlike most French duels, the affair seems to have been a singularly bloody one, for M. Pozzi received a wound on the wrist, and we presume there was some hemorrhage from it. The *British Medical Journal* has evidently spent some midnight oil in looking up the literature of the subject, and rescues a number of medical duels from the oblivion of the past. The wit and humor of our English contemporaries do full justice to the gravity of the subject, but may possibly have the one evil effect of making other medical men feel like fighting duels and killing somebody. We know no good reason why doctors, any more than other folks, should not fight duels. If duels are to be fought, there are some special reasons why medical men should acquit themselves well in them. The natural humanity of physicians, for instance, would lead them to avoid making the pastime too dangerous. This seems to have been a motive with M. Pozzi and Dr. Devillers, and the fact that M. Pozzi was hurt was doubtless due to an accident. Our only suggestion is that if American physicians go into this business (either for fun or for advertisement) they should make it a point to fight only French duels. By observing this precaution, they might be able to enjoy the affair in the next morning's newspapers. Mr. Bob Acres thought that a proper distance to fight with swords was about forty yards, but the French evidently insist on a closer interview, else M. Pozzi certainly would not have been harmed. Perhaps the eye-glasses were not properly adjusted, and the combatants overstepped the bounds. We are told by the eminent historian, Robertson, that the wager of battle was one of the last vestiges of feudalism to be swept away, but Robertson was evidently in error so far as refers to M. Pozzi and Dr. Devillers.

The Nature and Origin of Carcinoma.—The fact that carcinoma is a progressively fatal and not in any sense a self-limited disease, ever undergoing spontaneous recovery, would seem to indicate that it cannot be included among parasitic diseases of vegetable origin, among the bacterial diseases. That it is infectious or capable of transmission seems almost demonstrated, but there is no agreement with regard to the identity of the hypothetic causative agent. It must not be forgotten here, as with the parasitic diseases of vegetable

origin, that certain conditions of the organism—pre-disposing etiologic influences—are primarily essential for inoculation to take place. There can be no doubt that heredity, age and traumatism exert an influence in this connection. The only successful means of treatment as yet known consists in early and complete excision; but it is, perhaps, not extravagant to hope that, once the exciting cause is isolated, a biologic antidote may be obtained. A good deal of activity in research in this connection has been manifested in recent years, and one should be prepared to learn soon of the discovery of the nature and origin of carcinoma. In a review of recent studies upon this subject, read before the annual meeting of the Maine Medical Association on June 14, Dr. J. Collins Warren was inclined to agree with the statement that carcinoma is on the increase. The disease, unlike tuberculosis, is not uniformly distributed over the surface of the earth, but is rather confined to certain tolerably well-defined regions. Even houses and streets have been described in which cases have been repeatedly observed. There are numerous facts that are strongly suggestive of the communicability of carcinoma, but the clinical evidence, though positive, is not abundant. All of the inoculation-experiments, however, have been wanting in the isolation of the assigned causative agent from the induced lesions.

Medical Sermonets, No. 20. Medicine and Character.—"So long as we live we are giving our solution to this problem, the problem of conduct, solving it equally by what we do and what we do not do, by our activities and our inhibitions." It is a tribute to the humanizing and ennobling influence of our profession that so few of its practitioners give a mean solution to this problem, a summing-up of whims and accidents; or the bad solution of selfishness, passion or vice; that with all the opportunities for mercenary quackery, so few are selfish; that with all the lack of appreciation and ingratitude of the public, so few become embittered; that with all the temptations to the drug habits, so few yield; of all the sacred trusts, so few are betrayed. We all have our responsibility in sustaining the high reputation for character which the medical profession has attained; we cannot afford to neglect the principles of the code of ethics, to be exceptions to the rule. It is often asserted that one of the most important functions of our literary colleges is the building-up of character, but our medical schools are not supposed to exert much influence in this direction. No doubt the teacher of medicine often loses sight of this greatest opportunity presented by his position; yet the medical school must develop character as well as give specialized knowledge and skill or it will fail to produce graduates who can solve the problems of professional as well as of personal conduct. The attempt to be amusing by telling loose stories in the lecture-room; the slightest neglect in demanding the most scrupulous care in the laboratory; disregard of the sacredness of the human body in the dissecting-room; the slightest lack of kindness and consideration in the clinic, say nothing of roughness and brutality,—all these things and many others apparently as trifling may have a lasting influence in the characters of the future physicians of America and the world.

Correspondence.

SIGNS OF TUBERCULOSIS.

By ANDREW B. EADIE, M.D.,
of Ithaca, N.Y.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IN connection with Dr. Harrington's communication, entitled "An Early Sign of Tuberculosis," in the JOURNAL, April 28, I would like to call attention to certain anatomic or facial signs that I have been accustomed to note in tuberculous and nontuberculous constitutions. They were first pointed out to me about 12 years ago by an old physician whose observations, extending over many years, he asserted, confirmed their value. He said that when the superciliary ridge was prominent, especially between the eyebrows, and, as is usual in such conformations, was crossed by two well-marked, upright wrinkles extending upward at right angles to the line of the brows at their inner terminations, and the cheek-bones wide apart, that such people were very resistant to pulmonary tuberculosis, and if attacked by any pulmonary disease would make a valiant struggle, and in many instances would recover. On the contrary, where the space between the brows was flat, even depressed and smooth, and the cheek-bones not prominent, such persons were prone to contract consumption, and when attacked to succumb quickly. I have met with many apparent confirmations of the value of these observations.

QUACKERY IN TEXAS.

By JAMES HILL BALL, M.D.,
of San Antonio, Tex.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

I HAVE, in common with the ethical men of the profession throughout the country, the greatest respect for the PHILADELPHIA MEDICAL JOURNAL's constant and enlightened devotion to the higher interests of medicine. In no particular of its editorial work and responsibility is this devotion more "steadfast in grave hope and errorless purpose" than it is when given to the struggling cause of medical legislation. The views on this vexed subject, expressed from time to time in your editorial columns, are always just and wholesome, and have a far-reaching effect on professional sentiment and conduct. Realizing these facts, I desire to call your attention to the maladministration of medicine in Texas, and to point out certain factors that have not only contributed to its degradation, but have triumphed over its downfall.

You have recently given some consideration to the state of public medicine in Puerto Rico and the Philippines, but I must tell you that in neither of these remote and half-civilized dependencies are the impositions on the established facts of medicine as glaring, the trespasses on its dignity and utility as a real science as outrageous, as they are at the present time in the Lone Star State. It is a well known fact, that in these semi-barbarous countries evils of the nature suggested grow out of what is unconscious in ignorance, and are therefore excusable errors, but in the United States they grow out of what is consciously malevolent in legislation, and are unpardonable faults, if they are not something worse. For this reason, I repeat that medicine in Texas is more prostituted, more completely under the malignant influences of vicious legislation, than it is anywhere else in the world outside of wholly savage countries. The naked facts I have to

adduce in support of this statement will more than confirm it.

There is now established in San Antonio, Texas, by authority of the state legislature, what purports to be, and legally is, a school of medicine and surgery, the "New York Medical College of San Antonio." Any one who may desire to worship at the shrine thus reared to the twin deities of the medical Olympus, has only to qualify in the sum of \$50. Professional learning and experience, general culture, temperament and habits of life are things that count for nothing, in sympathy and advancement, with this so-called school, which has dispensed with the everlasting tedium, the burden and wearisomeness of the old methods of study, and inaugurated a short and easy road to the practice of medicine.

With an effrontery unparalleled in the history of similar frauds, the New York Medical College of San Antonio publicly declares its chartered rights, and assails common intelligence by advertising that it "will give thorough course and graduate on thorough examination by mail." The student's presence in the flesh is not a fateful necessity. The scholar does not have to go to school. The student does not have to study. His responsibility in the acquirement of a diploma begins and ends with the payment of \$50. The course is otherwise suited to his capacity and convenience. In a word, the school is an exquisitely conceived and executed mechanism for the automatic creation of doctors of medicine.

To test its actual workings, "for things seen are mightier than things heard," the local association of medical men last month found an ignorant negro laborer and matriculated him at this school. For one hour each day the storage battery of his mind was charged with a working (?) knowledge of the medical sciences. He was not required to read, dissect, work in laboratories, listen to lectures, or attend clinics. He was simply charged with knowledge by induction. This interesting process of intellectual saturation was continued, an hour daily, for the bewildering period of seventeen days. It was then declared that the undergraduate vessel was full, up to the brim and running over, and our negro protege received his diploma with the seal of the great State of Texas duly attached. This diploma places this laboring man on terms of equality with the most experienced and capable member of the profession, so far as the laws of Texas are concerned, and permits him, in defiance of public decency and morality, to practise his calling among the afflicted of mankind. These are not jokes. They are grim, stupefying facts.

Fourteen names are signed to this man's diploma, which is in the possession of the Western Texas Medical Association, and it is instructive to note the relationship which some of these names bear to science. Of the 14 professors, 12 are graduates of the New York Medical College of San Antonio, which has been in existence since about the first of December, 1899, nearly five months. The professor of anatomy, one of the 12 immortals, obtained his diploma after wrestling with the medical sciences for 12 days. But the greatest distinction has been achieved by the Forest family. Dr. J. D. Forest, the founder of the school and its chief inspiration, is professor of ophthalmology, which he spells after a fashion peculiarly his own. His younger brother is professor of surgery; his wife is professor of diseases of women; his son, a precocious youngster, 6 years old, is professor of diseases of children. The wind here is beautifully tempered to the —, but I must not be frivolous. The situation is too critical. Besides, comment of any kind is unnecessary. The case speaks for itself.

To pretend that this school is not a manifest fraud, dishonest in purpose, disgraceful in method, and infamous in its immediate effects and consequences, one must be agitated by the blinding influence wrought over common sense by election to the legislature, which is directly responsible for its existence and conduct.

And just here I desire to say, that the wish to be just and impartial will not permit me to sit in judgment on what the average member of our legislature does in the discharge of other public duties, but if he has ever done anything for the maintenance, progress, or defense of medicine, I have never been able to find it out. Whatever he may be in other directions, he is a dismal failure when it comes to the question of medical legislation. Here, at least, he blunders interminably. In the effects produced, he reminds one of Ruskin's Irish missal-painter, "who dressed his angel with no sense of failure, in happy complacency, and put red dots in the palms of each hand, and rounded the eyes into perfect circles, and left the mouth out altogether." But whether he is, like the missal-painter, innocent and ignorant, and helps to place laws on our statute books without consciousness of imperfection either in himself or in the laws of his creation, I am unable to say, though I have my suspicions.

What is your experience in dealing with this average member of the legislature? Have you ever reached the deep and hidden solitudes of his mind and conscience? Have you ever attempted to train his intelligence, to correct his public morals, and overcome his half-hundred prejudices? These are the things I desire to know—the things that it behooves the profession of Texas to find out.

The Effects of the Climate of Colorado on Sleep.

—J. T. Eskridge (*Denver Medical Times*, June, 1900) contributes a valuable article, analyzing the relation of the climate to sleep, in the acclimated and the unacclimated throughout the State of Colorado, summing up his report as follows: 1. Acclimated. (a) Healthy people of regular habits have continuous and refreshing sleep; in those of irregular habits sleep is more disturbed and depressed than at sea levels. Refreshment from good sleep is greater in Colorado than at lower altitudes, but slight disturbances affect sleep to greater degree than at sea levels; less time is required to be devoted to sleep in Colorado. (b) In people who are mentally overworked, sleep is broken, less refreshing and shorter than at low altitudes. Conditions that disturb the nervous system and circulation have greater effects in interfering with sleep in high than in low altitudes. (c) Persons of nervous tendencies do not sleep well unless they guard against taking too much physical exercise. (d) Neurasthenics are much troubled with disturbed rest unless they take an abundance of physical and mental rest, avoiding all things that disturb the heart and digestive organs. (e) The hysterical suffer great aggravation of the nervous state, the pulse often becomes greatly accelerated and insomnia intense. (f) The intemperate suffer greater nervous effects than exist at sea level; this refers to tobacco and coffee as well as to alcohol. (g) Tuberculous subjects sleep well, particularly if they avoid overexercise and as their nutrition improves. 2. The unacclimated. (a) The tourist who exercises freely suffers from disturbed sleep; those who take matters quietly until they become gradually accustomed to the atmospheric condition, sleep well. (b) The nervous subject is especially irritable and his sleep is disturbed by exercise and excitement; absolute quiet produces refreshing sleep. (c) The melancholic types of insanity temporarily improve in their capacity for sleep, but the maniac, and the paranoiac types have their sleep greatly disturbed. (d) Neurasthenics have their sleep disturbed by the Colorado climate. (e) In unacclimated tuberculous subjects sleep is worse unless precaution is taken to lessen the usual amount of exercise. (f) The climate of Colorado is the best means to overcome the insomnia of subjects from eastern cities and suffering from impaired nutrition produced by overwork and worry. [M.B.T.]

Special Article.

THE NAVAL HOSPITAL STEWARD.

By WILBUR F. THOMSON,

Hospital Steward, U. S. N.,

U. S. Naval Hospital, Pensacola, Fla.

FEW in the medical and pharmaceutical professions are familiar with the duties of the hospital steward in the United States Navy; nor do they, the pharmaceutical profession in particular, have any idea how little strictly pharmaceutical work is required of him; his duties are medico-clerical rather than pharmacal. Until recent years surgeons of the navy were permitted to have appointed whomever they wished as hospital stewards, then called apothecaries; and in consequence, not a few were appointed without regard to knowledge of medicine or pharmacy. But owing to the character of the duties being peculiar to the service and not to general pharmacy, they, after an enlistment, became quite as proficient as their brother apothecaries who possessed much wider experiences in the art of compounding medicines. It is not the intention to say that a thorough knowledge of pharmacy is not requisite for enlistment as hospital steward; for since the organization of the hospital corps, U. S. Navy, June, 1898, the examinations are more rigid and include more branches than examinations by State boards. A thorough knowledge of the following subjects is essential to pass a satisfactory examination for enlistment as naval hospital steward, viz: 1. General education: Arithmetic, orthography, writing (legible and grammatical), geography, and history of the United States. 2. Professional: *Materia Medica*—botanical names and the doses of drugs recognized by the pharmacopeia; pharmacy, the various pharmaceutical processes employed in the manufacture of officinal and official preparations, and the relative proportion of the more important drugs entering into their composition; chemistry—chemical symbols, the formulae of the more important official chemicals, and the reactions produced by combinations of chemicals; toxicology—symptoms, toxic doses and antidotes for poisons; recognition of crude drugs, making ordinary pharmaceutical preparations, compounding prescriptions, and criticising prescriptions incorrect by reason of pharmaceutical or chemical incompatibility; bandaging, minor surgery, application of dry and wet cups, application of splints, and the treatment of hemorrhage. Yet this presents but a foundation for the many duties and details learned only by actual experience in the service; and these duties, unless studied diligently and accurately, are mastered only after two or three years of service.

The work and study of the pharmacist in the average drug-store differs so widely from that of the naval hospital steward, that they can be compared only in a few respects. In the average drug-store the pharmacist has the commercial side of the question to be dealt with; buying and selling, market quotations and fluctuations, price-cutting, ledgers of unpaid accounts, the cigar counter and soda fountain; the hospital steward has to contend with none of these. The average pharmacist employs his knowledge of pharmacy behind his prescription-case and in the manufacture of his own preparations; the hospital steward has but little compounding to do, medicines are supplied, in the most part, ready for dispensing, and most combinations are prescribed in pill or tablet form or in simple solution, and usually dispensed in doses as required. Bandaging, dressing wounds, drawing teeth, arresting hemorrhage or applying splints in the case of accident, assisting the surgeon in major operations, and during the absence of the surgeon, supplying aid and advice in cases of emergency, are a few of the duties of a naval hospital steward; in such events the average pharmacist recommends some physician or surgeon whose office is in the immediate vicinity. At naval hospitals the duties of the hospital steward are clinical, clerical and many; accurate records of the sick are kept by him, under the direction of the medical officer; records and reports concerning the hospital are made daily, weekly, quarterly, and yearly. Chemical examinations of food and water are often conducted by the hospital steward, under the supervision of the medical officer; the average pharmacist has his business

correspondence as the clerical part of his work, but is usually too much engrossed in the commercial side of his profession to devote any time to food and water analysis.

The salary received by a naval hospital steward probably exceeds that received by the average drug clerk considerably, but I think will fall below the income of the average proprietor. Owing to the superior advantage, I would say that a hospital stewardship in the United States Navy is, by far, better adapted to the study of medicine and surgery than to pharmacy; the advantages are direct instruction from the surgeons, men who are equaled only by the best in their profession; opportunities for closely observing the course of diseases under treatment, with a review of the cases from clinical notes; practical work in minor surgery, electrotherapeutics and hydrotherapeutics, microscopy, bacteriology, and chemistry.

To pharmacists whose ambition is to become more skilled as such, I would say that it was quite probable that their ambition would be realized more quickly behind the prescription case of the drug-store than in the service as a hospital steward. But if the pharmacist has an ambition to become a physician, the service is most admirably adapted for obtaining that degree. Of the three hospital stewards that have been stationed at this hospital during the past 15 years, two of them have become physicians, who are most creditable additions to the profession. It naturally occurs to one that hospital stewards who have received their education in the service would be most valuable as medical officers; yet very few receive commissions on account of being over the age which applicants are permitted to take the examination for appointment as assistant surgeons, that age being fixed at 30 years; and a hospital steward who enlists after the age of 25 cannot well qualify himself by the time he reaches the age of 30. If provision could be made, whereby qualified hospital stewards under the age of 35 would be permitted to be examined for appointments as assistant surgeons, those who were successful would remain in the service that educated them rather than to leave it to establish themselves in private practice.

Prior to the organization of the Naval Hospital Corps, naval hospital stewards could not hope for promotion, there being no higher grade at that time; since, however, the grade of pharmacist has been created, with 25 appointments, to which hospital stewards may aspire. While the pharmacist is a warrant officer, and enjoys all the privileges as such, he does not enjoy the privileges of the commissioned officer; and as far as rank is concerned, no further chance for promotion. Yet the appointment in this grade is most desirable, and is to be preferred to any of the positions that I can just now recall, in the practice of pharmacy; and I think that I am not presuming too much to say that there are many medical practitioners who would be glad to accept an appointment in that grade.

Impetigo Adenosa.—N. E. Aronstam (*Medical Age*, June 10, 1900) describes 10 cases of a peculiar type of cutaneous affection to which, since he has failed to find it described or mentioned in any work on skin diseases, he gives the above title. He defines the disease as an acute contagious febrile affection characterized by the eruption of pustules and accompanied by enlargement of the lymphatic glands. It is contagious, since members of the same family were consecutively affected with it, also tenants in the same house and dwellings in the immediate vicinity were attacked. The cases observed were in children between 3 and 10 years of age. All of the patients complained bitterly of pain in the joints, suffered with vomiting of a protracted type and in many of the cases chill and convulsive movements existed. The exanthem appeared after 3 days as pustules the size of a pin-head only on the exposed portions of the body, the pustules were glistening, contained a yellow translucent fluid and were surrounded by an erythematous zone of bright scarlet. Simultaneous with the appearance of the eruption, the lymphatic glands of the groin, axilla, and neck began to enlarge, some even becoming as large as an egg. Fluctuation could never be detected. With the rupture of the pustule, febrile and constitutional phenomena declined. After rupture the contents of the pustules dried up and changed into crusts of a yellowish hue and encircled by a somewhat raised border of mahogany tint which in turn was surrounded by a deep red area. [M.B.T.]

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Medico-Chirurgical Hospital.—Dr. F. Savary Pearce has been elected clinical professor of nervous diseases.

St. Joseph's Hospital.—Dr. Melvin M. Franklin has been elected a visiting surgeon to St. Joseph's Hospital to succeed Dr. John S. Miller, resigned.

Pennsylvania Hospital.—A tent, 40x20 feet, has been erected on the hospital grounds, principally for cases of heat prostration, which do better in the tent than in the wards.

Deaths Before Coroner.—Coroner Dugan, of Philadelphia, investigated 29 deaths July 9. This unusually large list included victims of fireworks and heat and two drowning cases.

Homeopathic Board Files Report.—Reports received at the rooms of the State Medical Council in Harrisburg show that all the applicants recently examined by the Homeopathic Board in Philadelphia, except three, secured the necessary percentage to entitle them to certificates to practise medicine.

Living With a Broken Neck.—Lewis Bogel, a patient at the Samaritan Hospital, has a broken neck. His death is only a question of a few days. From his neck down he is paralyzed, and as good as dead, but his head is as clear and his mind as active as it ever was. He is fully conscious that he cannot recover, but does not bemoan his fate. Bogel fell from a tree July 4, at Wilkesbarre, a distance of 30 feet. He landed on his neck, breaking the fourth cervical vertebra.

Magee Pathological Institute, Mercy Hospital, Pittsburg.—Applications will be received for the position of resident pathologist to this institution. The expenses of a postgraduate course in pathology and bacteriology at one of the prominent postgraduate schools will be borne by the hospital; the course to be taken prior to entering upon active work in the institute. Address all communications to Dr. John De Vinne Singley, 212 N. Highland Ave., E. E. Pittsburg.

Medical Department, National Guard of Pennsylvania.—A circular detailing the rules of the medical department of the National Guard has been issued by the Surgeon-General. The hospital corps of a regiment consists of a steward and one enlisted man from each company who must receive instruction from a medical officer for at least 8 hours each month. Applicants for the position of surgeon or assistant surgeon must have been in active practice for at least 4 years.

Smallpox in Philadelphia.—An entire block between North Fifth and Lawrence streets is under quarantine. The first case came from Virginia about 3 weeks ago, and the patient was sent to the Municipal Hospital with four others. Every possible precaution is taken to prevent the disease from spreading further among the prisoners. Each house is fumigated daily. Each person in the block is required to observe every sanitary regulation conducive to health. The prisoners are fed by the city.

The Children's Sanatorium at Red Bank, 6 miles below Philadelphia, on the Delaware River, was opened June 7, and since then 50,000 visits from Philadelphia have been made to the park on the two boats owned by the Institution. Last season 166,554 visits were made, and 35,000 took advantage of the baths. Boys over 10 years of age are excluded from the grounds. A midday lunch of soup and crackers is given to each child. The Institution is supported entirely by charity. Dr. Harry Wylie, of Philadelphia, is the visiting physician.

Residents at the Almshouse and House of Correction Appointed.—At the recent meeting of the Board of Charities and Correction the following physicians were elected to act as residents at the Almshouse and House of Correction: John E. Huine, W. L. Karcher, Henry G. Godfrey, Meyer S. Cohen, Edward J. Cunningham, William G.

Shields, Jr., Floyd S. Clarke, Albert P. Donahue, Clarence M. Harris, Edward L. Robinson, Howard L. Kaucher, Madison J. Keeney, C. M. Hosmer, Joseph F. De Silver, Angus MacOdrun, and C. A. Blayney.

Infants Starve in a Baby Farm.—Death by starvation was the verdict of the coroner's jury in the case of an infant who died July 5 at the baby farm of Henrietta Morris, Philadelphia. Mrs. Morris admitted that another baby was dead in the house and that a third is dying. She said that some of the children in her place were nameless and that she did not know where to find their parents. She said she got \$3 a week for the care of the babies. The Coroner severely censured the woman and said he would see that her license was revoked, her establishment closed, and the babies in the house returned to their parents or placed in proper institutions.

Slums Are Now Clean.—Weeks of persistent labor by the Bureau of Health of Philadelphia have made the slum section of the city as clean as time and labor can make it. Every year an inspection has been made, but this year greater attention has been paid to sanitation. Chief Good is guarding against contagious diseases that may be lurking in the alleys and cesspools. Many foreigners wondered how the force had learned that their premises were not clean, and viewed the work of the men with suspicion. Chief Good said: "Sewerage is poor downtown, especially in the wards fronting on the Delaware, between Chestnut street and Washington avenue. Conditions, however, are improving."

Vital Statistics of Philadelphia for the week ended July 7, 1900:

Disease.	Cases.	Deaths.
Total mortality		544
Inflammation of appendix 6, bladder 2, brain 29, bronchi 8, kidneys 11, heart 1, lungs 27, pancreas 1, peritoneum 7, pleura 1, stomach and bowels 25		121
Cholera infantum		73
Inanition 24, debility 6, marasmus 30, anemia 1		61
Tuberculosis of lungs		35
Apoplexy 22, paralysis 9		31
Heart—disease of 24, fatty degeneration of 4, dropsy of 1		29
Convulsions		23
Casualties		18
Diphtheria	94	18
Carcinoma of face 1, peritoneum 1, stomach 3, uterus 3. Sarcoma—of neck 1. Tumor—ovarian 1, brain 1		11
Brain—congestion of 4, disease of 3, softening of 3		10
Measles		10
Uremia 8, diabetes 2		10
Old age		9
Typhoid fever	25	8
Teething		6
Diarrhea 3, dysentery 4		7
Bright's disease		6
Sunstroke		5
Septicemia		4
Burns and scalds		4
Abscess of—peritoneum 1, lungs 1, back 1		3
Drowned		3
Suicide—cutting arteries 1, drowning 1, shooting 1		3
Syphilis		3
Scarlet fever	44	2
Congestion of lungs 2, homicide 2, locomotor ataxia 2, rheumatism 2, suffocation 2, asthma 1, atheroma 1, cirrhosis of the liver 1, epilepsy 1, goiter 1, gangrene of foot 1, hemorrhage from stomach 1, hernia 1, indyosum 1, insanity 1, intussusception 1, pyemia 1, surgical shock 1, tetanus 1, ulceration of stomach 1, whooping-cough 1		

Philadelphia Pediatric Society.—Tuesday, June 12, DR. JOSEPH SAILER, by invitation, presented a patient, a girl of 4 years, having a pulsating swelling in the region of the external occipital protuberance. The patient fell down stairs 5 months ago and no untoward result was noticed for 2 months, when strabismus appeared and there were attacks of vomiting with pain in the back of the head. Improvement followed treatment, but ataxia developed, which is so marked that the patient frequently falls when walking, and there is also incoordination in the arms. The tension of the

tumor is not increased by respiration. Deep palpation shows a ragged orifice with bony edges, fluctuation, thrill and a murmur, audible a short distance away from the head, are present and aspiration showed that the swelling contained blood. The diagnosis of **aneurysm** was therefore made. DR. ALFRED HAND, JR., reported several cases of so-called **glandular fever**, the group of symptoms, which were described by E. Pfeiffer, being fever of irregular type, and enlargement of the lymphatic glands beneath and posterior to the upper end of the sternomastoid muscle; the enlargement was so great in some cases as to cause a decided torticollis; suppuration occurred in no case, perhaps attributable to the use of 25% ichthyol ointment. The term glandular fever conveys the idea of a distinct disease and in view of the obscure and evidently varying etiology of the condition the term proposed by A. Muggia, acute cervical lymphadenitis, is considered better, at least until the specific nature is proved or disproved. DR. GRIFFITH reported groups of cases of **influenza**, some members of each group presenting the symptoms of glandular fever while others had only the usual symptoms of influenza; it is reasonable to suppose that the cause of the enlarged glands was the influenza-bacillus, the condition in these cases therefore being part of influenza and not a separate disease. DR. H. D. MARCUS read the notes of a case of **gravel**, there being recurring attacks of painful urination with the presence of uric-acid crystals in the urine. DR. W. R. NICHOLSON reported a case of **infection with the Bacillus pyocyaneus** in a newborn infant, the clinical diagnosis being malaena neonatorum. The literature of the subject was thoroughly reviewed. DR. C. A. E. CODMAN reported a case of **leukocythemia** in a boy and exhibited stained preparations of the blood.

NEW YORK.

German Hospital, Brooklyn.—Dr. William Moser has been appointed assistant visiting physician to the German Hospital where he was formerly pathologist.

Dr. Alexander J. C. Skene, the eminent physician and surgeon of Brooklyn, died July 4, aged 62. He was one of the foremost gynecologists of his day and his contributions to medical literature have been many and valuable.

Cornell University.—Dr. Abram Tucker Kerr, of Buffalo, a graduate of Cornell in the class of 1895, and of the Medical Department of the University of Buffalo in 1897, has been appointed assistant professor of anatomy at Cornell University.

A Large Heart.—At an autopsy in New York, July 7, over the body of an unidentified man, who was choked to death by a quid of tobacco, Dr. Hamilton Williams of the coroner's office discovered that the man had a heart weighing 36 ounces.

Milk Made Many Ill.—Six members of the family of Rev. Rosenson and others living near were made seriously ill recently by milk purchased at a grocery store. The first case examined by Dr. Siff pointed strongly to arsenical poisoning. The milk has been sent to a laboratory to be analyzed.

Tenements Disinfected.—A thorough cleansing of the Italian quarter in New York began July 6. Chinatown will be disposed of later. This is the first time in 10 years that these districts have been thoroughly cleansed; then a yellow fever scare caused it. Dr. Blauvelt expects the work to be done each year hereafter. About 15,000 gallons of disinfectant were used the first day. It is said that the \$20,000 appropriated is not too large.

A Queer Occupation.—Biting off the heads of live snakes and rats for the entertainment of the public is the way in which William Gray, 12 years old, earns his livelihood. The lad was arraigned before Magistrate Voorhees in the Coney Island Police Court, July 5, and that is what he told the Court why he should not be committed as being without a visible means of support. His story was corroborated by the police. The boy was brought from Georgia early in the season as the chief attraction of a side show just off the Bowery.

Tried to Hypnotize a Bear.—It will no longer be the ambition of John Farrell to be an animal hypnotizer. At present he is in Fordham Hospital and the surgeons are consulting whether to amputate his hand or take off the arm at the elbow. He went to the park to show off his hypnotic powers and put his hand in the mouth of a large Polar bear, which failed to respond properly to Farrell's suggestions.

A Sick Man's Hard Luck.—Tatinia Berlingo, suffering from malaria, had an exciting trip to Bellevue Hospital in an ambulance with Sing Yung, a crazy Chinaman. Sing grabbed the Italian by the throat, and all the way to the hospital Dr. Crane and Berlingo were trying to keep him quiet. Berlingo was exhausted and had to be lifted out at the hospital while Sing was put in a straight jacket and taken to the pavilion for the insane.

New York Hospital Society.—In the report of the society of the New York Hospital it is stated that 62% of the patients in the wards of the several institutions under the control of the society received absolutely free treatment, and a large proportion of the remainder paid less than the actual cost of treatment. The total number of days of hospital treatment was 63,048, of which 75% were free. The treatment at the house of relief is entirely free and was maintained at a cost of \$38,905.33 for the year.

Quarantine Hospital Needed.—The *Buffalo Medical Journal* says that a detention hospital is very much needed in that place. Hundreds of sailors are arriving and departing daily from this port, and when one becomes suspected of smallpox or other contagious disease there is no place to assign him pending the development of the case, except to the pest-house. Recently the Health Commissioner, Dr. Wende, quarantined two vessels on account of smallpox suspects, much to the loss of the ships.

Barren Island Injunction.—An injunction has been granted by Justice Andrews of the Supreme Court to the Sanitary Utilization Company which runs the Barren Island garbage-plant, restraining the Board of Health from enforcing the act recently passed by the Legislature prohibiting the burning of garbage on Barren Island. In case the act is declared constitutional, crematories would have to be built by the city at a cost of not less than \$20,000,000. The complainants are real estate dealers who wish to enhance the value of property in the neighborhood of the island.

The Health Board of New York has been criticised severely for not ignoring anonymous communications. It is the habit of the board, a correspondent says, and correctly, to turn the unsigned complaints it receives over to Inspectors, who examine the property said to be in bad condition, and the result is that "in most cases the owners are ordered to make repairs under penalty of a fine." The *New York Times* fails to see any just grievance in this. If the Inspectors were accustomed to order repairs not required by law, that would be another matter; but no such charge is made. Any landlord can protect himself from such attacks simply by putting and keeping his premises in decent order. The *Times* thinks the Health Board is entirely justified in utilizing and even inviting anonymous complaints. The New York Association for Improving the Condition of the Poor has not hesitated openly to advertise its willingness to investigate unsigned denunciations of wrong committed by people who have more or less in their power the only persons to whom the existence of those wrongs is known.

Unregistered Physicians.—Justice McAdam holds that the New York County Medical Association is entitled to fines collected from physicians convicted of practising medicine without lawful registration. This decision was given in a suit brought by the Association against the city to recover a fine of \$50 collected from one Tito. The suit was a test case. Tito was arrested for practising medicine in the county of New York without lawful registration as a physician, tried and convicted, and was sentenced to pay a fine of \$50 or be imprisoned. He paid the fine, and the New York County Medical Association demanded it from the city under the authority of section 153 of chapter 398 of the laws of 1895. Justice McAdam says in his decision that since 1890 the plaintiff has been a duly incorporated society of the State, entitled to representation in the New York State Medical

Association, which was incorporated in 1884, and the State Association is the accredited society in the national body of physicians known as the American Medical Association. He says that the city contended that the act was for the exclusive benefit of three societies—the Medical, Homeopathic, and Eclectic—because they are named in certain prior acts. In regard to this contention Justice McAdam says:

"The construction contended for by the defendant would not effectively carry out the provisions of the act in regard to prosecuting offenders, for this is more surely accomplished by the liberal construction now given to it. The plaintiff discovered the offender, secured his conviction, the fine represents the fruit of its efforts, and there is no reason why it should not have the ransom."

NEW ENGLAND.

Must be Vaccinated.—On July 3 the Board of Health announced that all who had visited the home of Charles F. Sweetland, of Attleboro, the victim of smallpox, within a week, must be vaccinated. This will include about 60 persons. A hospital has been established at the Sweetland residence.

Law Regulating Sales of Ice.—Ice dealers throughout the State of Massachusetts must now retail ice in quantities as small as 5 cents' worth. Such is the requirements of the bill which passed through the last stages of enactment recently—short of the Governor's signature, which is not supposed to be in danger of being withheld.

"Divine Healer" Fined \$2,500.—Francis Truth, who advertised himself as a divine healer, has withdrawn his previous plea of not guilty, pleaded guilty and was fined \$2,500, which he paid. He pleaded guilty to seven indictments, accusing him of using the mails to furnish a scheme to defraud, which involved his divine healing methods, and on five charges he was fined the maximum penalty, \$500 each.

Murder by Faith-Cure.—Theodore Plausse, a 5-years-old boy of Webster, Mass., was burned to death last Sunday. The boy's screams attracted the attention of his grandfather, who was a faith-cure advocate. The latter, instead of attempting to extinguish the flames, fell on his knees and prayed. While his grandson's clothing was still blazing neighbors broke in and put out the fire, but too late to save the boy's life.

CHICAGO AND WESTERN STATES.

Ate Toadstools for Mushrooms.—An entire family of nine persons died July 9, near Calico Rock, Marion County, Ark., from eating poisonous toadstools, mistaking them for mushrooms.

University of Michigan.—The Board of Regents of the University of Michigan has conferred the degree of LL.D. upon Lewis S. F. Pilcher of Brooklyn, professor of surgery in Long Island Hospital and editor of the *Annals of Surgery*.

Hospital for South Chicago.—A building has been bought at Calumet Heights by the South Chicago Hospital Association, and the work of converting it into a hospital will begin immediately. It will have 2 wards, 6 large, double rooms, and will accommodate 25 patients.

Preferred Death to Ill-Health.—Two cases of suicide are reported from St. Louis, in persons who had been operated on at hospital and whose health had not been restored to their satisfaction. Joseph W. Griffin ended his life by a bullet at his home, while Elizabeth Trescher drank nitric acid at the hospital.

Refuse Thrown in River.—There is a general complaint that the river at Chicago is being used as a general dump for all sorts of rubbish. A great deal of filth goes in from the glucose works, gas works, and slaughter-houses. The harbor masters have taken hold of the matter and guilty parties will be punished.

University of Illinois.—The property adjacent to the hospital building now occupied by the West Division High

School has been purchased by the Medical Department of the University for \$186,000. Dr. George P. Dreyer, associate professor of physiology in the Medical Department of Johns Hopkins University, has accepted the chair of physiology.

Scalp Almost Complete.—Ruby Richards, whose scalp was torn off about a year ago is still at the St. Louis City Hospital and is now possessed of almost an entire scalp. There is merely a small spot of the crown uncovered. The case is one which has required more continuous practice from the medical staff than any other in the hospital.

Playgrounds for Poor Children.—Dr. D. B. Steuer, president of the Cleveland Council, is interested in obtaining additional playgrounds for poor children. This is a question of the first importance from the hygienist's standpoint, and the medical profession of the city should stand ready to render any aid possible to the accomplishment of so necessary an object.

Scavengers Compelled to Obey Laws.—A new ordinance has been passed in San Francisco relative to the transportation of garbage. All garbage-wagons must be lined with zinc, sheet-iron, or other metallic substance, and must be water-tight; and the covers must be of oiled canvas and be securely fastened, except when garbage is being put into the cart. Arrests have been made for violating this ordinance.

Street Noises.—The citizens of Chicago are trying to suppress street noises. An ordinance to this end has just been prepared which is directed against the following: Railroad companies, banana venders, vegetable peddlers, the iceman, the milkman who rattles his cans, the musical gripman, the umbrella tinker, the foghorn, the toy balloon man, river tugs, the early morning rooster, dogs that bark at the moon, braying donkeys, and cats that serenade.

The Ohio Hospital for Epileptics at Gallipolis receives \$480,400 from the State Legislature for 1900 and 1901. New land, including a large farm, will be purchased. The construction fund is \$125,000, of which \$35,000 is to be expended for a general hospital, \$50,000 for an Administration Building, and \$40,000 for two additional residence cottages for patients. A special appropriation had been made to enable the Pathologic Laboratory to participate in the pathologic exhibit of the American Medical Association, and provision has been made for the continuation of research work in this laboratory.

Plague Feared.—Health Commissioner Reynolds, of Chicago, received word from the National Board of Health, telling him to watch for travelers who come from Port Townsend and other Washington ports. This precaution is due to the arrival from the Orient of the steamer Queen Adelaide at Port Townsend in such a condition as to cause alarm among the health officials. The interior of the boat was in a filthy condition, and the Japanese physicians on board were unable to furnish a clean bill of health. The government's physicians feared bubonic plague and ordered the ship to be at once disinfected.

Kinyoun Purged of Contempt.—Federal Quarantine Officer Dr. J. J. Kinyoun, of San Francisco, has been discharged, being legally purged of contempt. It had been shown that the defendant had sent telegrams to the Federal quarantine officers at Eureka and San Diego suggesting precautionary measures against persons coming from the infected district. Dr. Kinyoun gave his opinion that vessels arriving at Eureka would be subject to quarantine restrictions by officers over whom the defendant had no control. He did not appear to have imposed as a condition for leaving San Francisco the procurement of health-certificates on the part of the passengers. There was no evidence tending to show that he violated the injunction or that he discriminated against the Chinese.

The Chinatown Nuisance.—Full justification is to be found in San Francisco's Chinatown, according to the *San Francisco Call*, for the removal of the Chinese from that locality, and should it ever become necessary there will not be lacking popular support to sustain it. At present there is a simpler remedy which is nothing more than the enforce-

ment of the health ordinances of the city. The Chinatown nuisance is made up of a host of violations of law. If the wealthy owners of property in the district are compelled to have their buildings put in proper repair much of the nuisance will be abated. Most of the buildings are overcrowded. If that is stopped a considerable number of the Chinese will have to move out of that district. The immediate work imposed upon the authorities is that of cleaning up the district as it stands and the enforcement within its limits of every ordinance of the city.

SOUTHERN STATES.

University of Maryland.—Dr. Chas. W. Mitchell has been elected to the chair of therapeutics in the University of Maryland, to succeed Dr. I. E. Atkinson, resigned.

Baltimore Medical College.—Dr. Wilmer Brinton has resigned the chair of obstetrics in the Baltimore Medical College. He is succeeded by Dr. J. M. H. Rowland.

Quarantine Changes.—The Governor has appointed Dr. J. N. Thomas to succeed Dr. C. P. Wilkinson as quarantine officer of Louisiana. His assistants will be Dr. T. Y. Aby at the quarantine station, and Dr. J. Hope Lamb at Port Eads.

Springfield Hospital.—Dr. Louise Holmes has been appointed assistant physician to the Springfield Hospital for the Insane at Sykesville, Md., and will have charge of the new group of buildings for female patients, which is now about ready to receive patients.

Smallpox Under Control.—Dr. W. C. Billings, of the United States Marine-Hospital Service, who has had charge of the smallpox hospital at Charlestown, W. Va., since its establishment has made the following report: Total number of patients received at hospital, 26; discharged, 16; number of suspects received, 55, all of whom will shortly be discharged unless a new case should develop among them.

A Pasteur Institute and Laboratory has been established in Atlanta and indorsed by the Medical Association of Georgia at a recent meeting. The Association also resolved to endeavor to secure through legislative enactment 50% of the tax on dogs for the support of the institution. The membership fee is \$10 and no dues. Dividends will be made and a discount of 50% given on all pathologic and bacteriologic work done in the laboratory.

\$15,000 for Blindness.—The famous damage case of John Marney, of Baltimore, against the Maryland Steel Company has been satisfied. Some years ago the case was tried and Marney got \$15,000 damages. The company vigorously fought the award and in every move Marney won. Interest has been charged on this amount since it was awarded. Marney lost his eyesight on account of an inexperienced man endeavoring to do the work of the regular man who was absent.

Butter-fat in Bottled Milk Diminished.—The mysterious diminution of butter-fat in the bottled milk which the United Milk Producers' Association is serving to Baltimore customers has caused the association officers to suspect that some of its drivers have been tampering with the milk. It has been found that in some instances milk which contained from 4.5 to 5.5% of butter-fat when it was bottled and sent out of the creamery only contained from 2.5 to 2.75% of butter-fat when the wagons were stopped on the street and sample bottles taken for analysis by the chemists, who reported that the milk had been tampered with and the association promptly offered a premium of \$500 to any person who would invent a seal to so fasten the caps of the milk bottles that they could not be opened and closed without the action being apparent.

CANADA.

The Ontario Medical Association met in Toronto June 6, 7. The discussions on Appendicitis, the Future of Therapy, Interprovincial Registration, and Army Medical Arrangements in South Africa were admirable, and the annual banquet was an enjoyable affair.

Canadian Medical Association.—The thirty-fourth annual meeting of the Canadian Medical Association, R. W. Powell, president, will be held in Ottawa, September 12-14.

MISCELLANY.

Report of Railroad Accidents.—According to the report of the Interstate Commerce Commission 7,123 persons were killed and 44,620 injured on the railroads during the year ending June 30. The number of passengers killed during the year was 239, and the injured, 3,442, or one passenger was killed for every 2,189,023 carried, and one injured for every 151,798 carried.

Obituary.—D. P. CALHOUN, of Jonesville, La., aged 81 years.—BENNETT F. BUSSEY, of Biggs, Cal., June 24, aged 92 years.—THOMAS P. EDWARDS, of Newark, N. J., July 4, aged 39 years.—CHARLES W. GELINEAU, of Indian Orchard, July 5, aged 56 years.—KING WYLLY, of Savannah, Ga., June 24, aged 59 years.—HOWARD P. BALLIET, of Philadelphia, June 25, aged 23 years.—CHARLES F. MACDONALD, of Hamilton, Ont., July 8, aged 71 years.

Tuberculosis in Hawaiian Schools.—A resolution has been adopted by the board of education of Honolulu prohibiting any one from teaching in the public schools who is suffering from tuberculosis or any contagious or infectious disease, and also prohibiting children with such diseases from attending school. The mild climate of the islands has caused a great influx of consumptives recently and the authorities are alarmed for the safety of the native population.

The Plague in Brazil.—Eduardo Oldendorff, of Buenos Ayres, gives the following explanation of the bubonic plague scare in Brazil: The President of Brazil owes a visit of courtesy to the President of the Argentine Republic, which is long overdue. He is afraid to pay it, because if he leaves the country his enemies will start a revolution and place his rival in power, so he stays at home to keep the army and navy from deserting his cause. The existence of bubonic plague is not the first excuse he has invented to keep from paying the visit.

The Pan-American Exposition at Buffalo, N. Y., has entrusted the care of the department of ethnology and archeology to a practising physician, Dr. A. L. Benedict. Many members of the profession are interested in the study of American ethnology and archeology and not a few have valuable collections of Indian relics and skeletons from Indian graves. Those not directly interested in this study could doubtless furnish the address of collectors. Dr. Benedict would be greatly obliged for information and for the loan of collections for the use of the department. Exhibits which represent study in some special line of American ethnology and archeology will be particularly suitable.

Woman's Sphere Again.—Regarding the alleged fatal wear and tear of a business life for women, especially for typewriters and stenographers, a St. Louis woman has collected some interesting statistics. She has found in one hospital, where the patients are mainly from well-to-do families, that of 165 women who have been admitted during the last year 95 are housewives, 14 are domestics, 3 are nurses, 6 teachers, 2 seamstresses, 1 a laundress, 2 worked in a factory, 4 are schoolgirls and 2 are stenographers. The remainder are women of leisure. In an institution where nervous diseases are a specialty there are 82 women patients. Of these 46 are housewives; 7 unmarried had been keeping their own homes; 5 are domestics and 15 are women of leisure. No stenographer had ever been an inmate there.

Victims of Lightning in the United States.—The Superintendent of the United States Weather Bureau states that the loss of life by lightning in this country last year was greater than in any year since statistics began to be collected. The number killed instantly, or suffered injuries from which death soon resulted, was 532; and 800 persons were injured, many of them suffering from physical shock, others from painful burns, and some from temporary paralysis of portions of the body. Paralysis of the arms or legs was the most common form of injury. The greatest number of fatalities, or 45%, occurred in the open; the next greatest number, or

34%, occurred in houses; 11% occurred under trees; and the least number, 9%, happened in barns. A number, mostly women, were killed while taking clothes from wire lines, or while near the lines during a thunderstorm.

Christian Science.—Recently the question arose in the Supreme Council of the Knights of Honor as to whether the lives of Christian Scientists, Faith Curists, etc., should be taken as risks. The supreme medical examiner said in his annual report, "We would not interfere with the religious bent of any Knight of Honor, but when a man professes to form a belief that tends, according to all scientific teaching, to shorten his life we must class him among the hazardous risks and decline to assume the risk." On the strength of this recommendation the committee proposed an amendment in reference to the noneligibility of members so as to exclude "one who avowedly professes to reject surgical or medical treatment for bodily injury or disease." This report was rejected by a vote of 64 to 13. However, the agitation was started and it is expected that other fraternal orders and regular insurance companies will take up the question. Inquiry of insurance companies has brought out the fact that there is in none of the application blanks of the companies any question which would bring out the information whether or not the applicant would avail himself of medical or surgical skill in case of illness or injury. The agents say that belief in Christian Science is a religious question and is not touched upon by the companies. Another way in which the question might be raised is by a Christian Science healer signing the death certificate of a beneficiary and the insurance company refusing to pay the policy on that ground.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended July 7, 1900:

SMALLPOX—UNITED STATES.			
DISTRICT OF		CASES.	DEATHS.
COLUMBIA:	Washington . . . June 23-30 . . .	4	
ILLINOIS:	Chicago . . . June 23-30 . . .	2	
INDIANA:	Evansville . . . June 23-30 . . .	2	
"	Indianapolis . . . June 23-30 . . .	1	
"	Michigan City . . . June 24-July 1 . . .	1	
KANSAS:	Wichita . . . June 23-30 . . .	6	
KENTUCKY:	Covington . . . June 23-30 . . .	16	
LOUISIANA:	New Orleans . . . June 23-30 . . .	12	3
MARYLAND:	Baltimore . . . June 23-30 . . .	3	
"	Cumberland . . . June 16-23 . . .	3	
MASSACHUSETTS:	Fall River . . . June 23-30 . . .	3	
OHIO:	Cincinnati . . . June 19-26 . . .	10	
"	Cleveland . . . June 23-30 . . .	10	
"	Portsmouth . . . June 23-30 . . .	1	
"	Youngstown . . . June 23-30 . . .	2	
PENNSYLVANIA:	Pittsburg . . . June 23-30 . . .	3	
SMALLPOX—FOREIGN.			
AUSTRIA:	Prague . . . June 8-16 . . .	8	
CHINA:	Hongkong . . . May 19-June 2 . . .	1	
EGYPT:	Cairo . . . May 30-June 3 . . .		10
ENGLAND:	Liverpool . . . June 8-16 . . .	2	
"	London . . . June 8-16 . . .	13	
"	Manchester . . . June 6-14 . . .	1	
FRANCE:	Lyons . . . June 8-16 . . .		7
"	St. Etienne . . . June 1-16 . . .	3	
GERMANY:	Frankfort on the Main . . . June 8-16 . . .	2	1
GREECE:	Athens . . . June 8-16 . . .		13
INDIA:	Bombay . . . May 28-June 5 . . .		40
"	Calcutta . . . April 28-May 5 . . .	12	7
"	Karachi . . . May 28-June 3 . . .	1	
JAPAN:	Nagasaki . . . June 1-10 . . .	1	
"	Osaka & Hiego . . . June 2-9 . . .		1
MEXICO:	Chihuahua . . . June 8-16 . . .	164	100
"	Mexico . . . April 30-June 17 . . .		7
"	Vera Cruz . . . June 17-23 . . .	6	6
RUSSIA:	Moscow . . . June 2-9 . . .	8	
"	Odessa . . . June 8-16 . . .	71	18
"	St. Petersburg . . . June 8-16 . . .		3
"	Warsaw . . . June 2-9 . . .	66	
SCOTLAND:	Glasgow . . . June 15-22 . . .		26
SPAIN:	Madrid . . . May 19-June 2 . . .		1
STRAITS SETTLEMENTS:	Singapore . . . May 12-19 . . .		1
URUGUAY:	Montevideo . . . May 12-26 . . .	1	
CHOLERA.			
INDIA:	Bombay . . . May 29-June 5 . . .		31
"	Calcutta . . . April 28-May 5 . . .		71

YELLOW FEVER.			
		CASES.	DEATHS.
COLOMBIA:	Barranquilla . . . June 8-16 . . .	40	18
"	Cartegena . . . June 1-13 . . .	3	3
CUBA:	Havana . . . June 13-20 . . .	8	3
"	Santa Clara . . . June 21-28 . . .	4	
MEXICO:	Vera Cruz . . . June 14-23 . . .		9
PLAGUE.			
ARABIA:	Aden . . . June 2-9 . . .	11	7
CHINA:	Hongkong . . . May 12-June 3 . . .	170	187
EGYPT:	Port Said . . . May 26-June 4 . . .	135	57
INDIA:	Bombay . . . May 20-June 5 . . .		131
"	Calcutta . . . April 28-May 5 . . .		216
"	Karachi . . . May 27-June 3 . . .	16	12
JAPAN:	Formosa, Tamsui . . . May 1-31 . . .	379	279
"	Osaka . . . June 12-19 . . .	1	
"	Shidzuoka . . . June 12-19 . . .	1	

Changes in the Medical Corps of the U. S. Army for the week ended July 7, 1900:

BRUHL, CHARLES E., acting assistant surgeon, will proceed to Cienfuegos, Cuba, for duty.

GIBSON, Major ROBERT J., surgeon, is granted leave for 1 month and 15 days.

LLOYD, CYRUS D., acting assistant surgeon, is granted leave for 1 month, on surgeon's certificate, with permission to visit Japan.

COOKE, ROBERT P., acting assistant surgeon, will proceed to Quemados, Cuba, and report to the commanding general, department of Havana and Pinar del Rio, for assignment to duty.

BROWN, CLARK L., hospital steward, is relieved from duty at the medical supply depot, Havana, Cuba, and will proceed to Quemados, Cuba, reporting to the chief surgeon, department of Havana and Pinar del Rio, for assignment to duty.

STEPHENSON, Major WILLIAM, surgeon, will proceed to Washington, D. C., and report to the Surgeon-General, U. S. Army, on business pertaining to the Medical Department of the Army.

STEPHENSON, Captain WILLIAM, assistant surgeon (now major, surgeon, U. S. Army), order of April 20 which relates to him is revoked, and he will proceed by transport via San Francisco, Cal., and Manila, P. I., to Taku, China, and report to Brigadier General Adna R. Chaffee, commanding the United States forces at or near that place, for assignment to duty.

FOGG, JOHN S., acting assistant surgeon, leave granted to him is extended 1 month, and he is granted permission to go beyond sea.

LORD, LESTER W., acting assistant surgeon, recently appointed, will report to the commanding officer of the troops stationed at Claveria, province of Cagayan, Luzon, for duty.

WHITTINGTON, WM. L., acting assistant surgeon, now on sick report at first reserve hospital, Manila, P. I., is relieved from further duty in the department of the Visayas, and will report to the commanding officer, convalescent hospital, Corregidor Island, for temporary duty.

KELLY, WALTER K., acting assistant surgeon, now on duty at Ormoc, Leyte, is authorized to appear before the examining board in Manila, P. I., for examination for appointment as assistant surgeon, U. S. Army.

AMADOR, RAOUL A., acting assistant surgeon, will proceed from New York City to Havana, Cuba, and report to the commanding general, division of Cuba, for assignment to duty.

HAYWARD, EDWIN P., acting assistant surgeon, will proceed from Nebraska City, Neb., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty in that department.

CORBUSIER, HAROLD D., acting assistant surgeon, will proceed from Elmira, N. Y., to Manila, P. I., and report to the commanding general, division of the Philippines, for assignment to duty.

LATIMER, CHARLES H., acting assistant surgeon, will proceed from Washington, D. C., to Manila, P. I., and report to the commanding general, division of the Philippines, for assignment to duty.

Changes in the Medical Corps of the U. S. Navy, for the week ended July 7, 1900:

NORTON, O. D., surgeon, detached from the "Monadnock" and ordered to duty with marines at Taku, China.

WOODS, G. W., medical director, will be detached from Naval Hospital, New York, and placed on retired list August 24, 1900, having reached the age of 62 years.

COOK, F. C., passed assistant surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to the Naval Hospital, Washington, D. C.

LEYS, J. F., passed assistant surgeon, detached from the "Franklin" and ordered home and to wait orders.

Changes in the U. S. Marine-Hospital Service, for the week ended July 5, 1900:

STONER, G. W., surgeon, detailed as temporary medical purveyor during the absence on leave of medical purveyor.

CARTER, H. R., surgeon, upon being relieved from duty at Havana, Cuba, directed to report at Washington, D. C., for orders.

CARRINGTON, P. M., surgeon, granted leave of absence, on account of sickness, for 15 days from July 5.

MAGRUDER, G. M., surgeon, bureau order of June 15, directing Surgeon Magruder to proceed to Memphis, Tenn., and assume command of the service, revoked, and directed to proceed to New Orleans, La., and assume command of the service.

GEDDINGS, H. D., passed assistant surgeon, detailed as acting director of hygienic laboratory during absence of the director. SMITH, A. C., passed assistant surgeon, directed to proceed to New York, N. Y., (Stapleton) and report to the medical officer in command for assignment to quarters. June 29. Granted extension of leave of absence for 8 days.

ROSENAU, M. J., passed assistant surgeon, upon completion of detail at International Congress of Medicine, Paris, France, to visit the Pasteur Institute and other laboratories for special temporary duty.

GARDNER, C. H., passed assistant surgeon, granted leave of absence for 21 days from July 19.

BLUE, Rupert, passed assistant surgeon, granted leave of absence for 15 days.

MATHEWSON, H. S., assistant surgeon, directed to proceed to Boston, Mass., and report to medical officer in command for duty and assignment to quarters.

HOBBS, W. C., assistant surgeon, directed to proceed to Honolulu, H. I., and report to Surgeon D. A. Carmichael for duty.

THORNBURY, F. J., assistant surgeon, relieved from duty at San Francisco, Cal., and directed to proceed to Port Townsend, Wash., for temporary duty. June 29.

HALLETT, E. B., acting assistant surgeon, granted leave of absence for 2 days from July 5.

MCDOWELL, W. F., hospital steward and chemist, relieved from duty at New York, N. Y., and directed to proceed to Havana, Cuba, and report to chief quarantine officer of Cuba for duty as hospital steward and chemist, and special disbursing officer.

KOLB, W. W., hospital steward, relieved from duty at Norfolk, Va., and directed to proceed to Savannah quarantine and report to the acting assistant surgeon in charge for duty and assignment to quarters.

SCOTT, E. B., hospital steward, upon being relieved from duty at Savannah quarantine, directed to proceed to Washington, D. C., and report at the bureau for duty.

Foreign News and Notes.

GREAT BRITAIN.

The Malaria Conference which it was purposed to hold in Liverpool at the end of July has been postponed, the centenary celebration of the Royal College of Surgeons of England and other events in the medical and scientific world having been arranged for the same time.

Voluntary Notification of Phthisis.—The Plymouth Town Council has adopted a scheme for the voluntary notification of phthisis, by which medical practitioners will receive a fee of 2s. 6d. for each notification in the case of private patients and 1s. for the notification in parish or dispensary cases.

Westminster Hospital.—The clinical laboratories which have been added to Westminster Hospital were recently opened by Lord Lister in the presence of a large body of medical and scientific men. They have been added to enable a more scientific examination than was possible in the wards, and are equipped with all the latest apparatus.

Royal Victoria Infirmary.—On June 20, the foundation stone of the Royal Victoria Infirmary at Newcastle-on-Tyne was laid. Prof. Philipson in an address alluded to the building of the present infirmary 150 years ago, while mention was made of the fact that the new hospital would accommodate 400 patients, and have a home for 100 nurses.

The Model Milk Clauses came up for discussion again in connection with the Oldham Corporation Bill. An attempt was made to substitute for them the Leeds clauses which require the order of two justices for the inspection of a dairy outside the borough when it is suspected to be the source of disease, while the Model clauses, which were inserted, require one.

National Society for Employment of Epileptics. The annual meeting of the governors of this society was held recently in London. The medical staff stated that among the epileptic colonists at Chalfont great improvement had been noted in the majority of instances both as regards the general health and the disease. The Executive Committee gave a brief review of the progress of the colony since its commencement in 1894, and reports many thousands of epileptics who are in urgent need of such provision as the colony affords.

University of Cambridge.—Sir Michael Foster has been appointed the university member of the Council of the Jenner Institute of Preventive Medicine. Hubert Nicholls, of St. Johns College, has been admitted to the degree of Doctor of Medicine. During the academic year just ended 15 Doctors of Medicine, 1 Master of Surgery, 53 Bachelors of Medicine, and 65 Bachelors of Surgery took their degrees.

Diphtheria in Edinburgh.—An epidemic of diphtheria visited Edinburgh during the beginning of last month. Nearly 50 cases were reported, the cause of which the medical officer of health traced to the milk coming from a farm in the Liberton district. Since the supply has been stopped no cases have developed. None of the family of the dairyman was incapacitated from work, though all were suffering from sore throat.

Bar-Parlors and Tuberculosis.—Dr. J. Wheatley, medical officer of health of Blackburn, in his annual report states that no places, excluding the workrooms of some trades, are more favorable to the spread of tuberculosis than bar-parlors and other frequented rooms of public houses. He urges most scrupulous cleanliness in the management of these places. He also says that the birth-rate has been steadily declining since 1872, and was last year the lowest on record.

Unqualified Poison-Sellers.—A society of unqualified traders is trying to do away with some of the meager provisions existing for the protection of the public. This society is interested in the sale of certain poisonous preparations not intended for human use. They promise some sort of regulation. For instance, the dealer will be licensed and registered, and the articles are only to be sold in original packages as received from the makers, and labeled with the name of the venders, the word poison, and the name of the active poisonous constituent. Particulars of each sale shall be registered.

Inoculation for Typhoid.—There has been general anxiety to learn the results of the tests made on the troops in South Africa. The Under-Secretary of War said that the information was being carefully compiled, but that so far the statistics were not enough to warrant conclusions. He further stated that no compulsion was used to induce soldiers to be inoculated, and that it was entirely optional with them. Members are anxious to learn whether there is any evidence of the protective character of the operation, whether it makes the disease run a milder course, and what proportion of those inoculated have recovered.

Typhoid Fever at Belfast.—For the week ended June 21, 50 cases of typhoid fever were reported in Belfast, Ireland. The Public Health Committee say that the cause is the bad water supply and claim that the catchment area at Stonyford is polluted. The commissioners obtained power to buy all farms the drainage of which might find its way into the Stonyford reservoir. The committee claims that this has never been acted upon. The places specially affected are on the direct supply from the Stonyford reservoir. Another view is that the disease is due to the soil being permeated with disease-germs due to the defective drainage of the jerry-built houses of Belfast.

The R. A. M. C. South African Fund.—A meeting of the General Committee of this Fund was held June 19. The total amount received was £2,266 8s. 4d. The *British Medical Journal* subscription resulted in the addition of £645 18s. 9d. to the fund. The report of the Executive Committee was presented by Surgeon-General Muir: 9,000 parcels had been sent to South Africa, containing upward of 100,000 articles. A vote of thanks to the ladies and others who had given assistance was moved by Major Wilson, who said that till the medical profession had made the Royal Army Medical Corps their own it could have been said that the corps belonged to nobody.

Food Preservative Investigation.—London is making a wry face over the disclosures following an investigation going on before the departmental committee appointed by the local government to inquire into food preservatives. It appears that nothing in recent years has caused so much trepidation among gourmets, for, from the humble smoked

herring to the luxurious foie gras, everything edible seems to be subject to a coloring process, either to hide its defects or to increase its charms to the eye of the inexperienced buyer. Dirty rice, for example, colored with coal-tar dye, was used to make what is called "egg powders," some of which have no association with the product of hens.

Proposed Exemption of Hospitals from Local Taxes.—The select committee of the House of Commons appointed to inquire into the proposed exemption of hospitals from local rates, met June 22 for the examination of witnesses. Mr. Burt said that the total amount of rates levied on the 77 scheduled medical hospitals in London, was £21,300 annually. He considered that those hospitals should be exempt that are carried on not for profit, but for the care of the sick, poor in mind or body, and maintained partly or wholly by voluntary contributions or endowments. The principal objection was that it was almost impossible to draw a line of exemption.

The Sale of Food and Drugs Act.—Mr. Walter Long, according to the *Lancet*, when questioned on the administration of the Sale of Food and Drugs Act of last year, said that he adhered to the view he had before expressed, that the main object of the Act was to ensure local action against adulteration, and the function of the Board of Agriculture was to exhaust every effort in urging, and, as far as they could, compelling, discharge of this duty before taking action themselves. Nothing could be more disastrous than for the central authority to be ready to do the work which rightly fell to the local authority. So far as he was aware the operation of the Act of last year had been most satisfactory.

Poisonous Sodium Phosphate.—Anxiety has been created recently by newspaper reports that a firm of chemists had informed their customers that a batch of effervescent sodium phosphate sent out by them contained arsenic. The makers of the effervescent preparation purchased the sodium phosphate in the ordinary physical condition from a well-known manufacturer of medical chemicals; it was then worked up into the effervescent form and distributed; after discovery of the poisonous nature of the preparation, warning was sent out; and a house which supplies retail chemists with proprietary articles notified these of the error. It is believed that most of the affected substance has been recovered.

To Investigate South African Hospitals.—In the House of Commons the names of the members of the committee appointed to investigate the South African hospital scandal have been announced as follows: Prof. D. J. Cunningham, Lord Justice Romer, and Dr. Church. Objections were made to the smallness of the number of the committee, and Mr. Balfour said that he would do his best to increase the membership of the committee to 5. A number of the members of the first Canadian contingent sent to South Africa sailed for home on the Allan Line steamer *Parisian* today. They complained greatly of the treatment they were subjected to in the field hospitals. Of the 1,150 Canadian troops, 800 were stricken down with enteric fever, mostly due to the putrid water of Paardeberg.

The St. Pancras Scandal.—The Lunacy Commission vote on June 22 gave an opportunity of calling attention to the gross scandal connected with relieving officers of the St. Pancras Board of Guardians in trafficking with the owners of private asylums to receive lunatics who should properly to have gone to the London County Council Asylums. Lord Russell said that this system of illegitimate commissions was not confined to St. Pancras, and that there had been cases in St. Matthew's, Bethnal Green. The relieving officers in St. Pancras, he said, had been in the habit of receiving 5s. for each medical examination, and the medical men who declined to make these payments were boycotted. This form of corruption, as well as the payments received from the owners of private asylums, the Lord Chief Justice said he had reason to fear was more widespread than was generally conceived.

Smallpox in Glasgow.—Smallpox has again visited Glasgow and although the epidemic as yet is not serious it continues to spread. Proximity of residence and a comparison of the dates of attack in one series of cases gave rise

to a suspicion of a common source of infection, and this most probably lay in an eating-house in the neighborhood. Inquiry elicited the fact that the wife of the eating-house keeper had recently died, there had been no medical attendant. Enough was elicited, however, to form a well-grounded suspicion of hemorrhagic smallpox, and the inquiry received its practical justification in the discovery that a daughter of this household was then recovering from an attack of the disease, so mild that not more than half a dozen spots could be detected. A circular has been issued to the medical practitioners of Glasgow urging them to encourage re-vaccination.

Sir William T. Gairdner, professor of medicine in the University of Glasgow, was entertained at a banquet, June 19, by his medical friends in the West of Scotland, on the occasion of his shortly leaving Glasgow to reside in Edinburgh. The customary loyal and patriotic toasts having been honored, Sheriff Barry proposed the toast of "The medical profession." He made a comparison between the three learned professions and considered that the world might be able to get on for a time without law, or even the Church, but not for a day without the medical profession. Sir William Turner in responding referred to a speech of Mr. Gladstone's in which the professions of medicine and politics were compared and the former considered superior. Principal Story proposed the toast of "The guest of the evening," and said that no better representative of all that was best in Scottish medical science than Sir William Gairdner had existed; that the University had lost an illustrious member.

The Granting of "Diplomas" to Midwives.—At the regular monthly meeting of the Medical Defence Union, the secretary read a draft letter concerning the granting of certificates to persons, other than medical practitioners by certain associations and lying-in institutions, which certificates were taken by the holders as qualifying them to practise as midwives. The Council adopted the letter, and ordered it to be forwarded to the General Medical Council, with a recommendation from the Union to the following effect: That it is desirable, in the interests of the public, that medical practitioners, either individually or collectively by associations, should not be allowed to issue any document which in any way can be taken by the holder or the public as granting authority to practise, or which can be used to cover any practice of medicine, surgery, or midwifery, saving in the case of persons examined by duly appointed examining bodies under the supervision of the General Medical Council through their inspectors of examinations.

Medical Officers of School Boards.—The Swansea School Board, acting under the advice of its medical officers, has issued a leaflet of advice to parents. This school board has appointed two medical officers, Dr. Rhys Davies and Dr. E. Rice Morgan. These gentlemen make a quarterly inspection and report to the Board. The leaflet contains some excellent advice expressed in clear and simple language on various matters as to which parents are apt to sin rather from want of attention than from design. Thus under the head of fresh air it is pointed out that children spend, or ought to spend, nearly one-half of their time in bed, and that, therefore, the ventilation of their bedrooms is a matter of the greatest importance, and the value of the open fireplace and the inexpensive ventilating bar to the window is pointed out. The necessity for proper clothing of the arms and legs is insisted upon, as is also the importance of watertight boots. A few words are said as to guarding children from measles and whooping-cough, and it is pointed out that the earlier the age the more dangerous are these diseases to life. Perhaps the most valuable section of the leaflet is that on "general cleanliness." It is pointed out that clean children are liable to have lice in the hair, for if one child in a school has it others may become infected, and a systematic examination showed a very large proportion of all girls in the schools were infected. The leaflet also contains under this head observations on the necessity of attending to the teeth, a matter upon which it is usually more easy to influence parents, and upon the toilet of the nails.

The Liverpool School of Tropical Medicine.—On June 25 a meeting was held in Liverpool to consider what action should be taken to urge upon the Government the

necessity for the amelioration of the conditions of life in West Africa and other tropical countries, by improved sanitation, better water-supply, separation of the Europeans from the native races, and other means. Prof. Boyce said that the Liverpool Tropical School of Medicine had been founded only about a year ago. It was not founded more than a month before it sent out an expedition with Major Ross to the West Coast of Africa. Shortly afterwards another expedition was sent out, and was at present working in West Africa. Now the School was about to send a third, this time to South America. The German Government voted £6,000 to send out a commission to study tropical diseases, and especially malaria. No sooner had the United States got a footing in Cuba and the Philippines than they despatched expeditions. The expeditions the Liverpool Tropical School had sent out had directly shown the cause of malaria, and by that means had made it possible that certain measures could be taken to prevent the spread of the disease among Europeans.

CONTINENTAL EUROPE.

Medical Legislators.—Prof. Maragliano, of Genoa, and Prof. Golgi, of Pavia, have recently been elevated to the rank of Senator of the Kingdom. Professor Sanarelli, of Bologna, has also been elected one of the Deputies in the new Parliament.

The Balbi-Valier Prize.—The biennial prize of 3,000 lire (nearly £120), which was founded by Balbi-Valier, has been awarded by the Venetian Institute of Sciences to Professor Grassi, of Rome, for his work on the mosquito and its relation to malaria.

Paris Supply of Water.—The supply of water from the springs of Loing and Lunain, works for which have been in progress for many years, are now complete. The aqueduct is 100 kilometers in length, the quantity of water delivered is ample, and the works cost 24,000,000 f. By this means, even during great spells of heat, Paris will have a plentiful supply of drinking water, and the fears which have been entertained of a water famine during the Exhibition are shown to be unfounded.

Hospital Abuse in France.—The question of hospital abuse is apparently acutely felt in France by the general practitioner. In a recent letter to the Concours Médical attention was drawn to this growing evil and the disappearance of the system of free consultation advocated. In regard to hospitals this statement among others was made, that half the confinements in Paris are attended at the expense of the governing body of medical charities. Graduated payment for hospital treatment or paying hospitals and an agreement between the various members and branches of the medical profession were suggested.

Smallpox at Lyons.—The epidemic of smallpox at Lyons still continues. To lessen the necessity for the workman losing time by having to attend the vaccination station, public vaccinators are offering vaccination at the homes, but are met everywhere by refusals. Out of 700 men employed by one firm only 10 consented to be revaccinated and that only by a medical man specially supplied by the head of the firm. M. Rafin considers that the drysweeping of staircases, which is a custom in Lyons, is a fruitful cause of the dissemination of infectious diseases, and M. Delore makes the same remark in regard to the custom of beating carpets in courtyards.

The Geographical Distribution of Goiter in France.—At a recent meeting of the Academy of Medicine, M. Poncet communicated the results of some statistics drawn up by M. L. Mayet relative to the distribution of goiter in various districts of France. The figures on which the statistics were based were taken from the returns furnished by provincial councils of the physical examination of recruits enrolled each year. The classification shows plainly that goiter is not distributed in a haphazard way, for the departments most affected are grouped in blocks occupying the regions of the Alps, the Pyrenees, the Central Plateau, the Jura, and the Vosges. The departments of the Aisne and the Orne alone show up as black spots in otherwise unaffected districts. M. Mayet has compared these figures with others for past periods, and concludes from these that the distri-

bution of goiter is still much the same as before, but that its amount has diminished, especially within the last 50 years. M. Mayet considers that probably the total number of goitrous people is between 375,000 and 400,000.

MISCELLANY.

Obituary.—PROF. THOMAS JONES, of Manchester, Chief Surgeon of the Welsh Army Hospital, died at Springfontein, in the Orange River Colony, June 18, aged 49. He was an eminent surgeon and a popular teacher, and was professor of surgery in Victoria University and surgeon to the Manchester Royal Infirmary.—HERBERT DAVIS, at Springfontein, June 15, aged 27.—GADET DE GASSICOURT, of Paris, aged 73.—PROF. MAXIMINO TEJEIRO, of Santiago.—PROF. TEODAEIO DE BONIS, of Naples, aged 53.—J. ICARD, editor of the *Lyon Médical*—FRIEDRICH BROSN, of Dresden, aged 42.—SAMUEL HOPE, of Petworth, June 21, aged 56.—DR. KISLEY, of Hyde, aged 45.—JAMES LOGIE, of Woolwich, aged 43.—DR. EMBLETON, of Bournemouth.

Anti-Alcoholic Serum.—Dr. Crevally, of Sydney, New South Wales, has reported an experience with anti-alcoholic serum that throws doubt on the efficacy of the serum discovered by Sapellier, Thébault, and Broca. He began his experiments over two years ago at the Sydney Institute of Bacteriology. He subjected a calf to a long term of enforced drunkenness, obtained a serum from it and injected it into several confirmed drunkards. After two or three injections they gave up drinking, and the doctor thought that his discovery was established. He found, however, that after a week his subjects took to drink as hard as ever and came to the conclusion that their temporary cure was due to the imagination. His opinion was confirmed when they returned to him and, after he had injected clear water into them instead of the intoxicated calf-serum, they declared their repugnance for alcohol and kept sober for a few days.

An Important Discovery.—The Hygienic Institute of Würzburg University, Berlin, recently published the fact that Dr. Zierler had practically applied an important discovery made by the scientists of the University, and had succeeded in destroying bacteria in the teeth and jaws of living people by electric currents. Having killed the bacilli of the tooth-nerve decay, he applied the currents to other bacteria, and the success was complete. By careful controlling he proved that the organisms had been completely destroyed, while the nutritious substance to which they adhered had not been poisoned. The electric currents were introduced into carious roots of teeth just extracted, and they sterilized the whole root in each case. After repeating the experiment many times, he tried it upon patients, with great success. When the process is correctly applied it is absolutely painless, and the narrowest root-canals can be sterilized if the needle electrode can be introduced. He has also cured very severe cases of caries in the jawbone which seemed hopeless. He says that teeth that were considered lost under the old system may be saved by the application of this invention.

Undecorated Distinction.—It is related of Lord Bacon that in the earlier part of his career at the bar he was fain to ask for the honor of knighthood in order that he might no longer be in the anomalous position of being the only untitled member of his mess at Gray's Inn. Had he looked at the situation in the true light he would have seen that the very circumstance which he found so humiliating was for a man like him a higher distinction than any title. When Lord Castlereagh at the Congress of Vienna presented himself in a plain black coat amid the beribboned and bestarred throng of plenipotentiaries and diplomatic magnates, Prince Metternich said to him, "*Ma foi, Milord, c'est très distingué!*" A distinguished British officer disliked to have the initials of his order placed after his name, because, as he put it, "Everyone is a C.B. now." In France this is almost literally true as regards the Legion of Honor; it is difficult to find an undecorated individual, even if he is a doctor. There is a story that Professor Rostan once asked a patient admitted to his wards the name of the practitioner under whose care he had been before coming to hospital. The patient answered that it was a doctor with a decoration. To which Rostan replied: "If you had told me it was a doctor without one I might probably be able to identify him."—[*British Medical Journal*.]

The Latest Literature.

British Medical Journal.

June 23, 1900. [No. 2060]

1. Degeneration of the Neuron. FREDERICK W. MOTT.
2. Two Lectures on Antenatal Diagnosis. J. W. BALLANTYNE.
3. Epidemic Cerebrospinal Meningitis in Dublin. ALFRED R. PARSONS and H. E. LITLEDALE.
4. A Case of Hemorrhagic Pancreatitis. JOHN C. UHTHOFF and EDWARD F. MAYNARD.
5. Notes on a Case of Acute Pancreatitis Complicating Mumps. HENRY W. JACOB.
6. General Emphysema Complicating Fractured Ribs. J. F. HEISE ELLERTON.
7. The So-called "Stave of Thumb" or Bennett's Fracture. JAMES E. PRICHARD.
8. Case of Hare Lip and Unusual Tumor of Prolabium. RUSHTON PARKER.

1.—See abstracts of *The Lancet* this issue.

2.—Ballantyne's second lecture on **antenatal diagnosis** is considered under the headings—(1) Maternal symptomatology; (2) Maternal physical examination; and (3) Physical examination of the fetus in utero. He considers the fact that the diagnosis of pregnancy is not easily made to be presumptive evidence that there is an abnormal pregnancy. Some of the symptomatologic deviations which are met with are, the occurrence of more or less regular and more or less sanguinolent discharges from the vagina. In the early months this may indicate a threatened abortion or a hydatid mole, and in the later months it may point to a low implantation of the placenta, or to premature separation of the same. It may also point to the existence of an antenatal morbid condition of the uterus itself, such as bicornate or septate organ, or to the presence of a tubal or tuboabdominal pregnancy. There may be deviations from the normal in the symptomatology of quickening. In cases of maternal malaria the mother has occasionally described attacks of fetal quivering and shaking, which seem to indicate that the fetus also suffered from malaria. Abnormalities in the degree and rate of abdominal enlargement, in the mammary sensations, the morning sickness, dysuria, headache, neuralgia, etc. In the maternal physical examination grave maternal cardiac disease will be undoubted warning that abortion, premature labor, or fetal death may be looked for and it may, especially when the maternal valvular lesion can be traced to acute rheumatism, mean that the infant will be born with a malformed heart. Pulmonary tuberculosis will often carry with it phthisis of the fetus, or tubercular changes in any of the organs or in the placenta. Morbid changes in the fetus may cause changes in the maternal organs which are capable of being recognized by the observer. Fetal death, for instance, may be followed by the disappearance of varicose veins, by shrinking of the thyroid enlargement, freer respiration, etc. Physical examination of the fetus in utero can hardly be separated from that of the mother's uterus and vagina, either in theory or practice. As a matter of fact, the two procedures are carried on simultaneously. [W.K.]

3.—Parsons and Littledale report 7 cases of **epidemic cerebrospinal meningitis**, 4 of whom recovered and 3 died. From these cases and the literature on the subject Parsons draws the following conclusions: Numerous outbreaks have occurred in America while England has escaped to a remarkable extent. The disease occurs chiefly in children and young adults, is most common in the spring, and the evidence tends strongly to show it is caused by the *Diplococcus intercellularis meningitidis*, which probably gains entrance by way of the nose. The onset is sudden and definite, with headache and often a chill; the temperature course is not constant; the head is retracted, chin pointed, and thighs flexed on the abdomen; Kernig's sign is usually present, and the kneejerk is diminished or absent; nasolabial herpes is common, likewise strabismus and double vision; albumin may or may not be in the urine. The prognosis is grave, but probably better for children than adults. Treatment consists of ice to the head and evaporating lotions, trional, bromids, and morphin. External rubbing with camphor liniment and alcohol relieves pain in the trunk and extremities. [A.B.C.]

4.—Uthoff and Maynard report a case of **hemorrhagic pancreatitis** occurring in a man of 77. The onset was sudden and characterized by pain in the abdomen, sickness, and collapse. Vomiting soon came on and occurred at intervals until death, which occurred 3 days after the onset. Each day of the illness was marked by a profound collapse from which the patient slowly recovered until the last, which ended in death. There was some distention of the abdominal wall. Necropsy showed the head of the pancreas to be the size of an orange. One large and numerous small hemorrhages had occurred in the substance of the organ. The capsule of the organ was thickened and tough. [A B C]

5.—Jacobs reports a case of mumps in a boy of 10, complicated by acute pancreatitis. The mumps ran about the ordinary course, but with the subsidence of swelling of the parotids there appeared exquisite abdominal tenderness in the region of the pancreas. A distinct sausage-shaped mass could be felt in this region. It corresponded in outline to the situation of the pancreas. Turpentine fomentations, calomel, Dover's powders, sodium bicarbonate, and a diaphoretic mixture relieved the condition, the tenderness and mass gradually disappearing. The boy made a good recovery. [A B C.]

6.—Ellerton reports a case of marked **emphysema following fracture of the sixth and seventh ribs**. There was cough and slight difficulty in breathing, but no hemoptysis or pneumothorax. With the exception of the forehead and legs the emphysematous crackling and percussion resonance were everywhere present, the examiner's fingers sinking three-quarters of an inch into the skin, and causing pain on pressure. The patient recovered from the immediate effects of the injury, but died several weeks later from general debility. [G.B.W.]

8.—Parker reports a case of double **harelip** in which in place of the usual prolabium and premaxilla found in these patients, a whitish globular tumor about half the size of the mouth presented. The skin and mucous membrane covering the growth were left in place while the tumor itself was removed. Three subsequent operations were necessary before a fairly satisfactory result was secured. The last operation was done to narrow the very broad nose. [G.B.W.]

Lancet.

June 23, 1900. [No. 4008.]

1. The Degeneration of the Neuron. FREDERICK W. MOTT.
2. Differentiation in Diabetes. F. W. PAVY.
3. Some Notes on the Introduction and Spread of Plague. G. J. BLACKMORE.
4. On Chylous Ascites, with an Illustrative Case. J. HALLIDAY CROOM.
5. A Plea for Early Operation in Cases of Undoubted Tubercle of the Lung. J. FOSTER PALMER.
6. Acroparesthesia. F. H. EDGEWORTH.
7. The Comparative Germicidal Action of Some Disinfectants. ARTHUR H. BURGESS.
8. Acute Glossitis Complicating a Case of Typhoid Fever. H. CAMPBELL THOMSON.
9. Imperforate Hymen and Retained Menstrual Accumulation. HUGH HOWIE BORLAND.
10. A Case of Thrombosis of the Superior Mesenteric Veins. W. M. DUNLOP.
11. Two Cases of Perforation of the Intestine during an Attack of Typhoid Fever treated by Laparotomy; One Recovery. R. W. MARSDEN.

1.—Mott in a lengthy, technical and valuable article discusses the nervous system. The **neuron theory** as formulated by Waldeyer some years ago is, with some modifications and additions, generally accepted today, despite the opposing views of some neurologists. Professor His showed that axis-cylinder, and other processes are really outgrowth from the cell protoplasm, and he believed that the apparent nervous network was really only an interlacing of the many cell processes. The author believes, however, that the neuron theory is not incompatible with the views of Held, namely, that the terminal arborization of the axis-cylinder of one neuron forms protoplasmic concrescences by fusion with the cell body and dendrites of another. This, of course, implies continuity of protoplasm of one neuron

with another, but trophically and genetically the two are independent. This independence is shown by secondary degeneration. Mott believes the "Nissl granules" seen in the cell protoplasm are formed by a death-change in the fluid plasma of the cell whereby the nucleoproteid substance contained in it is thrown down as a fine precipitate. That it is a death-change is indicated by the cells taking a uniform stain under certain conditions, as after hyperpyrexia and coagulation necrosis resulting from cutting off of the blood-supply. The gray sympathetic fibers differ from the white fibers by the latter being supplied with a myelin sheath. The white fibers of the central nervous system differ from those of the peripheral system by not having the nucleated sheath of Schwann. Certain tracts of the central nervous system develop earlier than others. Different tracts in the posterior columns of the cord become myelinated at different periods, and it was owing to Flechsig's studies that those of endogenous origin were differentiated from those of exogenous origin. The practical outcome of this research was the modern idea of the **pathology of tabes**, for it was shown that the exogenous fibers were alone atrophied in tabes, while the endogenous fibers which have their trophic and genetic centers within the gray matter of the cord were spared. This is incompatible with the generally accepted view that the degeneration is caused by a sclerosis of the posterior columns; but it points to a nutritive failure in the trophic and genetic centers by which the outlying projections of the axis-cylinder processes undergo a regressive atrophy, the inverse of their development. There is a correlation between the functions of the systems, groups, and communities of the neurons and the myelination of their axons; thus in the brain and spinal cord of the fetus and the newborn child tracts of fibers are myelinated with definite regularity. The myelin sheath appears 3 or 4 months after the axis-cylinder process. The afferent fibers are myelinated before the efferent. The whole afferent tract, conducting tactile, articular, muscular, and visceral sensations by the posterior columns, fillet, thalamus, and corona radiata, are myelinated at birth. The cerebral cortex increases in richness of myelinated fibers up to the fortieth year and longer, but diminishes in old age. The myelin appears to be necessary for the functional activity of the nerve-tracts. [A.B.C.]

2.—Pavy has already called attention to two forms of **diabetes**: (1) The "alimentary" form, caused by failure of the system to properly assimilate the carbohydrates; and (2) the "composite" form, caused by the disintegration of proteid material, thus setting free in the circulation the sugar it contains. A certain small standard amount of sugar is found normally in the blood and urine, and this is not influenced by the ingestion of carbohydrate food. We no longer hear of excessive secretion of sugar by the liver as being the cause of diabetes. Everything points to the carbohydrates belonging to our food passing as sugar into the general circulation in diabetes in a manner that does not occur in health. In health this sugar should: (1) Be converted into fat before reaching the general circulation, and Pavy says this should occur mainly in the villi of the small intestines; or (2) part of it is disposed of by synthesis with nitrogenous substances to form proteids. The alimentary form of diabetes has to do with the failure of the carbohydrates to be properly assimilated—i. e., converted into fat. The composite form of diabetes has to do with the synthetic compounds with nitrogen. If the ferric chlorid test gives no reaction it may be taken that thus far the case is only in the "alimentary" form. This may be corroborated by the cupric oxid reduction and by the polarimeter. The plan of treatment in the "alimentary" form is to restrict the diet of the patient, cutting down the starchy material in the diet till sugar disappears from the urine. The urine indicates when too much carbohydrates are being ingested, and, strange to say, the body weight indicates when too little is being ingested; for when there is no toleration of carbohydrates the restricted diet does not lead to loss in body weight; in fact, in this condition the patient often gains in weight, which may be fairly permanent. On the contrary, if there is toleration for carbohydrates and these are withheld, then there is a fall in weight. Thus the restoration of the normal assimilative power is the thing to be sought for. A sugar-free urine, on restricted diet, with a fall in weight augurs well. All sugar from the carbohydrate food should be assim-

lated before reaching the general circulation, as once there it will pass on to the urine. Everything tends to show that in diabetes the fault lies with the sugar being wrongly permitted to reach the general circulation as a consequence of the nonassimilation of the carbohydrate material. [A.B.C.]

3.—Blackmore calls attention to the way in which **plague** manifests itself as a rule in any place where it becomes epidemic. During the first year there are only a few cases and the disease apparently dies out. The following year it reappears and runs a distinctly longer and more virulent course and again apparently disappears. The next year it again appears and becomes epidemic. For 4 or 5 weeks the mortality is great, then it fluctuates. The exact means by which plague spreads is not definitely known. Rats doubtless convey it to other rats, but the author is of opinion that fleas and other vermin probably convey it to persons by inoculation. Rags probably serve as a good carrier. We know of no way of absolutely stamping out plague when it once gains a footing. The following precautions should be adopted to prevent its ingress: (1) A most careful search made for modified cases of plague for considerable time after it has apparently died out; (2) rigid inspection of vessels and passengers coming from infected places, even for months after; (3) disinfection of dirty rags and clothing coming from suspected places; (4) a sharp lookout kept for increased mortality among rats in seaport towns, and examination of their dead bodies for the plague-bacillus; (5) an attempt made to exterminate the vermin which might carry the germs; and (6) early inoculation of the people where plague has appeared among the rats. [A.B.C.]

4.—Croom reports a case of **chylous ascites** occurring in a woman of 39. She complained of swelling of the abdomen and gradually advancing weakness and emaciation. Up to 3 months previously she had enjoyed good health. She was the mother of 6 children, the youngest being 3½ years. The superficial veins were much distended, and the skin pigmented. A diagnosis of cancer of the omentum and mesentery was made. The abdominal cavity was aspirated and 380 ounces of a pale yellow pus-like fluid removed. This on microscopic and chemical examination showed 2% of fat, and debris composed mainly of leukocytes undergoing fatty degeneration. This relieved the patient for a short time, but subsequent tapping became necessary. The patient gradually became emaciated and died. Necropsy showed cancerous infiltration of the subpleural lymphatics, the stomach, small intestines, mesentery, and lymphatics along the principal bile-ducts. The lacteals especially were occluded. Though the receptaculum chyli and thoracic duct were free from disease a cancerous mass pressed upon the former. [A.B.C.]

5.—Palmer suggests **excision** of portions of **lung-tissue** in case of tuberculosis, basing his observations chiefly on anatomic considerations and the results of accidents affecting lung-tissue, together with the rare cases in which operation has been found necessary for other affections. He reports no personal experience, but reviews the literature of the subject thoroughly. [M.B.T.]

6.—Edgeworth describes 3 cases of **acroparesthesia**. They were all women between 40 and 50, engaged in earning their living by manual work, and otherwise in good health. The abnormal sensation complained of was a dead, tingling feeling in the hands and arms, which occurred either at night or on using the hands, or persistent though much worse on manual labor. In all three cases no objective signs of anything abnormal was discovered either when the patients were free from or suffering from the abnormal sensation. No symptom nor sign of hysteria was present. The pathology of acroparesthesia is unknown. According to Lereboullet the fault lies in the peripheral venous circulation which, by producing ischemia, or it may be passive hyperemia, results in serous infiltration of the terminal branches of the nerves. In some instances objective signs of vasomotor disturbance have been seen. The age and sex of the patient are predisposing factors. The following affections may be confounded with acroparesthesia: hysteria, peripheral neuritis, erythromelalgia, acrocyanosis, and arterial degeneration. The disease is difficult to treat. Bromids combined with small doses of nitroglycerin gave Edgeworth the best results. Two of the above cases were cured after six months. [A.B.C.]

7.—Burgs experimented with some 14 of the more o di-

nary **disinfectants** to test their relative **germicidal** powers. The method to be pursued, briefly stated, is as follows: A pure culture of a germ having first been obtained, silk threads are impregnated with this and are afterwards exposed to the action of the disinfectant to be tested in a solution of known strength for a certain definite length of time, at the expiration of which they are removed, well washed in sterilized water, and placed under conditions known to be suitable for the growth and development of the germ in question. Should growth occur, it is evident that the disinfectant in this particular strength of solution has failed to destroy the vitality of the germ; in other words, that disinfection has not taken place, and *vice versa*. The specific germ selected for these experiments was the *Bacillus coli communis*. As a result of the experiments, which were very elaborate and required the use of some 2,000 test tubes, a valuable table was compiled. The following are some of the more ordinary substances tested: Biniodid of mercury, perchlorid of mercury, chlorinated lime, formal aldehyde, lysol, carbolic acid. The author concludes that the biniodid of mercury is the most efficacious, being especially better than the perchlorid, because it does not form an albuminate of mercury in the presence of albumin, as does the perchlorid. An idea of the relative values may be obtained from the following, in which the proportions are equally efficacious: Biniodid, 1-5000; perchlorid, 1-2000; chlorinated lime, 1-100; formal aldehyde, 1-40; lysol, 1-20; carbolic acid, 1-20. In all of these the proportions given proved fatal to the germs within 5 minutes, and a slightly weaker mixture of each failed to kill. [A.B.C.]

8.—Thomson reports the case of a woman of 34 years, who, while suffering from typhoid fever, was attacked with **acute glossitis**. Some 30 days after the onset of the typhoid, during which time the patient gradually became worse, it was noticed that the left side of the tongue began to swell and become very red, firm and tender; 3 hours later the swelling had involved the right side. The great size of the tongue made it necessary to try to reduce it. Piercing with a grooved needle brought a little blood only. Death occurred soon after. Necropsy showed deep ulcers of the intestine with a perforation of the ileum, peritonitis, and ulcers on the dorsum of the tongue. The cause of the glossitis is a secondary local infection in most cases, in other cases it appears to be part of a general infection. [A.B.C.]

9.—Borland reports a case of **imperforate hymen** in a girl aged 13 years and 9 months. A large tumor rose above the pelvis reaching 2 inches above the umbilicus. The vulva was greatly bulged downward and the perineum distended. The vaginal orifice was completely occluded by a bluish membrane $2\frac{1}{2} \times 1\frac{1}{2}$ inches in size. This membrane was incised with a sterile knife for its whole length. The mucous membrane of the uterovaginal canal was found to be perfectly smooth and devoid of rugae. A large quantity of fluid was evacuated, and the recovery was uneventful. [W.K.]

10.—Dunlop says **thrombosis of the mesenteric vessels** simulates very closely intestinal obstruction. Either the arteries or veins may be affected. If the arteries are thrombosed the symptoms are acute, if the veins, the symptoms are usually of the chronic form. In almost every case laparotomy for intestinal obstruction is performed. A case of a man of 51 is described. For 2 days he had suffered with acute pain in the hypogastrium, and vomiting. The pain was paroxysmal in character. The abdominal wall was flaccid, no abdominal tenderness nor distention. A quantity of bright red blood was passed by the rectum and soon after the patient died. Necropsy showed that 2 feet of the middle part of the ileum was congested, almost black, but not distended. The veins of the congested area were uniformly plugged with firm, dark-clotted blood. The corresponding arteries were healthy. No cause for the condition could be found. [A.B.C.]

11.—A boy of 16 who had passed through a moderately severe attack of **typhoid fever** suffered a relapse during convalescence; this seemed to be terminating very satisfactorily when, on the tenth day, he was taken with acute cutting pain in the abdomen; the abdominal muscles became tense, liver-dulness disappeared, and there was decided tenderness between the umbilicus and the anterior superior spine. On opening the abdomen in the median line, yellow serous fluid containing minute particles escaped, a **perforation** was found 6 inches to the cecal side of a Meckel's

diverticulum; it was small, round, and about 3 mm. in diameter. The bowel was carefully examined without any other perforation being discovered; the perforation was closed by Lembert sutures and a drainage tube was passed toward the pelvis, after irrigating with warm saline solution; the operation lasted 30 minutes and had no ill effects, except that there were attacks of vomiting for the first 36 hours; after this there was uninterrupted progress toward recovery. In a second case a boy of 18 had been ill 2 or 3 weeks with a moderately severe attack of typhoid fever. Pain in the abdomen after defecation was the first indication of perforation; there was general tenderness over the hypogastrium, absence of liver-dulness, the respirations were shallow and thoracic, and there was extensive tenderness 8 hours after the onset of the symptoms. After the preliminary shock had passed off, a median incision was made, light-yellow milky fluid escaped, the bowel was slightly distended and the peritoneal coat much injected. After examination of a considerable length of the ileum, a perforation with sloughing edges was found in the center of a thickened edematous patch; it was closed by interrupted Lembert sutures; the peritoneal cavity was irrigated with warm saline solution, and the operation terminated after 35 minutes. The patient was evidently collapsed, but rallied and seemed to be getting on well. The next day he became worse, and on the following day died, 48 hours after the operation. [M.B.T.]

New York Medical Journal.

July 7, 1900. [Vol. lxxi, No. 1.]

1. Secondary Cataract. An Experimental Study. W. H. BATES.
2. Acute Traumatic Prostatitis of External Origin, Involving the Bladder and Seminal Vesicles. J. M. THOMPSON
3. The Identification of the Blood of Individuals. WOODBRIDGE HALL BIRCHMORE.
4. A Case of Typhoid Fever Presenting Some Unusual Features. CLARENCE E. SKINNER.
5. The Unrequited Services of the Physician. A. NOEL SMITH.
6. Acute Gonorrheal Arthritis, etc., of the Left Shoulder, which Necessitated Operation and was followed by Rapid Recovery. J. COPLIN STINSON.
7. A Case of Hatpin in the Urethra. W. LAUNCELOT BROWN.

1.—Bates defines **secondary cataract** as a condition often following the removal of the lens, in which the pupil is veiled by a more or less opaque tissue. In probably 70% of all cataract extractions secondary cataract develops within 3 months after the operation. It may develop 12 months or even later after the operation. After carefully studying the cause of secondary cataract and its prevention by experimenting upon the eyes of many rabbits, Bates comes to the following conclusions: 1. Secondary cataract in the rabbit is composed of new connective tissue, usually, together with the folded posterior capsule of the lens. But the opacity of the structure occupying the pupillary area is due to the new connective tissue and not to the capsule. 2. The formation of secondary cataract in the rabbit begins with the accumulation in the anterior chamber of a coagulable fluid at the time of operation. Fibrin appears in the pupillary area from the coagulation of this fluid. Later, new connective tissue replaces the fibrin. 3. The prevention of secondary cataract in the rabbit may be secured by performing a quick operation, closing the scleral or corneal wound with sutures, and restoring the anterior chamber with normal salt-solution. A description of the operation follows; the author insists this must be performed quickly, keeping the anterior chamber filled with a normal salt-solution. [A.B.C.]

2.—Thompson reports a case of **traumatic prostatitis** occurring in a man of 51. He was struck forcibly in the perineum by the pommel of his saddle while riding a bicycle. The pain was so severe that he was scarcely able to get home and by the next day he was suffering from all the symptoms of acute prostatitis, frequent urination, tenesmus, hematuria, and painful defecation. An expectant plan of treatment was adopted and the acute symptoms grew markedly less in a few days, but the subacute condition lasted so long that he consulted another doctor who passed a sound with the result of starting up an acute exacerbation. He was seen by Thompson 7 weeks after the accident when the clin-

ical picture of acute prostatitis was still present. Under appropriate and conservative treatment the patient made a good recovery. [G.B.W.]

3.—Birchmore believes that with carefully and accurately adjusted instruments, and by proper staining methods, the **blood of individuals may be differentiated**; that by having a specimen of stained blood the expert may say whether another specimen was from the same individual. He is of opinion this would be of value in some medico-legal cases. [A.B.C.]

4.—Skinner reports a case of **typhoid fever** occurring in a woman of 52. The attack was preceded by nervous symptoms which led the author at first to diagnose the case as one of climacteric neurasthenia. The course of the disease differed from the usual typhoid attack in the following points: 1. The sudden rise of the temperature to the immediate neighborhood of 102° F., with its steadily sustained character and even course during the first six days, as contrasted with the ordinary morning and evening variation with a steady increase on successive days. 2. The persistent and obstinate constipation as contrasted with the diarrhea usually encountered. 3. The absence during the entire illness of bronchial symptoms and headache. 4. The atypical color of the stools, which were dark tan. 5. The acutely painful abdominal conditions, with the location of the point of greatest tenderness in the left iliac fossa. 6. The nausea and vomiting, steadily sustained early in attack; in typhoid we commonly observe anorexia, but rarely sustained vomiting and nausea. 7. The severely painful character of the myositis appearing late. 8. Absence of eruption. 9. The protracted fastigium, which lasted 7 weeks, the whole course of the excessive temperature extending over a period of 10 weeks. 10. The gratifying effect of dry heat of high degree upon the myositis, which ordinary means and pain-relieving drugs other than opium and morphin had failed to relieve. The patient recovered. [A.B.C.]

5.—Smith writes a lengthy and interesting article in which he condemns the present **abuse of medical charity**. City hospitals are doing a great work, but physicians are responsible for the fact that many persons receive free treatment at these institutions who are abundantly able to pay for services rendered them, and should be compelled to do so. Throughout the cities of the United States today probably fully one-third of the population are treated gratis. States are beginning to pass laws regulating dispensary practice, and physicians should encourage these measures. Salaried clergymen should pay the doctor's fee as does any other person. Club practice should be condemned, and physicians engaged in such practice should be excluded from medical societies. There should be a better understanding between the specialist and the general practitioner with reference to fees. The deliberate "beat" we always have with us. Physicians should arouse themselves and do something to prevent the indiscriminate giving of free medical service. [A.B.C.]

6.—In the case reported by Stinson the **arthritis** began towards the last of an acute **gonorrheal** prostatitis. The left shoulder-joint was affected. In a day the temperature rose to 102.5° F. and the pulse to 110, the pain was severe, even morphin in one-grain doses did not relieve it. In spite of local and general medication the symptoms grew worse, the patient becoming anemic, emaciated and careworn, so that opening of the joint was decided upon. The incision was made 2 inches in length downward from the coracoid process over the head of the humerus and about an ounce of turbid fluid escaped. The joint was irrigated with a 1:1000 mercuric chlorid solution and dried with mercuric chlorid gauze, followed by closure of all but half an inch of the wound, from which a small gauze drain protruded. A discharge which contained gonococci kept up for 2 weeks after the operation, during which time the arm was kept at absolute rest. When this discharge ceased, electricity, massage and passive movements were gradually begun and the patient in the course of 2 months had a perfectly cured arm. [G.B.W.]

7.—Brown reports a case of **hatpin in the urethra** of a man of 75. It was removed by an incision half an inch long at the base of the scrotum, through which the pin was easily grasped with a pair of forceps. The wound in the urethra was closed with silk sutures and it healed rapidly without continued catheterization. [G.B.W.]

Medical Record.

July 7, 1900. [Vol. 58, No. 1]

1. The Non-Suppurative Inflammations of the Brain, with Report of a Case of Hemorrhagic (Malarial?) Encephalitis. CHARLES L. DANA.
2. Preliminary Report on the Presence and Nature of Parasitic Amebas (Cancrionameba Macroglossa) in the Epithelial Carcinomata. GUSTAV EISEN.
3. Three Cases of Vascular Tumor of the Orbit: Two Cured by Operation, One Apparently Cured Spontaneously. CHARLES STEDMAN BULL.
4. Fistula in Ano; its Relation to Phthisis. SAMUEL G. GANT.

1.—The authors divide **nonsuppurative inflammations of the brain** into the infectious encephalitis of infants, hemorrhagic polioencephalitis of adults, and hemorrhagic encephalitis due to some infection. The case reported occurred in an old man, and belonged to the third type. It was striking because these cases are usually seen in patients in early or middle life. There was no marked history of alcoholism, and no decided atheroma of the vessels. He had malarial infection, and examination of his blood at the time of observation showed the presence of plasmodia, and it was thought that the malaria acting upon bloodvessels which had been weakened by the use of alcohol led to the condition which caused his death. He was seen in a semiconscious condition. The most striking signs were paralysis of the tongue and lips. He had also almost complete paralysis of the left side. His hemiplegia improved somewhat, but he died 3 weeks after admission. The autopsy showed in the right hemisphere capillary hemorrhages and softening in the lower portion of the posterior central convolution, and in the anterior part of the marginal gyrus. There were 2 or 3 small lesions in the centrum ovale and some small foci in the spinal cord. The microscopic examination showed a hemorrhagic focus with some inflammatory reaction and epithelioid proliferation at the place described, with a more recent foci in the medulla and spinal cord. The microscopic examination is reported in full. Although malaria does not tend to produce reactive changes in the brain-tissue it is considered probable that alcohol, as in this case, might have produced the changes. The diagnosis of **hemorrhagic encephalitis** is chiefly from acute meningitis and ordinary cerebral hemorrhage. It differs from meningitis in the absence of stiff neck, small pupils, general rigidity, and twitching. From hemorrhage or thrombosis it differs in the presence of severe cerebral irritation persisting for some days before paralysis occurs, and there is usually also the story of some recent infection. The absence of leukocytosis may be of some aid in distinguishing the condition from suppurative processes. It is important to recognize hemorrhagic encephalitis, because some cases are curable. [D.L.E.]

2.—The summary of Eisen's results are as follows: First, he finds a **parasitic ameba in practically all epithelial carcinomas**. The reason that earlier researches and those of others have failed is, he believes, that the tissues were not properly fixed. The tissue should be fixed at once, as soon as it is removed from the growth and while yet at practically body-temperature. He uses a solution containing potassium bichromate, 3 parts; glacial acetic acid, 5 parts; water, 100 parts; fix for about 12 hours, then wash in running water for about 12 hours, and then harden in alcohol from 30% upward. He embeds in paraffin and stains with eosin and methylene-blue. He believes that these so-called cancrionamebas cause the characteristic appearance of the cell-nests. The amebas occupy the center, and the cells surrounding them in their effort to overcome them, form nests. The amebas are said to propagate by spores and by amitotic division. They are readily distinguished by their large size, frequently reaching 30 μ . They are acutely sensitive to cold, and slight reduction of the temperature will cause them to contract and be much distorted. This suggests the possibility of successfully treating carcinomas by freezing. Eisen thinks that the bodies which he describes are the cause of the peculiar structure of cancer, and probably the cause of the affection itself. [D.L.E.]

3.—Bull reports 3 cases of **cavernoangioma of the orbit**; in one case spontaneous recovery apparently resulted; in another case electrolysis was first repeatedly but

unsuccessfully tried, and then the growth was removed by 2 operations at intervals of about 2 months; a third growth was also removed by operation. [M.B.T.]

4.—Gant draws the following conclusions as to the **relation between fistula in ano and phthisis**: Tuberculous fistula is usually secondary to tuberculous disease of the lungs; but the latter is rarely, if ever, secondary to fistula either before or after operation. When the patient's general condition will permit we should operate on all fistulas irrespective of the kind. We should not refuse to operate on persons suffering from a mild form of phthisis, nor on those who give a family history of tuberculosis. If we arrest one destructive process, nature is all the more capable of dealing with the other. Patients operated upon for tuberculous fistula and those nontuberculous but complicated by phthisis, who rapidly decline and die, do so as the result of an inflammation of the lungs induced by the anesthetic, especially ether. Such accidents have not followed any of the operations which Gant has made under local anesthesia. We are justified in discarding the teachings of writers who believe that the cure of a fistula will result in a development of phthisis. [M.B.T.]

Medical News.

July 7, 1900. [Vol. lxxvii, No. 1.]

1. The Hospital Governor and His Staff; Being a Glance at the Personnel of a Modern Hospital and a Plea for a Permanent Resident Staff. THOMAS J. HILLIS.
2. The Treatment of Tetanus. ALEXANDER LAMBERT.
3. The Immunizing Cure of Hay Fever. H. HOLBROOK CURTIS.
4. Significance of the Stool in Infantile Diarrheas. WM. EDGAR DARNALL.
5. Exstrophy of the Bladder Combined with Epispadias. W. B. YOUNG.

2.—Lambert gives a critical discussion of the evidence regarding the utility of **tetanus antitoxin** in the treatment of the disease. He calls attention first to the fact that in human beings, a mixed infection almost invariably occurs, and that the constitution of the tetanus toxin is still unknown. In general, it is desirable to use certain special antitoxins on wounds that may possibly be infected with the tetanus spores. Among these are a mixture of bichlorid, carbolic and hydrochloric acid, solutions of silver nitrate, solutions of iodine, formalin, etc. It is particularly important to remove all dirt from the wounds and this should be done at once, particularly in wounds the result of discharge of blank cartridges. Internally, physiologic antidotes, such as chloral, the best, or morphia either alone or combined with antimony, should be employed. A chemical antidote consists in the antitoxic serum. This is valuable in proportion to the shortness of the interval that has elapsed between its administration and infection. Statistics apparently show that the acute cases are not greatly improved by the administration of the antitoxin, but that in the chronic cases the percentage of deaths is materially reduced, from 40 to 16. This is, of course, when the antitoxin is not given until the symptoms develop. Bazy, who has adopted the plan of inoculating immediately all patients having wounds that might have been infected with tetanus, with 10 ccm. of tetanus antitoxin, has practically eliminated the disease from his clinic. Even intracerebral injection does not appear to be of any particular value. Nearly 88% of the acute cases died, which is just about the hospital statistics, and about 27% of the chronic cases. It has been shown that when the upper part of the spinal cord is involved in the disease, intracerebral inoculations are valueless. [Injection through a lumbar puncture has recently been tried with asserted good results. J.S.]

3.—The idea has occurred to Curtis of **immunizing patients** suffering from various forms of acute coryza produced by certain specific irritants. This was apparently suggested to him by the fact that two girls who were subject to ipecac cold and who were employed in a drugstore, could acquire a temporary tolerance for the drug by taking internally doses of the tincture or sirup for several days before the exposure. He, therefore, employed hypodermic injections of the watery extracts of flowers, upon a lady who was so susceptible that she could not pass a

florist's shop without having a very severe attack. Immunization was tried first for roses, and the acquired tolerance for these; then for various other flowers, and she gradually became able to endure all kinds. Curtis has also experimented upon cases of hay fever with the extract of ragweed, goldenrod, and lily of the valley. The results were good. He calls attention to the fact that the disease he has treated in this manner is really ragweed-coryzasthma. He requests others to perform similar experiments in order that the true value of the method may be determined. [J.S.]

4.—Darnall describes the different types of bowel movements that occur in **infantile diarrheas**. The dirty lead-colored stool indicates infected masses of imperfectly digested food; the green stool is acid in reaction and indicates an excess of carbohydrates in the food; the thin watery stool containing small specks of light-pea-green color is intensely poisonous and occurs in the later stages of marasmus. Mucus indicates an inflammatory condition. If from the upper portion of the small intestine, it may be bile-stained; if from the colon, it is white. White or gray-white stools are composed largely of fat. The first step in the treatment of these conditions is to stop food for a day or two, using sterile water to allay the thirst, then evacuation by castor oil and aromatic sirup of rhubarb, followed by antiseptic doses of calomel given in tenths of a grain with $\frac{1}{4}$ grain doses of salol. If the stools are serous, Dover's powder may be employed. In case of profound exhaustion, stimulation either by brandy or by a mixture of morphia and strychnia may be employed. Hot applications over the abdomen often relieve the pain. If there is much mucus, bismuth with some aromatic substance may be employed. The most difficult part of the treatment is the adjustment of the diet. The proprietary foods are usually unsatisfactory. Modified milk, however, is both scientific and usually satisfactory. At first it is necessary to start with low proteids and the mixture should be pasteurized. Later, the proteids may be increased, to be decreased the moment curds appear. It is really not very difficult to have the milk modified at home. [J.S.]

5.—Young reports a case of **exstrophy** of the bladder combined with **epispadias**, in a patient who was a double cryptorchid. There was continual dribbling of the urine which, however, did not cause any excoriation, and the child was otherwise in perfect health. The parents refused operation. [J.S.]

Boston Medical and Surgical Journal.

July 5, 1900. [Vol. cxliii, No. 1.]

1. Remarks on the Surgery of Uterine Fibroids, with Special Reference to the Importance of Early Removal in the Young. MAURICE H. RICHARDSON.
2. The Use of the Angiotribe. F. H. DAVENPORT.
3. A Case of Morbid Fear. J. W. COURTNEY.
4. Colostomy for Obstruction Due to Malignant Disease. J. B. BLAKE.

1.—Richardson regards the **early removal of uterine fibroids** as an exceedingly desirable procedure especially in the young, as it preserves the sex and does not destroy the power of bearing children and of enjoying life, as does the hysterectomy that will be necessary at a later stage of growth of the fibroid. A small fibroid may at any time cause a hemorrhage that will threaten life. If extramural, with a long pedicle, the pedicle may become twisted. Among the insidious complications must be mentioned the gradual effect of pressure upon the ureters and consequent hydronephrosis. When hysterectomy is necessary, however, he believes one important source of sepsis, that of cutting across the uterine canal, can be obviated by the use of the cautery. [W.K.]

2.—Davenport believes that the **angiotribe** is a safe and efficient means of controlling hemorrhage, renders the operation easier for the operator and more comfortable for the patient, that it is distinctly an advance and that it has come to stay. In vaginal hysterectomy in which the use of this instrument seems peculiarly indicated, his mode of procedure is as follows: Having seized the cervix with the vulsellum he divides the tissues in the posterior culdesac at the junction of the vaginal wall with the cervix; with the Paquelin cautery heated to a red heat. The point of the blade is kept close to the tissues and the whole breadth of the culdesac is

divided. The same is done on the anterior surface of the cervix, and the vagina is divided in the lateral culdesacs as well, but to a moderate depth only. The tissues are then pushed up front and back with the fingers, separating the attachments between the uterus, and bladder and rectum until the peritoneum is reached. If there are no adhesions and the uterus is small, the peritoneum is then opened and the anterior and posterior surfaces of the uterus freed. The blades of the angiotribe are then introduced on the left side under the guidance of the fingers, including as much of the broad ligament as they will grasp, close to the uterus. Care should be taken that the ends of the blade do not include bowel or omentum. The blades are then screwed together tightly, and the clamp allowed to remain for two minutes. The tissues are then divided on the uterine side, leaving a little margin of tissue on the outside of the clamp. When the clamp is carefully removed the edges of the broad ligament will be seen to be a flat ribbon as thin as paper, which is completely dry. The same is then done on the other side. If the uterus is small the fundus may be turned out anteriorly, and the upper part of one broad ligament, including the tube and round ligament and the ovarian artery, clamped from above, compressed for two minutes, then severed, the same done on the other side and the uterus removed. In case of a large uterus, after the uterine arteries have been compressed, the uterus may be bisected and each half removed separately. A plug of gauze is then inserted between the stumps of the broad ligaments and the operation is complete. [W.K.]

3.—Courtney reports the case of a stenographer, 22 years of age, who, at the death of her father, 7 years before, had suffered severe **emotional disturbance**. Subsequently, two other deaths occurred in her family, and she herself acquired a dread of dying. Frequently she had visions in which she was in the death-agony and was surrounded by her friends. There was a very pronounced neuropathic ancestry as well as cases of mental derangement in her family. Physically, aside from slight anemia, her condition was good, and she was able to perform her work satisfactorily. Courtney prescribed iron, forced feeding, and moderate exercise. This at first seemed to exaggerate the condition, but in the course of 3 months she had gained 16 pounds. A sort of pseudohypnosis was then employed, and by means of suggestion during this state her mental condition was changed to one of surprise at living. Subsequently, some mental gymnastics—that is, memorizing prose and poetic passages—were employed, and she appeared to recover completely. [J.S.]

4.—A cachectic, poorly nourished woman of 50 had had but 6 bowel movements in 5 weeks, her abdomen was distended and tympanitic except in the right iliac region. Rectal examination showed a hard, nodular, immovable tumor. Left **inguinal colostomy** was performed with slight relief and death followed 4 days later. At the necropsy carcinoma of the bladder and vagina extending to neighboring organs was found, with metastases in the retroperitoneal, bronchial, and mediastinal lymph-glands. The obstruction was located at the ileocecal valve. Considering the fact that obstruction may exist in the right as well as the left inguinal regions Blake suggests the possible desirability of a median exploratory incision to determine the site of obstruction in such cases before performing colostomy. [M.B.T.]

Journal American Medical Association.

July 7, 1900. [Vol. xxv, No. 1.]

1. Paroxysmal Tachycardia. JOSEPH M. PATTON.
2. Experimental and Clinical Notes on the Subarachnoid Space. DUDLEY TAIT and GUIDO CAGLIERI.
3. The Surgery of Biliary Calculi. WILLIAM D. HAGGARD.
4. Case of Perforating Gastric Ulcer. ALLAN JONES.
5. Review of the Present Status of Jonnesco's Operation. MARCEL HARTWIG.
6. Common but Generally Unrecognized Symptoms of Eye-Strain. ELMER G. STARR.
7. Diseases of the Pancreas. Review of the Present Status of Knowledge Concerning Them. CRAYKE PRIESTLEY.
8. Symposium of Dental Education. Discussion. G. V. I. BROWN, CRYER, J. L. WILLIAMS, J. McMANUS, E. A.

BOGUE, W. H. TODD, G. LENNOX CURTIS, RHEIN, HENRY D. HATCH, JOHN S. MARSHALL, JAS. TRUMAN, A. E. BALDWIN, W. B. HILL, WILBUR F. LITCH, R. R. ANDREWS, ALICE STEEVES and E. S. TALBOT.

1.—Patton discusses **paroxysmal tachycardia** and reports 3 cases. A woman of 60 was under observation for 3 months, during which period the attacks became of longer duration and left her weaker and with increasing dilation of the heart. During her last attack the pulse-rate was 210, and dyspnea, cyanosis and death eventually resulted. In the case of a woman of 57 with moderate arteriosclerosis tachycardia, with a pulse-rate of over 200 per minute followed angina pectoris, and death resulted in about 10 days. A man of 50 had tachycardia with a pulse-rate of 260 per minute coming on during recovery from typhoid fever. Recovery and subsequent good health followed. Patton finds nothing definite with regard to the morbid anatomy of this affection; the prognosis is unfavorable in recurrent cases; there are no specific indications as to treatment. Diet and exercise should be adjusted; sources of irritation should be avoided. [M.B.T.]

2.—The following conclusions are drawn from **experimental and clinical study**: The route through the sixth cervical space to the **subarachnoid space** is recommended as easy and safe location for puncture. Cerebrospinal fluid is found to contain none of the properties of lymph and the perivascular lymphatic sheaths do not empty into the subarachnoid space. Liquids injected by lumbar puncture diffuse rapidly toward the cavities of the brain and reach the cortex. The difference in osmotic currents and the protection of the perivascular lymphatic sheaths explains the rarity of infection of the cerebrospinal fluid from blood-infections and the gravity of primary infections of the cerebrospinal fluid. Direct intramedullary medication deserves further trial. Subarachnoid injections of cocain are safe if made with precautions. The solution should be fresh, injected slowly at a temperature of 37c.; in amounts of not over 3 cc. Analgesia is proportionate in extent and duration to the amount of drug used. It appears in 5 to 35 minutes and lasts long enough for all operations in the lower limbs and pelvis. It may be of service in obstetrics. After-effects are partly due to increased pressure in the subarachnoid space, from too rapid diffusion, but they are never alarming nor lasting. One cc. of 1% cocain solution is usually sufficient. A small amount of fluid may be withdrawn before injecting. The credit of introducing this method of anesthesia is given to an American, J. L. Corning. [M.B.T.]

3.—Haggard briefly discusses the surgery of biliary calculus without adding anything specially new to the subject. [M.B.T.]

4.—A man of 57 had suffered 5 years from recurrent gastric pain and vomiting but never hematemesis. After medicinal measures had been tried without avail the abdomen was opened and a chronic perforating ulcer was found in the superior anterior surface of the stomach near the pylorus. Pylorotomy was performed, but the patient died a few days later, probably as a result of his weakened condition before the operation. [M.B.T.]

5.—From a consideration of the results of **division** of the **cervical sympathetic** in the hands of various operators in the treatment of epilepsy, glaucoma and Graves' disease, Hartwig believes that Jonnesco's operation will occupy an established position among the surgical operations of the future. [M.B.T.]

6.—Among the common but generally unrecognized symptoms of eye-strain, Starr mentions: Pain in the back of the neck, mental confusion, backwardness in children, irritability, vertigo, varying character of the handwriting. Several illustrative cases are cited. [M.B.T.]

7.—Priestly reviews the symptomatology of various diseases of the pancreas and reports all the symptoms of acute pancreatitis appearing during attacks of mumps. [M.B.T.]

Archives of Pediatrics.

June, 1900. [Vol. 17, No. 6.]

1. Clinical Observations upon Operative Treatment of Tuberculous Peritonitis. AUGUSTUS CAILLÉ.

2. Pancreatic Digestion of Casein. B. K. RADEFORD.
3. Case of a Child Cretin where the Effects of Treatment were Rapid and Complete. H. O. NICHOLSON.
4. Acute Glandular Fever. W. F. BOGGESS.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 997.

2.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 997.

3.—Nicholson reports the case of a female child, aged 2 years and 8 months, who presented the readily recognized appearance of **sporadic cretinism**. The patient had one brother who had had convulsions in infancy and a sister who had had convulsions during the teething period. The paternal grandmother was subject to "falling sickness," which developed late in life. There was no consanguinity in the parents. During the first 4 months of the patient's life she had frequent attacks of diarrhea. At that time the child suffered from an attack of whooping-cough of 4 months' duration, which was followed by an attack of bronchitis. At this time the child was weaned, and shortly afterward the parent noticed that she had a "wizened" appearance. The condition became progressively worse and the abdomen became larger. This latter condition was less marked after diarrhea than after constipation. The first tooth did not appear until the eleventh month and the child showed no signs of intelligence. The points of interest in the physical examination are the impossibility of detecting a thyroid body after careful palpation, large pendulous abdomen, lordosis of the vertebral column, absence of sweating, deficiency of the salivary secretion, and subnormal temperature. The child was at first given $2\frac{1}{2}$ gr. thyroid powder in the food; but, owing to the occurrence of vomiting and diarrhea, this was reduced in 4 days to $1\frac{1}{4}$ grains. The improvement was rapid and is well illustrated by the photographs accompanying the paper. The child died, 9 months after the commencement of treatment, of malignant measles. Since the sister, who was not a cretin, died of the same disease, there was no reason to suspect that the improved cretin was specially susceptible to the infection. The author thinks that the child was perfectly normal at birth, and that the attack of whooping-cough and the complicating bronchitis were the exciting causes of the following condition. [J.M.S.]

Wiener klinische Wochenschrift.

February 22, 1900. [13. Jahrg., No. 8.]

1. Alimentary Glycosuria. EMIL RAIMANT.
2. A Rare Form of Aneurysm of the Descending Thoracic Aorta. MAXIMILIAN WEINBERGER and ARTHUR WEISS.
3. Traumatic Aneurysm of the Brachial Artery with Separation of the Median Nerve. Total Extirpation of the Aneurysm: Nerve Suture. KARL SINNREICH.

2.—An **aneurysm** of the **descending aorta** in a man of 54 produced pulsation and dulness over the manubrium sterni and to the right, and a decided pulsation over the upper half of the back on the right side. In front there was a loud, systolic bruit, and over the back also a loud sound. The x-ray confirmed the diagnosis of aneurysm. The patient had several large hemorrhages without any cough or other symptom, and at the autopsy a perforation was found into a bronchus of the right side. It was somewhat peculiar that although the aneurysm was large there had been very few subjective symptoms. [D.R.]

3.—A man of 51 received a stab wound in the right arm. The blood spurted in a stream immediately and after a severe hemorrhage it ceased of itself. About 3 hours later a physician applied a compression-bandage. The patient noticed that the three first fingers of the right hand were stiff and without sensation. Ten days later there was a recurrence of hemorrhage which led to fainting and ceased spontaneously; 2 days later it recurred. After 2 weeks the patient came to the hospital and a pulsating tumor the size of the hand was felt; the pulsation and bruit ceased on compression of the axillary artery. A diagnosis of traumatic **aneurysm** was made; there was entire paralysis of the median nerve. Taking into consideration the repeated and severe hemorrhage, operation was immediately undertaken. The aneurysmal sac was dissected out, the ends of the median nerve were freshened and sutured and the elbow was dressed in the flexed position. About a month later there was found no disturbance of motion at the wrist and prona-

tion was complete. There was decided motor paralysis of the second finger and of the thumb; however, these could still be brought into apposition. There was also disturbance of sensation in the second and third fingers. The methods of operating for aneurysm are discussed and a table of 35 operations accompanies the article. [M.B.T.]

March 1, 1900. [13. Jahrg., No. 9.]

1. Suture of the Bladder for Suprapubic Cystotomy. GEORG LOTHEISSEN.
2. The Etiology of Malarial Parasites. XAVER LEWKOWICZ.
3. Therapeutic Studies with Sanatogen. EDUARD RYBICZKA.

1.—Lotheissen believes that with the perfection of technic which has developed of late years, the **suprapubic operation for stone in the bladder** is rapidly superseding all others. He reports 3 cases. The first patient, a girl of 18, had lost a hairpin in the bladder 5 or 6 years previously. For 4 years no symptoms other than difficulty in urination had developed. A stone the size of a hen's egg was found at operation, in which the hairpin was embedded. The bladder was sutured, a strip of iodoform gauze was passed down to the wound and a catheter was inserted into the bladder. In a second case, a man of 53 was operated upon, and a stone weighing 303 gm. and measuring 8 cm. in length and $4\frac{1}{2}$ cm. in thickness was removed. The nucleus of the stone was oxalic acid while the surface was phosphatic; as there was considerable cystitis the bladder was not sutured. The progress of the case was at first good, but later there was arrest in the recovery and the patient eventually died of marasmus. In a third case a man of 20 years was operated upon and a stone the size of a nut was removed; the bladder was sutured tightly with 3 rows of sutures. The prevesical space was loosely packed with iodoform gauze and uneventful recovery followed. Lotheissen advocates immediate suture of the bladder in all cases in which the urine is clear, or if only slight catarrh is present. Where there are advanced pathologic changes in the mucosa of the bladder, and the urine is alkaline and decomposing, drainage of the bladder is advised. [M.B.T.]

3.—**Sanatogen** is a grayish-white powder, composed of 95% casein and 5% glycerophosphate of sodium. It is easily digestible and has been used by the author with satisfaction in a variety of affections. It stimulates the appetite, lessens the insomnia of neurasthenics, increases the bodily weight, and in some instances the hemoglobin content of the blood. [D.R.]

Deutsche medicinische Wochenschrift.

May 3, 1900. [26. Jahrg., No. 18.]

1. New Experiments in Serum-Therapy. A. WASSERMANN.
2. Red Medullary Substance and Myeloblasts. OTTO NÄGELI.
3. Physical Therapy. GOLDSCHIEDER.
4. Herpes in Women and Its Relation to Menstruation. ERNST LEVIN.

1.—Wassermann believes that the reason that **serum is often inactive** is that both the intermediate bodies and the end-bodies are not present in sufficient amount. Usually the intermediate bodies are present in sufficient quantity, while the end bodies are not. He believes it is because the end bodies, which combine with the intermediate bodies, are not present in sufficient amount that the serum is usually ineffectual. In order to provide more of the end-bodies he has attempted to find the proper complement for certain serums. He has found that injecting a guineapig with a culture of typhoid and then with typhoid serum caused intoxication, but that guineapigs which were injected in the same way, and at the time of the injection of the serum were given 4 cc. of fresh normal serum of cows' blood, showed intoxication as a result of the action of the cows' serum, but otherwise remained well. He believes, therefore, that it will be possible to find complements of the various serums which will increase their effect by containing bodies which will unite with the intermediate bodies and thus produce immunity, but that this must be sought in different animals for different serums. It will be a difficult task. [D.L.E.]

2.—Nägeli expresses his personal views upon the nature of **cells in the bone marrow**. The classification of these

into small cells free from granules, which resemble lymphocytes, into cells of similar staining character, and into cells of almost the character of myelocytes is artificial, because various forms which belong midway between these are seen. Naegeli believes that the granule-free cells are entirely different from lymphocytes; he gives them the name of myeloblasts, since the myelocytes are derived from them. They differ from leukocytes because they show intermediate forms between them and the larger elements, while the lymphocytes never do; they are not always round, while lymphocytes are, and the nucleus is oftentimes oval in the myeloblasts. They do not stain so intensely, and the chromatin is regularly net-like in its arrangement while in leukocytes it is irregularly arranged. Also, he has never seen nucleoli in myeloblasts. The protoplasm of the myeloblasts shows staining with methylene-blue, in lymphocytes it is more markedly basophile. The guaiac reaction does not appear to be given by lymphocytes, but it is given by the bone marrow and probably by the myeloblasts. He also believes that pernicious anemia is testimony that the small cells of the bone marrow are myeloblasts and not lymphocytes, because in pernicious anemia there is apparently a reversion of the bone marrow to the embryonal type, and myeloblasts are embryonal forms. [D.L.E.]

3.—Goldscheider describes a number of forms of apparatus for aiding in attempted **motion of paretic parts**, the apparatus being so constructed that it aids the patient in each attempt at voluntary movement. He also describes thermomassage, and the use of movements in the treatment of the pains of tabes and in neuralgia. He describes a special form of stool for carrying out movements in the limbs. The details are too numerous to be given in an abstract. [D.L.E.]

May 10, 1900. [26. Jahrg., No. 19.]

1. Gastroenterostomosis, Gastrostomosis and their Relation to Gastroenterostomosis Externa. O. WITZEL and C. HOFMAN.
2. The Significance of Carbohydrate Digestion in the Diagnosis of Gastric Hyperacidity. LEONHARD SCHULER.
3. Acute Dilation of the Heart and Cor Mobile. AUG. HOFFMANN.
4. The Relation of Epileptic Attacks to the Elimination of Uric Acid. CARO.
5. Investigation in the Etiology of Acute Exanthemata. SIEGEL.

1.—The indication for **gastroenterostomosis** exists when for some reason the pylorus is unable to allow the contents of the stomach to pass into the intestines, if such disability cannot be overcome by operative procedures. Unfortunately the operation of uniting the intestines to the stomach has not been attended by results always favorable. This, due either to the thickening of the opening leading from the stomach to the gut, or to bending of the efferent gut to such an angle that the gastric contents do not readily flow into it, or, as in the case reported by Kocher, to dilation of the afferent intestinal loop pressing upon the distal portion. [G.B.W.]

2.—Schüler presents a very interesting paper in which, on the basis of a number of observations, some of which he reports, he describes new methods for determining the existence of what symptomatically constitutes **hyperacidity**. He, with other students of Strauss, has insisted that the symptoms of hyperacidity, in a clinical sense, are not always accompanied by increase in the acidity of the stomach-contents. Schüler considers whether the acid be found high or not, if there is marked blue or bluish-violet color upon the addition of iodine, indicating that the starch is not well digested, and if the specific gravity of the stomach-contents is low, these facts show that there is hyperacidity in the sense that an alteration in excretion causes symptoms of hyperacidity. The normal specific gravity is between 1.015 and 1.020, and a specific gravity below 1.010 is practically never seen except in cases of hyperacidity. The reason that normal conditions of the acidity are found with interference in starch-digestion and in low specific gravity is difficult to state; perhaps it may be that the stomach is excessively irritable, and reacts with undue rapidity, reaching its highest point of acidity even before the end of the hour when the examination is made, and then the course of acidity de-

creases. This is questionable, but certainly such forms of clinical hyperacidity appear frequently. Schüler observed 17 in 87 cases of hyperacidity. [D.L.E.]

3.—Hoffmann reports another case to show the importance of upward **dislocation** of the heart by pressure from beneath, as a cause of apparent **dilation**. The upward dislocation of the heart causes it to turn somewhat on its axis and increases the lateral dullness. Care must be used in investigating cases of enlarged liver, distention of the stomach, etc., in order that dilation of the heart may not be considered present when it is mere torsion. [D.L.E.]

4.—A case of **epilepsy** was investigated for about 2 weeks. It was noticed that the uric acid varied within very wide limits, a marked reduction being seen during the 2 days preceding a severe outbreak. [This report may be considered of little value. There is no consideration of the diet during this time, and the method of determining the amount of uric acid is antiquated. D.L.E.]

May 17, 1900. [26. Jahrg., No. 20.]

1. Poisoning and Accident Insurance Laws. L. LEWIN.
2. The Relation of Blood-Pressure in Neuropathic Children. PAUL HEIM.
3. Gastroenterostomosis and Gastrostomosis and Their Relation to Gastroenterostomosis Externa. O. WITZEL and C. HOFMANN.
4. Three Cases of Fatal Parenchymatous Gastric Hemorrhage. REICHARD.

2.—Heim reports a series of determinations of the **blood-pressure in neuropathic children**, and compares them with the results obtained in normal children. He found the blood-pressure practically always high in the neuropathic cases as compared with the normal, also in cases with organic disease in which the symptoms were not unlike those of the neuropathic cases; otherwise he found the blood-pressure low. He therefore thinks that increase of the blood-pressure may become a matter of value in the diagnosis between organic and functional conditions. There was no apparent constant difference in the blood-pressure in various forms of neurosis. The pressure was determined by the Gaertner tonometer. [D.L.E.]

3.—To overcome the bad results which so often follow **gastroenterostomosis**, Witzel and Hofman suggest a new procedure which they term gastroenterostomosis externa. It consists essentially in passing a rubber tube through a gastric fistula across the stomach and into the opening leading to the efferent portion of the jejunum. The operation consists of four divisions; first, gastrostomosis after the method of Witzel is done, except that the tube is carried for a sufficient distance to reach a subsequent opening into the intestine, which distance would be about two-thirds of the length of a Nelaton's catheter; second, a posterior gastroenteranastomosis is completed up to the placing of the anterior row of sutures; third, the portion of the tube projecting into the stomach is brought out of the opening edge of the anastomosis; fourth, the gastroenteranastomosis is completed by putting in the anterior row of sutures. [G.B.W.]

4.—Reichard reports 3 cases of **parenchymatous hematemesis**, with fatal results. The first occurred in a man of 56, who at necropsy was found to have a chronic interstitial hepatitis. No ulcer could be found in either stomach or duodenum. In the other two cases no cause at all could be found for the hemorrhage; the first of these two presented typical symptoms of gastric ulcer, but at both the operation and postmortem no such lesion could be found. [G.B.W.]

Münchener medicinische Wochenschrift.

April 17, 1900. [47. Jahrg., No. 16.]

1. The Diagnosis of Lung Changes Caused by Inhalation of Dust. BÄUMLER.
2. The Causes of Hypertrophy of the Heart with Diseases of the Kidney. AUGUST BIER.
3. The Pathology of the Esophagus. W. FLEINER.
4. Glycosuria Among the Vagrant Classes. G. HOPPE-SEYLER.
5. A Modified Method of Microscopic Diagnosis of Bacteria; The Demonstration of Tubercle-Bacilli in the Feces. STRASBURGER.

6. Laryngitis Diabetica. OTTO LEICHTENSTERN.
7. The Psychology of Stuttering. MAX BREITUNG.
8. Material for Surgical Sutures and Ligatures. H. BRAUN.

1.—The pulmonary changes caused by the inhalation of dust may produce a clinical picture resembling tuberculosis. The patients are usually men of middle or advanced life, and have cough, expectoration, moderate fever or none at all, evidences of condensation of one or both apices, and more or less extensive bronchial catarrh. The circulation and nutrition are, as a rule, impaired. Under proper treatment the patients recuperate very promptly; in other cases the signs of emphysema appear and the disease may take on the character of chronic heart disease with loss of compensation. Tuberculosis may in some cases be added to the clinical picture. If the patient who has **pneumonokoniosis** gives up his occupation, he may recover without anything except a tendency to bronchitis. Cases of tuberculosis subjected to long-continued inhalation of dust may be favorably influenced by the tendency of the latter to cause fibroid changes. The physical signs produced by fibroid changes the result of dust-inhalation, are, principally, shrinkage of the lung, and especially, as Bäumler points out, the **retraction of the anterior margin** of the upper portion of one or both lungs. This leaves the anterior mediastinum to a greater or less extent free from lung, and changes the percussion note. [D.R.]

2.—Bier looks upon **hypertrophy of the heart** and the vascular changes in **disease of the kidney** as a compensatory hypertrophy which is useful and necessary. The secretion of the urine is largely dependent upon the blood-pressure. In diseases of the kidney a large portion of the renal structure is destroyed, and in order that sufficient urine shall be secreted by the remaining portions, the filtration-pressure must be correspondingly increased. This can only be brought about by a general increase in blood-pressure, as the system has no provision for raising the arterial pressure in one organ independently of the others. The increased secretion of urine in contracted kidney is an evidence of compensation, and is the result of the hypertrophy of the heart and the increased blood-pressure. The cause of the compensatory hypertrophy is unknown. It is probably chemical in nature. The author likewise suggests the possibility that the retention of certain substances, and possibly also an internal secretion of the kidney, may play a part. [D.R.]

4.—Hoppe-Seyler points out the occurrence of **glycosuria in vagrants**, dependent probably upon a disturbance of metabolism from insufficient nourishment, and exposure. [D.R.]

5.—The addition of alcohol to urine or other fluids containing bacteria greatly facilitates sedimentation by lessening the specific gravity of the fluid, so that the heavier bacteria sink to the bottom. Strasburger takes one part of fluid and two parts of 96% alcohol. He has also employed this method in **examining feces for tubercle-bacilli**. He was able to demonstrate the presence of these bacilli in feces that otherwise looked quite normal, but which came from patients with pulmonary tuberculosis. [D.R.]

7.—A famous actor in Meiningen suddenly became extremely hoarse at the end of the fourth act of the "Maid of Orleans." Thinking that the condition was due to cerebral fatigue and not to any local cause, Breitung wrapped the actor in blanket, ordered him to drink half a bottle of Sec, and told him to continue the performance without previously testing his voice. The suggestion succeeded admirably. The case is cited an example of voice-fatigue of cerebral origin. [D.R.]

8.—As to the strength of the **linen thread permeated with collodion**, the medium size, .35 mm., held 2,600 grams, and when tied in a hard knot, 2,200 grams. This is a marked increase in strength over the raw thread. Boiling, sterilizing with hot steam or soaking in sublimate solution had no effect on the strength or durability of the collodion-thread. The celluloid linen thread is more difficult to prepare and because of its brittleness does not stand nearly so much traction when knots have been tied. Because of the nonabsorbing qualities of the collodion-thread it can be left in the tissues for weeks without causing irritation to the stitch-canal, and when removed it will in the majority of cases be found sterile. [G.B.W.]

April 24, 1900. [47. Jahrg., No. 17.]

1. Hystereuryisis. DECKART.
2. Late Diphtheria in the Nasopharynx. ESCHWEILER.
3. A Case of Rupture of a Tendon. OSCAR VULPIUS.
4. Ruptures of the Biceps Muscles and Tendon. ERNST PAGENSTECHER.
5. Mucous Colic and Membranous Catarrh of the Large Intestine. R. SCHULTZ.
6. The Occurrence of Sebaceous Glands in the Human Mucous Membrane. SUCHANNEK.
7. Ichthalbin in Intestinal Diseases. ROLLEY.
8. A New Contribution to the Pathology of the Esophagus. W. FLEINER.
9. Laryngitis Diabetica. OTTO LEICHTENSTERN.
10. The Study of Internal Medicine in France, England, and Germany. L. R. MÜLLER.

2.—Eschweiler reports a case of **nasopharyngeal diphtheria** developing some time after the patient had recovered from an ordinary attack of diphtheria. There was a discharge from the right nostril, and a membrane was found in the right nasal passage, evidently ejected from the cavity of the nasopharynx into the nose. He believes that a large number of cases of so-called primary diphtheric rhinitis do not arise in the nose, but in the nasopharynx. The discharge of membranes in the nose can readily set up rhinitis. It is possible also that the persistence of bacilli after the disappearance of the membrane from the pharynx is dependent upon a diphtheric condition in the nasopharynx. It would be interesting to determine whether local treatment of the nasopharynx would not cause an early disappearance of the bacilli from the nose and pharynx. In the present instance the late development of the nasopharyngeal diphtheria was probably connected with the existence of adenoid vegetations. [D.R.]

3.—Vulpus has seen in the last 3 years 7 cases of **ruptured tendons**. In speaking of the etiology he says that in his cases there was a fatty degeneration of the tendon as proved by the microscopical examination of small excised portions. Many doubt the possibility of a voluntary contraction of a muscle being able to tear a normal tendon. In the case of the extensor of the thigh the most common seat of rupture is close to the patella. In these cases the prognosis depends on the extent of rupture unless some operative procedure is undertaken, and this is almost always the best method of treating tears of this tendon. A recurrence of course is possible where there is fatty degeneration. [G.B.W.]

4.—In **rupture of the long head of the biceps**, the groove which normally exists between the deltoid and the biceps is markedly increased and deepened so that the humerus may be readily felt between the two muscles. Rupture generally takes place at the junction of the tendon with the muscle. Because of the anatomic relation of the long tendon to the joint, when this tendon is torn a luxation of the head of the humerus in an anterior and upward direction is a fairly frequent occurrence. The case reported was a man who had received the injury 2 years previous. When examined it was seen that the head of the humerus instead of fitting exactly in the glenoid cavity was subluxated to a slight extent in an upward direction. This caused a limited range of active motion and when forced beyond this area by the surgeon a considerable amount of pain was produced. [G.B.W.]

5.—Some look upon **colica mucosa** as a neurosis; others, as a catarrhal inflammation of the colon. The author reports 4 cases of mucous discharges. In 2 of them the mucus was always evacuated with the stools; in the other 2, generally independently. In all of the cases the mucus was at times unformed, and at times constituted distinct membranes and tubular structures. The author believes that colica mucosa is an independent affection, which can be distinguished from catarrh of the colon. The differential diagnosis can only be made by a careful study of the discharges. In colica mucosa the secretion of mucus is periodical, and the stools in the intervals are normal—that is, free from mucus. If the stools contain mucus in the intervals, then the condition is one of catarrhal colitis. [D.R.]

6.—Suchannek found in a man of 46 years, on the **inside of the cheek**, especially opposite the upper molars, peculiar yellowish spots, the size of a millet-seed, which,

on excision and microscopic examination, proved to be **sebaceous glands**. The existence of these glands had been previously described by Montgomery and Hay. [D.R.]

7.—From a study of **ichthalbin** in diseases of the intestines, Rolly concludes as follows; (1) Ichthalbin, even in doses of 8 grams (120 grains) per day, does not produce any harm and does not cause constipation; (2) it favors the retention of albumin; (3) it sharpens the appetite and increases the body weight; (4) in doses of 1½ to 3 grams (22½ to 45 grains), it lessens the quantity of ethereal sulfates in the urine; (5) it has a favorable influence on simple chronic enteritis, and on that associated with peritonitis or tuberculosis; (6) it is useful in subacute catarrh of the stomach and intestine, in acute cases it is not so valuable. The doses are: for children under 1 year, from .3 to .5 gram (4½ to 7½ grains), thrice daily; from 1 to 5 years, .5 to 1 gram (7½ to 15 grains) over 5 years, 1 gram (15 grains), for children and adults as a tonic, .3 to .5 gram. [D.R.]

8.—Fleiner calls attention to the existence of **spindle-shaped dilation of the esophagus** above the diaphragm, a condition that is termed **antestomach**, and to a similar condition in the subdiaphragmatic part of the esophagus, known as "**antrum cardiacum**." He has seen six instances of antestomach. In three of the cases there appeared to be several spindle shaped dilations. In two of the cases the condition was found at autopsy, and in the four others the diagnosis was based upon clinical evidence. Diverticulum of the esophagus situated low down, may be considered homologous with antestomach and with cardiac antrum. The origin of the spindle-shaped dilations is probably congenital. The condition may remain latent, but if retention of food occurs symptoms arise. These are: a sensation of pressure behind the sternum; when the sack is filled the patients have to wait until the antestomach has emptied itself. If they do not do this, each addition to the food causes stretching of the sac and intense pain. Regurgitation is very apt to occur, and sometimes rumination develops. Severe symptoms arise when impaction occurs in the lower orifice. Such symptoms of obstruction set in especially at meals. A very interesting case is detailed in which a woman at each of five pregnancies had nausea, retching without vomiting, and a sensation as if the chest were being torn asunder. There was some difficulty in swallowing and a diagnosis of diverticulum was made. Finally, Fleiner saw the patient and diagnosed a spindle-shaped dilation of the esophagus. The stomach-tube at several points met with slight resistance. At 51 cm. behind the teeth the resistance became insurmountable. During the passage of the tube 200 cc. of a turbid, offensive fluid escaped. After the esophagus had been washed out with warm water the tube could be passed into the stomach itself. The diagnosis of dilation of the esophagus may be made from the accumulation of food, drink, and saliva above the stomach. At times there is a history of difficulty in deglutition beginning early in life, suggesting a congenital anomaly of the gullet. It may be difficult to differentiate between antestomach and cardiac antrum. In such cases the Röntgen-ray may be of value, the sac being previously filled with a bismuth mixture. The **treatment** consists in the use of lavage of the sac, and feeding with a tube directly into the stomach. For lavage weak astringent or disinfectant solutions should be employed (salicylic acid, 1:1000), or in cases of excoriation of the mucous membrane, bismuth mixtures. The patient should also drink small quantities of Vichy water. [D.R.]

9.—Among the papers of the late Dr. Leichtenstern, an interesting article was discovered on **diabetic laryngitis**. Leichtenstern found that in some cases of diabetes the first symptom was a dryness of the throat and pharynx, a **laryngoxerosis and pharyngoxerosis**. It was not associated with an increased thirst or polyuria, and in a number of cases under his observation the patients had been under treatment by specialists for "catarrhal laryngitis" and other laryngeal conditions, the true nature of the disease not being recognized. He also reports a case of abscess of the larynx in a woman who had been suffering from furunculosis. The diagnosis was "idiopathic abscess," until a fruity odor of the breath suggested an examination of the urine which revealed 8% of sugar. The features of this **furunculosis diabetica laryngis**, as Leichtenstern calls it, are: 1. The acute onset of the affection under the picture of a circumscribed

edema, which rapidly passes on to abscess-formation. 2. The repetition of the process at different parts of the larynx. 3. The rapid cure of the abscess after its evacuation. 4. The absence of fever and of marked constitutional symptoms. 5. The preservation (at least in two cases observed by him) of the perichondrium. He believed, as is indicated in the name, that the multiple abscess-formation in the larynx in diabetes was the analog of furunculosis of the skin. [D.R.]

10.—The theoretic instruction of the medical student in Germany is unsurpassed by that offered in any other country. In clinical instruction, however, both France and England have reached a higher state of perfection. Müller, who recently visited the English and French medical schools, advocates a lengthening of the curriculum for the purpose of increasing the clinical instruction, and suggests that dispensaries be used for the teaching of students. [It is certainly true that the student can gain a splendid experience by attendance at dispensaries. He learns the art of history-taking, of which he acquires but little in the ordinary course of study; he becomes practically familiar with the doses of drugs and the methods of prescribing, and learns the diagnosis especially of those minor ailments which will form such a large part of his daily practice afterwards. Provision could be made in the third and fourth years for compulsory attendance at different dispensaries, the physicians at these dispensaries being associated with the medical schools as extramural teachers. It should be one of their duties to report on the work of the students, such reports having an influence upon the final grading. It must be admitted that the adoption of this plan would necessitate a revolution in the present curriculum in our large schools, but the benefits to be obtained are so great and certain that the change in the curriculum might well be undertaken. D.R.]

Centralblatt für innere Medicin.

June 9, 1900. [21. Jahrg., No. 23.]

2. A Case of Acquired Stenosis of the Pulmonary Artery. A. KASEM-BECK.

1.—Acquired stenosis of the pulmonary artery is extremely rare and very difficult of diagnosis. The case reported occurred in a man of 50 who had evidence of severe cardiac insufficiency with a systolic thrill over the body of the heart, most marked over the second left intercostal space, with general enlargement of the cardiac dulness, and upon auscultation an intense systolic murmur which was heard over the whole body of the heart and was most marked in the second intercostal space on the left. There was also a slight diastolic murmur most marked in the middle of the sternum and the second right intercostal space. The second pulmonary sound was not accentuated. Since mitral regurgitation so frequently gives rise to exactly the same signs the systolic murmur was attributed to mitral regurgitation. Necropsy showed a collection of nodules in the pulmonary artery, the lumen was narrow, the intima uneven, and near the valves there were scars to which the pulmonary valves were adherent. The nodules in the pulmonary artery proved to be gummata. The tricuspid valve was thickened and fibrous, and there was relative insufficiency of the mitral valve. A diagnosis of stenosis of the pulmonary artery might perhaps have been made upon the signs, but as a rule if the diagnosis is made upon these signs it will prove to be erroneous, and mitral regurgitation will be found. [D.L.E.]

Deutsche Zeitschrift für Chirurgie.

March, 1900. [Band 55, Heft 1 u. 2.]

1. Tuberculosis of the Kidney. PROF. KÖNIG and PELS-LEUSDEN.
2. The Transplanting of the Omentum onto Defects of the Bladder. PROF. ENDERLEN.
3. Cystic Fibrosarcoma of the Mammary Gland with Epidermoid Metaplasia. B. GROHE.
4. The Clinical and Pathological Position of Malignant Adenoma of the Suprarenal Capsule. L. BURKHARDT.
5. The Technic of Antro-Atticotomy. R. VON BARACZ.

6. The Treatment of Retropharyngeal Abscess. WALTER SCHMIDT.
7. Experiments over Appendicitis. RICHARD MUEHSAM.
8. A Case of Hernia Obturatoria Incarcerata. OSCAR BERNHARD.
9. Fracture of the Patella and Its Treatment. LICHTENAUER.

1.—Koenig and Pels-Leusden have written quite an extensive article on **tuberculosis of the kidney**, Koenig reviewing it from the clinical standpoint and Pels-Leusden from the pathologic. There were 18 cases operated on, 6 of which were men and 12 were women. Koenig, as the result of his work, gives the following conclusions: There are two forms of kidney tuberculosis, the solitary tuberculosis of the parenchyma and the pyelitic form. The first form often runs into the second. The diagnosis in the first form is generally very uncertain, while in the second it is comparatively easy. The diagnosis as to the condition of the other kidney cannot always be made with any degree of surety, but the cystoscope and the examination of the ureters often give very helpful data. Neither nephrotomy nor resection of the kidney can effect a cure and neither is recommended, but when a healthy condition of the other organ can be ascertained a nephrectomy will add many years to the patient's life. The best results are obtained in the cases in which the disease is still limited to the parenchyma and then an absolute cure may sometimes be effected. In the pyelitic forms a complete cure can hardly be expected because of the extent of the disease. In 16 of the cases reported by Koenig, Pels-Leusden made careful pathologic studies, from which he deducts the following conclusions: 1. In all cases of tuberculosis of the kidney, in which a diagnosis could be made with sufficient positiveness to warrant an extirpation of the organ, the disease had spread so far that the pelvis of the kidney was always involved and the ureters generally so. 2. The extent of the disease in the parenchyma of the kidney is generally so diffuse that a partial resection of the organ will not suffice to remove all the diseased portions. 3. The occurrence of a spontaneous cure of tuberculous disease of the kidney is not without the range of possibility. 4. The method by which the tuberculous process progresses through the kidney substance resembles that of the acute pyelonephritis, a figure of radiating streaks of tuberculosis being produced, which follow the direction of the urinary excreting tubules. [G.B.W.]

2.—Enderlen has carried out an extensive series of experiments on the lower animals to determine the value of **transplanting omentum in cases of defects of the urinary bladder**. He has shown that under the proper conditions the omentum unites readily with the bladder wall, and an anastomosis of the bloodvessels of the adapted surfaces takes place rapidly. Irregular bundles of connective tissue develop in the omentum and its internal surface soon becomes covered with the rapidly proliferating bladder epithelium. The epithelium in places sends prolongations into the deeper structures, especially along the suture tracts. The omentum is at first increased in size by the growth of connective tissue-cells, but later contraction occurs with resulting shrinking of the tissues. The practical use of transplanting of the omentum must in surgical procedures be limited to very few cases. Its strongest indication is to support an intraperitoneal suture of the bladder wall when subsequent leakage is thought possible. The omenta which contain much fat are more easily fastened to the bladder than the very thin ones because the latter are very easily torn by the stitches. [G.B.W.]

3.—**Cystosarcoma** of the breast which possesses epidermoidal structures is a comparatively rare tumor. Grohe reports 2 cases from his own experience. The first occurred in a married woman 27 years of age in whom the growth had been present for 5 years without causing any special inconvenience except that due to its size. The tumor after extirpation was examined microscopically and was found to consist for the greater part of a cystosarcoma. The cysts were in part lined with cylindrical cells, but in other places without any sharp border line intervening, there was a gradual change to the squamous type. Sometimes, however, the line of separation was sharply drawn and again some of the cysts showed nothing but the squamous cells. The other case was in a married woman, 48 years of age, who had noticed the growth only 4 months before presenting herself. Here the

tumor was for the most part a cystosarcoma, but with this there was a smaller portion which consisted of a pure spindle-cell sarcoma. The cysts were for the greater part lined with stratified squamous epithelium, the superficial layers of which had become horny. A few of the cysts possessed cuboidal epithelium. In many of the cysts which were lined with the stratified epithelium the cells had proliferated to such an extent that the cavity of the cysts was filled with the horny debris. Grohe closes his paper with a review of the literature on the subject of cystosarcoma. [G.B.W.]

4.—Burkhardt says that there is at present little doubt that **malignant tumors may develop in the kidney from misplaced particles of suprarenal capsule**. He reports four typical cases, and goes on to say that the symptoms of these tumors are at first so slight that the patient does not recognize until years after the growth has started, that there is anything the matter with him. During this period the tumor is of a benign nature, a true adenoma of suprarenal tissue, and it may reach great size before malignant changes become manifest. The malignant change is manifested by a rapid increase in size and the appearance of hematuria. The presence of blood in the urine is a sign that malignancy is already existent. Characteristic for these tumors is the benign beginning followed by malignant change, the former stage being much the longer in duration. The malignancy of the tumor begins when the growth breaks through its capsule of fibrous tissue and starts rapidly to penetrate the surrounding structures and gives rise to metastasis. The only treatment which is of any use is the earliest possible excision of the diseased kidney. Statistics show that the tumor is exceedingly malignant and is a disease of late life, generally occurring between 40 and 60. The growth in its early state has the form of a true adenoma of the suprarenal gland, and is made up of varying numbers of sharply encapsulated nodules. Later the nodules become diffuse and the tumors should then be classified among the carcinomas. The metastasis takes place through the lymph-channels, and by the growth penetrating into the lumen of the bloodvessels, through the vascular system. [G.B.W.]

5.—Baracz says that Stacke's is the best method of **antrotomy**, but he suggests two modifications which tend to lessen the time of healing. The difficulty in healing these cases is because of the size of the hole left after the operation and because of the poor nutrition afforded to the newly formed epithelium by the bone which is very sparsely supplied with bloodvessels. It takes from 3½ months to a year for the wounds left by this operation to heal. The modifications suggested by Baracz consist: (1) In covering the bone, still bare after the Stacke's flap has been used, by grafting by Thiersch's method; or (2) by turning up a large flap from the neighboring skin of the neck. He reports 3 cases: Nos. 1 and 2, both ears operated in the same person. Grafts after Thiersch's method were used and the wound was healed within six months after the operation. No. 3. A flap of skin was taken from the neck below the wound and turned up so that the fresh surface lay on the bone and almost the whole of the middle ear was thus covered with epithelium. The wound in this case healed within a month, but a small portion broke open and had to be closed by a second operation. [G.B.W.]

6.—In treating **retropharyngeal abscesses**, opening through the mouth possesses the one advantage of being easily and quickly done. On the other hand, it possesses many and serious disadvantages, as follows: There is danger of immediate suffocation if the discharge is great; septic pneumonia is very apt to result from the inspiration of a quantity of pus; pulmonic tuberculosis may develop in a like manner if the abscess is a result of caries of the spine; and the constant swallowing of putrid material may cause a severe gastroenteritis. Schmidt reports 15 cases, of which only 2 were tubercular, the rest being classed as idiopathic. These latter cases were all very young children, the oldest being 3 years of age. The operation of choice for opening these abscesses is by an incision along the inner border of the sternomastoid, penetrating to the outer side of the jugular vein. Drainage should be established by inserting 2 or 3 small rubber drainage tubes and packing around these with iodoform gauze. The above operation is especially adapted to the more difficult cases. The after-treatment should be conducted on the same plans as in any other phlegmon. [G.B.W.]

7.—Muehsam says that experiments on rabbits with relation to the production of **appendicitis** do not furnish data of much importance to our study of the disease when found in man. This for two reasons: First, the anatomic structure of the appendix is so different that trauma does not play as an important part in the rabbit as in man, and, secondly, the susceptibility of the two towards microorganisms is very different. However, he has carried out a series of experiments on rabbits and sums up his results about as follows: It is possible to produce gangrenous appendicitis in rabbits of a part or whole of the appendix by cutting off its nutrition through the tying of the supplying arteries. The peripheral part more easily undergoes these gangrenous changes than the central. The process is a purely local one as shown by the fact that the inflammation does not tend to spread to the neighboring structures and it is this feature which stands out most prominently in the difference between the appendicitis of the rabbit and the appendicitis of man. [G.B.W.]

8.—The case of **incarcerated obturator hernia** reported by Bernhard was a man of 67. Five days before the operation he developed the symptoms of intestinal obstruction with pain extending down the inner side of the right thigh. Examination showed the presence of a swelling about the size of a pigeon's egg just below Poupart's ligament, reaching to the beginning of the fold between the thigh and the scrotum. At the operation a very adherent hernial sac was found which contained perforated gangrenous intestine. After enlarging the hernial opening at the obturator foramen the gut was pulled down into the wound and the gangrenous portion resected. The anastomosis was made with a Murphy's button. The patient died 5 days after the operation from collapse. [G.B.W.]

9.—Lichtenauer suggests the application of the weight-extension in the **treatment of fractures of the patella**. He says that the fragments are drawn apart by the action of the extensor muscle of the thigh and this retraction he overcomes as follows: Several broad strips of adhesive plaster are placed longitudinally along the thigh from the knee upwards and fastened by a number of transverse strips, and to the ends of the longitudinal strips the weights are attached as in ordinary extension. The fragments are not secured by any special bandages, but the dressing is left open above the knee so that they may be inspected as often as required. The dressing is left on until the fragments are united, which is often from 4 to 6 weeks, and then massage of the extensor muscles is begun. One very important advantage of this method of treating fractures of the patella is that it may be readily carried out where surgical operations requiring aseptic technic cannot be safely done. [G.B.W.]

Revue de Médecine.

May 10, 1900. [20me Année, No. 5.]

1. Desquamation in Typhoid Fever in the Adult. P. REMLINGER.
2. Clinical Study on Some Infectious Diseases. H. ROGER.
3. The Function of the Thyroid Body. G. GAUTHIER.

1.—Remlinger considers that **desquamation in typhoid fever** is a trophic cutaneous disorder and that it is similar to the loss of hair, so frequently seen following this disease. The histories of 6 cases are given in detail. [J.M.S.]

2.—In the isolation hospital of the Porte d'Aubervilliers, during 1899, Rogers has seen many interesting cases of **infectious disease**. The article, which deals with various features of these diseases, began in the April number and is concluded in the present issue. As in former years, mothers who were suffering from infectious diseases were allowed to nurse their babies; consequently, 15 women suffering from measles, 19 from scarlet fever, 9 from angina of which one was diphtheria, 5 from erysipelas, 2 from gastroenteritis, and 1 from mumps, nursed their children during the course of the disease. Except a moderate athrepsia, which was due to a terminal erysipelas, these children presented no accident. **Measles**.—Among the symptoms of the period of invasion it is interesting to notice rachialgia, which was very marked in 4 men and 14 women. Out of 6 pregnant women suffering from measles, 5 were delivered at term and 1 miscarried at the eighth month. In the latter case the blood from the umbilical cord gave a pure culture of streptococci. Thirty patients had had former attacks of measles; and 3 patients

who were convalescent from measles suffered from second attacks before they had left the hospital. A female patient, aged 24 years, was attacked with splenopneumonia. Examination of the sputum failed to reveal the presence of tubercle-bacilli and the patient finally put on flesh and was discharged perfectly cured. But a guineapig that had been inoculated with the expectoration from this patient, died 5 months later, and then the viscera were found to be riddled with tubercles. The author records one case of hysteria following measles. More frequently than usual this year new morbilliform eruptions were noted after the termination of measles. These exanthemata may be divided into 2 classes characterized by the presence or absence of catarrhal symptoms. **Scarlet fever**.—Twenty-three patients gave a history of a former attack of scarlet fever; 11 patients presented cardiac lesions that were sequels of rheumatism; these lesions were not influenced by the disease. The urinary apparatus may suffer from functional disorders or from organic lesions in the course of scarlet fever; 3 patients suffered from the coexistence of scarlet fever and measles and 2 from scarlet fever and typhoid fever. Death usually results from the predominance of the lesions in one organ; these are usually found in the kidneys, although the liver, the spleen and the heart may be involved. Purulent coryza is a dangerous complication. Out of 3 adult patients presenting this complication, 2 died. Bacteriologic examination of the nasal discharges from one of the fatal cases showed a pure culture of streptococci; from the other fatal case, a mixed culture of streptococcus and Staphylococcus pyogenes aureus was obtained. In late childhood this complication is more serious than in the adult; out of 17 patients presenting it, 6 died. During convalescence, a child, aged 8 years, developed choreiform movements and hemianesthesia of the left side and later presented a well-marked hysteric attack. Another child presented astasia abasia. Scarlet fever is very rare in children under 2 years of age; the author notes 11 cases in children under this age. **Varicella**.—Two cases of pemphigoid varicella are noted, one of which proved fatal. Another patient died of an acute enteritis that developed in the course of the disease. In 4 years the mortality from this disease has been 41%. **Erysipelas**.—In 21% of male patients and 28% of female patients extra cardiac murmurs have been noted. On the other hand, no organic lesions have been seen to develop during the course of erysipelas, and, indeed, patients who have had old cardiopathies have presented no new manifestations. In a woman who had just miscarried at 7 months severe erysipelas developed in the region of the genitalia and extended to the lower extremities, but was not followed by puerperal infection. Gestation pursued a normal course in 6 pregnant women who were attacked with erysipelas. There were 3 cases of the disease in newborn children; one aged one month, one aged 6 weeks, and one aged 17 months. All were cured. **Diphtheria**.—Diphtheria in adults seems to be less influenced by serumtherapy than in children. In 4 years the death-rate computed from 217 cases is as follows: before 2 years, 40.9%; from 2 to 14 years, 17.8%; adults, 13.1%; total mortality, 16.5%. **Nondiphtheric anginas**.—These affections may be divided into: (1) The erythematous anginas; and (2) the exudative anginas. The author has seen 3 cases of sore throat due to oidium albicans; these cases belong in the second group. **Mumps**.—Fifty-six cases of mumps were treated, all occurring in patients between the ages of 14 and 30 years. Orchitis was the most frequent complication; in 10 cases the inflammation was unilateral and in 2 cases it was bilateral. A sharp rise in temperature almost surely indicated the occurrence of orchitis. **Gastroenteritis**.—The attacks of gastroenteritis generally assume the choleric form type. The stools have no fixed character. The disease showed a mortality of 6.7% in 133 cases. There were 7 cases of dysenteriform enteritis. From these cases the author isolated a microorganism that he considers pathogenic and which is similar to that described by Lemoine and by Barbier and Tollemer. In the treatment of the articular pains accompanying scarlet fever the author has had satisfactory results from the external application of salicylate of methyl. In the treatment of erysipelas the author uses very hot compresses on the inflamed skin; they are well borne. The rationale of the treatment is found in the interpretation of the dermatitis as a defensive reaction of the system which,

experiment shows, attenuates the streptococcus by favoring the flow of arterial blood to the diseased area. The hot compresses are well borne and the disease does not last, as a rule, more than 6 days. [J.M.S.]

3.—Gauthier concludes his study of the **functions of the thyroid body** by reviewing the literature on the influence of the thyroid body on the pathogenesis and therapeutics of myxedema, scleroderma, psoriasis, obesity, arrest of development, changes in the osseous system, etc. He calls attention to the power of assisting in the disassimilation of albuminoids that the thyroid body possesses. The influence of the thyroid body on the excretion of phosphates and of chlorids by the kidneys is discussed. The author is of the opinion that the greater the amount of thyroid secretion in the blood, the more the uteroovarian activity is reduced and that of the mammary gland is accentuated. The author believes that all pathologic states that arise from a diminution of the nutrition may be connected with a diminished secretion of the thyroid body (hypothyroidia) and may often be benefited by thyroid treatment. [J.M.S.]

Revue de Chirurgie.

May, 1900. [20me Année, No. 5.]

1. Wounds of the Rectum. QUENU.
2. A Note on Embryology and Teratology. CH. FÉRÉ.
3. Fractures of the Neck of the Radius. A. MOUCHET.
4. Median Osteotomy of the Hyoid Bone. M. VALLES.

1.—In the treatment of **wounds of the rectum** which do not penetrate the peritoneum the first indication is to arrest the flow of blood, the next indication is the cleansing of the wound. Hemostasis can be easily effected if the wound is in the lower part of the rectum; if more highly situated it can often be located by means of the rectoscope; the flow of blood can then be arrested by injections of cold or iced-water or by the use of Allingham's tampon. For proper cleansing of the intestine preliminary dilation of the sphincter is usually necessary; the wound may then be sutured with catgut, if possible, or drainage may be used; the bowels are confined for a few days. In wounds complicated by rupture of the bladder the chief indication is to produce free drainage of the urine, and this can be accomplished by tying a catheter into the bladder; if the peritoneal coat is penetrated laparotomy is indicated. The mortality of cases in which operation is performed is 33%, in cases where intervention is not practised the mortality is 82%. [M.B.T.]

3.—Mouchet reports 10 cases of **fracture of the neck of the radius**. From a study of these cases he decides that the mechanism of production is difficult to determine; probably indirect violence is responsible most frequently. Among the symptoms are mentioned swelling of the anterior and external part of the forearm, inflammation and severe pain; abnormal mobility and crepitus cannot be considered prominent symptoms and the movement of supination is impossible. X-ray photographs give the positive diagnosis. The prognosis is favorable if the fracture is properly treated soon after the injury. Treatment by massage and passive motion is recommended. Reduction is impossible and the bones cannot be retained in place if reduction is effected. Osteotomy of the neck of the radius may be necessary in case of vicious union. [M.B.T.]

4.—Valles recounts the difficulty of operations in the region of the pharynx and base of the tongue. In 1895 he first performed **osteotomy of the hyoid bone** and used the transhyoid route in extirpating a carcinoma of the epiglottis. He is convinced of the value of this procedure, which he describes in considerable detail. A number of cases are reported which were operated on successfully after this preliminary procedure. [M.B.T.]

June, 1900. [20me Année, No. 6.]

1. Carcinoma of the Large Intestine. R. DE BOVIS.
2. Polyps of the Rectum. M. PÉRAIRE.
3. Chronic Proliferating Osteomyelitis. B. ZOZLOVSKY.
4. Compression of the Pedicle of a Movable Kidney by a Gallbladder Distended with Stones. E. REYMOND.

1.—Bovis bases his article on an analysis of 426 cases which he had collected from literature. According to the statistics of surgical services, **carcinoma of the large in-**

testine occurs once for about every 2,000 to 3,000 illnesses, but according to the reports of anatomical institutes it is much more frequent, one for every 300 or 400 deaths. In relation to carcinoma affecting other organs it occurs between 2 and 5 times for every 100. The intestine is probably not much less frequently affected than the rectum, though carcinoma of the small intestine is extremely infrequent; about 53.9% of the cases are males and a little more than half of the cases are between 40 and 60 years of age. After careful study of the statistics, Bovis finds himself unable to draw any definite conclusions as to the influence of heredity, degeneration, and intoxication as causative factors. Chronic constipation is usually believed to be a common cause, but if this is so, females should be more frequently affected; this, however, is not the case. The sigmoid flexure and cecum are most frequently affected, the flexures of the colon do not seem to be more frequently affected than other parts. Annular forms occur much more frequently than lateral forms, and they more often cause stenosis; the lateral forms, however, probably favor invagination. Invagination is more likely to be caused by comparatively small tumors, when the intestinal wall is flexible and the mesentery extensile. In the progress of the disease ascites, perforation, and adhesion to neighboring organs are likely to occur. Of the forms of degeneration the gelatinous is more often met than the colloid; almost all colloid neoplasms affect the cecum. The article is continued. [M.B.T.]

2.—A woman, 38 years old, had a tumor about the size of an orange, with a pedicle 3 cm. long and 2 cm. thick. This tumor had first escaped from the rectum during childbirth; it was replaced by the midwife and had only escaped from the rectum 3 or 4 times subsequently at stool. Defecation was painful and difficult and there was abdominal pain and constipation. After locally anesthetizing the parts with cocain it was removed between double ligature and a perfect cure resulted. Péraire has studied the literature of **rectal polypi** thoroughly and finds the first case recorded in 1731. The symptoms most frequently complained of are pain, which is colicky in character, and frequent rectal hemorrhages; it may usually be felt by rectal examination. The progress of a case is usually slow, though it is likely to keep on increasing in size and may reach the size of 2 fists; spontaneous atrophy occasionally results. Abstracts of the cases reported in literature are given and discussed. The thermocautery is usually unnecessary to prevent hemorrhage. The application of double ligature and the use of the bistoury and scissors is sufficient. [M.B.T.]

3.—**Chronic proliferating osteomyelitis** or fibrous proliferating osteomyelitis is a rare form of disease, which has been taken by many authors for syphilis, tuberculosis or a malignant neoplasm. Kocher describes a form of typical acute suppurative osteitis which is proliferating and vascular; its chronic character often gives the idea that it is tuberculous. The granulations and excrescences which are sometimes present give the structure a strong resemblance to sarcoma. Kohler reports 3 cases of this affection which have occurred in his practice during 8 years out of about 60 cases of the ordinary form of the affection. [M.B.T.]

4.—From a search in the literature of the subject, Raymond has been unable to find a case exactly analogous to the following: A woman of 38 was taken with severe pain in the left flank following great fatigue. There was no evidence of jaundice, but she vomited almost constantly; the abdomen was distended and examination was difficult. At the region of the gallbladder an irregular hard tumor could be felt, the form of the first; below, and at one side a second mass could be felt of more homogeneous consistency and of the form of the kidney. On incision in the lumbar region the kidney was found to be about double its normal size and much discolored; at the region of the pelvis was a hard irregular mass which felt like the gallbladder distended with fluid and calculi. **Nephropexy** was performed at this time and 7 days later **cholecystotomy** was performed; about 60 gm. of purulent fluid escaped from the gallbladder at the time of the operation. The gallbladder was freed from its adhesions, 4 calculi the size of an egg removed, and the gallbladder drained. Cultures from the gallbladder showed the *B. coli communis*. The general symptoms, in part at least, were thought to be the result of the affection of the gallbladder. The functional symptoms and pain were referred to the kidney and were largely due to pressure. [M.B.T.]

Practical Therapeutics.

Under the charge of

A. A. STEVENS, A.M., M.D.

Mitral Stenosis.—Sansom (*Clinical Journal*, January 31, 1900) states that digitalis increases the force of action of the muscles of both ventricles. But in mitral stenosis the left ventricle does not want it, since there is no difficulty in the left ventricle unloading itself into the aorta. In these cases digitalis acts disproportionately on the right ventricle. The more powerfully the right ventricle acts the greater the amount of blood that is driven into the venous circulation, including the liver, and therefore digitalis is not likely to do much good. Five-minim to 10-minim doses of the tincture, or dram-doses of the infusion, or grain-doses of the leaves 3 times a day, do good for a limited time. In some cases it does no good at all. The great difficulty is that the right ventricle is overdone. Under these circumstances a great deal can be done to relieve the distention by bleeding from a vein. When the tension is thus relieved, digitalis will perhaps do good. But another cardiac tonic may be selected, namely, convallaria or caffein, particularly convallaria. When the heart-action is slow, another heart-tonic may be employed, namely, belladonna. In mitral stenosis there is a gradual narrowing of the mitral orifice going on through the course of years. Under such circumstances massage and exercise do good by helping the venous circulation and increasing the driving power of the right heart. It is not a good thing for such a patient to be taught to "cave in." Systematic bathing is also a good thing. The warm bath should be followed by a cold sponging to tone up the heart-muscle. Exercises should be graduated. This slow-going, insidious, heart-trouble must be met by gradual means calculated to assist the system over its difficulties. By these means, judiciously carried out, the patient may be placed in fair health for years.

Veratrum in Palpitation of the Heart.—According to the *New York Medical Journal*, for June 23, 1900, the following formula is well spoken of in the *Medicinische Wochenschrift* for April 23, 1900:

R.—Sodium bromid..... 1½ drams.
Tincture of veratrum viride..... 50 drops.
Sirup of orange peel 12½ drams.
Distilled water to make..... 4½ ounces.

A tablespoonful twice a day.

The Treatment of Epilepsy in its Incipency.—W. P. Spratling, Superintendent of Craig Colony for Epileptics (*American Medical Quarterly*, April, 1900) divides epilepsy into true and false. The latter includes cases of so-called epilepsy due to some distinguishable physical infirmity, such as a strained eye-muscle, urethral stricture, a poisonous gas in the intestinal canal, or an immediate injury to the brain. Doubtless convulsions of this character may ultimately lead to genuine epilepsy. True epilepsy is largely transmitted by heredity or through hereditary influences. The disease is one of the degenerative type. The sooner we ascertain and attempt to remove the cause that creates the epileptic channel, or the epileptic focus in the individual, the greater will be the chance of a cure. This principle applies to cases of genuine epilepsy as well as to others. If the case be one of pseudoepilepsy it can be dealt with far more easily and with hopes of far better results than if it be one of true epilepsy. After 15 years' experience with the disease Spratling does not believe that it can be demonstrated that more than 6% or 8% of cases of genuine epilepsy recover; whereas with reflex epilepsy the ratio of recovery would go very much higher. The author believes that parental sympathy has stood stoutly in the way of the recovery of many cases. It has been estimated that not more than from 1% to 2% of genuine epileptics recover under home treatment, and one of the chief causes is that the physician's best efforts are defeated by parental sympathy. The principle of dietary at the Craig Colony is that patients shall have meat but once a day, and that at the noon hour, and only a small quantity; they shall have nothing fried in grease, and nothing in the way of pies, cakes or pastries. They must eat largely of

cereals, bread-stuffs, milk, fruit, eggs and butter; but there are no hard and fast lines to observe in all cases. An important element of institution treatment is the matter of discipline. In the epileptic the continuity of action is being continually broken because of a defect in his power of inhibition. In the institution he is made to feel certain ever present and active forces that tend to keep him along the line of proper conduct. For aborting expected seizures the following mixture is recommended:

R.—Potassium bromid 30 grains.
Chloral 20 grains.
Morphin sulfate ¼ grain.

Such a combination has no curative effects, though the author has known it in certain cases to hold the seizures in abeyance for months. Of the newer remedies the writer speaks favorably of the fluid extract of horse-nettle. It appears to have an advantage over bromids in not impairing the digestive functions; on the contrary, it seems to possess distinctly tonic properties. Simulo is another drug that has given excellent results. Concerning the Flechsigt treatment (opium and bromids) he has yet failed to see a case in which it produced any permanent benefit. Great stress is laid on the systematic exercise of all the muscles of the patient's body. Much can be accomplished in cases of epileptic palsy by the application of physical means for its correction.

Menorrhagia.—The following formula is given in *Le Progres Médical* (*The Therapist*, May 15, 1900):

R.—Salipyrin..... } of each..... 2½ drams.
Potass. bromid. }
Extract of viburnum prunifolium..... 5 drams.
Distilled water..... 1 ounce.
Cognac..... } of each..... 5 drams.
Sirup of orange }

A teaspoonful to be taken in the evening the fifth day before the expected period; the same quantity morning and evening on the fourth and third days; 3 teaspoonfuls on the second day, and 4 teaspoonfuls on the day before and on the day of the appearance of the menses.

Aqueous Extract of Suprarenal Gland.—Somers (*Merck's Archives*, June, 1900) draws the following conclusions from the use of the extract of suprarenal gland, in 450 cases in hospital and private practice: (1) The aqueous extract of the suprarenal gland is the most powerful astringent and vasomotor constrictor that we possess; (2) its action is peripheral, is exerted directly on the vessel walls and basement membrane, and is limited only to the parts with which the drug comes in contact; (3) it is nontoxic, nonirritating, cannot produce a vicious habit, and may be repeatedly used on the same individual without losing its power; (4) it prevents to a marked extent the toxic effects of local anesthetics by retaining them in the tissues and preventing absorption; (5) the aqueous extract readily decomposes on account of the large amount of animal matter present, but the degree of putrefaction in no way impairs the physiological activity; (6) it first blanches and then contracts mucous tissues, and will subdue active or passive inflammation; (7) its activity is not impaired by boiling and it may be repeatedly sterilized in this manner, while carbolic acid will preserve the solutions indefinitely and in no way impair their value; (8) it will prevent primary, and greatly lessen danger of secondary, hemorrhage; (9) its action is manifested in 20 seconds, attains its maximum in 5 minutes, and lasts from 1½ to 24 hours; (10) it increases the tonicity of the parts, augments the action of other drugs, especially cocain, and diminishes postoperative swelling; (11) it markedly restricts exuberant granulation-tissue wherever situated; (12) finally, it diminishes secretion and aids in more rapid healing. He states that the following solution is a valuable local application in hay fever, and is also remarkably efficient in controlling inflammation or bleeding, and in producing anesthesia of the mucous membrane:

R.—Adrenal..... 20 grains.
Phenic acid..... 2 grains.
Eucaïn B..... 5 grains.
Distilled water..... 2 drams.

Macerate 10 minutes; filter.

This solution is permanent, will not decompose nor lose its physiologic activity for several months.

Original Articles.

TOTAL EXCISION OF THE SCAPULA ALONE, AND
WITH THE ARM (INTERSCAPULOTHORACIC AM-
PUTATION): PARTIAL EXCISION OF THE SCAP-
ULA FOR TUMOR.

By J. J. BUCHANAN, M.D.,

of Pittsburg, Pa.

Surgeon to Mercy Hospital.

[Concluded from page 37.]

GROUP III.

GENERAL REMARKS.—Total excision of the scapula with preservation of the arm has been called by Sir William Fergusson "the *ne plus ultra* of conservative surgery." It is certainly an operation most gratifying in its temporary results in malignant disease and in its permanent outcome in other conditions. The usefulness of the affected arm is remarkably little impaired by the operation. Abduction of the arm suffers most; but a variable amount even of this motion is retained. All the functions of the forearm are present, and those who perform manual labor can usually return to it, provided it does not include overhead work.

The first operation of this kind was done by von Langenbeck, in 1855; but the evolution of the complete extirpation from the partial was so gradual that the final step was but a trifling innovation, either from an operative or functional point of view, upon partial operations which had been done before by Seutin, von Bruns, and von Langenbeck himself.

Jansen, of Lyons, had removed the entire body of the bone in 1824; Skey, of London, had removed all but the glenoid process in 1830; Seutin had removed all but part of the acromion in 1849; von Langenbeck had removed all but the coracoid process in 1850; and von Bruns all but the acromion and coracoid in 1853.

It is evident that von Langenbeck himself did not attach great importance to the totality of the extirpation; for there is no record of his having performed the operation again; whereas, two months after his total excision, we find that he made a partial excision for sarcoma, removing only the body of the bone.

Nearly all writers on excision of the scapula consider those operations total in which but a small part of the bone is left; but the gradations in the amount excised are so imperceptible that no satisfactory line can be drawn. The majority of such writers, however, exclude von Langenbeck's partial case, of 1850, and admit exactly similar cases of later dates.

While, in the present paper, it has been thought best to draw the line absolutely between total and partial excisions; the fact is recognized that, for all practical purposes, except with reference to recurrence, a large number of cases in the partial list are comparable in every respect to total excisions. For this reason it has been thought necessary to make a "combination statistic" to include "total and nearly total excisions."

In Table IV is a small group of cases in which the entire scapula has been removed at two or more operations. These cases have been almost invariably classed as total excisions; but, while they are such in their ultimate effects, from an operative point of view, they were at no period more than partial excisions.

In contrast with von Langenbeck's apparent indifference to the operation which he was the first to practise,

was the enthusiasm of Syme, who performed the second total extirpation, and, in common with many British authors, believed it to be the first of its kind.

INDICATIONS.—The entire scapula has been excised for morbid growths, necrosis, osteomyelitis, tuberculosis, and injury. The question whether the entire scapula should be removed in all cases of malignant disease affecting any part of it is a very important one and cannot be decided with positiveness from the statistics so far presented. In Table III and Table V will be found all the cases bearing on this question for which the writer has been able to collect the data. The analysis made of these cases in the concluding summary would appear to show that, if by removal of less than the entire body of the scapula the growth can be entirely extirpated, the operative mortality is least, while the probability of a permanent cure is greater than if the entire bone were removed. If, however, the removal of the diseased tissue requires excision of the entire body of the scapula, or more, then the immediate mortality becomes greater and the probability of permanent cure less than when the total extirpation of the bone is practised. This is contrary to the accepted belief that the treatment of a malignant growth of a bone always calls for the extirpation of the entire bone. This idea has been well expressed by Guermont, of Lille, in advocating the total in preference to the partial excision of the scapula: "From a therapeutic point of view, it is not sufficient to remove the affected portion of bone (in osteosarcoma); the entire bone should be extirpated as if the marrow were affected in its entire extent, and the capsule of the neoplasm were formed by the periosteum."¹ The number of cases on which the opinion favoring partial excision in small growths is based is too small to reverse the principles which govern the treatment of malignant disease in other bones; but there is sufficient basis for following a conservative course in small growths till further statistics are available.

In the less malignant conditions, necrosis, osteomyelitis, and tuberculosis, each case must be a rule for itself, although it should be remembered that total excisions are no more dangerous than partial, where the entire body of the bone requires removal.

It has been very aptly said that it is hard to imagine a case of injury which would require excision of the entire scapula without involving loss of the arm. As a matter of fact, no such case has been recorded, with the single exception of Choppin's operation in 1856.

The reference to this operation in the place quoted is so clear that there is no doubt whatever that the operation was done; but there is such an absence of detail in the report that it is not at all improbable that some portion of the bone was left in place, the operator considering it a total excision even though the processes were left. This has been done by many surgeons.

METHOD OF OPERATION.—The form of incision required to uncover the bone in excision of the scapula depends frequently on the size and location of a growth, the involvement of integument by the disease, and the location of fistulous tracts in tuberculous and necrotic processes. When the shape of the flaps is a matter of choice, they may be made in a number of ways. Probably the incision most generally adopted is the T-shaped, practised by Syme. The U-incision is advised by Phelps on account of sloughing, which occurred in his own case, in which he employed the T-incision. A

¹ Bull. Soc. Anat.-Clin. de Lille, 1893, viii, 140.

similar incision was advised by Sedillot and Chassaig-nac (Hausmann).

The flaps, having been shaped, are dissected from the underlying bone. The trapezius and deltoid are separated from their attachment to the acromion and spine of the scapula, and the supraspinatus separated near its insertion. The inner border is freed by dividing the levator anguli scapulæ and the rhomboidi close to their insertions. The posterior scapular artery will now require ligation. The inner border of the bone is lifted from the chest and the serratus magnus cut through

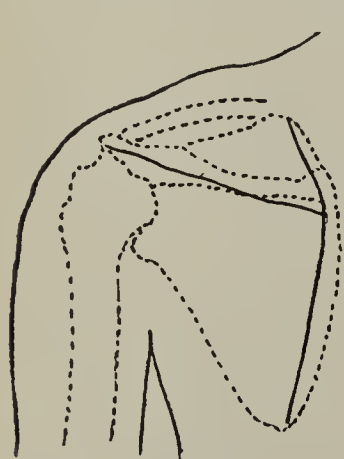


FIG. 1.

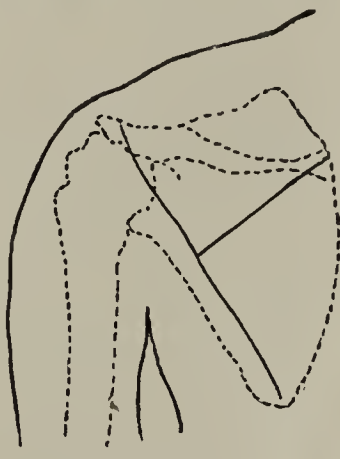


FIG. 2.



FIG. 3.

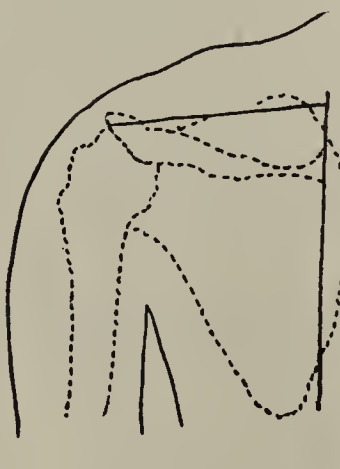


FIG. 4.



FIG. 5.

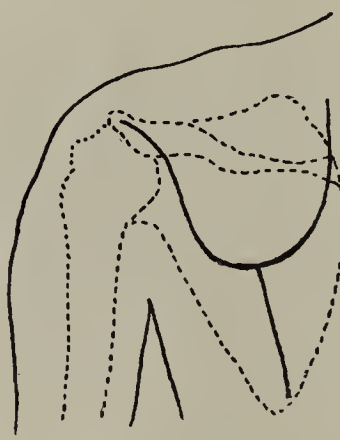


FIG. 6.

Fig. 1.—Ollier's incision. Fig. 4.—von Langenbeck's incision. Fig. 5.—Syme's incision. Fig. 6.—Phelps' incision.

close to its attachment. While the bone is still held away from the body, the upper border is cleared and the omohyoid divided. At this time it will be necessary to tie the suprascapular artery. The arm is now drawn downward and the acromio-clavicular attachments separated and the coraco-clavicular ligaments divided from behind. The inner border is tilted forcibly forward from the chest-wall and the teres muscles and infraspinatus divided, care being taken to secure the subscapular artery before its division. Further

tilting of the bone renders possible the separation of its muscles from the coracoid process—the biceps, coracobrachialis and pectoralis minor as well as the coracohumeral ligament. The capsular ligament of the shoulder-joint being completely severed and the long heads of biceps and triceps divided, the bone can be completely removed.

The order in which the different borders of the bone are freed is varied by the exigencies of the case or the inclinations of the operator.

In cases of necrosis and tuberculosis, the subperiosteal method of Ollier is preferred and often results in almost complete regeneration of the bone.

The only change in method of any importance which has been suggested since the early operations, is that of Jeannel,² who proposes that, in every case in which it is suspected that the axillary vessels and nerves may be involved in a growth, the operation should be so conducted that it may, if desirable, be converted into a formal interscapulothoracic amputation, according to Berger's method. He makes the clavicular and posterior incision of Berger, divides the clavicular and acromial insertions of the deltoid and through this incision makes a digital examination of the relation of the growth to the vessels and nerves. He then decides whether a scapular excision alone is sufficient. If satisfactory information cannot be thus gained, he resects the external third of the clavicle, separates the muscular attachments of the coracoid and thus gains better access to the vessels and nerves. Berger³ advises almost the same procedure, resecting the clavicle primarily in every doubtful case.

DR. BUCHANAN'S CASE III.—*Total Excision of the Scapula for Sarcoma. Recovery. Recurrence in Upper Jaw 5 Years Later.*

John K., aged 34 years, previously healthy, began to have pain in the region of his left scapula one year before the present operation, which he attributed to carrying heavy boxes on that shoulder. About six months after the pain began, a small growth was discovered above the spine of the scapula. This was excised in November, 1893, by Dr. Oyer, who preserved the specimen. The growth recurred *in loco* soon after, and the pain became almost constant and quite severe.

When he applied for treatment, the specimen was secured from Dr. Oyer for microscopical examination and was found to be a sarcoma. The recurrent growth was not larger than a small hen's egg and had its seat at the outer extremity of the suprascapular fossa.

He was admitted to Mercy Hospital and the entire scapula, with the growth, was excised on March 15, 1894, Dr. R. W. Stewart assisting. The T-shaped incision was used to uncover the bone. The muscular attachments of the body of the bone were divided, the acromio-clavicular joint separated and the scapulo-humeral joint disarticulated. The scapula was then drawn from the chest, the coracoid process exposed and its muscular attachments separated.

The capsular ligament of the shoulder joint was stitched to the periosteum of the end of the clavicle with catgut and served to hold the humerus up for a time.

The patient left his bed on the third day and made a good recovery.

His arm was perfectly useful for every purpose not requiring much elevation from the body and he was able to do the work of a huckster without difficulty.

About 5 years later he had a growth, presumably of the same nature, in the upper jaw, which was burned with a caustic plaster by an irregular practitioner. It recurred in the same place and when he applied for treatment the case was considered unsuitable for radical measures.

¹ *Le Midi Med.*, 1895, 1, 251.

² *Bull. et Mem. de la Soc. de Chir.*, Paris, 1897, xxiii, 571.

TABLE III.—TOTAL EXCISION OF THE SCAPULA (AT ONE OPERATION) WITH PRESERVATION OF THE ARM.

NO.	OPERATOR.	DATE OF OPERATION.	SEX AND AGE.	CONDITION REQUIRING OPERATION.	RESULT.	SUBSEQUENT HISTORY.	REMARKS.	PLACE OF RECORD.
1	v. Langenbeck, of Berlin.	May 22, 1855.	M., 12.	Malignant growth.	Recovery.	Recurrence in 109 days and death in 10 months.	Three inches of clavicle also removed.	* Fock: <i>Deutsche Klin.</i> , 1855, Nr. 38, 422.
2	Syme, J., of Edinburgh.	Oct. 1, 1856.	F., 70.	Cystosarcoma.	Recovery.	Died of "old age" 2 months later.	Tumor size of cocoanut, with aneurysmal bruit. T-incision. Good use of arm followed.	* <i>Med. Chir. Trans.</i> , London, 1857, xl, 107.
3	Choppin, ¹ of New Orleans.	Spring of 1856.	M.	Injury.	Death.		Railway injury.	* <i>N. O. Med. News and Hosp. Gaz.</i> , January, 1857.
4	Crawford, ² of Ayrshire.	1857.		Carcinoma.	Recovery.			* <i>Med. Times and Gaz.</i> , 1857, ii, 155.
5	Jones, G. M., of Jersey.	May 10, 1858.	F., 14.	Caries.	Recovery.		Osteitis began 5 months before.	* <i>Med. Chir. Trans.</i> , London, 1859, xlii, 7.
6	Esmarch, F., of Kiel.	May 9, 1859.	M., 33.	Sarcoma.	Recovery.	Recurrence and death in 6 months. (Gies.)		* <i>Arch. f. klin. Chir.</i> , 1863, iv, 534.
7	Hammer, A., of St. Louis.	October, 1860.	F., 18.	Malignant growth.	Recovery.	Recurrence and death in 10 months.		* <i>St. Louis Med. Rep.</i> , 1866, i, 1.
8	Syme, J., of Edinburgh.	Nov. 13, 1862.	M., 45.	Malignant growth.	Recovery.	In good health several years later.	Tumor weighed between 4 and 5 pounds. Head of humerus had been before removed.	* <i>Excision of the Scapula</i> , Edinburgh, 1864.
9	Michaux, M., of Louvain.	Nov. 24, 1864.	M., 15.	Encephaloma.	Recovery.	Recurrence in mediastinum and death in 10 months.	Tumor weighed 940 grams.	* <i>Gaz. Med. de Par.</i> , 1866, 313.
10	Hamilton, F. H., of New York.	Feb. 10, 1866.	M., 33.	Necrosis.	Recovery.			* <i>Med. and Surg. Rep.</i> , 1866, xiv, 372.
11	Rogers, S., of New York.	Dec. 12, 1867.	F., 7.	Carcinoma.	Recovery.	Recurrence and death in 6 months.		* <i>Am. Jour. Med. Sci.</i> , 1868, lvi, 359.
12	Michel, of Strasbourg.	Sept. 20, 1868.	M., 50.	Cyst of bone.	Recovery.	No recurrence 5 years later.	Fell in 1833. Loaded vehicle passed over shoulder in 1866.	* <i>Levre: Resection Complete du Scapulum</i> , Strasbourg, 1869.
13	Pollock, G., of London.	Sept. 30, 1869.	M., 47.	Vascular growth.	Death.	Recurrence; secondary operation, followed by hopeless recurrence.	Tumor noticed 9 months before. Size of adult head. Death on fifth day.	* <i>St. George's Hosp. Rep.</i> , 1869, iv, 223.
14	Steele, C., of Bristol.	April 18, 1871.	M., 8.	Encephaloid.	Recovery.	No recurrence 2 years later.	Tumor noticed 6 weeks. Large growth.	* <i>Brit. Med. Jour.</i> , 1871, ii, 430.
15	King, K., of Hull.	June 17, 1871.	F., 8.	Carcinoma.	Recovery.		Growth preceded by injury. Exploratory puncture for microscopic examination.	* <i>Liverp. and Man. Med. and Surg. Rep.</i> , 1874, ii, 68.
16	Logan, S., of New Orleans.	Dec. 19, 1871.	M., 33.	Necrosis.	Recovery.		Head of humerus previously removed.	* <i>Rich. and Louisv. Med. Jour.</i> , 1872, xiv, 131.
17	Spence, J., of Edinburgh.	Feb. 21, 1872.	M., 68.	Malignant growth.	Recovery.	Death about 6 months later of capillary bronchitis. (?)	Tumor size of a melon.	* <i>Dublin Jour. Med. Sci.</i> , 1873, lv, 508.
18	Kotthmann, A., of Solothurn.	May 23, 1873.	M., 48.	Necrosis.	Recovery.		Tumefaction had existed about 4 months.	* <i>Cor. Bl. f. Schw. Aerzt.</i> , 1874, 253.
19	Schneider, R., of Königsberg.	Dec. 3, 1873.	M., 6.	Sarcoma.	Recovery.	General recurrence and death in 4½ months.	Tumor appeared without known cause.	* <i>Berliner klin. Woch.</i> , 1874, xi, 377.
20	O'Grady, E. S., of Dublin.	Jan. 20, 1874.	M., 18.	Necrosis.	Recovery.		Head of humerus previously removed. Recovered perfect use of arm.	* <i>Med. Press and Circular</i> , 1874, xvii, 179.
21	MacCormack, W., of London.	May 10, 1876.	F., 29.	Myxochondroma.	Recovery.	Recurrence and death some months later.	Tumor size of a hazelnut noticed in 1869. Growth size of a child's head.	* <i>St. Thomas' Hosp. Rep.</i> , 1876, vii, 307.
22	Mazzoni, C., of Rome.	Dec. 6, 1877.	M., 29.	Necrosis.	Recovery.		Bone abscess followed some abdominal disease. Head of humerus previously resected. Subperiosteal method.	* <i>Gazz. Med. di Roma</i> , 1877, iii, 61.
23	Orlowski, W., of Warsaw.	Mar. 29, 1877.	M., 25.	Necrosis.	Recovery.		Osteomyelitis of scapula began 6 months before. Head and neck of humerus also removed.	* <i>Centrabl. f. Chir.</i> , 1878, v, 457.
24	Brigham, C. B., of San Francisco.	Oct. 23, 1877.	M., 35.	Necrosis.	Recovery.		Disease of scapula began in March, 1877. Incision along spine. Good use of arm.	* <i>Boston Med. and Surg. Jour.</i> , xcvi, 455.
25	Spence, J., of Edinburgh.	1877.		Tumor.	Death.	No recurrence 3 months later.	Stiffness and swelling of shoulder appeared 18 months before. T-incision.	* <i>Lectures on Surgery</i> , 3d edition, ii, 967.
26	Peters, G. A., of New York.	Jan. 11, 1878.	M., 42.	Carcinoma.	Recovery.		Head of humerus previously removed.	* <i>Am. Jour. of Med. Sci.</i> , 1878, lxxvi, 100.
27	O'Grady, E. S., of Dublin.	March, 1878.	M., 25.	Necrosis.	Recovery.			* <i>Med. Press and Circ.</i> , 1878, xxv, 361.
28	Nixon, F. A.	Nov., 1881.	M., 13.	Sarcoma.	Recovery.		Large tumor of rapid growth.	* <i>Brit. Med. Jour.</i> , 1881, ii, 1056.
29	Roth, A., of Cagliari.	Jan. 14, 1884.	M., 33.	Myxosarcoma.	Recovery.	No recurrence in 1888 (Tito Costa).	Tumor, size of a large fist, growing from acromion.	* <i>Melis: Estirp. della Scap.</i> , Cagliari, 1886.
30	Ellison.	July, 1884.	M., 13.	Sarcoma.	Recovery.			* <i>Australas. Med. Gaz.</i> , 1884, iv, 39.
31	Poniset, G., of Bordeaux.	Sept., 1884.	M., 52.	Sarcoma.	Death.		Tumor caused by a blow 2 years before. Growth nodulated and size of 2 fists. Death 2 days later of sepsis.	* <i>Rev. de Chir.</i> , Par., 1885, v, 201.
32	Schulz, of Neumark.	Dec. 12, 1884.	M., 16.	Caries.	Recovery.		Disease of bone began in July, 1884. Head of humerus and part of clavicle also removed.	* <i>Deutsche Zeit. f. Chir.</i> , 1885-86, xxiii, 291.
33	Lanelongue, of Bordeaux.	March 5, 1885.	M., 34.	Chondrosarcoma.	Death.		Tumor, size of adult head. Alcoholic subject. Death from shock in 36 hours.	* <i>Leçons de Clin. Chir.</i> , Paris, 1885, 235.
34	Brinton, J., of Philadelphia.	Oct. 3, 1885.	F., 11.	Sarcoma.	Dea h.			* <i>Maryland Med. Jour.</i> , 1885-86, xiv, 21.
35	Ceci, A., of Genoa.	March 5, 1886.	M., 17.	Osteomyelitis.	Recovery.		Disease of bone began 1 month before, 5 days after circumcision for inflamed prepuce. L-flap. Subperiosteal operation. Good function.	* <i>Arch. et Att. Soc. Ital. di Chir.</i> , 1886, Roma, 1887, iii, 415.
36	Paci, A., of Pisa.	Nov. 16, 1886.	F., 17.	Necrosis.	Recovery.		Moderate use of arm.	* <i>Lo Sperimentale</i> , 1887, lx, 570.
37	Treudelenberg, H., of Bonn.	Nov. 16, 1886.	M., 42.	Sarcoma.	Recovery.	Recurrence and excision in 4 months. Later recurrence and death in 1½ years.		* <i>Trottmann Ueber die Erst. der Scap.</i> , 1887.

¹This case has not been generally accepted. See remarks in body of paper on this point.

²This case, called in question by some, and omitted by other authors, was recognized as authentic by Mr. Syme himself in a letter to Mr. Jones, of Jersey, in 1857.

TABLE III.—TOTAL EXCISION OF THE SCAPULA (AT ONE OPERATION) WITH PRESERVATION OF THE ARM.—CONTINUED.

No.	OPERATOR.	DATE OF OPERA- TION.	SEX AND AGE.	CONDITION REQUIRING OPERATION.	RESULT.	SUBSEQUENT HISTORY.	REMARKS.	PLACE OF RECORD.
38	MacCormick, A., of Sid- ney.	April, 1887.	M., 56.	Sarcoma.	Recovery.	Operations for recurrence in June and Dec., 1889. Patient well in 1898.	Tumor removed 3 years before. Growth in serratus magnus, rais- ing scapula from thorax.	<i>Australas. Med. Gaz.</i> , 1898, xvii, 295.
39	Jeannel, M., of Toulouse.	Sept. 16, 1887.	M., 50.	Sarcoma.	Death.		Violent wrench of arm 2½ years before. Head of humerus and axillary glands removed. Death from shock in 3 hours.	* <i>Le Midi Med.</i> , Toulouse, 1892, i, 349.
40	Cheever, D. W., of Boston.	Oct. 14, 1887.	M., 12.	Necrosis.	Death.			<i>Clin. Rec.</i> , Boston City Hospital. (Per- sonal communication.)
41	Chavasse, T. F., of Birm- ingham.	Feb., 1888.	F., 8.	Sarcoma.	Death.			* <i>Lancet</i> , 1892, ii, 471.
42	Ollier, L., of Lyons.	March 9, 1888.	M., 16.	Caries.	Recovery.		Head of humerus excised 1 year before.	<i>Traite des Resections</i> , Paris, 1891, iii, 904.
43	Sandler, P., of Magde- burg.	May 2, 1888.	F., 23.	Sarcoma.	Death.		Death in 14 days of sarcoma of lung.	* <i>Arch. f. klin. Chir.</i> , 1889, xxxviii, 300.
44	Vander Hoeven, J. J., Jr.	March 7, 1889.	M., 4½.	Sarcoma.	Recovery.	No recurrence 15 months later.	Tumor arose in callus of fractured scapula. Humerus attached to clavicle.	* <i>Nederl. Tijdschrift v. Gen.</i> , 1890, xxvi, 521.
45	Perier.	Dec., 1889.	M., 55.	Sarcoma.	Recovery.	Died in 14 months of acute entero- colitis.	Good functional result.	* <i>Le Mercedi Med.</i> , 1890, No. 5, 51.
46	Putti.	1889.	M., 45.	Sarcoma.	Recovery.		Head of humerus and part of clavicle also removed.	* <i>Riform. Med.</i> , Naples, May, 1, 1891.
47	Ceci, A., of Genoa.	May 20, 1890.	F., 17.	Tuberculosis.	Recovery.		Death 10 weeks after operation, preceded by delirium and joint effusions.	* <i>Costa: Arch. di Ortop.</i> , Anno x, No. 2, <i>et seq.</i>
48	Hadra, of Erlangen.	Jan. 13, 1891.	M., 59.	Sarcoma.	Death.		Nodular tumor, size of child's head. T-shaped incision, some sloughing of flaps.	* Hausmann: <i>Ueber die totale Exst. des Schulterbl.</i> , Erlangen, 1892.
49	Phelps, A. M., of New York.	Nov., 1891.	M., 42.	Fibrosarcoma.	Recovery.	Recurrence and removal of arm on July 3, 1895. Patient well in February, 1900. (Personal com.)	Very good functional result. Subscapular muscle invaded. Good use of arm afterward.	* <i>Med. and Surg. Rep.</i> , Philadelphia, September 9, 1893.
50	Putti.	1891.	F., . .	Sarcoma.	Recovery.	No recurrence 2 years later.	Growth of about 2 months. Clavicle involved and part removed. T-incision. Very good use of arm after operation.	* <i>Riform. Med.</i> , Naples, May, 1, 1891.
51	Jacobson, W. H. A., of London.	March, 1892.	Adlt.	Sarcoma.	Recovery.			* <i>The Operations of Surg.</i> , London, 1897, 151.
52	Golding-Bird, C. H., of London.	March 28, 1893.	F., 14.	Sarcoma.	Recovery.	Recurrence in wound and in axilla and death April 2, 1894. (Per- sonal communication.)		* <i>Lancet</i> , 1893, i, 1066.
53	Folet, of Lille.	April 14, 1893.	F., 19.	Sarcoma.	Recovery.		No previous traumatism. Tumor noticed for 1 month. Very good use of arm followed.	* <i>Bull. Med. du Nord</i> , 1893, xxxii, 305.
54	Jaboulay, of Lyons.	October, 1893.	M., 57.	Tuberculosis.	Recovery.		Suppuration for 10 years before. Upper half of humerus removed. Head of humerus resected before. Good use of arm 5 years later.	* <i>Lyon Med.</i> , 1898, lxxxviii, 537.
55	Peters.	Nov. 13, 1893.	M., 21.	Necrosis.	Recovery.		Regeneration of scapula. Good use of arm.	* Lesshaft: <i>Deut. Milit. Zeit.</i> , 1895, xxiv, 14, 116.
56	Buchanan, J. J., of Pitts- burg.	March 15, 1894.	M., 34.	Sarcoma.	Recovery.	Recurrence in upper jaw 5 years later. No recurrence <i>in situ</i> .	Growth excised 4 months before. Present growth in supra- spinous fossa. Good use of arm.	Body of present paper.
57	Cheyne, W., of London.	Oct. 5, 1894.	M., 50.	Enchondroma.	Recovery.		Large tumor, involving entire scapula and weighing 10 pounds. Growth of 7 years.	* <i>Lancet</i> , 1894, ii, 1157.
58	Madelung, of Strasbourg.	March 5, 1895.	F., 23.	Sarcoma.	Recovery.	Recurrence <i>in situ</i> and death in 5 months.	Upper end of humerus also removed.	* <i>Deutsche Zeit. f. Chir.</i> , 1896, xliii, 443.
59	Johnson, A. B., of New York.	Oct. 9, 1895.	M., 45.	Sarcoma.	Recovery.		Injured 4 years before.	* <i>N. Y. Med. Jour.</i> , 1896, lxxii, 389.
60	Warren, J. C., of Boston.	Dec. 28, 1895.	M., 14.	Sarcoma.	Recovery.	Operated 3 times for recurrence in 1896; drowned while skating about 1 year after operation. (Per. com.)		* <i>Boston M. & S. Jour.</i> , 1896, cxxxiv, 511.
61	MacDonald, G. C., of San Francisco.	Jan. 31, 1896.	F., 25.	Sarcoma.	Recovery.	In good health one year later. (Personal communication.)	Growth of 18 months' standing. Good use of arm followed.	* <i>Occidental Med. Times</i> , 1896, x, 600.
62	Dalziel, T. K., of Glas- gow.	Febru'y, 1896.	M., 36.	Sarcoma.	Recovery.	No recurrence in Feb., 1900; in per- fect health then. (Personal com.)	Growth noticed 7 months before. Both surfaces of scapula and muscles involved. T-incision. Good use of arm followed. Subperiosteal resection.	* <i>Glasgow Med. Jour.</i> , 1897, xlvii, 140.
63	Kochet, V., of Lyons.	Aug. 26, 1896.	M., 13.	Tuberculosis.	Recovery.		Infrapinnous fossa involved.	* <i>La Province Med.</i> , 1896, x, 457.
64	Edington, G. H., of Glas- gow.	Dec. 27, 1896.	F., 8.	Sarcoma.	Recovery.	No recurrence 6 months later.		* <i>Glasgow Med. Jour.</i> , 1897, xlviii, 202.
65	Van Iterson, J. E., of Leyden.	Jan. 22, 1897.	F., 30.	Sarcoma.	Recovery.		Weighted 6 kgr. after excision. One week later the arm was re- moved for want of circulation and anesthesia.	Personal communication.
66	Berger, P., of Paris.	June 2, 1897.	F., 21.	Sarcoma.	Recovery.	Recurrent growth excised early in 1899. In good health in March, 1900. (Personal communication.)	Tumor recurrent and of large size.	* <i>Bull. et Mem. Soc. Chir. Par.</i> , 1897, xxiii, 571.
67	Robson, A. W. M., of Leeds.	July 20, 1897.	F., 20.	Sarcoma.	Recovery.	Death from sarcoma of lung on September 10, 1899.	Kocher's incision.	Personal communication.
68	Moynihan, G. B. A., of Leeds.	Sept. 16, 1897.	F., 23.	Sarcoma.	Recovery.	Rapid recurrence <i>in situ</i> . Second- ary operation in 22 days; death 15 days later.		* <i>British Med. Jour.</i> , 1898, i, 1198.
69	Picque, L., of Paris.	Oct. 26, 1897.	F., 25.	Sarcoma.	Recovery.		Tumor size of child's head.	* <i>Bull. Soc. Anat. Par.</i> , 1897, lxxii, 919.
70	Schmidt, M., of Cux- haven.	Dec. 5, 1897.	M., 57.	Sarcoma.	Recovery.	Recurrence in one year.	Subspinous tumor size of man's fist. End of clavicle also removed. Humerus wired to clavicle.	* <i>Deutsche Zeit. f. Chir.</i> , 1898-9, i, 394.
71	Prülls, of Schlus- sel.	Summer, 1898.	M., 18.	Tuberculosis.	Recovery.		Head of humerus excised in April, 1898. Subperiosteal operation. Patient had a chronic nephritis a year later.	* <i>Therap. Monatsch.</i> , 1899, xiii, 315.
72	Golding-Bird, C. H., of London.	Jan. 10, 1900.	F., 10.	Sarcoma.	Recovery.	No recurrence in middle of Feb- ruary, 1900.	Swelling over scapula began after a blow from a stick. T-incision.	Personal communication.

SUMMARY OF TABLE III.

TOTAL EXCISION OF THE SCAPULA (AT ONE OPERATION) WITH PRESERVATION OF THE ARM.

For malignant growths.....	47
For semi-malignant and doubtful growths	5
For caries and necrosis.....	14
For tuberculosis	4
For osteomyelitis	1
For injury.....	1
Total	72

Malignant growths : 1, 2, 4, 6, 7, 8, 9, 11, 14, 15, 17, 19, 26, 28, 29, 30, 31, 33, 34, 37, 38, 39, 41, 43, 44, 45, 46, 48, 49, 50, 51, 52, 53, 56, 58, 59, 60, 61, 62, 64, 65, 66, 67, 68, 69, 70, 72.
Semi-malignant and doubtful growths : 12, 13, 21, 25, 57.
Caries and necrosis : 5, 10, 16, 18, 20, 22, 23, 24, 27, 32, 36, 40, 42, 55.
Tuberculosis : 47, 54, 63, 71.
Osteomyelitis : 35.
Injury : 3.

OPERATIVE MORTALITY.

For all cases, 11 deaths in 72 operations	15.3%
For neoplasm, 9 deaths in 52 operations.....	17.3%
For caries and necrosis, 1 death in 14 operations	7.1%
For tuberculosis, 4 operations.....	No mortality.
For osteomyelitis, 1 operation	No mortality.
For injury, 1 fatal case	100%

REMOTE RESULTS OF TOTAL EXCISION OF THE SCAPULA FOR NEOPLASM.

Malignant growths.

Death from operation	7
Cases without record beyond 3 years	17
Death from intercurrent or unknown causes.....	4
Later recurrence, but final result not reported	3
Recurrence followed by removal of arm, and no recurrence 5 years later	1
Death from recurrence.....	11
Free from recurrence 3 years or more	4
Total	47

Of these 19 cases (3+1+11+4) in which the remote result is known, 5 remained free from recurrence for 3 years or more, *i. e.*, 26% cured beyond the 3-year limit.

Semi-Malignant and Doubtful Growths.

One bone-cyst remained cured beyond 3 years.
One myxochondroma recurred and died in a few months.

COMBINED STATISTICS OF TOTAL AND NEARLY TOTAL EXCISION OF THE SCAPULA FOR NEOPLASM (THE ARM BEING PRESERVED).

In the summary below are included all cases of excision of the scapula for neoplasm in Tables III, IV and V, in which the entire bone, or all but the acromion or coracoid or both processes, was removed at one operation. These operations are, from an operative point of view, practically total excisions and have been tabulated together by nearly all writers. For the immediate result of operation this combination statistic is of value, but the remote results are more satisfactorily secured by examining the cases in each table separately.

Total excision of the scapula for neoplasm (at one operation) with preservation of the arm, 52 cases—9 deaths. Total excision of the scapula for neoplasm (at two operations) with preservation of the arm, 2 cases—1 death. Partial excision of the scapula for neoplasm leaving only a part or all of the acromion, or coracoid, or both, 22 cases—5 deaths. Total : 76 cases, with 15 deaths—mortality, 19.7%.

TABLE IV.—TOTAL EXCISION OF THE SCAPULA (AT TWO OR MORE OPERATIONS) WITH PRESERVATION OF THE ARM.

No.	OPERATOR.	DATE OF OPERATION.	SEX AND AGE.	CONDITION REQUIRING OPERATION.	RESULT.	SUBSEQUENT HISTORY.	REMARKS.	PLACE OF RECORD.
1	Heyfelder, J. F., of St. Petersburg.	Feb. 7, 1857.	M., 40.	Caries.	Death.	.....	Death on eighth day. Partial excision Nov. 16, 1856.	* <i>Deutsche Klin.</i> , 1857, No. 20.
2	Bird, J. D., of Stockport.	Feb. 17, 1865.	F., 10.	Malignant growth.	Recovery.	No recurrence 18 months later. (Jacobson).	Original growth size of an orange. Body of bone removed Jan. 26, 1863. Head of humerus also removed at last operation.	* <i>Lancet</i> , 1865, ii, 696, and 1866, 247.
3	Kappeler, O., of Münster-linger.	April 13, 1877.	F., 25.	Enchondroma.	Recovery.	Recurrence and amputation of arm 2 years later. Died in 1881 of enchondroma of spine.	Body of scapula removed in 2 operations 5 and 3 years before.	* <i>Deutsche Zeit. f. Chir.</i> , 1880-1, xiv, 305, also pers. com. from Dr. H. Walder.
4	Busch, W., of Bonn.	June 7, 1877.	F., 37.	Lymphosarcoma.	Recovery.	No recurrence 10 years later. (Hausmann.)	Body of bone removed 13 months before. Head of humerus also removed at last operation.	* Personal communication to v. Adelman.
5	Heath, C., of London.	Feb., 1879.	M., 22.	Sarcoma.	Death.	.....	Part of coracoid process previously removed. Death in 36 hours.	* <i>Brit. Med. Jour.</i> , 1879, i, 287.
6	Ball.	Sept. 2, 1879.	.....	Sarcoma.	Recovery.	No recurrence 3½ years later.	Body of scapula removed March 7, 1879.	* <i>Brit. Med. Jour.</i> , 1883, i, 817.
7	Bellamy, E., of London.	Oct. 28, 1880.	M., 14.	Sarcoma.	Recovery.	.....	All but acromion removed 26 days before. Infiltrated tissue left behind at this operation.	* <i>Lancet</i> , 1880, ii, 889.
8	Poncet, of Lyons.	April, 23, 1887.	M., 26.	Necrosis.	Recovery.	.....	Coracoid process and head of humerus previously removed.	* <i>Audry: Rev. de Chir.</i> , 1887, 988.
9	Pollosson, M., of Lyons.	1890.	Male, adult.	Necrosis.	Recovery.	.....	Shot-wound in 1870. Head of humerus resected in 1884. Part of scapula removed in 1885. Prof. Ollier later wired end of humerus to clavicle with good result.	<i>La Prov. Med.</i> , xlii, 114.
10	Heineke, of Erlangen.	Nov. 19, 1891.	M., 33.	Chondrosarcoma.	Recovery.	.....	Half of body of scapula removed 9 months before.	* Hausmann: <i>Ueber die totale Exstirp. des Schulterbl.</i> , Frankfurt a. M., 1892.

TABLE V.—PARTIAL EXCISION OF THE SCAPULA FOR TUMOR.

NO.	OPERATOR.	DATE OF OPERATION.	SEX AND AGE.	NATURE OF TUMOR.	AMOUNT OF SCAPULA REMOVED.	RESULT.	SUBSEQUENT HISTORY.	REMARKS.	PLACE OF RECORD.
1	v. Langenbeck, B., of Berlin.	Feb. 6, 1850.	M., 36.	Enchondroma.	All but coracoid.	Death.	Enormous tumor.	Death in 17 hours.	* <i>Deutsche Klin.</i> , Berlin, 1850, No. 7, 67.
2	Agnew, D. H., of Philadelphia.	June 6, 1883.	M., 27.	Sarcoma.	All but part of coracoid.	Death.	Enormous tumor.	Death in 17 hours.	Univ. Hosp. Record and personal communication from Prof. Ashurst.
3	Czerny, J., of Heidelberg.	Oct. 9, 1884.	F., 14.	Sarcoma.	All but tip of coracoid.	Recovery.	Extensive recurrence in 4 months.	Lymphatic glands in axilla extirpated. Good functional result.	* <i>Arch. f. Clin. Chir.</i> , 1888, xxxvii, 146.
4	Lyon, of Glasgow.	Sept. 13, 1884.	F., 12.	Sarcoma.	All but coracoid.	Recovery.	Enormous tumor.	Death in 17 hours.	Personal communication from Dr. A. Paterson.
5	Gerster, A. G., of New York.	July 11, 1881.	M., 8.	Sarcoma.	All but tip of coracoid.	Recovery.	No recurrence 4 months later.	Growth first noticed 3 months before.	* <i>Annals of Surgery</i> , 1900, xxxi, 257.
6	Seutin.	Nov. 10, 1899.	M., 22.	Encephaloid.	All but part of acromion.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Presse Med. Belge</i> , Brux., 1849, i, 408.
7	Fergusson, W., of London.	June 24, 1849.	M., 25.	Encephaloma.	All but acromion.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
8	Pollock, G., of London.	July 27, 1865.	F., 16.	Malignant growth.	All but acromion.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
9	Schuppert, M., of New Orleans.	March 30, 1865.	F., 36.	Enchondroma.	All but tip of acromion.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
10	Jones, S., of London.	Oct. 2, 1868.	M., 43.	Enchondroma.	All but acromion.	Death.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
11	Wood, J., of London.	Feb. 20, 1875.	M., 25.	Encephaloid.	All but acromion.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
12	Maclean, D., of Detroit.	Jan. 13, 1883.	F., 51.	Sarcoma.	All but acromion.	Death.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
13	Perier, of Paris.	Dec., 1889.	M., 55.	Sarcoma.	All but acromion.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
14	Park, R., of Buffalo.	1895.	M., 22.	Sarcoma.	All but acromion.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
15	Littlewood, H., of Leeds.	Aug. 16, 1897.	M., 52.	Epithelioma.	All but acromion.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
16	v. Bruns.	1853.	F., 15.	Carcinoma.	All but acromion and coracoid.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
17	Symonds, C., of London.	April 1, 1884.	M., 34.	Sarcoma.	All but acromion and coracoid.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
18	Helferich, of Greifswald.	June 17, 1887.	M., 22.	Fibrosarcoma.	All but part of acromion and part of coracoid.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
19	Southam, F. A., of Manchester.	June 14, 1889.	M., 14.	Sarcoma.	All but part of acromion and part of coracoid.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
20	Clark, H. E., of Glasgow.	July 3, 1895.	M., 13.	Sarcoma.	All but acromion and coracoid.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
21	Park, R., of Buffalo.	1896.	F., 50.	Sarcoma.	All but acromion and coracoid.	Death.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
22	Shepherd, F. J., of Montreal.	June 26, 1896.	F., 33.	Sarcoma.	All but tip of acromion and coracoid.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
23	Skey, F. C., of London.	Oct. 8, 1886.	M., 40.	Fibrous tumor.	All but glenoid process.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
24	Cheever, D. W., of Boston.	Sept. 26, 1886.	M., 40.	Sarcoma.	All but glenoid process.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
25	Gross, S. D., of Philadelphia.	May 29, 1887.	M., 20.	Malignant growth.	All but head and coracoid.	Death.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
26	Herz, of Erlangen.	Nov. 21, 1862.	M., 17.	Encephaloma.	All but glenoid process and acromion.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
27	Wernher, of Giessen.	Oct. 20, 1869.	M., 26.	Osteoma.	All but glenoid process and acromion.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
28	King, K., of Hull.	May 15, 1887.	F., 43.	Sarcoma.	All but glenoid process and acromion.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
29	Keeling, J. H., of Sheffield.	June 15, 1877.	M., 44.	Myxochondroma.	All but lower angle.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
30	Macnamara, N. C., of London.	Oct. 4, 1824.	F., 43.	Malignant growth.	Body.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
31	Billroth, T., of Vienna.	June 18, 1825.	M., 41.	Malignant growth.	Body.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
32	Janson, of Lyons.	Oct. 4, 1824.	F., 43.	Malignant growth.	Body.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.
33	Wutzer, of Munich.	June 18, 1825.	M., 41.	Malignant growth.	Body.	Recovery.	Enormous tumor.	Death in 17 hours.	* <i>Lancet</i> , 1865, ii, 233.

34	Petrequin, J. E., of Lyons.	Dec. 24, 1844.	M., 20.	Malignant growth.	Body.	Death.	.....	.....	.....	<i>Bull. de l'Acad. Imp.</i> , 1859-60, 289.
35	Walter, A. G., of Pittsburgh.	Sept. 12, 1854.	M., 44.	Sarcoma.	Body.	Recovery.	No recurrence 1 year later.	.....	.....	<i>* Brit. Med. Jour.</i> , 1858, 225.
36	South, J. F., of London.	Nov. 10, 1855.	M., 30.	Sarcoma.	Body.	Recovery.	.....	.....	.....	<i>* Med. Times and Gaz.</i> , 1856, i, 37.
37	v. Langenbeck, B., of Berlin.	July 23, 1855.	M., 35.	Sarcoma.	Body.	Recovery.	.....	.....	.....	<i>* Deutsche Klin.</i> , 1855, Nr. 40, 445.
38	Hancock.	June 8, 1861.	M., 27.	Malignant growth.	Body.	Recovery.	Recurrence in lungs and death in 6 weeks.	.....	.....	<i>* Lancet</i> , 1862, ii, 531.
39	MacLeod, G. H. B., of Glasgow.	May 1871.	M., 52.	Carcinoma.	Body.	Death.	.....	.....	.....	<i>* Glasgow Med. Jour.</i> , 1871-2, iv, 12.
40	Fischer, H., of Breslau.	1873.	F., 34.	Enchondroma.	Body.	Recovery.	.....	.....	.....	<i>* Am. Jour. Med. Scie.</i> , 1875, July, 256.
41	Fischer, H., of Breslau.	July 25, 1874.	F., 40.	Myxochondroma.	Body.	Recovery.	.....	.....	.....	<i>* Ibid.</i>
42	Wolcott, E. B., of Milwaukee.	April 23, 1878.	M., 55.	Chondrosarcoma.	Body.	Recovery.	.....	.....	.....	<i>* Med. and Surg. Rep.</i> , 1878, xxxix, 399.
43	Hill, B., of London.	April 23, 1879.	M., 25.	Sarcoma.	Body.	Death.	.....	.....	.....	<i>* Brit. Med. Jour.</i> , 1880, i, 478; ii, 659.
44	Paci, A., of Pisa.	April, 1882.	M., 60.	Sarcoma.	Body.	Death.	.....	.....	.....	<i>* Io Sperimentale</i> , 1887, ix, 564.
45	Billroth, T., of Vienna.	Mar. 21, 1889.	F., 51.	Enchondroma.	Body.	Death.	.....	.....	.....	<i>* Wiener klin. Woch.</i> , Nr. 15, 1889.
46	Openshaw, of London.	1890.	.....	Sarcoma.	Body.	Recovery.	.....	.....	.....	<i>* Brit. Med. Jour.</i> , 1890, ii, 1477.
47	Jaboulay, of Lyons.	Aug. 17, 1891.	F., 26.	Sarcoma.	Body.	Recovery.	Recurrence <i>in loco</i> in 6 months. (Personal communication.)	.....	.....	<i>* Lyon Med.</i> , 1891, lxviii, 332.
48	Folet, of Lille.	1892.	F., 45.	Sarcoma.	Body.	Recovery.	Recurrence in lungs in 6 months.	.....	.....	<i>* Bull. Med. du Nord</i> , 1893, xxxii, 311.
49	Morton, C. A., of Bristol.	Nov. 25, 1896.	F., 30.	Sarcoma.	Body.	Recovery.	No recurrence January 31, 1900. (Personal communication.)	.....	.....	<i>* Lancet</i> , 1897, ii, 188.
50	Jeannel, M., of Toulouse.	Dec. 1, 1899.	M., 29.	Enchondroma.	Body.	Recovery.	.....	.....	.....	Personal communication.
51	Paget, J., of London.	Nov. 8, 1862.	M., 15.	Malignant growth.	Greater part of body.	Recovery.	Recurrence and death.	.....	.....	<i>* Lancet</i> , 1862, ii, 530.
52	v. Dittel, of Vienna.	Before 1883.	M., 35.	Enchondroma.	Greater part of body.	Recovery.	.....	.....	.....	<i>* Wien. med. Blätter</i> , 1883, No. 30.
53	van Iterson, J. E., of Leyden.	Oct., 19, 1894.	M., 51.	Sarcoma.	Greater part of body.	Recovery.	.....	.....	.....	Personal communication.
54	Luke, S., of London.	Oct., 14, 1828.	F., 14.	"Medullary fungus."	Inner three-fourths.	Recovery.	No recurrence 11 months later.	.....	.....	<i>London Med. Gaz.</i> , 1829-30, v, 535.
55	Malagodi, L., of Faou.	June 1, 1863.	F., 23.	Encephaloid.	Inner three-fourths.	Recovery.	Secondary operation 13 months later. No recurrence 8 years afterwards.	.....	.....	<i>Raccog. Med.</i> , Forli, 1873, 433.
56	Vincenzo, O., of Cremona.	Feb., 5, 1874.	.....	Sarcoma.	Inner three-fourths of body.	Recovery.	.....	.....	.....	<i>* Ann. Univ. di Med.</i> , Milano, 1874, ccxxix, 554.
57	Lossen, of Heidelberg.	July, 1876.	M., 33.	Enchondroma.	About of body.	Death.	.....	.....	.....	<i>* v. Adelmann: Zur Gesch. und Stat. der theiln. und railst. Schulterblattresecl.</i>
58	Helferich, of Kiel.	July 24, 1897.	M., 48.	Fibrosarcoma.	Upper two-thirds of bone.	Recovery.	No recurrence on March 27, 1900.	.....	.....	Personal communication.
59	Liston, R., of Edinburgh.	Nov. 16, 1819.	16.	Malignant growth.	Inner two-thirds.	Recovery.	Recurrence <i>in loco</i> and death in 5 months.	.....	.....	<i>Edinburgh Med. and Surg. Jour.</i> , 1820, xvi, 66, 215.
60	Watson, P. H., of Edinburgh.	Sept. 30, 1869.	.....	Sarcoma.	Inner two-thirds of body.	Recovery.	.....	.....	.....	<i>* Med. Press and Circ.</i> , 1870, ix, 42.
61	Paterson, A., of Glasgow.	1889.	Male.	Tumor.	Inner third of body.	Recovery.	No recurrence to 1896.	.....	.....	Personal communication.
62	Ollier, of Lyons.	1878.	.....	Chondrosarcoma.	Upper half of body.	Recovery.	No recurrence to 1891.	.....	.....	<i>* Bictrix: De Pablation totale de l'omoplate</i> , Lyon, 1891.
63	Heymann, of Coblenz.	May 13, 1823.	M., 22.	Malignant growth.	Body below spine.	Recovery.	Recurrence and death in 1 year.	.....	.....	<i>Mag. f. d. ges. Heilk.</i> , Berl., 1825, xix, 505.
64	Travers, B., of London.	July, 1838.	Male, adult.	Sarcoma.	Body below spine.	Recovery.	Recurrence and death in 1 year.	.....	.....	<i>London Med. Gaz.</i> , 1838.
65	Barrier, of Lyons.	March 31, 1853.	M., 46.	Enchondroma.	Body below spine.	Death.	.....	.....	.....	<i>Bull. de l'Acad. Imp.</i> , 1859-60, 295.
66	Richet.	1855.	M., 34.	Enchondroma.	Body below spine.	Death.	.....	.....	.....	<i>Gaz. des Hop.</i> , 1855, Nos. 95 and 96.
67	Regnoli, of Florence.	Sept. 10, 1857.	M., 28.	Osteoma.	Body below spine.	Recovery.	No recurrence.	.....	.....	<i>Lo Sperimentale</i> , 1858, 154.
68	Burci, B., of Florence.	Jan. 26, 1861.	F., 42.	Carcinoma.	Body below spine.	Recovery.	Recurrence in 2 months and death.	.....	.....	<i>Raccog. Med.</i> , Forli, 1873, 434.
69	Michaux, M., of Louvain.	1861.	M., 64.	Sarcoma.	Body below spine.	Death.	.....	.....	.....	<i>* Gies: Deutsche Zeit. f. Ch.</i> , 1880, xii, 578.
70	Demarquay, of Paris.	Dec., 1865.	F., 6.	Myeloplague.	Body below spine.	Recovery.	.....	.....	.....	<i>* Michaux: Gaz. Med. de Par.</i> , 1866, 299.
71	Pean, T., of Paris.	April 14, 1877.	M., 19.	Medulloma.	Body below spine.	Recovery.	.....	.....	.....	<i>* Lancet</i> , 1877, II, 126.
72	Brunelle, J. A. S., of Montreal.	Mar. 10, 1880.	M., 10.	Sarcoma.	Body below spine.	Recovery.	No recurrence in Feb., 1900. (Personal communication.)	.....	.....	<i>* L'Abelle Med.</i> , Montreal, 1880, II, 388.

TABLE V.—PARTIAL EXCISION OF THE SCAPULA FOR TUMOR.—CONTINUED.

NO.	OPERATOR.	DATE OF OPERATION.	SEX AND AGE.	NATURE OF TUMOR.	AMOUNT OF SCAPULA REMOVED.	RESULT.	SUBSEQUENT HISTORY.	REMARKS.	PLACE OF RECORD.
73	Cacelopoli, G.	Oct. 23, 1881.	M., 32.	Enchondroma.	Body below spine.	Recovery.	No recurrence 13 months later.	Enchondroma 70 cm. around growing from periosteum.	*Paci: <i>Lo Sperimentale</i> , 1887, 489.
74	Pean, T., of Paris.	March 11, 1882.	F., 26.	Sarcoma.	Body below spine.	Recovery.	.....	.....	*Langenliagen: <i>Tum. Sol. du Scap.</i> Par., 1883.
75	Elder, G., of Nottingham.	Oct. 1, 1882.	F., 23.	Sarcoma.	Body below spine.	Recovery.	No recurrence 6 months later.	T-incision. Useful arm.	*Lancet, 1885, i, 203.
76	Bell, J., of Edinburgh.	About 1885.	M., 16.	Osteoma.	Body below spine.	Recovery.	No recurrence in January, 1900.	Useful arm.	Personal communication.
77	Polaillon, of Paris.	March 23, 1885.	M., 30.	Enchondroma.	Body below spine.	Recovery.	.....	.....	*Barthelemy: <i>De l'enclenchrome de l'omoplate</i> , Paris, 1889.
78	Macnamara, N. C., of London.	Sept. 24, 1890.	M., 60.	Carcinoma.	Body below spine.	Recovery.	No recurrence 2 years later. (Personal communication.)	.....	*Westminster Hosp. Rep., 1890, vi, 97.
79	Krause, F. V., of Altona.	Sept. 28, 1897.	M., 52.	Sarcoma.	Body below spine.	Recovery.	No recurrence one year later. (Personal communication.)	.....	*Mittelheil. f. d. Ver. Schlesw.-Holst. Aerzte, 1897, vi, 70.
80	Lloyd, J., of Birmingham.	July, 1898.	F., 25.	Enchondroma.	Body below spine.	Recovery.	No recurrence in March, 1900.	No disturbance in function of limb.	Personal communication.
81	Van Iterson, J. E., of Leyden.	April 25, 1899.	M., 9.	Enchondroma.	Body below spine.	Recovery.	.....	Left hospital on eleventh day.	Personal communication.
82	Gross, of Nantes.	Aug. 13, 1881.	F., 46.	Sarcoma.	Three-fourths of spinous portion.	Recovery.	No recurrence 6 months later.	.....	*Langenliagen: <i>loc. cit.</i> , p. 86.
83	Beaumont, of Canada.	1838.	M., 12.	Exostosis.	Part of body.	Recovery.	.....	.....	<i>London Med. Gaz.</i> , 1838, Oct., 162.
84	Textor, Jr., of Heidelberg.	July 22, 1846.	F., 2.	Enchondroma.	Part of body.	Recovery.	.....	.....	*Freyer: <i>Ueber die Res. des Schulterbl.</i> , Würzburg, 1846.
85	Textor, Jr., of Heidelberg.	Feb. 23, 1849.	M., 56.	Malignant growth.	Part of body.	Recovery.	Recurrence and death.	.....	*Arch. f. Path. Anat. & C., Berlin, 1852, iv, 3.
86	Helferich, of Kiel.	Jan. 17, 1896.	M., 41.	Tumor.	Part of body.	Recovery.	In good health in 1900.	Tumor present since his ninth year. Now size of an apple. Since operation arm fully useful for any work.	Personal communication.
87	Ried, of Jena.	Dec. 19, 1849.	M., 27.	Exostosis.	Upper, inner angle.	Recovery.	.....	.....	*Stern: <i>Ueber die Resection des Schulterbl.</i> , Erlangen, 1852.
88	Ronyer.	1856.	F., 26.	Enchondroma.	Upper, inner angle.	Recovery.	No recurrence 1 year later.	.....	<i>Constat's Jahresbericht</i> , 1856.
89	Cock, E., of London.	Jan. 22, 1856.	F., 27.	Sarcoma.	Acromion and most of spine.	Recovery.	.....	.....	*Guy's Hosp. Rep., 3d Ser., ii, 1856.
90	Phillips, of Brussels.	May 26, 1843.	M., 35.	Enchondroma.	All of spine and acromion but tip.	Recovery.	.....	.....	<i>Bull. de l'Acad. Roy. de Med. Belge</i> , ii, 19.
91	Jaeger, M., of Würzburg.	1838.	M., 12.	Exostosis.	Inferior angle.	Recovery.	.....	.....	*Gies: <i>loc. cit.</i> , p. 580.
92	Syme, J., of Edinburgh.	Jan. 5, 1836.	M., 45.	Enchondroma.	All processes.	No record.	.....	.....	*Edinburgh M. & S. Jour., 1836, xlvii, 249.
93	Baroni, P., of Rome.	1851.	M., Adlt.	Sarcoma.	Glenoid process.	Recovery.	.....	Head of humerus also removed.	Mazzoni.
94	Cavazzani, G., of Paoli.	Oct. 12, 1895.	F., 54.	Chondromyxoma.	Glenoid process.	Recovery.	.....	.....	*Riv. Veneta di Sci. Med., 1896, xxiv, 211.

TABLE VI.—PARTIAL EXCISION OF THE SCAPULA FOR TUMOR, WITH SIMULTANEOUS REMOVAL OF THE ARM.

1	Asiari, G., of Pesaro.	March, 1830.	.....	Sarcoma.	Portion of glenoid process, external border.	Recovery.	.....	.....	<i>Il Racog. Med.</i> , Anno 36, May, No. 15.
2	Gilbert, D., of Gettysburg.	Nov. 21, 1846.	M., adult.	Sarcoma.	All processes.	Recovery.	Recurrence and death in 5 months.	Injury of shoulder by fall 11 months before. Pathological fracture of humerus subsequently.	*Am. Jour. Med. Sci., 1847, xiv, 360.
3	Dolbeau, of Paris.	Sept. 21, 1861.	M., 56.	Enchondroma.	Coracoid process.	Death.	.....	.....	<i>Gaz. des Hôpitaux</i> , 1861, 522.
4	Parise, of Lille.	1873.	M., 30.	Sarcoma.	All but inner border.	Recovery.	Recurrence in lungs and death in 18 months.	.....	*Langenliagen: <i>loc. cit.</i>
5	Busch, W., of Bonn.	June 15, 1877.	M., 25.	Sarcoma.	All but lower angle.	Recovery.	Recurrence in other axilla.	.....	*v. Adelmann: <i>loc. cit.</i>
6	Tirifahi, of Belgium.	1877.	M., 47.	Cysto-sarcoma.	Glenoid process.	Recovery.	.....	.....	<i>La Presse Med. Belge</i> , 1877, Nos. 38, 39.
7	Bassini, of Pavia.	1879.	F., 30.	Sarcoma.	Acromion, glenoid process, outer margin.	.....	.....	.....	*Paci: <i>Lo Sperimentale</i> , 1887, ix, 585.
8	Helferich, of Greifswald.	Nov. 3, 1886.	M., 61.	Enchondroma.	Acromion and coracoid.	Recovery.	.....	.....	*Neubeck: <i>Exart. von Hum. u. Scap.</i> , Berlin, 1892.
9	Senn, N., of Chicago.	1886.	.....	Sarcoma.	Glenoid process.	Recovery.	Recurrence in axilla nearly 12 years later, with removal of secondary growth.	Growth of upper end of humerus.	*Chicago Med. Rec., 1898, xiv, 333.
10	Wreth, J. A., of N. York.	1888.	F., 55.	Sarcoma.	Outer half.	Recovery.	Recurrence and death in 8 months.	.....	*New York Med. Jour., 1891, i, 59.
11	Körte, W., of Berlin.	Jan. 17, 1891.	M., 41.	Enchondroma.	Spine and neck.	Recovery.	No recurrence in January, 1900. (Personal communication.)	Tumor of the upper end of humerus, size of child's head.	<i>Deutsche med. Woch.</i> , 1892, No. 12.
12	Seun, N., of Chicago.	Feb. 9, 1898.	.....	Sarcoma.	Glenoid process.	Recovery.	.....	Sarcoma of upper end of humerus caused by fracture. Scapula not involved. Part of clavicle removed.	*Loc. cit.

SUMMARY OF TABLE V.

PARTIAL EXCISION OF THE SCAPULA FOR TUMOR.

For sarcoma.....	43
For carcinoma.....	5
For "malignant growths."	17
For enchondroma	21
For osteoma.....	6
Not stated.....	2
Total, 94	—

OPERATIVE MORTALITY.

For all cases, 17 deaths in 94 operations.....	18 %
Before antisepsis (1881-2), 11 deaths in 56 operations.....	19.6 %
Since antisepsis (1881-2), 6 deaths in 38 operations.....	16 %
For cases in which <i>less than the entire body</i> was re- moved, 4 deaths in 44 operations	9 %
For cases in which <i>the entire body or more was removed</i> , 13 deaths in 50 operations	26 %

REMOTE RESULTS OF PARTIAL EXCISION FOR TUMOR.

Malignant Growths.

Death from operation	11
Cases without record beyond 3 years	29
Later recurrence, but final result not reported	3
Death from recurrence	18
Free from recurrence for 3 years or more	4
	—
	65

Of these 25 cases (3 + 18 + 4), in which the remote result is known, 4 remained free from recurrence for 3 years or more, *i. e.*, 16% cured beyond the 3-year limit.

Malignant Growths.

Died from operation: 2, 12, 21, 24, 26, 27, 34, 39, 43, 44, 69.
Cases without record beyond 3 years: 4, 5, 6, 7, 13, 14, 17, 18, 29, 30, 35, 36, 37, 42, 46, 53, 54, 56, 58, 60, 70, 71, 74, 75, 78, 79, 82, 89, 93.
Later recurrence, but final result not reported: 3, 47, 48.
Died from recurrence: 8, 11, 15, 16, 19, 20, 22, 23, 25, 32, 33, 38, 51, 59, 63, 64, 68, 85.
Free from recurrence for 3 years or more: 49, 55, 62, 72.

MALIGNANT GROWTHS FOR WHICH LESS THAN THE ENTIRE BODY OF THE SCAPULA WAS REMOVED.

Death from operation	1
Cases without record beyond 3 years.....	14
Death from recurrence.....	6
Free from recurrence for 3 years or more	3
	—
	24

Of these 9 cases (6 + 3) in which the remote result is known, 3 remained free from recurrence for 3 years or more, *i. e.*, 33.3% cured beyond the 3-year limit.

MALIGNANT GROWTHS FOR WHICH THE ENTIRE BODY OR MORE WAS REMOVED.

Death from operation	10
Cases without record beyond 3 years	15
Later recurrence but final result not reported.....	3
Death from recurrence	12
Free from recurrence for 3 years or more	1
	—
	41

Of these 16 cases (3 + 12 + 1) in which the remote result is known, 1 remained free from recurrence for more than 3 years, *i. e.*, 6.25% cured beyond the 3-year limit.

Enchondroma.

Of the 21 partial excisions for enchondroma, 6 of the patients died from operation, and in none of the surviving 15 patients has any history been recorded to or beyond 3 years and none is reported as recurring.

WHEN MAY A CASE OF MALIGNANT GROWTH BE CON-

SIDERED CURED? The length of time after operation, at which a patient may be considered permanently cured of a malignant growth cannot be settled from statistics made up as these have been. The cases in which the late results are reported are the only ones available for this purpose and these are necessarily in the great minority, for many reasons—the death of many operators, the inaccessibility of others, the disappearance of many patients, and the death of others from unknown causes, possibly unrecognized internal recurrences.

An examination of the cases in all of the six tables will show that the date of recurrence, or death from recurrence, is given in only 106 cases; of these, 70% had their recurrence within the first year; 18% recurred or died of recurrence in the second year; 5% in the third year; and the others at varying periods after the third year.

Considering the fact that an interval of several months usually elapses between the date of operation and the publication of the report and that, as a rule, the operator keeps trace of his patient during this period, it is not strange that *the early recurrences are the ones that are recorded*. It is also the case here that four-fifths of the operators quoted have reported but a single case and the opportunity has never arisen after the first report to publish the further history of the case, even if it becomes known to the operator.

Noting the fact that 93% of the known recurrences or deaths from recurrence have happened during the first 3 years after operation, we cannot go far wrong in adopting the classical rule of considering as cured those patients who have passed three years without recurrence.

SUMMARY.—Some facts worthy of special attention are to be found in the preceding tables. The interscapulo-thoracic amputation is primarily a very successful operation, especially when performed for neoplasm, the mortality in such cases since the general practice of antisepsis being only 8%. In the 34 cases in which it would appear to have been possible to make a disarticulation, at the shoulder, there was not a single death from operation.

Of the cases amputated for sarcoma and other malignant growths, whose subsequent history is definitely known, 18.6% were cured beyond the 3-year limit. While the immediate mortality of cases operated for sarcoma of the humerus not involving the tissues of the shoulder, is *nil*, the remote results in such cases are but little more favorable (20% of cure beyond 3 years) than in operations done for malignant growths involving the scapula and shoulder.

All the cases of interscapulo-thoracic amputation for enchondroma whose history is known remained free from recurrence. This emphasizes the comparative benignancy of these growths and the fallacy of conclusions drawn when they are included in groups of malignant neoplasms.

It is evident from Table II that, compared with other operations, excision of the scapula subsequent to disarticulation at the shoulder is less practised now than formerly, probably owing to the increasing popularity of the interscapulo-thoracic amputation. The immediate mortality of the consecutive operation for neoplasm since antisepsis has been 6.6%; but the fact that the mortality of interscapulo-thoracic amputation for neoplasm during the same period is only 8%, while the percentage of ultimate cures of malignant cases by the interscapulo-thoracic is 18.6% as against 6.25% after

the consecutive excision of the scapula, confirms the wisdom of the general preference now displayed for the primary major operation.

The case is made still stronger when it is considered that, of the 34 cases in which a primary disarticulation might have been done, there was no mortality whatever.

Eighteen per cent. of ultimate cures does not at the first glance seem to be a very favorable showing for an operation so radical and so mutilating as the interscapulo-thoracic amputation; and especially when even this may be reduced by the relapse of cases long after the period of three years has passed. This contingency is at least counterbalanced by the fact that, of the patients operated on during the last three years, all who are known to have died have been counted against the operation, whereas not one of those who will pass this period safely has been counted in its favor.

Excision of the entire scapula for neoplasm has an immediate mortality of 17.3% and a record of 26% of cures (to 3 years) in malignant cases.

Partial excision of the scapula for tumor, taking away less than the entire body, has an immediate mortality of 9% and a record of 33.3% of cures (to 3 years) in malignant cases.

Partial excision of the scapula for tumor, taking away the entire body or more, has an immediate mortality of 26% and a record of 6.25% of cures (to 3 years) in malignant cases.

Notwithstanding the excellent functional result of total excision of the scapula, it is not advisable, according to these statistics, to remove the entire bone, even in malignant cases, if a satisfactory excision of less than the entire body can be made. If, however, the entire body or more, is implicated then, both the immediate and remote prognosis are improved by a total removal of the bone, which should in all cases be performed.

In concluding this paper, the writer can do no less than express his thanks to the many eminent surgeons who have made known to him the ultimate results of their operations by personal communication, and have thus made the statistics here presented far more complete than they would otherwise have been.

ADDENDA.—Since the completion of the present paper, a very excellent monograph has been published by Drs. Picque and Dartigues, of Paris.⁴ The authors give an extended account of Dr. Picque's case (Table III, No. 69), and a most elaborate and thoroughly illustrated dissertation on the operative technic.

Dr. J. William White, of Philadelphia, in the May issue of the *University Medical Magazine*, has reported the following cases:

1. Interscapulothoracic amputation for recurrent sarcoma in a man of 22 years, from whom Prof. Ashurst had removed the middle third of the clavicle four years before. The operation was performed in February, 1900, and the patient made a good recovery.

2. Excision of the scapula subsequent to disarticulation at the shoulder, done six months before. The patient was a man, 34 years of age, and the last operation was performed on April 25, 1900. Result, recovery.

Dr. Hector C. Cameron, of Glasgow, has kindly informed the writer that his patient (Table I, No. 128), operated in March, 1866, died in September, 1896, of lung disease, probably sarcomatous.

Dr. R. G. LeConte, referring to his case of interscapu-

lo-thoracic amputation, operated on April 12, 1899, states that the growth was a giant-cell sarcoma, that recurrent growths were removed from the first rib in January and June, 1900, and that there is now (June 20), probably a secondary growth in the mediastinum, as indicated by asthmatic attacks and displacement of the larger part of the heart to the right of the sternum.

Dr. Russell S. Fowler's patient (Table I, July 23, 1898), is now (June 19, 1900), alive and well.

The author's patient (Case 1, of the present paper) is also in good health (June 22, 1900).

A CASE OF PRIMARY ADENOCARCINOMA OF THE GALLBLADDER WITH SECONDARIES IN BOTH ADRENALS, MELANOSIS OF SKIN (ADDISON'S DISEASE?), VITILIGO, AND HYPERTROPHY OF THE PANCREAS.

BY ALDRED SCOTT WARTHIN, M.D., PH.D.,

of Ann Arbor, Mich.

Assistant Professor in Pathology, University of Michigan.

(Continued from page 40.)

EPICRISIS.—*Gallbladder Carcinoma*.—According to postmortem statistics primary carcinoma of the gallbladder is found in 5% of all cases of carcinoma (Kaufmann), but the majority of authors state that its occurrence is very rare. As stated by Ames,¹ the literature of primary cancer of the gallbladder is of recent date, the most important contributions having been made within the last 10 years. By far the majority of cases have been reported since 1870. Analysis of the cases reported in the literature will be found in Courvoisier² and Musser.³ Ames's paper contains the bibliography of the subject up to 1894. Since his report cases have been constantly appearing, and in the relatively small service of this hospital three cases have come to autopsy since 1897. Two of these I have already reported.⁴ There is, therefore, much reason for believing that the condition is not uncommon, and that perhaps the majority of cases escape observation or are incorrectly diagnosed.

The pathology of gallbladder cancer is so briefly touched upon in the various textbooks that it may be of value here to gather the sum total of the pathologic knowledge of this condition. The forms described are: cylindrical-celled, simplex, medullary, colloid, scirrhus, and a very doubtful form with squamous cells. Of these the columnar-cell variety (adenocarcinoma) is by far the most frequent. It often assumes the form of a villous or polypoid growth. The origin of all these forms is directly from the epithelium of the mucosa of the gallbladder. The growth may begin in any part of the mucosa, but is most frequent in the fundus or at the neck. Courvoisier holds that the former is most often the seat of the origin of the growth, as irritation from gallstones is most likely to be produced in that part. The growth extends by diffuse infiltration or expansion leading to the formation of nodular growths in the region immediately surrounding the gallbladder, frequently extending into the liver in a tree-like growth.

The gross appearance of the tumor varies greatly according to its structure. The scirrhus form is firm, whitish, like scar-tissue, and of a diffuse growth, almost always very limited in extent. The larger tumors are almost always of the columnar-cell variety. They are

⁴ Scapulectomie ou Ablation primitive et totale de l'omoplate avec conservation du membre supérieur dans les tumeurs malignes de cet os. *Revue de Chirurgie*, April, 1900.

grayish, brown, or yellowish, in color, of soft consistency, possess little stroma, and on scraping yield an abundant exudate. They usually contain cyst-like spaces filled with a colloid-like substance (mucin), and show also numerous yellowish or gray areas of necrosis. The larger masses when on a surface show umbilication. The portion of the tumor projecting into the cavity of the bladder is almost always polypoid, and may show a grayish, ulcerating surface. In those cases in which the bladder is greatly dilated numerous papillary growths may be scattered over the mucosa. Microscopically, these are found to consist of strands of epithelial cells which infiltrate the bladder-wall.

The scirrhus variety usually forms a small diffuse growth resembling the changes of chronic inflammation, and may be mistaken for this, but the neighboring lymph-glands almost always show metastasis. Often the entire peritoneum is diffusely infiltrated with a scirrhus growth giving the appearance of a diffuse fibroid thickening. The colloid form may also produce a diffuse infiltration of the peritoneum and even surround the ovaries with new-growth. It is highly probable that in some of these cases the primary seat of the growth entirely escapes observation. But in the majority of all cases the primary growth is of limited extent, so that usually portions of the original bladder-wall are preserved.

Occasionally the growth may form a universal thickening of the wall to the thickness of a finger. Tumors of the size of the fist, or rarely, of the head, may thus arise, the great size being due to a cystic dilation. These larger tumors usually contain a cavity filled with gallstones, cellular debris, and remains of bile. The fluid in the cavity may be almost black, brown, yellow, greenish, or even clear. It is frequently purulent.

More frequently the diffuse infiltration of the bladder-wall leads to a great retraction, so that the gallbladder may be concealed under the liver. As the growth around the bladder increases in size and further contraction takes place, an appearance is sometimes produced as if the gallbladder had been drawn upwards into the liver-substance, in some cases the growth being surrounded on all sides by liver-tissue. This may be explained by the fact that as the growth develops and contracts the portions of liver-tissue near the fissure are drawn toward and around the bladder, so that in some cases a tongue-like process of liver is drawn around the growth. On cutting down upon the gallbladder through the overlying liver-tissue a nodular mass is found which contains the remains of the gallbladder in the shape of a small cavity filled with stones or the debris of stones.

In these cases of marked retraction the growth is usually very small. The retraction is not confined to the scirrhus form, but may be found in any variety. In other cases the bladder may become greatly dilated, appearing as a fluctuating tumor. This may be mistaken for a simple dilation when the carcinoma is very small and in the neck of the bladder. The dilated bladder may contain bile, a thin grayish fluid, or even a clear one. Gallstones are not so frequently found in these dilated bladders as in the retracted ones, but may be present in the cystic or common ducts.

The growth of the gallbladder carcinoma is usually by extension along the wall of the cystic duct toward the liver portal, then by continuity along the hepatic and common ducts. The growth extends usually by an

infiltration of the wall of the ducts, but may take place directly through the lumen. As a rule the cystic and common ducts are wholly or partly obliterated by the growth or associated inflammatory processes. The growth by extension through the wall of the common duct may extend even to the duodenal papilla. From the liver portal the growth travels upward into the liver through Glisson's capsule compressing the intrahepatic bile-ducts and portal vessels. By extension through the liver lobules the growth may reach the hepatic veins and breaking into these lead to hematogenous metastasis.

It is stated by Courvoisier and Kaufmann that scattered secondaries throughout the liver are very rare in primary gallbladder cancer. The metastases which are usually lymphogenous are very much more frequently found in the duodenal-hepatic ligament, omentum, peritoneum, the mesenteric and retroperitoneal lymph-glands. Rarely metastatic nodules are found in the duodenal papilla. A retrograde metastasis is possible through the distended intrahepatic bile-duct. By the involvement of the branches of the portal hematogenous metastasis may be set up in other parts of the liver. Metastases in distant organs as the lungs, and kidneys, etc., are very rare in all forms of gallbladder carcinoma, and are usually the result of the extension of liver-secondaries into the hepatic veins. The kidneys may be involved by extension or metastasis through the retroperitoneal lymph-spaces. Metastases are very much more frequent in the case of adenocarcinoma variety, and may be very large and numerous. They usually have a rich blood-supply and undergo degeneration very quickly in their central portions, forming frequently cystic tumors which may much surpass the primary in size and importance. The degeneration often becomes gangrenous in character and may lead to a gangrenous pyelophlebitis with thrombosis of the branches of portal, hepatic, and vena cava. Calcareous masses are frequently found in the degenerating areas of gallbladder carcinoma, and should not be mistaken for gallstones.

The intestines, stomach and pancreas may be invaded by the extension of the tumor through inflammatory adhesions which serve as bridges. The adhesions with the colon are very common and fistulous communications may be formed at the site of these adhesions through which gallstones may escape into the bowel. Some authors believe that all cases of fistulous communication with the bowel are cancerous. Ileus may also be produced by contractions at the point of adhesion which cause twisting or kinking of the bowel. The adhesions between the gallbladder and duodenum are much less common.

In my case the extension of the tumor has taken place in all of the ways hitherto described, by continuity into the liver along the biliary passages, by extension along the common duct, by adhesions with omentum and colon, by lymphogenous metastasis through omentum, mesenteric and retroperitoneal lymph-glands, left adrenal, kidneys, and appendix, by hematogenous metastasis through both lungs, and by extension through inflammatory tissue into the right adrenal. This extension is through the lymph-spaces of the new connective tissue. This last occurrence I have been unable to find in any other case of primary gallbladder carcinoma. The widespread metastasis in this case is also very unusual.

The presence of the gallstones in the inflammatory

tissue about the right adrenal points to an earlier perforation of the bladder with the escape of the stones and their encapsulation with connective tissue. This perforation may have occurred in a distended bladder-wall or through a wall weakened by carcinoma infiltration. No evidence existed of such a perforation, as the small bladder cavity was intact and contained fluid. The growth of the carcinoma may have led later to a closure of the opening, but it seems more probable that the perforation occurred earlier, possibly preceding the growth of the cancer which may have developed primarily at the seat of perforation. No evidence existed as to the possibility of the stones escaping from the cystic or common ducts or intestine. The clinical history of the case throws no light upon this point, containing nothing which would indicate the presence of gallstones or the occurrence of a perforation.

The association of primary gallbladder carcinoma with the presence of gallstones has been known since 1856, when Klob made the observation that gallstones were present in all cases of villous cancer of the gallbladder.⁵ Frerich also noted the frequency of their coincidence. Klebs and Willigk (1869) appear to be the first who definitely affirmed that cholelithiasis is the cause of gallbladder cancer.⁶ In 1875, Hilton Fagge⁷ again emphasized the importance of the relations of the two conditions; and later v. Schüppel,⁸ Krauss,⁹ and Marchand¹⁰ confirmed these views. Zenker¹¹ found gallstones in 85% of gallbladder carcinoma. Musser's analysis of 100 cases makes the proportion 92%, Courveisier found them in 74 of 84 cases, Brodowski¹² found them in every one of 40 cases, Jayle¹³ in 23 out of 30 cases, Bertrand in 14 out of 15, Siegert in 95% of cases. Ames¹⁴ and Rolleston¹⁵ both emphasize the importance of the coincidence of the two conditions. In Ames' article the bibliography of the subject is given up to the date 1894; and the reader is referred to this paper for more extended references. In four cases seen by me here gallstones were present in every case, in three of the cases in the bladder, the fourth case being the one described above.

Schröder estimates that 14% of all cases of gallstones suffer from primary gallbladder carcinoma. Naumyn believes that half of the cases of chronic icterus diagnosed as cholelithiasis are complicated with or due to cancer alone. If this is true the condition must be much more common than is usually supposed; the usual smallness of the growth and the absence of metastases contributing to the nonrecognition of the condition.

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- ⁵ Wiener med. Wochenschr., 1856, Naumyn's cit.
- ⁶ Naumyn's cit.
- ⁷ Trans. London Pathol. Society, vol. xix.
- ⁸ Ziemssen's Handbuch, Band viii.
- ⁹ Deutsch. Arch. für klin. Med., Band 34.
- ¹⁰ Deutsche med. Wochenschr., 1885.
- ¹¹ Deutsch. Arch. für klin. Med., 1889.
- ¹² Naumyn, p. 153.
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- ¹⁴ Johns Hopkins Hosp. Bull., 1894.
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[To be concluded.]

Dr. Jameson, the raider, has been unanimously elected a member of the Cape Parliament from Kimberly. He has passed 2 or 3 medical examinations, led a body of raiders into the Transvaal, been imprisoned therefor in South Africa and in England, suffered severely from typhoid fever while besieged in Kimberly, and has had many other adventures.

THE ACTION OF RENNIN UPON MILK-DIGESTION.

By I. H. CORIAT,

of Boston, Mass.

Assistant in Medical Chemistry, Tufts College Medical School, Boston.

[From the Chemical Laboratory of Tufts College Medical School.]

(Concluded from page 43.)

A GLANCE at the above tables—the end-results of the experiments detailed in this paper—will solve the problem of milk-coagulation—or, in other words, it answers the question, as to why milk must be coagulated before digestion. It is true that casein can be digested by pepsin and pancreatin, even if rennin be absent. In the case of pepsin alone, at least, coagulation can take place, and does so, through the acid reaction of the HCl. But this coagulation is an entirely different one from that of rennin—it seems that the curd formed by the HCl differs considerably and, therefore, is less easily digested than the curd formed by the enzyme. This is shown by the fact, that in all the pepsin experiments, more peptone was produced when rennin was present, than when absent—regardless of any action of HCl. With pancreatin this was different—the reaction was distinctly alkaline—there was no acid either free or combined to coagulate the casein. Here, too, in every case, when rennin was present, more of the proteid was digested. However, as will be subsequently shown, HCl need not exist free for coagulation—the combined acid will coagulate, provided it be present in sufficient amounts.

Therefore, the conclusion which we are compelled to adopt is that when rennin is present, the resulting curd is more easily and more rapidly digested by the proteolytic enzymes, and consequently, in every case, more soluble and diffusible proteid, as albumose-peptone is produced. This can only be explained by the fact of the peculiar action of rennin upon the casein of milk, forming a coagulum of a definite and invariable chemical composition. This resulting compound was acted upon more easily by the digestive enzymes. When casein is present in milk in the ordinary way, either in solution or suspension, it is acted upon less energetically by the proteolytic enzymes. Under the action of rennin, however, the casein was split up into paracasein, which was more easily attacked by both pepsin and pancreatin—and into the albumose-like whey proteid, which already was soluble to a certain extent, and possessed, even at the time of splitting, a composition related closely to the albumoses.

The rennin-function, therefore, may be summed up as follows:

1. It splits up the casein into more easily digestible proteids.
2. These resulting proteids, therefore, are converted into albumose-peptone more easily and quickly than is the casein as it exists ordinarily in milk.
3. When rennin is present, there is produced, in every case, with the proteolytic enzymes, more albumose-peptone.
4. Rennin assists the action of pepsin and pancreatin.

When we come to compare the coagulating powers of animal and vegetable enzymes on milk, that is, as to their possible identity, we have reached a field upon which little work had been done. It has been proven that vegetables and plants produce proteolytic and diastatic enzymes whose action, as far as intermediate and end-products are concerned, is almost identical with

those formed by the animal cell. The vegetable coagulating enzymes, however, have been but little investigated. In fact, Friedburg makes the following statement to this effect (see ref. 9): "We do not feel justified in assuming that the active principle in milk coagulation is the same in an extract of the stomach of ruminants and in the juices of certain plants. An effort will be made to show that rennin—an animal coagulating enzyme—and a vegetable coagulating enzyme—act under the same conditions of amount, acidity and coagulation time." The rennin used was in tablet form, of a definite weight, furnished by Parke, Davis & Co.

In the first place 0.650 gm. of rennin was dissolved in 100 cc water, and of this solution

1 cc.....	.0065 gm. rennin.
2 cc.....	.0130 gm. "
3 cc.....	.0195 gm. "
4 cc.....	.0260 gm. "
5 cc.....	.0325 gm. "

Varying quantities of milk (10 to 20 cc.) were placed in test-tubes, and to these were added steadily increasing quantities of the rennin solution (1 to 5 cc.). These tubes were placed in a large beaker of water, set in a flat tin vessel, partially filled with water. The temperature was kept constantly at 40° C. The coagulating time was accurately noted and was as follows :

TABLE IV.

Coagulation Time.

No.	Rennin Solution.	Milk.	Minutes.	Seconds.
1.....	1 cc.	10 cc.	1	50
2.....	2 cc.	10 cc.	1	40
3.....	3 cc.	10 cc.	1	30
4.....	4 cc.	10 cc.	1	10
5.....	5 cc.	10 cc.	1	00
6.....	1 cc.	20 cc.	3	30
7.....	2 cc.	20 cc.	2	30
8.....	3 cc.	20 cc.	2	00
9.....	4 cc.	20 cc.	1	40
10.....	5 cc.	20 cc.	1	30

From the above it will be seen that the coagulation-time grows less as the amount of rennin is increased—and that the larger the amount of milk, the longer the coagulation time. In order to compare this with taka-diastrase, the same experiment was repeated. A solution of the vegetable enzyme was made up of the same strength as rennin-solution—0.650 gm. to 100 cc. water. Of this solution,

1 cc.....	.0065 gm. vegetable enzyme.
2 cc.....	.0130 gm. "
3 cc.....	.0195 gm. "
4 cc.....	.0260 gm. "
5 cc.....	.0325 gm. "

The same quantities of milk were taken as above, with the vegetable enzyme solution in increasing quantities with the results as tabulated.

TABLE V.

Coagulation Time.

No.	Vegetable Enzyme Solution.	Milk.	Minutes.	Seconds.
1.....	1 cc.	10 cc.	19	00
2.....	2 cc.	10 cc.	16	50
3.....	3 cc.	10 cc.	10	10
4.....	4 cc.	10 cc.	8	00
5.....	5 cc.	10 cc.	6	30
6.....	1 cc.	20 cc.	51	30
7.....	2 cc.	20 cc.	21	20
8.....	3 cc.	20 cc.	15	40
9.....	4 cc.	20 cc.	11	10
10.....	5 cc.	20 cc.	9	30

This table also shows a decrease of coagulation-time as the amount of vegetable enzyme is increased. The

time is longer than that taken by rennin for the same amounts of milk—but we must remember, that with rennin we are working with a pure, isolated enzyme whose only function is coagulation, while the coagulating action with the vegetable enzyme is but secondary. For instance, although 1 cc. of this solution contains .0065 gm.—this amount is a mixture of foreign material and a coagulating enzyme—how much of the latter we cannot say, as it is not in an isolated form. Undoubtedly, if this coagulating enzyme could be isolated, it would be equal in its action to that of rennin, or even more powerful.

The above are simply the results of test-tube experiments in the laboratory. In the living organisms, these enzymes, whether secreted by the cells of the organism itself, or introduced from without, are subject to the manifold influences of digestion,—either helpful or inhibitory. The most potent factor influencing coagulation is, of course, HCl—as this can coagulate milk alone. With a view to determining this, it seemed advisable to try alone, and with rennin and the vegetable enzyme the action of HCl upon milk-coagulation. The following were tried.

1. The action of free HCl.
2. The action of combined HCl in varying proportions.
3. The action of combined HCl plus the coagulating enzymes.

The first may be dismissed in a few words, as all free acids, whether mineral or organic, coagulate milk. As to the action of combined HCl, detailed explanations and experiments are necessary. A solution of digestive HCl was made up, of a strength of 2.5 parts per 1000. When 1 cc. of this solution was added to 10 cc. of distilled water, it gave the tests for free HCl (Günzburg's and Töpfer's) when it was added to milk, the following results were obtained.

Milk.	HCl.	Reaction for free HCl.
10 cc.	$\frac{1}{2}$ cc.	Negative.
20 cc.	1 cc.	Negative.
10 cc.	1 cc.	Negative.
20 cc.	2 cc.	Negative.

All the HCl had entered into combination with the proteids of the milk as combined HCl (an acid albuminate), and, therefore, did not react to the tests for the free acid.

The effect of HCl upon coagulation was next considered. Free HCl was not tried, but HCl in the amounts as added above (combined) was used. First, the effect of the combined acid on coagulation was tried, with the following results, to be used as controls in the other experiments.

Milk.	HCl.	Time of Action.	Results.
5 cc.	1 cc.	2 hours.	Coagulation.
10 cc.	1 cc.	.....	No coagulation.
10 cc.	$\frac{1}{2}$ cc.	.....	No coagulation.
5 cc.	2 cc.	.....	Coagulation.
10 cc.	2 cc.	.....	Coagulation.
20 cc.	1 cc.	.....	No coagulation.
20 cc.	2 cc.	.....	No coagulation.

It will be readily seen from the above, that combined HCl does not coagulate milk when it is equal to $\frac{1}{10}$ or less of the bulk of milk present—but when this amount is exceeded, even combined HCl coagulates milk, without any free acid being present. If this amount ($\frac{1}{10}$) of combined HCl does not coagulate milk alone, does this increase of total acidity help the coagulation when coagulative enzymes are present? To answer this question, the same experiments under exactly the same conditions of temperature, were undertaken as above—using the same increasing amounts of rennin and the

vegetable enzyme. The only difference, of course, was the addition of varying amounts of HCl (in a combined form) with the following results:

TABLE VI.

Coagulation Time.

No.	Rennin Solution.	Milk.	HCl.	Minutes.	Seconds.
1.....	1 cc.	10 cc.	1 cc.	...	20
2.....	2 cc.	10 cc.	1 cc.	...	12
3.....	3 cc.	10 cc.	1 cc.	...	06
4.....	4 cc.	10 cc.	1 cc.	...	05
5.....	5 cc.	10 cc.	1 cc.	...	04
6.....	1 cc.	20 cc.	2 cc.	...	45
7.....	2 cc.	20 cc.	2 cc.	...	30
8.....	3 cc.	20 cc.	2 cc.	...	20
9.....	4 cc.	20 cc.	2 cc.	...	15
10.....	5 cc.	20 cc.	2 cc.	...	12
11.....	1 cc.	10 cc.	$\frac{1}{2}$ cc.	...	25
12.....	2 cc.	10 cc.	$\frac{1}{2}$ cc.	...	14
13.....	3 cc.	10 cc.	$\frac{1}{2}$ cc.	...	10
14.....	4 cc.	10 cc.	$\frac{1}{2}$ cc.	...	08
15.....	5 cc.	10 cc.	$\frac{1}{2}$ cc.	...	06

TABLE VII.

Coagulation Time.

No.	Vegetable Enzyme Sol.	Milk.	HCl.	Minutes.	Seconds.
1.....	1 cc.	10 cc.	1 cc.	9	20
2.....	2 cc.	10 cc.	1 cc.	6	20
3.....	3 cc.	10 cc.	1 cc.	4	30
4.....	4 cc.	10 cc.	1 cc.	3	30
5.....	5 cc.	10 cc.	1 cc.	2	20
6.....	1 cc.	20 cc.	2 cc.	18	00
7.....	2 cc.	20 cc.	2 cc.	16	20
8.....	3 cc.	20 cc.	2 cc.	10	00
9.....	4 cc.	20 cc.	2 cc.	8	10
10.....	5 cc.	20 cc.	2 cc.	7	00
11.....	1 cc.	10 cc.	$\frac{1}{2}$ cc.	14	50
12.....	2 cc.	10 cc.	$\frac{1}{2}$ cc.	8	20
13.....	3 cc.	10 cc.	$\frac{1}{2}$ cc.	5	30
14.....	4 cc.	10 cc.	$\frac{1}{2}$ cc.	4	30
15.....	5 cc.	10 cc.	$\frac{1}{2}$ cc.	3	30

The above shows that rennin acts more energetically and rapidly in the presence of combined HCl—the amount of acid used not being sufficient to coagulate the milk alone. The same holds true of the vegetable enzyme, proving in every case, both with and without acid, the identity of the action of the animal enzyme (rennin) and the vegetable enzyme. When the amount of HCl is less than $\frac{1}{10}$, coagulation is prolonged, but even here it is less than when HCl is entirely absent.

CONCLUSIONS.

Action of Rennin in Digestion.

1. The casein of milk can be digested by both pepsin and pancreatin, without being first coagulated by rennin.
2. When, however, rennin is present, in order to precipitate the casein, the amount of digested proteid or albumose-peptone produced by the proteolytic enzymes above mentioned, is greater in every case.
3. The presence of rennin is necessary to secure a more rapid and energetic casein-digestion.
4. This increased peptone production, due to the presence of rennin, takes place in both acid (pepsin) and alkaline (pancreatic) media.

Action of Rennin on Coagulation.

1. Combined HCl, when equal in bulk to $\frac{1}{10}$ or less of the milk used, does not coagulate milk, even after prolonged action.

2. Combined HCl, when it exceeds $\frac{1}{10}$ of the bulk of milk used, coagulates with rapidity, although not as rapidly as when HCl is free.
3. Free HCl, alone, coagulates milk.
4. Rennin coagulates milk without HCl being present, but when it is present in a combined form equal to $\frac{1}{10}$ or less of the bulk of milk used, coagulation takes place in a much shorter period of time.
5. The presence of acid-albumin hastens coagulation by the enzymes.
6. Coagulation time decreases steadily, as greater amounts of absolute rennin are present.
7. Vegetable enzymes coagulate milk in a way which compares very favorably with rennin.
8. Coagulation with vegetable enzymes takes place under the same condition of temperature, acidity and amount as rennin.
9. Enzymes exist in the plant kingdom, which have an action analogous to that of rennin.

A CASE OF MYOMA OF THE BLADDER.

By OTTO G. RAMSAY, M.D.,

of Baltimore, Md.

Instructor in Gynecology, Johns Hopkins University.

(Concluded from page 44.)

To this type of tumor rather than to the myomas belong probably the so-called infiltrating myomas of the bladder which are occasionally described. F. S. Eve¹ describes such a case under the name of myosarcoma, though Terrier and Hartmann have incorporated it into their article as a case of pure myoma. G. Nicolich² reports a like case in which the whole bladder-wall was thickened and dense, and on section was of a light rosy red color. This case was also classed as a myosarcoma.

These tumors are occasionally found multiple, several tumors appearing grouped near together or placed separately in various parts of the bladder.

The individual case reported by Terrier and Hartmann was of this variety, and there were two smaller tumors besides the single larger one demonstrated in the bladder. This case, however, cannot be certainly classed as belonging to the true myomas, both because of the malignant character which it showed in the early recurrence, and also because the pathologic description did not agree in many particulars with the accepted description of a pure myomatous tumor.

The tumors vary greatly in size from a small tumor the size of a hickory nut to enormous masses weighing several thousand grams. Polaillon and LeGrand³ report one which weighed 3,200 grams.

Clinical History.—The affection is distinctly a disease of adult life, the youngest patient being a boy of 12 years of age, operated upon by Gussenbauer.⁴

The age in the remainder of the cases collected varied from 25 to 74 years. It affects both sexes in about an equal proportion. Terrier and Hartmann, in their statistics, find that 7 males and 8 females out of 15 cases was the average, and the few cases reported since then give about the same proportion.

The rate of growth varies most probably between wide limits. Our patient had suffered with some vesical symptoms for about two years, though we cannot be at all certain that the tumor had not been present for a much longer time, and that she had only suffered dur-

ing this last period because of the onset of a slight cystitis.

Faye⁵ reports a case in which the tumor was discovered 12 years before the date of operation, and during this time it had slowly but steadily increased in size. Verhoogen's case had symptoms for 5 years before coming to him. In most of the reported cases, however, any attempt to fix the duration of the growth is merely guesswork, as symptoms were usually not complained of until the onset of hematuria or cystitis. We are safe, however, in concluding from their analogy to uterine myomas, which we know grow slowly, as well as from the fact that they occur generally in persons of early middle age, that their rate of growth is slow, and covers a period of years, before symptoms appear. The symptoms vary, naturally depending on the seat of the tumor, whether submucous and projecting into the vesical cavity, or subserous and projecting into the peritoneal cavity.

In the last-named variety the symptoms are apt to be somewhat vague and misleading, and not referred at all to the bladder. Verhoogen's patient suffered chiefly from attacks of pain in the rectum, a constant sense of pressure in this region, and at times rectal tenesmus. The only bladder-symptom was occasional frequency of micturition. A case reported by Polaillon and Le-Grand⁶ complained only of a feeling of weight in the lower abdomen, and increase in size of the abdomen; and the diagnosis rested between a myoma of the uterus and an ovarian cyst.

The submucous variety on the other hand gives rise usually to a definite set of symptoms.

Terrier and Hartmann, in discussing the symptoms of the submucous form, describe them as a combination of those usually found with vesical neoplasms, with, in addition, the physical signs of a tumor with the form and consistence of a uterine myoma. The first complaint is either of frequent or painful micturition or of hematuria.

The frequent micturition may come in attacks, with intervals of freedom from symptoms, as in our case, or it may be a constant symptom after its first appearance, slowly increasing in severity. The hematuria is an almost constant symptom in myomas, occurring in 75% of the cases, and varying in degree from the cases in which only a few red cells are to be discovered in the urine to the cases in which there is active hemorrhage, with serious loss of blood. This last form must be ascribed to the later stages, however, when there is a marked cystitis with ulceration, and any marked hemorrhage in the earlier stages is a rare exception.

Pain and vesical spasm are common, due probably to the cystitis, or possibly to the mere presence of the tumor, which acts as a foreign body. In our case the vesical spasm was almost constant, and its effect was shown by the disappearance of the urethra, from the attempt of the bladder to expel the tumor through this opening. A sense of weight in the perineum or bladder is another common symptom. If the tumor is a pedunculated movable one, there may be interference with micturition from a blocking of the internal urethral orifice by the movable tumor, and the patient will describe an inability to pass urine when in certain positions.

The tumor can usually be palpated either as a dense hardening of the anterior vaginal wall in the female, or by bimanual palpation through the vagina in the female, and through the rectum in the male. By this

last method the growth is felt as occupying distinctly the bladder region; it may be movable, or is fixed in position by a broad base, and has the dense elastic feel characteristic of the uterine myoma. The dimensions, as well as the seat and size of the base, can also be outlined with a bladder-sound, and valuable indications for treatment are obtained by the use of this instrument.

Complications.—The complications likely to occur with these growths may be easily imagined. Cystitis is almost certain to appear some time during the course of the trouble, and following this ulceration or a pericystic infection. Ascending inflammation of the ureters, with pyelitis and pyelonephritis, is also a common complication. Two cases have been described in which a beginning carcinoma of the ulcerated mucous membrane covering the tumor was found. Hyaline degeneration, necrosis of the tumor, or calcification, is almost always found.

Diagnosis.—Practically the only new growth which will give rise to the vesical symptoms associated with a pedunculate tumor is a sarcoma, and the duration of the symptoms in the myomas cover a period so much longer, and the course of the disease is so much slower, that this should serve to establish the diagnosis, though it can only be verified by a microscopical examination of a piece of the tissue.

If the tumor be smaller and not easily palpable the diagnosis is a much more difficult one, and a differential diagnosis from all varieties of vesical tumors must be made. In such cases the cystoscope is of the greatest value, as with it all of the papillomatous growths may be eliminated as well as carcinomatous or other ulcers, though in these cases also a microscopical examination is the only sure means of verifying the diagnosis.

Treatment.—This is entirely surgical and consists in the removal of the growth. In the subserous variety the removal is sometimes a comparatively simple operation for the skilled abdominal surgeon, though if the tumor lie deep in the pelvis beneath the bladder, or growing into the space of Retzius, much difficulty may be experienced in its enucleation.

In the submucous form 3 avenues of attack in the female are open; namely, to enter the bladder through the anterior abdominal wall, above the symphysis pubis, from the vagina through the vesicovaginal septum, and through the urethra after dilation. In the male there are only two routes, namely, suprapubic and perineal.

In the female all 3 avenues have been used, though apparently the favorite method is the suprapubic incision. In our case the patient would hardly have been able to stand the prolonged anesthesia and manipulation necessary in the suprapubic incision, and in our case the formation of the vesicovaginal fistula previously for drainage was another indication in favor of the vaginal route. The tumor was seized with strong forceps and dragged bodily through the fistula and brought outside of the vulva, when enucleation was easily done and the hemorrhage controlled by passing catgut sutures through the bladder tissues. Tassi⁷ has also operated through a vaginal incision for the removal of a vesical myoma. In his case the tumor was small and quite near the vaginal incision, so that he did not have much difficulty in introducing 2 wire sutures, which were carried in before removal of the tumor to avoid the possibility of hemorrhage.

It would seem possible also to enucleate through a

like vaginal opening a large myoma by morcellement, as they are like the uterine myomas in the fact that there is but a small circulation in the depths of the tissues.

Gibbons and Parker⁸ speak of a case in which the myoma was removed by a combined urethral and suprapubic operation. It was in reality, however, a suprapubic operation, as the urethra was only used to pass out the two ends of an electric wire snare with which the pedunculated myoma was slowly removed; the base was burnt after removal with a cautery iron to prevent hemorrhage.

The suprapubic route is, as mentioned before, the most popular, and under the proper conditions deservedly so, as by this route the field of operation is under the eye and the work can be more carefully and successfully done.

The most troublesome complication which is apt to arise is hemorrhage, and this may be met in one of several ways. If the base be wide and the hemorrhage free, strong catgut sutures passed through the vesical tissues and tied moderately tight will control it. The Pacquelin or actual cautery will control small bleeding areas if the hemorrhage be not too free, or if there be difficulty in passing the sutures, and the patient be in a bad condition, the application of the peroxide of iron powder or astringent solutions followed by a temporary packing of the vesical cavity will control the hemorrhage.

These means are, however, only to be used when it is found impossible to unite the edges of the bladder wound, as necessarily this is the most satisfactory if it can be carried out.

Drainage is usually necessary in these cases on account of the coincident cystitis. In the female it will be found most convenient to drain through the vagina by an artificial vesicovaginal fistula, though the suprapubic drainage in the slighter infections may be sufficient. In the male the drainage through a suprapubic wound will usually suffice.

Irrigation.—In very bad infections of the bladder it will be found useful to leave the suprapubic wound widely open, and keep the patient in a continuous hot bath, obtaining in this way the most perfect possible drainage.

In the milder cases frequent vesical irrigations using mild antiseptic or astringent solutions will suffice. Closure of the suprapubic wound entirely is hardly indicated save in the rare cases in which the infection is slight.

The results after operation for the removal of vesical myomas have been unfortunately not as good as we might expect after operation for a benign growth of this character, and this bad result may be partially explained by the severe coincident infection of bladder or kidney, or to a general septic condition. This follows evidently from the late recognition of the growth, and the development of cystitis, but at the present time there seems to be no way to avoid this late recognition, as no trouble is suspected until the onset of the cystitis calls for an examination and recognition of the tumor.

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DISLOCATION OF THE JAW IN EPILEPSY.

By CHARLES J. ALDRICH, M.D.,

of Cleveland, Ohio.

Lecturer on Clinical Neurology and Anatomy of the Nervous System, College of Physicians and Surgeons; Visiting Physician and Neurologist to the Cleveland General Hospital and Dispensary; Neurologist to the Cleveland City Hospital.

DISLOCATIONS, fractures and similar accidents during the epileptic paroxysm have been occasionally noticed, but literature records such few cases of dislocation of the jaw that it must be one of the very rare complications of this very common disease. From our knowledge of the actions of the facial muscles during an epileptic paroxysm we would hardly expect a luxation to occur. The two cases hereinafter reported are examples of complete dislocation of the jaw in epilepsy, and are deemed of sufficient interest for a short report. It is of some interest to note that a correct diagnosis was not made in either case by the first physician called.

CASE 1.—Miss C., single, white female, age 21, suffered a fall at the age of five years which was followed by two or three spasms and a prolonged unconscious spell. Soon after this she began to have staring spells, on recovering from which she would keep spitting as if to put something out of her mouth. About four years ago she began to experience an occasional attack of grand mal. Following one of these attacks it was noticed that she could not close the mouth. A physician was called who failed to make the diagnosis. Another physician saw the case and sent for Dr. A. E. House, of Cleveland, who diagnosed a complete dislocation of the jaw, which was reduced under an anesthetic. Since the above report was written this patient has suffered a like injury, and was again compelled to call a surgeon to reduce the luxation.

The notes of the next case were furnished me by Dr. A. J. Smith, of Spencer, Ohio, and through whose courtesy I am enabled to give the following report:

CASE 2.—E. M., male, white, age 25, carpenter, married and a confirmed epileptic. Soon after dinner the patient threw his arms wildly about him and fell to the ground in a rigid condition, but soon commenced opening and closing his mouth with extreme violence. This was so marked that a bystander compared the action to that of a maddened animal. Suddenly it was noticed that his mouth remained permanently open. Dr. Smith was called to see the case 26 hours after the attack, but the patient had been under the care of an unlicensed practitioner who believed that the jaw was held open by the spasmodic contraction of the muscles, and applied a poultice and put the patient's feet in hot mustard water, hoping relaxation would take place; but after 26 hours had elapsed friends decided to call in Dr. Smith, who gave a small amount of anesthetic and reduced the dislocated jaw.

Thorax Resection for Empyema.—Henry Rutherford (*The Glasgow Medical Journal*, April, 1900) reports the case of a child, aged 7 years, who had suffered from a discharging empyema for more than a year. There was a tuberculous history. The patient was pale and thin, two sinuses on the left side gave vent to copious discharges. A modified Schede's operation was performed, resecting about 4½ inches of each rib from the tenth to the second inclusive. The patient made a good recovery. This case is instructive, in showing that a lung collapsed for a year or more may reexpand. On recovery there was no lateral curvature of the spinal column, but there was an atrophy of the abdominal muscles, which was probably due to the interference with intercostal nerves. When the child coughs there is bulging of the left abdominal wall as far down as the umbilicus. Another case is reported in which an operation similar to the above had to be done in successive stages with 2 to 3 months intervals. The empyema in this case was due to a perforating abscess around a tuberculous rib. [M.B.T.]

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Indiscriminate abuse of manufacturers of pharmaceutical preparations is sometimes the veriest rant and cant. It is easy and self-flattering, but by no means therefore either just or wise. In view of the astonishing lapses of medical men and of their participation in pharmaceutical frauds, it tends to provoke ironic laughter. If one takes the drug-trade journals of our country and compares them dispassionately with the medical journals, one is not certain that we as a profession will appear to better advantage in the way of honor and ideality than do the manufacturers. Surely one will find as frequent proofs of fraud, shamelessness, and unscience among journals edited by doctors of medicine as in the literature of the pharmacist and manufacturers. The worst of either are bad enough, and any scorn upon our part is indicative of egotism rather than of a study of actual facts and conditions. Whatever the justice of complaints against the manufacturers, their "instruction of medical men," etc., we need not be unjust and we must not be indiscriminate in our criticisms. As a profession we are under great obligations to pharmacy and to purely commercially-motivated manufacturers for many most valuable means of progress and for much therapeutic advance itself. There are many such manufacturers who have as pure and as strictly professional aims, and who realize them as perfectly in practice, as do physicians. There are today biologic and chemic laboratories owned and operated by lay capital for the sake of money-making, and yet from which many professional laboratories might learn both science and ethics.

Studies in Metabolism.—Probably few physicians are aware of the great amount of work done by the U. S. Department of Agriculture in investigating the various problems relating to foods and to metabolism. The object of these investigations is evidently largely economic, but they are also necessarily of physiologic and general medical interest. The work is done in the office of Experiment Stations under Director A. C. True. A mere list of these publications would be surprising to most readers, and would be convincing that this department of the General Government is accomplishing work of a high order. We shall take occasion from time to time to call attention to these publications, for we consider them of great importance, but at present we wish merely to speak of one of them. This is the

Digest of Metabolism Experiments, compiled by Dr. W. O. Atwater and Dr. C. F. Langworthy. This work has involved great labor, for it is a compilation of about 3,000 experiments gathered from the literature. The whole mass is arranged systematically and tabulated so that it is comparatively easy to find conclusions; in fact, there is an air almost of mathematical precision about it that is most striking. These experiments were made upon both man and animals. The human subjects are subdivided into the healthy and the invalid. The object of the experiments was to obtain a balance in the income and outgo of one or more factors of the food—the nitrogen especially. The individuals were in various conditions, not only of health and disease, but of exercise, special diets, etc. To physicians this book gives many valuable hints as to the use and abuse of food—a subject about which they are too often in ignorance. Some of the problems are reduced here to as nearly a set of formulas as we suppose it is possible to get them, and we trust that the work thus summarized will be still further pushed to definite results by the officers of this department of the Government.

The confidence in the family physician is among the most sacred of the things placed in his care, in fact, it may be designated as the most sacred. He is looked up to by the younger generation, who have known him since their infancy, and who have sought his advice for mental as well as physical troubles; he is regarded as a friend as well as a medical adviser by those of his own age; and his word is respected by the aged whose experience has taught them how to discriminate among men. The trust reposed in him will, in time, make him the possessor of secrets which might be the undoing of many, and while not of benefit to anyone in particular, might be the ruin of a life or a family which hitherto held the respect of the community. The daily press has recently told of how such confidence was violated by a physician, and of the swift retribution that followed.

The Reorganization of the New York State Medical Association.—Every effort directed toward reform invariably develops three factions: one in favor of the movement, one opposed, and one indifferent. Especially does this appear to be the case among physicians

in matters relating to their own interests, and it probably accounts for the fact that scarcely a State in the Union has enacted laws for the benefit of the medical profession as a class. Time and again legislators have said, "Agree among yourselves what you want; then come to us and you shall have it," and as many times the advice has been ignored. What is true regarding legislative matters is equally true of the average organization of medical men for scientific work, and the reason therefor is not difficult to unearth. Lack of organization along lines that offer the fairest treatment to all concerned has sounded the death-knell of otherwise well-directed and well-intentioned efforts in almost every instance in which reform has been demanded.

In the State of New York especially this lack of cohesiveness appears to have been evident, and therefore the efforts that are now being made to completely reorganize the State Medical Association and its affiliated county associations into what will practically be one harmonious, smoothly-running body, having for its object "the cultivation and advancement of the science of medicine, the promotion of public health, and the establishment of a death-benefit fund for the dependents of its members," are worthy of the closest attention and emulation, the more so, perhaps, because they promise to be crowned with flattering success.

In order to understand why these efforts are being made at this time it will be necessary to refer briefly to the conditions obtaining in the State subsequent to the adoption by the New York State Medical Society, in 1882, of a code of ethics different from that which governs the American Medical Association, with which it was affiliated. The immediate result of this action was that, by unanimous vote, the State Society was denied representation and its delegates excluded from the annual meetings of the Association. From that time many county societies, branches of the State Society, ceased to send delegates to the annual meeting of the latter, and in 1884 the members who had seceded from the State Society, on account of its attitude regarding the code, organized the New York State Medical Association. But the prestige of the venerable State Society, founded in 1806, and, to a lesser extent, that of the several county societies, combined with the more or less imperfect knowledge of the principles for which the new association stood, undoubtedly did much to retain the membership in the older bodies of many who, otherwise, would have thrown in their fortunes with the new, and as time passed the growth of the State Association and its affiliated county branches did not keep pace with the hopes of their founders.

Membership in the State Medical Society is obtained only through the election of a member of a county society as delegate to the annual meeting of the State Society, each county society being entitled to as many delegates as there are Assembly districts in the county in which it is located. Each delegate is elected for

three years, and at the expiration of that period, on certain conditions, he is admitted to membership in the State organization. It is evident that a glaring fault in this method of representation lies in the fact that a clique in any county society may almost certainly and indefinitely prevent the election of a nominee, and it is equally evident that all the members of any one of the county societies cannot obtain membership in the parent body, no matter how strong their desire may be. The New York County Medical Society, with a membership of 1800, for instance, is represented by less than 100 permanent members, and it is entitled to but 35 delegates. A body thus organized cannot fairly represent the bulk of the profession of the State, nor can it do so until such restrictions to general membership are removed. Enjoying the distinction of being the only purely State medical organization acting under a charter, the State Medical Society naturally has been recognized by the lawmakers at Albany, and probably by the public at large, as the official mouthpiece of the medical profession, whereas, in reality, its arrogation to itself of this function has been unwarranted. As near as may be gathered, the State Society now numbers about 600 members, out of an estimated total of 9,500 medical practitioners in the State.

The first step in the plan to completely reorganize the State Medical Association and its affiliated county associations was marked by the grant of a charter to the parent organization by the Legislature in April last. This plan has been laid out on the broadest and fairest lines, and the keynote of it all is "home rule." No question of rivalry or opposition enters at all into the scheme, but equal representation, unity of purpose, and the greatest good to the greatest number—in other words, *liberté, égalité, et fraternité*. All of the county associations previously affiliated with the State Association have already voted unanimously to become parts of the new organization, and new associations are being organized in counties in which the State body has not been actively represented. As an indication of the popularity of the movement it may be noted that in several counties in which no local association existed, but in which county societies had been established, by practically unanimous vote of the members, charters from the governing body have been surrendered and application made to the State Association to take them into the fold. The membership of the State Association has increased from about 500, in April last, to nearly 1,500 on July 1.

In brief the plan may be outlined as follows: The 61 counties of the State have been grouped into 5 divisions, each division being represented by a branch, or district, association, the membership of which is made up of the members of all the county associations in the district. A person will be ineligible to membership in the State Association unless he is already a member of a county or district association. *Membership in either of these carries with it membership in the*

State Association as well, and this is the keynote of the entire scheme. Each county and each district association will elect its own officers and adopt its own by-laws, the latter being in conformity with the constitution of the State Association. The presiding officer of each county association will appoint committees on legislation, public health, and on ethics and discipline, each being subservient to and working in accord with like committees of the State Association. The local committees on ethics and discipline will pass on all charges and complaints against members, their findings being subject to the approval of their local association, but the rulings of the latter will be reviewed and final disposition of cases made by the Council of the State Association if appeal is made by the member against whom decision has been rendered.

Each county association, at its annual meeting, will elect one delegate and one alternate to serve on the nominating committee of its district association, and one member for each ten of its membership or fraction over five to a Fellowship in the State Association. The Fellows, so elected, in conjunction with the members of the Council, will direct the affairs of the Association. The Council will consist of the officers of the State Association, and the presidents of the five district associations. The duty of the nominating committee of each district association will be to nominate a full list of officers for its district organization to be elected at the annual meeting, and to elect two Fellows from all of those previously elected by the county associations, as members of the nominating committee of the State Association. It is purposed to make the initiation fee \$10.00, and the annual dues the same amount, these covering membership in the three organizations—State, district, and county. Each initiation fee will be added to the permanent fund of the State Association. Of the annual dues of each member, \$2.00 will be deposited in the treasury of the local county association, 50 cents paid to the district association, 50 cents retained by the treasurer of the county association as compensation for his services, and the balance, \$7.00, forwarded to the treasurer of the State Association. The annual dues of members assures to them the receipt of a copy of the *Medical Directory of New York, New Jersey, and Connecticut*, the publication of which was begun last year, and of the *Transactions* of each annual meeting, without additional charge. A member resigning from any county or district association, ceases at the same time to be a member of the State Association. Members will be subject to expulsion for any one of three reasons: non-payment of dues, violation of the code of ethics, and commission of a crime.

The secretary of each county association will make an annual report of the proceedings of the local organization to the secretary of the district association, and the latter will forward a report embodying these several reports and the proceedings of the

annual meeting of the district association to the secretary of the State Association, to be read at the annual meeting of the latter and incorporated in the *Transactions*. The president of each district association will be a vice-president, ex-officio, of the State Association and a member of its council. The executive committee of each district association will consist of its titular officers and the presidents of the county associations located in the district. All delegates to the American Medical Association will be appointed by the president of the State Association, in accordance with suggestions made by the presidents of the various county associations ratified by nominations of the Council, and the credentials of such delegates will be countersigned by the president and secretary of the county association to which each delegate belongs.

The two features of this reorganization scheme that probably will appeal most strongly to the average medical man are those relating to protection and assistance, and the death-benefit fund. It is proposed that the Council shall receive and investigate applications for assistance in defending members against malpractice and other suits. If in the judgment of the Council a suit is unjust, the defense of the member will be undertaken by the Association's own attorney and the full moral and financial strength of the Association exerted in the protection of the accused. No single measure will serve to attract and bind together the members of the profession more strongly than this. The knowledge that a physician will have behind him the full strength of a powerful association will certainly do much to discourage the bringing of unwarranted suits by the laity.

The plan of a death-benefit fund will not be acted on immediately, but it is hoped that when the membership in the State Association has become sufficiently large to warrant it, death benefits may be paid to the estates of deceased members from the permanent and other funds of the Association, without the necessity of levying individual assessments, as is now done by the majority of associations organized for life-insurance purposes.

It will be seen that this reorganization scheme as a whole, in addition to keeping up the standard of scientific work, aims practically to assist the members of the State organization in many ways not attempted in the past. Its success will mark an important era in the progress of the medical profession in New York, and will exert a pronounced influence on the relations of the State Association to the National organization. At the present time but 600 New York physicians are enrolled in the American Medical Association, a number entirely out of proportion to the total in the State. If the plans of the workers who have this matter in hand are carried to a successful termination, there is every reason to think that this membership will soon be much more than doubled. The voice of the Empire State will then

be heard more frequently and to better purpose in the councils of the American Medical Association, and she will take the place in the front rank to which she is justly entitled.

The Noise Nuisance.—Even Chicago has begun to recognize the injury of noise. The chief of police has classified noises into the tolerable, the intolerable, and the unavoidable. We should be inclined to exclude the first and third classes and classify all noises as intolerable. Certainly all noises injurious to health are intolerable and avoidable. But our modern American cities are pandemoniac with avoidable noises. It is perhaps not far from the truth that the "nervousness" and waste energy of our people are due to the nerve-shattering noises of our life. The few nervous systems that can withstand such ceaseless shocks are blunted into stupid dulness. Every physician and sanitarian should use all justifiable means to lessen the noise- nuisance and to bring such influences to bear upon executive officers of the city and town as may abate it. In Philadelphia the most disgraceful indifference to noise was found ultimately to be due to the fact that the police have found it useless to arrest and prosecute noise-makers as well as beggars, drunkards, insulters of women, etc., because the magistrates at once discharge the offenders unfined; the police are thus powerless to curb such impudence and lawlessness. The political boss is always the aider and abettor of crime. The drunkards and rowdy boys bawl and yell unrestrained, the dogs bark, the crazy whistlers do their worst, the street venders bellow and the buyers of old rags out-bellow them, the street-car men bang their bells, and the street-organs add to the din. In Brooklyn recently the street venders in every street, failing to invent a more diabolic noise, were ringing cow-bells. The modern trolley-car is the very acme of atrocity. It has been made so heavy and the crossing rails are so clumsily arranged that houses are jarred for a square every minute or two day and night, and dynamo-roar and bell-thumping are added. We have taught the young for a hundred years that making the most frightful noise is the way to express joy. How long will it take us to teach the healthfulness of quiet? How soon shall we learn that one has no more right to throw noises than they have to throw stones into a house? Every physician knows the baleful effect of noise upon his patients, and every physiologist understands its pathogenic effect upon the nervous system. Above all things unnecessary noises at night should be mercilessly stopped. If all the physicians and medical societies of a city should use their influence upon the city governors, the greater part of such noises could be eliminated.

Studies in Racial Dietary.—The U. S. Department of Agriculture has been making a series of interesting studies of the diet of various classes and races in this

country, and has recently published, under the superintendence of Prof. W. O. Atwater, a report on the diet of Virginia negroes. The authors of the report are Dr. H. B. Frissell, of the Hampton Institute, and Miss Isabel Bevier, of Lake Erie College. The region chosen was the eastern part of Virginia, bordering the Great Dismal Swamp, where the colored population live in a very primitive way. The poorer negroes obtain their living almost entirely from the soil, the chief products being sweet potatoes, corn, and peanuts. Near the sea, however, fish and oysters are obtained, and near the great swamp frogs, turtles, and even snakes are added to the menu. The better classes may keep a cow, but usually exchange the butter for groceries. Hog and hominy, with a little milk, are after all the mainstays. Fresh meat, other than that mentioned, is seldom eaten. The culinary habits are of the simplest kind. These colored folks seldom own a kitchen stove, but do all their cooking in an open fireplace. Consequently, the cooking is not, as a rule, well done and the nutritive value of the food not fully realized. Under the influence of the Hampton Institute the negroes are being taught better customs, but still very many of them must still live in a state not far removed from barbarism. They usually live on rented land, and one half of their crops goes for rent. Their houses are the simplest cabins, and even the water they drink is usually obtained from surface drainage and is muddy and doubtless often impure. Wheat flour is seldom obtained by these rural negroes, but only the coarsest kind of corn meal containing a large quantity of bran. This corn meal is baked without leavening. In spite of all these drawbacks, the results obtained are not so bad as might be anticipated. According to the tables in these reports, the cost of food for each person per diem is from 4 to 21 cents—but this probably includes the better classes who live in the towns. The amount of proteid is from 55 to 169 grams, and the energy from 1880 to 5350 calories. The amount of proteid in the dietary of these negroes is as large as that contained in the daily diet of white families in comfortable circumstances, and falls but little below what is called the *normal* standard. The amount of fat is large, and of carbohydrates well up to the standard. Hence, judged by its quantity and quality, the food of these Virginia negroes is amply sufficient, but it loses in value from its indigestibility and the defective culinary methods by which it is prepared.

Primary Endothelioma of the Left Superior Pulmonary Vein.—For the sake of accuracy, abstract 11 on p. 14 of the JOURNAL for July 7 should be supplemented by the statement that what was recorded in the pathologic diagnosis as chronic obliterating phlebitis of the superior pulmonary vein was concluded on histologic examination to be a primary endothelioma characterized by hyperplasia of the connective-tissue stroma and by enlargement of the lymphatic spaces and of the vasa vasorum.

Correspondence.

REGISTRATION OF TUBERCULOSIS.

By MAZYCK P. RAVENEL, M.D.,

of Philadelphia.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

In your issue of June 2, 1900, an article by Dr. Lawrence Flick on "The Registration of Tuberculosis" appears which contains some statements liable to do much injury, and since they are dogmatically put as facts, while they are really only the opinions of Dr. Flick, and unsupported by any evidence, I beg to give some arguments on the other side.

He says: "The extermination of tuberculosis among dairy cattle is highly commendable as an economic agricultural measure, but not as a measure for the prevention of tuberculosis among human beings. While tuberculosis is frequently conveyed from human beings to animals, it is not yet certain that it is often conveyed from animals to human beings." Thus, in a few words, Dr. Flick disposes off-hand of one of the great problems of the day as a "misdirected effort." In this view he is opposed by the vast majority of investigators, health-officers, and teachers in every part of the world where tuberculosis is known. Osler, after a short review of the evidence at hand, says: "There is no reason to believe that young children, or even adults, are less susceptible to the virus than calves or pigs, so that the danger of the disease from this source (milk) is real and serious." ("Practice of Medicine," p. 267.)

In the PHILADELPHIA MEDICAL JOURNAL for December 30, 1899, a most excellent and conservative article appears by Professor J. George Adami on this subject. To the question "If infectious from animal to animal, is bovine tuberculosis infectious from animal to man?" he says: "The answer to this question is generally given as an unhesitating affirmative. I wish, however, to point out to you to-day that, *while we must accept the affirmative as the correct answer, and while it is the duty of the individual and of the State to act in full accordance with the belief that it is so*, the amount of reliable evidence of direct transmission of tuberculosis from cattle to man is singularly slight." (Italics mine.) Admitting fully the difficulty of absolute proof, there are numerous cases on record, such as those reported by Demme and Ollivier, which are quoted by Adami, as well as others, which rest on evidence which would be readily accepted in the case of typhoid fever, scarlet fever, diphtheria, etc., and which is at least as strong as that on which Dr. Flick bases his belief in the infectiousness of certain houses.

Dr. Flick's statement that "tuberculosis is frequently conveyed from human beings to animals" is wide of the facts. Bang, of Copenhagen, whose experience is, perhaps, greater than that of any man living, gives it as his opinion that transmission of the disease from man to the domestic animals does not often take place, and gives only three instances, two in cows and one in pigs, which he has been able to collect. Dr. Leonard Pearson, State Veterinarian, has never observed an instance of it. Dr. Pearson and myself have for a number of years made as thorough a review as possible of the literature of tuberculosis, and have been able to collect only three instances, besides those reported by Bang, of contagion from man to dairy cattle. The evidence in all of these is much the same as Dr. Flick rejects when the contagion is the other way.

Whatever may be said as to the nature of the evidence on

which we base our belief of the danger to man from tuberculosis of cattle, it is surely strong enough with all its defects to make it imperative on the individual as well as the State to guard against it by every means in our power.

"THE MALADY OF MANILA." (GONORRHEAL RHEUMATISM.)

By THEO. REPUBLICA, M.D.,

of Westfield, N. J.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

"The malady of Manila is gonorrheal rheumatism." The careful reader will please notice that this expression is not original with me. For my part, I do not care to recognize the term. It is one of those instances in which the name "rheumatism" is misapplied. But there is no question about the fact of the malady. The patients have rheumatism, and they have gonorrhea. It is articular rheumatism, and extremely severe. The patients suffering from the specific disorder are attacked with the rheumatism, and such is the morbid offence that the gonorrhea is forgotten. All agree that more severe cases of the disease were never seen than those in the Philippines. It occurs in 1 in 22 cases of illness. The local affection is particularly painful. In many cases ankylosis occurs. In most there is suppuration. The knees seem to be the principal seat of the disease, although in the majority of cases there is marked sciatica. The surgeons agree that the manifestations are those of pyarthrosis, and it would seem to me as though that would be the preferable term. It appears to be ichoremic, and they justly attribute it to the result of absorption into the blood of the morbid matter effused into or formed upon the membrane of the urethra. The pyemic condition, however, is attributable to inflammation of the prostatic veins. This special pathologic condition is of marked virulence. The sensitiveness of the part is remarkably acute. The patients complain that the touch of their clothing cannot be borne, and the degree of inflammation is almost extreme. Whenever it occurs, the rheumatism complicates.

Every gonorrhea patient sooner or later becomes lame in the knees, and it is a sure sign of the disorder when he or she is seen to limp. The treatment cannot be alkaline. Whether continued or intermitted, the alkalies do not avail. The preparation of guaiacum, or the compound decoction of guaiacum, into which guaiacum enters, has been found useful in some cases, but is not to be depended on. The Spanish treatment embraced inunction with mercurial ointment and mercurial fumigations. It is stated on what appears to be good authority that the Spanish physicians bled their patients, both locally and generally, and followed it with blisters. No wonder that it is told that "opium was also demanded."

Recently excellent results have been had from the use of eucalyptol, 2 drams with the same quantity of potassium citrate and 3 drams each of tincture of belladonna and mucilage of tragacanth. The dose is a teaspoonful every four hours. The physiologic effect seems to be exerted against the local affection. For the disinfection of the urinary tract the eucalyptus may be injected. A peculiar circumstance is the constipation attending the "malady of Manila." For this, elaterium has been used by the Spanish physicians to some extent, and is still in some favor. Somewhat oddly, the gonorrheal rheumatism is less severe during the rainy season.

THE URINE SEGREGATOR.

By M. L. HARRIS, M.D.,

Professor of Surgery, Chicago Polyclinic.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

DR. A. J. DOWNES, of Philadelphia, published in THE PHILADELPHIA MEDICAL JOURNAL of June 2, 1900, an article on what he terms "A New Instrument" for collecting the separate urines. The instrument presented is identical in principle with my segregator, and is the same in construction with the exception that he has omitted from his instrument a few little points which are present in mine and which are of so much importance that I deem it advisable to call attention to them again. Let us analyze the points which Dr. Downes claims for his instrument:

1. "A much smaller caliber as a whole." His measures No. 13 American, while mine is about a No. 24 French, the difference between these two being very slight.

2. "A simpler curve at the beak end." His is a simple arch which is continuous with the straight portion, while in mine the curve is set at a slight angular displacement with the straight portion, which permits the lever to hug closely the angle between the diverging ends when open, and allows for the thickness of the base of the bladder or tissues between the lever and the catheters. The distinct advantage of this is that it prevents the urine from running around the lever in the angle. A study of these two curves in the open bladder will show at once the superiority of the wide angle of my instrument.

3. "A single opening near the end of the beak." I had a single opening at first, but a study of different bladders showed that the ureters do not open always at the same distance from the internal orifice of the urethra, nor the same distance from each other. Consequently, when these distances are short the urine, after it escapes from the ureter, will have to come in contact with considerable of the bladder-wall before it can reach the end of the beak. The advantage, therefore, of multiple openings along the curve is apparent, as they permit the urine to enter the catheter at once as it escapes from the ureter, whether this opens near the urethra or far from it.

4. "The absence of a spring for elevating the partition." He sets his solid with a set screw. Experience shows that some bladders contract occasionally when the instrument is in place. The danger of injury to the bladder-wall is, therefore, much less when the parts are held together by soft, yielding springs, than when fixed solid by a set screw.

5. "The introduction of a new feature, siphonage alone, for the withdrawal of the individual urine," and 6. "The absence of all unnecessary suction apparatus" will be considered together.

Concerning the "new feature" of siphonage, in *The Northwestern Lancet* of November 15, 1898, I said: "As soon as the catheters and rubber tubing leading to the vials become filled it is seldom necessary to use the bulb as the urine usually flows by siphonage."

Again, in *The Medical Record* of April 1, 1899, I state "usually when the flow is once started, the dependent position of the vials and tubes produces sufficient siphonage to insure the immediate escape of the urine as soon as it leaves the ureters." It will be noted that it says "usually." At first it appeared the siphonage alone would be sufficient, but with more extended experience, a case was found now and then, in which the bladder would not empty itself completely with the patient on the back by the amount of

siphonage obtained. If such a bladder be filled with fluid and the instrument allowed to siphon it out, when the flow ceases, the use of the bulb will remove several ccs. more of fluid. I have seen several ccs. of urine accumulate in such a bladder with the instrument in place which would not flow until the bulb was used. I, therefore, called attention in the above-mentioned articles to the fact that while siphonage was usually sufficient an occasional case was found wherein the gentle use of the bulb was absolutely necessary to insure the immediate passage of the urine from the ureter into the catheter.

Those who have had much experience in this line would readily detect the points brought out, but as attention to detail is so necessary it was deemed advisable to present them again lest some fall into error. I wish also to protest against Downes' claim of a "new instrument," as there is nothing new in his instrument either in principle or method of use.

Fatal Case of Cocain Poisoning.—Henry Ernest Knight (*Quarterly Medical Journal*, for Yorkshire and adjoining counties, June, 1900) relates the case of a married woman of 22, 8 months advanced in pregnancy, who had been addicted to the use of cocain for about 2 years unknown to her physician and family. Her husband was awakened at 3 A.M. by hearing her fall and found her lying on the floor, unable to speak, and apparently unconscious, though the eyes looked at him vacantly. She was faint and cold, and blue about the lips. In a few minutes there was twitching of the face and both extremities, the breathing at first was good, but shortly became shallow, and death took place in about 15 minutes. A piece of paper labeled "cocain" and empty was found, and it was found that the patient had obtained 30 grains from a druggist the day before, and this she had evidently taken. The habit was begun by rubbing the drug on the gums for toothache and she had been taking on the average, at least 60 grains a day. The symptoms of the use of the drug—dizziness, nausea, and, at times, vomiting, dilated pupils, attacks of faintness, increased thirst, desire for stimulants, varying moods of temper—were masked by and mistaken for those due to her pregnant condition. It is estimated that death was due to at least 30 grains taken at one dose, although it is quite probable that more had been taken earlier in the evening. [M.B.T.]

Chronic Appendicitis and Intestinal Obstruction Necessitating Double Operative Intervention.—A.M. Cartledge (*Louisville Journal of Medicine and Surgery*, June, 1900). The history of the patient presented a number of attacks of appendicitis during the 2 years preceding date of operation, December 26, 1899. At operation the appendix was found adherent to omentum and intestines and with an abscess containing about one ounce of pus. It was removed entirely, and the omentum was fixed between the coils of intestine about the head of the cecum to prevent further intestinal adhesions if possible; stercoraceous vomiting, belching, and other symptoms of acute intestinal obstruction supervened within 38 hours, and a secondary operation was performed, an obstruction being found close to the ileocecal valve. March 10, 1900, the secondary operation for the cure of the obstruction was undertaken and about 4 inches below the original point of incision into the bowel, at the time of operation following appendicectomy, the constriction was found, the bowel having a lumen not larger than a lead pencil; the adhesions were found very dense, and were dealt with in the usual manner. While the wound was on the long axis of the bowel it was somewhat oblique, and as the bowel was very much contracted and there was quite a large opening, a transverse suture was used instead of resecting the bowel and suturing. A small cheesy abscess found at the site of the appendix and head of the cecum was excised and drained; the intestine was carefully sutured, the drain wrapped in rubber tissue, carried out to the seat of this abscess and the balance of the wound closed by an interrupted silkwormgut suture. [M.B.T.]

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

The Lehigh County Medical Association met in Allentown, July 10. The following papers were read: "Cancer of the Stomach," by C. S. Martin; "Emphysema," by W. J. Lowright, and "Minor Surgery With Cases," by H. H. Riegel.

Lehigh Valley Medical Association.—The annual meeting of the Lehigh Valley Medical Association will be held at Neversink Mountain Hotel, near Reading, August 16. On invitation the Berks County Medical Society decided to meet at the same time and place.

Octogenarians in Quaker City.—An examination of the obituary records of Philadelphia for the first 6 months of the present year shows that during that period there have occurred the deaths of 493 persons who lived to or beyond the age of 80 years. Of these, 206 were men and 287 were women.

Hospitals Aided.—The following bequests are made according to the will of the late Henry M. Curry, of Pittsburgh, Pennsylvania. To the Western Pennsylvania Hospital, \$25,000, Pittsburgh Hospital for Children, \$20,000, Homeopathic Hospital, \$10,000, Western University of Pennsylvania, \$10,000, and to Kingsley Home, \$5,000.

Smallpox Quarantine Raised.—The smallpox quarantine on the houses in the block bounded by Fifth, Bristol and Lawrence streets, Philadelphia, has been raised. There were only 2 cases of the disease, and they recovered at the Municipal Hospital. The houses have been generally renovated under the direction of the Board of Health.

Baby-Farm in Philadelphia.—"Beulah Orphanage" is the name of a baby-farm in a six-roomed house on North Second Street, Philadelphia, where 13 children and 5 adults have been living at one time. The adults are members of a sect known as the "Fire-Baptized Holiness Association," and medicine is an unused factor in their lives. The death of a child, without medical attendance, revealed the peculiar state of affairs. The proprietors of the place have been sent to prison on the charge of criminal negligence and of conducting a baby-farm without a license, and will be held to await the action of the District Attorney.

The Public Bath Association of Philadelphia controls an institution for baths and family washing on Gas-kill Street near Fourth and South. Fees: For a bath 5 cents, and 5 cents an hour for the use of family washing facilities. In 1898 one-third enough nickels were taken in to pay expenses, 1899 one-half enough, and this year they claim the receipts should reach 75%. The total number of bathers in 1899 was 34,680, of washers 1,487. Friends of the poor are asked to provide the additional \$5,000 needed. Contributions should be sent to the treasurer, Franklin B. Kirkbride.

The "Cripple News," is a unique periodical for a unique organization. The House of St. Michael and All Angels was founded September 29, 1886, and is located at 613 N. Forty-third Street, West Philadelphia, Pa., for the surgical treatment, and mental, religious, and industrial training of young colored cripples. It is the first known work of mercy devoted to crippled children of this race. This house receives destitute little colored cripples from any state or diocese, without entrance fee and without pay for board; it is without endowment (except 3 endowed cots) or connection with any parish, and is entirely dependent upon charity.

Transportation of the Dead.—An Act concerning the transportation of dead human bodies across or within the State of New Jersey has recently been enacted by Senate and General-Assembly of the State. It is not lawful for any person to convey or accept for transportation any human body dead of smallpox, diphtheria, scarlet fever, asiatic cholera, yellow fever, typhus fever or bubonic plague except the same to be closed in a hermetically sealed casket and except a license for such transportation be obtained in writing from the Board of Health of the State of New Jersey.

Rules were also framed regulating the transportation, and forms of certificates and transits permits issued. Acts were also passed relating to burial and disinterment of the dead. Any person violating this law is liable to a fine of \$100.

The Medical Societies and "Divine Healers."—With a view of bringing within the scope of the law relating to the practice of medicine the numerous impostors who by posing as "Divine Healers," "Faith Curists," and other titles prey upon the credulity of their victims, the Philadelphia County Medical Society will at its next meeting discuss these humbugs and take steps to secure legislation which will compel these pretending healers and curists to register in the same manner as a regular practitioner and hold them responsible for any serious results arising from their methods. The laws of this State are not broad enough to punish "Divine Healers" and others of their ilk for the mere practice of their humbug, and they cannot be brought to justice unless their methods prove fatal to their patients or they are charged by one of their victims with having received money under false representations.

Vital Statistics of Philadelphia for the week ended July 14, 1900:

	Cases.	Deaths.
Total mortality		633
Disease.		
Inflammation of appendix 5, brain 13, bronchi 6, kidneys 15, heart 1, prostate gland 1, lungs 26, peritoneum 8, pleura 2, stomach and bowels 24, uterus 2, spine 2, tonsils 1		106
Cholera infantum 96, morbus 1		97
Inanition 18, marasmus 38, anemia 3, debility 7		66
Tuberculosis of lungs		65
Sunstroke		33
Apoplexy 21, paralysis 11		32
Heart—disease of 26, fatty degeneration of 4, neuralgia of 1		31
Uremia 18, diabetes 2, Bright's disease 5		25
Carcinoma of breast 3, bladder 1, colon 1, face 1, liver 5, mouth 1, rectum 1, stomach 5, throat 1, uterus 6		25
Convulsions		19
Diphtheria	56	17
Brain—softening of 7, congestion of 4, dropsy of 3, abscess of 1		15
Typhoid fever	27	11
Old age		10
Burns and scalds		7
Measles		7
Drowned		7
Teething		7
Diarrhea 4, dysentery 2		6
Suicide—hanging 1, illuminating gas 1, shooting 2		4
Cirrhosis of liver		4
Alcoholism		3
Cyanosis		3
Gangrene		3
Scarlet fever	33	3
Congestion of lungs 2, arterial sclerosis 2, surgical shock 2, whooping-cough 2, abscess of pelvis 1, aneurysm of aorta 1, erysipelas 1, goiter 1, hernia 1, homicide 1, influenza 1, obstruction of bowels 1, opium poisoning 1, purpura hæmorrhagica 1, childbirth 1, suffocation by gas 1.		

NEW YORK.

Coney Island Milk Inspected.—All places on Coney Island where milk and butter are sold were visited, July 12, by the State Dairy Inspectors, and several of the local health officials. Over 350 tests were made with only 6 suspicious cases.

Shoelaces in His Body.—Dr. Dwyer, of Passaic Hospital, has taken several yards of shoelaces from the body of a man who was in an explosion. The force of the explosion had driven the leather strings through the skin in two bunches, and they had traveled some distance between the ribs and the skin.

More Water for Brooklyn.—Filtering plants will be constructed at Springfield and Baisley's ponds by which 8,000,000 gallons of water daily will be added to Brooklyn's supply. It will require about two months' time to build the filters and at a cost of \$150,000.

Sterilized Milk for Brooklyn Babies.—The distribution of pasteurized modified milk for sick babies in Brooklyn began July 17. The preparation of the milk is conducted by the Board of Health. Arrangements were made with the matrons of the Brooklyn Diet Dispensaries and with hospitals for the distribution of the milk.

New York State Hospital for the Care of Crippled and Deformed Children.—The following, in addition to those already announced, have been appointed by the Consulting Board: Dr. Samuel B. Ward and Dr. A. Vander Veer, of Albany, Dr. Jarvis S. Wight and Dr. John A. McCorkle, of Brooklyn, and Dr. Richard B. Coutant, of Tarrytown.

Hospitals to Receive the Fayerweather Bequests.—In the United States Circuit Court, July 12, Judge Lacombe, of New York, handed down decisions in the Fayerweather will litigation, holding in favor of the beneficiaries, among which are the Presbyterian Hospital, St. Luke's Hospital, and Manhattan Eye and Ear Infirmary, with \$25,000 each, and the Woman's Hospital, and Mt. Sinai Hospital \$10,000 each.

Patent Medicine Cut-Rates.—An effort will be made to induce the retail druggists of New York to ratify the agreement made between the Retail Druggists' Association and the Manufacturers to keep the price of patent medicines up to the figures printed on their labels. If 75% of the retailers ratify this agreement in any locality, it is declared in force. A similar agreement as to the prices of patent medicines was formed by New York druggists in 1883 and proved ineffective.

New Milk Booths.—Two additional milk booths, erected under the supervision of the New York Park Department, have been completed and will be opened soon. Every facility for the proper care and dispensation of milk is provided. Free coupons have been issued by Mr. Straus to all charity organizations, the summer corps of doctors and others, and will be honored when presented at any of the 14 stations. During the hot weather filtered ice water will be furnished free from the booths in Central Park, City Hall, Tompkins' Square, and Battery Park.

Imperfect Sewer System.—The awards for damages for land to be taken at Jamaica South, L. I., for the erection of a sewage disposal works, have been confirmed. The Jamaica sewer system was built prior to consolidation, but the available appropriation was used up, and there were no funds for the city to build a disposal works. Frequently the sewers have flooded surrounding property, endangering health, and even at times approaching close to the stations of the Brooklyn water-supply system. The last Legislature passed a bill appropriating \$90,000 for the building of the plant. The work on the plant will begin soon.

NEW ENGLAND.

Typhoid in Connecticut.—An epidemic of typhoid fever at Forestville, Connecticut, has resulted thus far in 35 cases, and 6 deaths have been traced to a contaminated water-supply.

Yale Medical College.—Dr. Moses C. White, professor of pathology for the last 33 years, has become emeritus professor; Dr. Bartlett has been appointed to succeed him. Dr. Benjamin Moore, professor of physiology, has resigned, having been appointed to the lectureship in Charing Cross Hospital, London.

"Healer" Truth Free.—Francis Truth, the "healer," who was fined \$2,500 for fraudulent use of the mails, is now free. It is estimated that \$50,000 is in letters addressed to him at the post office. Now that Truth has pleaded guilty the postal authorities at Washington think the letters will be returned to the senders. He says that unless full reparation is made he will proceed against those who accused him of using electrical batteries and other artificial devices.

CHICAGO AND WESTERN STATES.

The Waukesha Medical Society.—The physicians of Waukesha, Wis., have formed a medical society.

Rush Medical College.—Dr. Daniel R. Brower has been appointed professor of neurology and psychiatry.

A Champion of Noise.—The Mayor of Chicago has vetoed the ordinance for the abolishment of unseemly noises in that city.

Smallpox at Chicago.—A victim of smallpox arrived in Chicago from Indianapolis recently and was taken in charge by the health department.

The Colorado State Medical Society held its thirteenth annual convention at Denver, June 19. The society now has 306 members. The next meeting will also be held in Denver. W. P. Munn was elected president.

Chicago's Streets Uncleaned.—The streets and alleys of Chicago are to be left uncleaned and the garbage uncollected because of a deficit in the city treasury. About 1,000 men have been discharged and all work on the streets stopped.

Smallpox at Fond du Lac and New London.—The demand of the health commissioners of Fond du Lac for a pesthouse revealed a case of smallpox in the city, and recently 4 deaths from the same disease were reported from New London.

College of Physicians and Surgeons.—The commencement exercises of the College of Physicians and Surgeons of San Francisco were held July 5. Degrees were conferred upon 33 graduates in medicine, 39 in dentistry and 9 in pharmacy.

Quarantine Hospital Closed.—The St. Louis Quarantine Hospital for the cure of smallpox and other infectious diseases has been closed for the summer, all the patients having been discharged as cured. In the season 108 cases have been treated at the institution with 2 deaths.

Postal Authorities Denounced.—"Dr." John A. Dowie, the self-styled divine healer and overseer of Zion congregation of Chicago, has in a sermon denounced the postal authorities for not admitting his new publication, the *Coming City*, to the mails at newspaper rates. The paper is devoted to the interests of "Dr." Dowie's real estate on the north shore.

Colorado State Medical Society.—The following will be the program for the entertainment of the visiting physicians to the Colorado State Medical Society: Smoker, Tuesday, 8.30 p.m., Champa Street, above 18th; Address on State Medicine (music if sufficient funds), Wednesday, 8.15 p.m., Brown Palace Hotel; Reception, Dance, and Banquet, Thursday, 8.30 p.m., Brown Palace Hotel.

Die Under Faith Cure.—Quarantined in a farmhouse near Rockville, Ill., with several of their companions dead and more than half of the survivors stricken with diphtheria, 25 followers of Abram Zook, a religious zealot, resist medical aid forced upon them by the authorities. The medicines left remain untasted by order of the leader, who believes in faith cure. Tar and feathers or lynching are suggested as the mildest punishment for such fanaticism.

Drought in Arizona.—It is reported from the drought-stricken sections of Arizona that every water hole and most of the wells have gone dry. In consequence, cattle are dying by the thousands and their shrunken frames dot the desert country of Pima, Pinal, Santa Cruz, Yuma, Cochise and parts of the Maricopa counties. Not a drop of water is reported in the Gila, and there is none in the San Pedro from Benson to its confluence with the Salt River above Phoenix. The prolonged drought has greatly augmented the sufferings of the famine-stricken Pima Indians on the Sacaton Reservation in Arizona. Most of the Indians now depend for food on the few who still have provisions. They are emaciated and suffering, and unless the \$33,000 Congressional appropriation can be used, private subscriptions must be taken.

St. Louis Water-test Fund.—The Council of St. Louis granted an appropriation of \$26,400 to complete the bacteriologic and chemic tests of the city's water-supply. The tests already made have proved that the water is unfit for use, but it is necessary to show by comparative daily analytic records whether it is more impure since the opening of the Chicago drainage canal than it was before. This is rendered necessary because of the proceedings of the city against the Sanitary District of Chicago.

Danger from Sewerage.—Chemist Bennett, of the Milwaukee Health Department, says that the objection to the outer harbor plan based upon the belief that an outer breakwater would tend to stagnate the sewage carried into the lake and gradually spread contamination far out from shore, is well taken. He believes that the currents in the lake are such, that this contaminated water would be carried out through the gap to the north and wafted almost directly in the vicinity of the intake, particularly when the wind is from the south or southwest.

Dr. Turck and the Humane Society.—Dr. Fenton B. Turck's researches in abdominal surgery have caused a general uprising among his neighbors in Chicago. The Humane Society has been notified. Dr. Turck does not deny the fact that he performs operations on dogs and other small animals, but says he works purely in the interest of humanity, and that he has been successful beyond hopes. The investigations were in gastroenterostomy. Dr. Turck's departure for Paris will probably settle matters without legal proceedings, which his neighbors threatened.

Practising without a License.—Dr. F. X. Schaeffer, of Milwaukee, was placed on trial in the police court recently on a charge of practising medicine without a license. He testified as to his practising medicine in the city prior to the passage of the law requiring physicians to take out a license. He then produced a diploma from the Wisconsin Eclectic College and a certificate to show that he had been a student at the university in Prague. He states that his diploma from this university was destroyed by fire in Cleveland. The case will come up again later.

Unsanitary Conditions in San Francisco.—A complaint was made recently to the Board of Health of San Francisco against the Bryant Street sewer and its terminus. The attention of the Board of Supervisors will be called to the unsanitary condition of the locality. An ordinance prohibiting the renting or occupancy of lower portions of the apartments of any building the floors of which are damp or impregnated by any offensive gas injurious to health; also prohibiting the occupancy of cellars, bathrooms, or rooms containing a vault, or other places that are dangerous to life or health by reason of a want of ventilation or drainage, was submitted to the Board of Supervisors.

A New Diploma Mill.—The Secretary of State recently chartered a concern in Chicago under the title "The Chicago College of Medicine, Surgery, and Hygiene." The attention of the State Board of Health is now called to the corporation. The certificate of incorporation gives the purpose of the College in the following language: "For the purpose of training students in the science of life, hygiene, and sanitary science, and the care of the body in sickness and in health, and for instructing and training in physical development to fullness of health, beauty, and attractiveness; and for the correction of habits and modes of living tending to shorten life and making chronic invalids; and for special instructions how to live 100 years or more in good health; and to confer degrees and grant diplomas." This institution has no standing in the knowledge of the Board of Health.

SOUTHERN STATES.

The Mississippi Valley Medical Association will hold its twenty-sixth annual meeting at Asheville, N. C., October 9, 10, 11, 1900, under the presidency of Harold N. Moyer, of Chicago.

Johns Hopkins University.—Dr. W. H. Welch has been appointed professor of therapeutics and materia medica, and O. to G. Ramsay has been appointed to the chair of obstetrics and gynecology.

Deaths of Children in Baltimore.—There were 171 deaths of children under 5 years of age, and 148 of children under 1 year of age for the week ended July 14. Inanition caused 21 deaths and cholera infantum 99.

Texas Quarantines.—In case quarantine is declared against New Orleans, Texas will admit lime, stone, cement, turpentine, rosin, coke, machinery, iron, tin, steel, sugar, molasses, rice, fruits, sound and taken direct from clean vessels that have complied with all quarantine regulations; all articles to be in straight carload lots, freights and cars to be disinfected when deemed necessary by the State health officer. Through freights and freights originating in New Orleans destined to points beyond Texas will be permitted to pass when complying with proper restrictions. All railroads must agree to the terms set out, and if they violate the agreement they will forfeit all right to bring freight into Texas.

MISCELLANY.

Serum Treatment.—Dr. Bellinzaghi, of Brazil has brought his yellow-fever serum to the hospitals of Vera Cruz for trial. Governor Desha has appointed a committee of doctors to aid him in his work.

Smallpox at Cape Nome.—A dispatch announces 20 cases of smallpox isolated at Cape Nome. The steamer St. Paul arriving at San Francisco also reports many cases of typhoid fever and smallpox at the Cape.

Yellow Fever.—The yellow fever at Quemados has probably reached an end. No new cases have been reported since July 1, when Major Surgeon Ducker, the noted yellow fever expert, was stricken with the disease.

Marine-Hospital Service.—Surgeon Milton J. Rose-nau will represent the service at the International Medical Congress in Paris, commencing July 29, and Assistant Surgeon Samuel B. Grubbs will be the representative at the Congress of Applied Chemistry, held in Paris, July 23.

A Mode of Quenching Thirst.—Thirst disappears and perspiration is diminished by keeping a small round pebble in the mouth, according to Dr. A. Philip. He states that he has gone as long as 8½ hours in a broiling sun with nothing but dry biscuits and cheese for a lunch, and at the end of that time was not particularly thirsty.

German Meat Bill Modified.—The German Government has consented to modify the new Meat Inspection Bill so that it will not interfere with existing contract obligations of American exporters. All present contracts will be carried out on the present basis of inspection, and the new system will apply after there has been opportunity to make contracts with the full knowledge of the changed conditions of affairs.

Obituary.—DAVID G. BOWMAN, of Denton, Md., aged 63.—CHARLES F. McDONALD, of Hamilton, Ont., aged 71.—DAVID P. WOLHAUPT, of Washington, D. C., July 11, aged 61.—CHARLES P. JUDKINS, of Cincinnati, July 1, aged 57.—GERALD FREEMAN, lost overboard in Halifax Harbor, July 6.—FRANKLIN GAUNTT, of Burlington, N. J., July 7, aged 77.—JOHN B. CHAMBERLAIN, of Moss Point, Miss., on July 13, aged 35.—K. D. COLLINS, of Point Coupee Parish, July 12, aged 30.—SAMUEL RUSSELL WELLS, of Waterloo, N. Y., aged 75.—T. H. B. DILLARD, of Salem, July 13, aged 71.—ROBERT JACKSON HILL, of St. Louis, July 15, aged 64.—THOMAS WELSCH, of Davidsonville, Md., July 16, aged 61.

The Red Cross.—A meeting of the incorporators of the Red Cross was held in Washington, July 10. Miss Clara Barton was again elected president. The act of incorporation sets forth that, at Geneva, representatives of Italy, Baden, Belgium, Denmark, Spain, Portugal, France, Prussia, Saxony, and Württemberg, and the federal council of Switzerland agreed upon articles of a convention for mitigating the evils of war, and providing for a distinctive flag for wounded and neutrals. This treaty was ratified by 43 nations, including the United States, and a permanent organization formed for the purpose of cooperating with the international committee. The act gives the corporation right to hold real estate, to sue and be sued, and to use the Greek cross, which was adopted by the several nations.

Maritime Quarantine at Cape Nome.—The Surgeon-General of the Marine Hospital Service has ordered Assistant-Surgeon Earle, of the Marine Hospital, San Francisco, California, to take the first available steamer either from San Francisco or Seattle for Cape Nome, to confer with Lieutenant Jarvis, who has established a quarantine, and to arrange with him and with General Randall for maintaining maritime quarantine. Before going he was ordered to confer with Kinyoun as to quantity of sulphur and bichlorid and number of Dutch ovens or pots of fumigation needed, and order same and ship by the speediest practicable route. The government will mail from Washington 5,000 vaccinations unless he can purchase good virus in San Francisco, in which case he is to purchase and take with him. If possible he is to extend shore aid to the extent of vaccinations.

Patent Medicine Indorsement by the Ministry.—Labor Commissioner Carroll D. Wright, speaking as to the result of an investigation of the liquor question by a committee of which he was a member, said that one of the most comical conclusions reached already is the amount of alcohol there is in the widely-advertised patent medicines. The truth in this regard has been published many times, he said, but the people do not seem to take it to heart, and keep on buying the nostrums which are sometimes worse than harmless. He laughed heartily as he told of prominent W. C. T. U. leaders who preached 7 days and 7 nights a week against the sin of intemperance and then wrote long and enthusiastic testimonials for some patent medicine telling how it had given them new life and taken away that tired feeling and braced them up from day to day for the day's arduous work; and of Methodist ministers who cried down the crime of indulging in strong drink, recommending to their friends some patent medicine or invigorator or tonic which had done them a world of good and made new men of them two or three times a day. "Of course it had," said Mr. Wright. "They were under the influence of alcoholic stimulant. Some of those patent tonics have as high as 25 and 30% of alcohol, and champagne has less than 10% of that stimulating drug. They were drunk when they were recommending the stuff and talking against intemperance." —[*Evening Wisconsinian*]

Changes in the Medical Corps of the U. S. Army for the week ended July 14, 1900:

POLHEMUS, Captain A. S., assistant surgeon, now at the Presidio, will rejoin his proper station, Fort Leavenworth.

BOWMAN, MADISON H., acting assistant surgeon, are relieved from temporary duty at the U. S. general hospital, Presidio, and will report to the commanding officer, Sixth Cavalry, for duty with that regiment.

HALSELL, JOHN T., acting assistant surgeon, are relieved from temporary duty at the U. S. general hospital, Presidio, and will report to the commanding officer, Sixth Cavalry, for duty with that regiment.

DICKINSON, CLARENCE F., acting assistant surgeon, is assigned to temporary duty with troops on the U. S. transport "Grant," to sail for the Philippine Islands about July 1.

VAN KIRK, HARRY H., acting assistant surgeon, is assigned to temporary duty with troops on the "Grant," to sail for the Philippine Islands about July 7.

JENKINS, FREDERIC E., acting assistant surgeon, is relieved from temporary duty at the U. S. general hospital, Presidio, and assigned to temporary duty with troops on the transport "Cone-maugh," during the voyage of that vessel to the Philippine Islands.

ROWAN, CHARLES J., acting assistant surgeon, is relieved from temporary duty at the U. S. general hospital, Presidio, and assigned to temporary duty with troops on the transport "Leelanaw," during the voyage of that vessel to the Philippine Islands.

LUNDY, PEMBERTON, acting assistant surgeon, is relieved from duty in the division of Cuba, and will proceed to Buffalo, N. Y., and report by letter to the Surgeon-General of the Army for annulment of contract.

CLAYTON, First Lieutenant JERE B., assistant surgeon, will proceed from Vancouver Barracks to Portland, Oreg., and make a thorough sanitary inspection of the U. S. transport "Lennox."

STEPHENSON, Major WM., surgeon, having completed the duty for which he was ordered to Washington, D. C., will return to New York City.

GOLTRA, J. N., acting assistant surgeon, is granted leave for 20 days.

CUSHMAN, GABRIEL, hospital steward (appointed June 30, from acting hospital steward, hospital corps), now at Skaguay, Alaska, is assigned to duty at that post.

BALCH, Major LOUIS, surgeon, is granted leave for 4 months on account of sickness.

VON CLOSSMAN, AUGUST, acting assistant surgeon, is relieved from duty at Jefferson Barracks, and will proceed to St. Louis for

duty as attending surgeon and examiner of recruits in that city.

BUNGER, HENRY, hospital steward, Fort D. A. Russel, orders which direct him to be sent to San Francisco, Cal., en route to the Philippines, is revoked.

GIESEKING, FRED., hospital steward, Fort D. A. Russell, will be sent to Fort Logan for duty.

JOHNSON, DAVID J., acting assistant surgeon, will report to the commanding officer, Fifteenth Infantry, for duty to accompany the first battalion of that regiment from Plattsburg Barracks to San Francisco, and upon the completion of this duty will return to his proper station.

MAHON, A. N., acting assistant surgeon, is granted leave for 20 days.

McKAY, JAMES G., acting assistant surgeon, leave granted to him is extended 20 days.

WOODBURY, FRANK T., acting assistant surgeon, will proceed from Philadelphia, Pa., via San Francisco, Cal., to Manila, P. I., and report to the commanding general, division of the Philippines, for assignment to duty.

SHIMER, First Lieutenant IRA A., assistant surgeon, leave granted to him is extended 1 month.

GRIFFITH, LEWIS T., acting assistant surgeon, is granted leave for 15 days to take effect on his being relieved from duty at Fort Preble.

A board of officers to consist of Colonel WILLIAM H. FORWARD, assistant surgeon general; Major WILLIAM H. ARTHUR, surgeon, is appointed to meet at San Francisco, Cal., to examine into and report upon the physical fitness of First Lieutenant JOHN CROTTY, Fortieth Infantry, U. S. Volunteers, to perform the duties of his rank.

A board of officers to consist of Lieutenant-Colonel BENJAMIN F. POPE, deputy surgeon general; Captain HENRY A. SHAW, assistant surgeon, First Lieutenant HENRY E. WETHERILL, assistant surgeon, is appointed to meet at the Presidio, June 25, to examine into and report upon the present physical condition and fitness to remain in service of Major LEWIS BALCH, surgeon.

Changes in the U. S. Marine-Hospital Service, for the week ended July 12, 1900:

STONER, G. W., surgeon, is granted leave of absence for 5 days.

GLENNAN, A. H., surgeon, is detailed as quarantine officer at the port of Havana, Cuba, vice Surgeon H. R. CARTER, relieved.

WASDIN, EUGENE, surgeon, is granted leave of absence for 10 days.

WILLIAMS, L. L., surgeon, is detailed as acting medical purveyor during the absence of leave of Surgeon G. W. Stoner.

McINTOSH, W. P., surgeon, is granted extension of leave of absence for 2 days.

BLUE, RUPERT, passed assistant surgeon, directed to proceed to Milwaukee, Wis., and assume command of the service, reporting at Washington, D. C., en route.

SPRAGUE, E. K., passed assistant surgeon, is granted leave of absence for 2 days.

GRUBBS, S. B., assistant surgeon, is detailed to represent the service at the fortieth session of the International Congress of Applied Chemistry at Paris, France, July 23-31.

BILLINGS, W. C., assistant surgeon, is relieved from duty at Washington, D. C., and upon expiration of leave of absence to proceed to Baltimore, Md., and report to medical officer in command for duty and assignment to quarters.

KERR, J. W., assistant surgeon, is relieved from temporary duty at San Francisco Quarantine and directed to proceed to Honolulu, H. I., and report to Surgeon Carmichael for duty.

THORNBURY, F. J., assistant surgeon, on return of Passed Assistant Surgeon C. H. Gardner from leave of absence, to proceed to Chicago, Ill., and report to medical officer in command for duty and assignment to quarters.

VOGEL, C. W., assistant surgeon, is relieved from duty at San Francisco Quarantine and directed to proceed to San Francisco and report to medical officer in command for duty and assignment to quarters.

GLOVER, M. W., assistant surgeon, on being relieved from duty at Baltimore, Md., directed to proceed to Boston, Mass., and report to medical officer in command for duty and assignment to quarters.

EARLE, B. H., assistant surgeon, is directed to proceed to Cape Nome, Alaska, for special temporary duty.

PIERCE, C. C., assistant surgeon, is relieved from duty at Mobile, Ala., and directed to proceed to Tortugas Quarantine and report to medical officer in command for duty and assignment to quarters.

GIBSON, L. P., acting assistant surgeon, is granted leave of absence for 5 days.

GREENSTREET, A. G., of the District of Columbia, appointed acting assistant surgeon for duty at Wilmington, N. C.

Changes in the Medical Corps of the U. S. Navy, for the week ended July 14, 1900:

OLCOTT, F. W., passed assistant surgeon, detached from the Recruiting Rendezvous, Philadelphia, Pa., and ordered home and granted sick leave for 2 months.

GROVE, W. B., passed assistant surgeon, detached from the "Scindia" and ordered home.

RUSH, W. H., surgeon, granted sick leave until October 1.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended July 14, 1900:

SMALLPOX—UNITED STATES.			
DISTRICT OF		CASES.	DEATHS.
COLUMBIA:	Washington . . . July 1-7	4	
FLORIDA:	Jacksonville . . . July 1-7	1	
ILLINOIS:	Cairo July 1-7	7	
INDIANA:	Evansville July 1-7	1	
IOWA:	Des Moines June 1-30	3	
KANSAS:	Wichita July 1-7	9	
KENTUCKY:	Covington July 1-8	13	
LOUISIANA:	New Orleans July 1-7	18	5
MARYLAND:	Cumberland July 1-7	5	
MASSACHUSETTS:	Fall River July 2-9	2	
MICHIGAN:	Jackson July 1-7	1	
MINNESOTA:	Minneapolis June 8-30	20	1
NEBRASKA:	Omaha June 23-30	3	
NEW HAMPSHIRE:	Manchester July 1-7	1	
NEW YORK:	New York July 1-7	1	
OHIO:	Cincinnati June 30-July 8	6	
"	Cleveland July 1-7	37	
PENNSYLVANIA:	Pittsburg July 1-7	1	
UTAH:	Ogden June 1-30	6	
"	Salt Lake City July 1-7	1	
VIRGINIA:	Roanoke June 1-30	23	1
WASHINGTON:	Tacoma June 23-30	1	
WEST VIRGINIA:	Charlestown July 7	4	

SMALLPOX—FOREIGN AND INSULAR.			
AUSTRIA:	Prague June 16-23	5	
EGYPT:	Cairo June 10-17	1	
ENGLAND:	Liverpool June 16-23	1	
"	London June 16-23	13	
FRANCE:	Bordeaux May 1-31		1
"	Paris June 16-23		1
GREECE:	Athens June 16-23	10	6
INDIA:	Karachi June 3-10	8	7
"	Madras May 26-June 1		1
MEXICO:	Chihuahua July 1-7		1
"	Vera Cruz June 23-30		5
PHILIPPINES:	Manila May 19-26	1	
PUERTO RICO:	Ponce June 8-23	1	
RUSSIA:	Moscow June 8-16	10	2
"	Odessa June 16-23	3	1
"	St. Petersburg June 16-23	27	11
"	Warsaw June 8-16		2
STRAITS SETTLEMENTS:	Singapore May 19-26		1

YELLOW FEVER.			
COLOMBIA:	Barranquilla June 16-23	7	3
"	Cartagena June 14-21	3	3
"	Panama June 23-July 2		1
CUBA:	Havana June 23-30		3
"	Santa Clara June 20-25	4	

CHOLERA.			
INDIA:	Madras May 26-June 1		2

PLAGUE.—FOREIGN AND INSULAR.			
EGYPT:	Port Said April 20-June 18	73	32
INDIA:	Karachi June 3-10	13	13
JAPAN:	Osaka June 2-12	6	
"	Shidzuoka Kon June 2-12	2	
PHILIPPINES:	Manila May 12-26	7	4
TURKEY:	Smyrna June 6-21	5	

Treatment of Scoliosis.—Hoffa gives (*Zt. f. Orthop. Chir.*, vol. vii, p. 538) the following suggestions as essential: (1) The stiff scoliosed spine must be made pliable; (2) the muscles of the back should be strengthened by active exercise so that they are able to overcorrect the deformity, and this can be done in all except the worst cases; (3) the position thus attained is to be kept by proper apparatus. The motions used in the exercises consist in stretching the back upward, thereby assuming the "best possible posture," bending at the hips while the back is still stretched, in placing the hand on the side of the convexity of the main curve on the ribs of that side and exerting pressure, in placing the hands over the head and tilting the pelvis by bending one knee and in various combinations of these movements. A stationary apparatus, which helps the patient to make these movements properly, and a portable supporting jacket which holds the back in a normal position are described and illustrated. [G.B.W.]

foreign News and Notes.

GREAT BRITAIN.

New Medical Deputy Lieutenant.—The appointment has been announced of Dr. Joseph Byrne, of Londonderry, as deputy lieutenant of the city and county of Londonderry.

New Asylum at Hollymoor.—An inquiry under the auspices of the Local Government Board was held on June 21 for the purpose of borrowing £249,250 for building a new asylum at Hollymoor.

Cremation.—Lord Monkswell's Bill has passed through Committee in the Lords. It is now called the Cremation Bill, 1900. It has been amended so as to widen its scope, and bring under Home Office regulations private crematoria as well as those conducted by public authorities.

Prof. Ogston Ill.—Much regret is felt in Aberdeen at the fact of Professor Ogston being ill with fever at Bloemfontein Hospital. Professor Ogston was no doubt exposed more to infection than other acting army surgeons, as he was not attached to any particular hospital but took a general survey of the medical arrangements at the seat of war in South Africa.

The St. Pancras Scandals.—An inquiry into the irregularities in connection with the certification of lunatics in St. Pancras has been ordered. Mr. Chaplin stated that there was reason to believe that the system was more or less widely practised elsewhere in the metropolis. The guardians had been informed that the Local Government Board regarded the practices complained of as altogether indefensible, and any officer offending in this respect in the future should be dismissed.

Antityphoid Inoculation.—A. Conan Doyle believes that a mistake has been made in not making the inoculation for typhoid compulsory among the soldiers in South Africa. In a letter to the *British Medical Journal*, he says: "We have no doubt the matter will be fully threshed out in statistics, but our strong impression, from our own experience, is that although it is by no means an absolute preventive it certainly modifies the course of the disease very materially. We have had no death yet from among the inoculated, and more than once we have diagnosed the inoculation from the temperature-chart before being informed of it. Of our own personnel only one inoculated man has had it, and his case was certainly modified very favorably by the inoculation."

Factors Leading to a Relatively High Percentage of Male Offspring.—After studying more than 300 marriages with the object of discovering some of the conditions likely to give rise to a relatively high percentage of boys, Dr. Gerald S. Walton has come to the following conclusions: 1. Do not marry the eldest daughter of a family, but rather the youngest. There is a progressive increase of boy-producing power from the eldest up to the youngest daughter. 2. Do not marry one whose age differs much from your own, and do not marry much under or over 30. 3. Do not marry a widow. 4. Do not refuse to marry a cousin or an only daughter. He thinks if these rules are followed we will hear less often the complaint of paterfamilias that he has "seven daughters who prophesy," and, alas, not one son.

Purity of Drugs.—*The Physician and Surgeon* says that medical men do not, as a rule, obtain warranties with the purchase of their drugs. Beyond the words on a label or an invoice, they have no written assurance from the wholesale druggist who supplies them with medicaments that the latter are up to the standard. The druggist could not, therefore, be sued under the Food and Drugs Acts for the sale of defective preparations unless the medical man had taken some most unusual trouble when he made his purchase. But it now appears that loss or damage can be recovered in Great Britain in these circumstances on the ground that an implied warranty has been given. At any rate, a person who was supplied with defective camphorated oil which was not specifically guaranteed as of B. P. quality, has been able to recover from the wholesale supplier penalties which were incurred through the sale of this article to the public.

Lack of Medical Attention in South Africa.—J. J. Van Alen, of New York, who equipped an ambulance corps and hospital for field service in South Africa, which the British Government finally accepted, referring to the charges made against the British army hospital corps in the field, said the charges were true. With Roberts' army men died of typhoid from lack of attention. Near Bloemfontein two marquees and a few bell tents contained 496 patients, 300 typhoids. There were only 17 orderlies to attend to what is within 24 of the number allotted to a general hospital. Mr. Van Alen thought the cause of such a condition was due not so much to the personnel of the army medical corps as to the sudden and unexpected amount of sickness at the front. The army with Roberts, in the face of their heavy marches, had outstripped the medical corps, and although supplies were abundant, the surgeons did not expect an epidemic of typhoid, and were unprepared.

The Light-Treatment in London.—On June 30, Mr. Malcolm Morris, of St. Mary's Hospital, gave a demonstration of the electric light treatment of lupus and other superficial skin-diseases to members of the Medical Graduates' College and Polyclinic. He pointed out that a great advance was made when the plan of scraping lupoid tissue with a Volkmann's spoon was adopted, and spoke of points in technic and factors in the success with light-treatment. A good instance of the difficulty experienced was in cases of lupus of the cheek implicating the interior of the nose. In such cases a combined method of treatment with the Finsen light and the x-rays had given excellent results. Its rationale is that, as the Finsen rays cannot be brought to bear on any other than plane surfaces, the Röntgen-rays, in virtue of their power of penetrating soft tissues, may be used to act on mucous membranes, however complicated their arrangement. After about 15 or 16 exposures, a distinct improvement was manifest. The reaction produced was similar in kind to that of the Finsen system, but the dermatitis which was set up was said to be less marked in diseased tissues than in healthy ones.

CONTINENTAL EUROPE.

Resort for Invalids.—A day resort for pulmonary invalids has been opened on the outskirts of Berlin, with facilities for reclining, warming lunches, and obtaining inexpensive wholesome refreshments.

New School for Nurses in Russia.—The first meeting of the committee of the Russian Red Cross for the organization of a school for female nurses was held April 23. It will probably be established at Wassili-Ostrov in connection with the hospital.

Food Adulteration in Europe is attracting the attention of the authorities, especially in Switzerland. Chocolate and honey are frequently adulterated and the weight of bread increased by the introduction of ingredients that lessen its nourishing powers. Artificial coffee-berries have been so well made by the aid of some agglutinant that the deception was not discovered for a long time. The Chinese frequently mix sage, linden, strawberry and other leaves with tea or the leaves of brewed tea have been used for export trade.

Foreign University Intelligence.—Dr. A. Birnbacher, extraordinary professor of ophthalmology at Gratz, has been appointed ordinary professor. An institute of forensic medicine has been recently established at Leipsic, the charge of which has been intrusted to Professor Kockel. Dr. Calmette has been appointed professor of hygiene and bacteriology at Lille. Dr. Ernesto Tricoma, of Padua, has been appointed professor of clinical surgery and operative medicine at Messina. Dr. Bosc has been appointed professor of pathologic anatomy at Montpellier. The chair of systematic medicine in the University of Glasgow, vacated by the resignation of Sir William Gairdner, has been filled by the appointment of Professor McCall Anderson.

Leprosy in Portugal.—Dr. Zepherino Falcao has presented to the Royal Academy of Sciences at Lisbon a communication on the extension of leprosy in Portugal. Since the suppression of leper houses in that country the disease has gradually spread, and it is estimated that there are now

some 1,500 lepers in the country; this is a considerable proportion in a population of 4,700,000. The lepers are scattered throughout the country, no district being exempt; most of them, however, are on the coast and in the deep valleys. There are, however, also foci in the mountain regions. Dr. Falcao considers that the disease as it is met with in Portugal is very slightly contagious, special conditions being necessary for transmission to take place from one patient to another. —[*British Medical Journal*.]

MISCELLANY.

Danger of Pestilence.—A cablegram from Tien Tsin states that 10,000 Chinese have been killed in the attack and lie unburied outside of the city. The food-supply of the besieged is also short.

Plague.—A fatal case of plague, according to private advices, occurred recently on board the *Isla de Luzon*. The patient was an Asiatic and was concealed for several days before discovery of his ailment.

Women Doctors in the East.—The Hon. Ella Scarlett has recently sailed for Korea to take up an appointment as physician to the women of the Royal household at Seoul. She will assist Miss Cook, who has been attached to the Court for some years.

Mortality of Typhoid.—It was stated in the House of Commons, June 29, that the percentage of mortality in typhoid cases during the South African war, and more especially at Bloemfontein, has been 21 of the admissions to hospitals. The total number of admissions for typhoid fever at Bloemfontein for the 8 weeks ended May 11, was 2,087, with 286 deaths. The total admissions for simple continued fever were 5,860, with only 1 death.

Calcium Chlorid in Plague Inoculation.—An interesting report on the Haffkine prophylactic has been submitted by Captain Stevenson. Among other points he refers to the effect of calcium chlorid on the febrile reaction and shows that given both before and after the inoculations it has a good effect. The best results were obtained when the calcium chlorid was given a few days before the inoculation as well as after it. —[*Lancet*.]

Leeches in the Philippines.—A correspondent writing from Paete, P. I., speaks of the land leeches which got on the soldiers. They even crawl through the lace-holes in the shoes and under the leggings. Everywhere they bite the blood keeps up a continuous flow. After being out 5 days and 4 nights among the leeches, the men looked as though they had been shot full of holes, for their clothes were covered with blood. In comparison with them the mosquito is a harmless thing.

A Curious Dental Accident.—The *Indian Medical Record* of June 6 reports a curious accident. A boy, aged 9, while driving a cow was horned by her in the face. The effect of the blow was to drive the left central incisor through the alveolar process into the incisor fossa, from which it was easily removed by means of suitable forceps. The remarkable features about the accident was that the blow inflicted no other injury in the mouth. The tip of the horn must just have caught the cutting edge of the incisor tooth.

Cholera and Famine.—The Secretary of State for India, Lord George Hamilton, has received the following from the Viceroy of India: "The cholera mortality continues high in Bombay. The May mortality there was appalling. The number of persons receiving relief is 6,013,000." The Governor of Bombay telegraphs to the Foreign Office: "There were 10,320 deaths from cholera and 6,502 fatalities in the famine district during the last week in June. The total deaths among the numbers on the relief works in the British district were 5,324."

The Native Manila Bed.—Lieut. Fred. T. Austin, 46th Vol. Inf., writing home from Manila to the *Reveille* tells us of his first experience with a native bed. "It has," he says, "the advantage of hanging high enough from the ground to prevent the lizards from crawling down the back of our necks and the bugs and ants from using us as a promenade."

We have seldom used the hammocks in the field as we were not able to carry them. We have become used to the lizards and other crawling things of the tropical jungles, but no words can describe these little ants. They are found everywhere by millions, on the hard tack and in the coffee. At night they seem to take a fiendish delight in marching up and down the back of one's neck."

Obituary.—PROFESSOR DANIEL JOHN LEECH, of Manchester, aged 60.—DENNIS CAWOOD EMBLETON, of Bournemouth, June 18, aged 46.—ROBERT ARGLES, of Hyde Park, June 14, aged 60.—CADET DE GASSICOURT, of Paris, aged 74.—JAMES ALEXANDER BAIRD, of Dublin, June 29 aged 44.—ARNOLD SCHETELIG, of Nervi, aged 65.—JAMES STEVENSON FORRESTER, on board the *Dunera*, June 18.—W. H. F. RAMSDEN, of Saddleworth, June 24.—THOMAS McLAUGHLAN BROWN, of Glasgow.—DR. CHÉRON, of Paris.—HENRY BURFORD NORMAN, of Chesham, June 11, aged 81.—HENRY PEACOCK, of Bath, June 12, aged 88.—ARCHIBALD ADAMS, of the Indian Medical Service, at Mount Abu, May 20, aged 50.—CLAUDE CLARKE CLAREMONT, at Bognor, May 27, aged 77.

Prof. Koch's Investigations on Malaria.—The report from Stephansort, New Guinea, states that through the efforts of the members of the German Malarial Expedition malaria has been reduced to a minimum in that place. The same measures are used for the purpose of prophylaxis as for treatment. A number of Ambonese, a people very susceptible to malaria, came to Friedrich-Wilhelmshafen. About one-half of them took quinin prophylactically while the other half did not. The former group remained well; of the latter, all fell ill of malaria with the exception of one woman. They were sent to Stephansort for treatment, where they quickly recovered. The members of the expedition have regularly carried out the prophylactic use of quinin and have for 4 months remained free from malaria. Prof. Koch believes that in the future a greater effort will be made to destroy the malarial parasite. The less infective material there is about the less will be the need of quinin prophylaxis. He speaks of many chronic and mild cases, the diagnosis of which can only be made by the use of the microscope; these cases frequently do not seek medical aid. He says that to suppress malaria will be a tedious undertaking, but we are in a position to make every malarious district wholly or nearly free from malaria. The only requisites are the necessary number of doctors and a sufficient supply of quinin. In the case of an intelligent and obedient population it will not be difficult to carry the struggle against malaria to a successful issue.

The Famine in India.—Dr. Louis Klopsch, who went to India to prepare the way for the arrival of the *Quito*, chartered by the United States Government to carry 200,000 bushels of grain to Bombay, has returned to New York. He says the grain is sold at 75 cents a bushel to those famine sufferers who have money. It cost 50 cents a bushel. The profit is to be used to buy grain for those that have absolutely no means. He also said there was plenty of grain in India, but it was sold at high prices. He said that famine sufferers increase at the rate of 25,000 a day. As soon as the rainy season sets in he fears the plague will find every condition favorable for development. In large districts of India millions of cattle could not be sold for 50 cents a head. The country has been turned into a desert by the failure of the monsoon rains. There are grass lands in other parts of India, but the animals are too weak to be driven to them. The thought has never occurred to the 35,000,000 Hindu peasantry now suffering from hunger that the cattle would have been a food-resource to tide them over the months of crop-failure. The people who base their religious beliefs upon the Vedas would rather swallow dirt and gnaw roots than eat beef, and yet they are not strict vegetarians, for all eat butter and milk, and also fish and mutton when they can procure them. Beef is proscribed for food. In this vast region no meats are imported except for European consumption. If there is a partial failure of rice, wheat, maize, barley or the indigenous grains on which the laborer lives, starvation begins at once; and so while India sells to the world every year from \$250,000,000 to \$350,000,000 worth of products, and buys about three-fourths as much as she sells, her purchases are almost wholly textiles, machinery, railroad material and coal.

The Latest Literature.

British Medical Journal.

June 30, 1900. [No. 2061.]

1. Application of Pathology to Surgery. HENRY T. BUTLIN.
2. Degeneration of the Neuron. FREDERICK W. MOTT.
3. Lead encephalopathy and the Use of Diachylon as an Abortifacient. W. B. RANSOM.
4. A Case of Lannelongue's Craniectomy. CHARLES WARD.
5. Pin Introduced in the Ear Passed per Anum. ALLAN I. PETYT.
6. Ossified Stylohyoid Ligament Simulating a Foreign Body. C. FRANK WIGHTMAN.
7. A Method of Mounting Mosquitos in Glycerin. JOHN REID.
8. A Mild Case of Tetanus; Recovery in Four Days. H. H. TIDSWELL.
9. Open-Air Treatment Applied in Case of Influenza. WILLIAM M. BERGIN.

2.—Mott says that secondary **Wallerian degeneration** conclusively proves that the reciprocal metabolic interaction of the axon and its ensheathing structures is controlled by the nerve-cell and its contained nucleus. The nerve being cut the axon and myelin sheath die, but the substance of Schwann does not. The latter doubtless plays an important role in regeneration, as regeneration in the central nervous system, where the substance of Schwann is absent, does not occur. When a nerve is injured its cell-nucleus is seen to undergo: (1) The reaction phase; (2) the reparation phase, during which the cell increases in volume; and (3) if the injury be so severe that regeneration cannot take place, the degeneration phase. The author distinguished diseases of the nervous system from diseases within the nervous system. Cutting off of **blood-supply** to the central nervous system leads to cell-changes, and death soon follows; but if the anemia die but temporary there may be only loss of consciousness, etc. Thus we can understand how temporary loss of motion or psychical functions may occur in syphilitic disease of the arteries; for if collateral circulation be restored within an hour or so after blocking of the artery, the function may be restored in the course of a few hours or days. In producing anemia of the spinal cord experimentally by clamping the abdominal arteries, in animals, it was found that the exogenous fibers of the posterior columns and the pyramidal tracts, which have their origin respectively in the spinal ganglia and the cerebral cortex, do not undergo degeneration, but the tracts which have their trophic and genetic centers in the cells of the gray matter of the cord undergo degeneration. Mott cites a case of acute anterior poliomyelitis occurring in an infant. Examination was made 14 days after the onset, and the degeneration was limited entirely to those tracts, the fibers of which arise from cells in the cord. He is of opinion that spasm of the large artery supplying the lower end of the cord caused a cutting off of the blood-supply, and consequent degeneration of the cells giving origin to these fibers. Among the insane he found that among those who suffered from **epileptic** attacks the frequency and severity of the paroxysms varied in proportion to the large number of recently degenerated fibers of the pyramidal systems. Consequently we may assume that epileptiform seizures in this disease are associated with death of the cortical pyramidal motor neurons, due in great measure to vascular disturbance of the cortex. The disease is primarily a progressive decay of the nervous elements, but owing to circulatory disturbances large numbers of neurons are destroyed, and thus the seizures precipitated. The arteries are seldom occluded in **general paralysis**, but congestive stasis in the arterioles, capillaries, and veins, and even thrombosis in the latter is common. Destruction of the nervous cortex is probably accelerated by this inflammatory stasis. The brain atrophy in this disease is usually limited to the frontal and central convolutions. Over this region the pia-arachnoid is thickened and adherent. This area is drained largely by those veins emptying into the longitudinal sinus, and the author is of opinion that venous stasis plays a large part in the symptomatology and pathology of this disease. **Hyperpyrexia** induces a swelling and coagulation of the nerve-cells in the gray matter of the

spinal cord; a temperature of 107° F. continued for some hours in the rabbit effected the same change as 109.5° F. for a short time. If the temperature is soon reduced the animal recovers. The author thinks this explains the remission of symptoms, the return of consciousness, and recovery, which often takes place in some forms of hyperpyrexia when the cold bath method is resorted to without delay. The influence of the toxic conditions of blood and lymph upon the nervous system, and the selective influence of poisons are considered by the author. [A.B.C.]

3.—Ransom gives in detail the history and treatment of 6 cases of lead poisoning due to the use of **diachylon as an abortifacient**. The poison symptoms became manifest in from 6 months to a year or longer after taking the drug. The dose taken varied from a halfpennyworth to a pennyworth (23 to 46 grains) taken in 1 or 2 doses. It terminated the pregnancy in every one of his cases after longer or shorter period. The writer has obtained literature on the subject from various men of note and has come to the conclusion that it is without doubt that diachylon is largely used for abortion. It is easily purchased. Penny balls of the emplastrum plumbi are kept by the most respectable chemists ready wrapped in a handy drawer; there is absolutely no restriction on its sale. For a penny a woman can buy enough lead to not only empty the uterus but to cause grave disease of the bowels, the kidneys, and the brain; a disease which not rarely proves fatal. The drug proves to be an insufficient abortifacient, always endangers and often destroys life or leaves permanent bodily and mental enfeeblement. It is a question whether something should not be done to restrict the indiscriminate sale of this drug and to class it with poison. [A.B.C.]

4.—Ward reports an interesting case of specific hyperostosis of the skull occurring in a boy 6 years of age and operated on by a method closely resembling **Lannelongue's craniectomy**. A skin-flap 2½ inches in width and the whole length of the skull was turned upward and a piece of bone ¼ inch in width was chiseled out from the skull the whole length of the cutaneous flap. The patient made great improvement after the operation, and was almost free from his old symptoms except that he had lost the power of his legs. But about 5 months later he was suddenly taken with a fit and died before help could be summoned. [G.B.W.]

5.—Petyt reports a case in which a **pin was introduced into the ear** for the purpose of removing cerumen from which there had been otorrhea for some years and the pin slipped into the ear, thence to the throat where the patient felt it sticking, but before it could be removed it passed on into the stomach, and 3 days later it passed the anus. [A.B.C.]

6.—Wightman reports a case of **ossification of the stylo-hyoid ligament** simulating a foreign body. The patient complained of having a piece of rabbit bone lodged in his throat. Upon examination he found no laceration of the mucous membrane, but felt a hard elongated mass on the left side of the pharynx behind and slightly below the posterior pillar of the fauces. [A.B.C.]

7.—Reid **mounts mosquitos, aphides, etc., in glycerin**. He coaxes them into a drop of the glycerin and allows them to get entangled into it and then with fine needles puts them into the most advantageous position. He claims that this method prevents their being injured and the air bubbles from forming, and makes them take the most natural appearance. [A.B.C.]

8.—Bergin treated 17 cases of **influenza** in what he calls full "open air" wards, that is, those in which all the windows and ventilators were wide open day and night. Although there was always fire in the wards during the winter, the temperature in them was seldom more than 2 or 3 degrees higher than the temperature outside. The average temperature of the wards was 42 degrees. From his tables it will be deducted that those treated in the "open air wards" had; (1) Lessening range of fever; (2) Much shorter duration of fever; (3) Freedom from complications. [A.B.C.]

Lancet.

June 30, 1900. [No. 4009.]

1. The Degeneration of the Neuron. FREDERICK W. MOTT.
2. The Application of Pathology to Surgery. HENRY T. BUTLIN.

3. The Commoner Neuroses of Childhood, their Pathology and Treatment. O. J. KAUFFMANN.
4. Differentiation in Diabetes. F. W. PAVY.
5. The Primary Disorders of Growth. HASTINGS GILFORD.
6. A Case of Syphilitic Fibrospongoid Osteitis. J. BASIL HALL.
7. The Value of Urotropin and Its Practical Application as a Urinary Antiseptic. H. E. DRAKE BROCKMAN.
8. The Excretion of Urinary Water and Urea from the Human Body, with Diminished Kidney Weight. JOHN B. NASH.
9. The Use of Mercury in the Treatment of Cardiac Failure Due to Arteriosclerosis. ALEXANDER MORISON.
10. The Action of the Water of Llangammarch Wells on Uric Acid. WILLIAM BLACK JONES.
11. A Case of Hermaphroditism. G. R. TURNER.
12. A Case of Removal of a Gallstone from the Common Bile Duct by the Duodenal Incision. FREDERICK PAGE.

1.—See abstracts of *British Medical Journal* for June 30.

4.—Pavy says there is no liability to diabetic coma from the "alimentary" form of **diabetes**; this only comes with the "composite" form of this disease. The ordinary "alimentary" form is comparatively easily controlled in most cases by dieting—by withholding excess of carbohydrates from the patient's food. The special danger lies in the proneness of the "alimentary" form to pass into the "composite" form. This form is characterized by disintegration of the tissues of the body; wasting follows, coma may supervene, and death finally results. In the treatment of the alimentary form the author lays stress on the fact that after the patient has been for a time on restricted diet and has a sugar-free urine and then begins to lose weight and have the same depressed feeling that characterized the onset of the disease, the indications are that his system has acquired a tolerance for more carbohydrate material than the restricted diet allows; so this should be increased. The patient then usually gains in weight. "Alimentary" diabetes developing in young persons is more difficult to control, and more liable to pass into the "composite" form than when it develops later in life. The *composite* form is indicated by the presence of oxybutyric acid by the cupric-oxid reduction test, and diacetic acid by the ferric-chlorid test. The latter test is especially valuable. Diabetic coma is the result of a true autoxidosis, and not due to acetone, as was formerly supposed, but probably to the presence of B-amido-butyric acid, as suggested by Sternberg. [A.B.C.]

5.—Gilford says 4 **primary growth diseases**—hypoplasia, hyperplasia, degenerative hypoplasia, and degenerative hyperplasia—may attack the skeleton. They form two divisions, of which the one—hypoplasia and hyperplasia—is distinguished by defect or excess of normal growth; while the other, in which are comprised the two degenerative diseases, shows all those broad clinical and anatomical features which are characteristic of the degenerative diseases of growth, whatever the tissue may be that they affect. And as degenerative hypoplasia of the skeleton is seen to run into degenerative hyperplasia by imperceptible gradations, each being distinguished from the other by characters imprinted by age alone, so degenerative hyperplasia is subdivided into two diseases, according to tissue. If it affects the hard part of the skeleton especially, it is called osteitis deformans; if the soft substance, it is called osteomalacia. In the main these two diseases are distinct, yet they often overlap each other. Their differences are mainly those due to differences in tissue, function, sex, and age. All other tissues of the body are liable to the same four kinds of disorders, and all are affected in the same way, varying only to the extent to which one tissue differs from another. [A.B.C.]

6.—Hall describes a case of **syphilitic fibrospongoid osteitis** occurring in a boy, who was 14 years of age at the time seen. The boy's mother was in good health, the father was delicate. The patient, who had snuffles as a baby and was always delicate, was the eldest of 5 children, 2 of whom died in infancy and 2 were stillborn. The boy did not walk until 5 years old, and anterior bending of the legs was noticed 18 months afterwards. He complained of aching pains in the legs at night. When examined the teeth were irregular, the palate arched, and the lower jaw, right humerus, the clavicles, and both tibia were much enlarged

and somewhat nodular, showing there had been an osteitis. There was also thickening of the skull, especially of the right temporal bone. The most notable feature was the enlargement, elongation, and anterior curve in the middle two-fourths of the tibia. A point in differential diagnosis between this case and rickets is that in the latter the curve in the tibia occurs in the lower segment of the bone. Hall is of opinion that one reason so few cases of this disease are reported is that it is often confounded with rickets. Parrot describes 2 osteophytic forms of bone affection in congenital syphilis, viz., the osteoid form, and the fibrospongoid or rachitic form. The osteoid form may develop in early childhood, and may even be prenatal. The tissues are more brittle than normal bone, and contain large quantities of lime-salts. The spongoid form never develops before the fifth month of life. It begins as a subperiosteal growth of fibroid material over which the periosteum is greatly thickened. The bones most commonly affected are the humerus at its lower end, the ulna, the femur, and the tibia. The two forms are often present in the same case, as they were here. [A.B.C.]

7.—Drake-Brockman recommends the use of **urotropin** for 3 purposes, viz.: (1) as a urinary antiseptic; (2) as a uric acid solvent; and (3) as a mild nontoxic, and, therefore, harmless diuretic. As a urinary antiseptic it may be used with success in any condition where the bladder or urinary tract is invaded by pathologic microorganisms. As a uric acid solvent it may be used in gout, gravel, and uric acid diathesis. Combined with salicylic acid it appears to increase its efficiency. When used as a diuretic it may cause slight purging, particularly if there be enlarged prostate and irritable bladder. [A.B.C.]

8.—Nash reports estimates made of the urine and urea from 3 patients, each of whom had been **deprived of part of the kidney weight**. The first was a woman of 35 who, 3 years before the experiment, had the right kidney removed, the experiments were continued over a period of 7 weeks. The specimen examined each day being taken from a mixture of the whole for the 24 hours. The average amount excreted in 24 hours was 1520 cc., and the average amount of urea was 1.6%. The second case was a man of 20, who 2 years before the test had about half of the right kidney removed. The experiment covered a period of 52 days. The average daily quantities were 1,167 ccm. of urine, and 2.13% of urea. The third case was a woman of 56 who had the left kidney removed, and the experiments were commenced on the day after the operation and continued over a period of 53 days. The average daily quantities were 889 ccm. of urine, and 1.57% of urea. The second and third days after the operation the urea was 4.56%, while the urine was 653 cc. and 625 cc. The urine gradually increased in amount until at the end of the 52 days it was running about 1,500 cc. The percentage of urea correspondingly fell. [A.B.C.]

9.—Morison believes that the use of **mercury** in the treatment of **cardiac failure** due to arteriosclerosis is not now being given the attention which it merits, probably from the fact that it was too indiscriminately used formerly. As an evidence of its value he cites the case of a man afflicted with this condition, and in whom **anasarca** was very great, where the diuretic pill composed of 1 grain each of powder of digitalis, powder of squills, blue pill, and extract of hyoscyamus was used. Various other drugs, including atrophanthus, digitalis, brandy, diuretin, strychnia, bromids, saline aperients, had all been tried for days without success. Under the use of the above pill the patient began slowly to improve and 12 days after beginning this treatment the urine had increased to 110 ounces. With the relief of the **anasarca** the urine naturally fell, but several times the pill was withheld for some days and each time the urine became scanty and there was evident return toward the former condition. Relief was always afforded by again using the pills. The man, who was 67, regained his ordinary health and a fair degree of comfort, but occasionally had to resort to the pill. [A.B.C.]

10.—Jones treated 7 case of lithemia by having them drink the mineral water from the **Llangammarch Wells**, and he concludes that on the whole the results are most encouraging, and show that in this water we have a powerful agent for the elimination of uric acid. The water is indicated in rheumatism, gout, osteoarthritis, and in all forms

of uric-acid diathesis. A valuable adjunct to the treatment is the exercise in the mountain air of the vicinity. [A.B.C.]

11.—Turner reports a case of a probably true **hermaphrodite**. The individual was 14 years old, supposed to be a girl, and had been "ruptured" since birth, wearing a truss until 12 years of age, after that no support was worn. She had never menstruated. She was admitted to the hospital, and an oval irreducible swelling in the left inguinal region was supposed to be a prolapsed ovary. This was removed and found to be a testis lying over the external abdominal ring. Microscopical examination showed it to be histologically a well-formed testis. The external organs of generation were like those of the normal female. The vagina was a mere culdesac about 1½ inches in depth. There was no uterus and no body resembling a prostate. [A.B.C.]

12.—A woman of 59 had been subject for 2½ years to sudden attacks of severe pain in the region of the gallbladder extending down to the umbilicus and lasting several hours; when very severe it extended through to the back. The attacks were accompanied by vomiting and shivering, and occurred about once a fortnight. Three months previously she became jaundiced after an attack of colic and the discoloration had continued. The urine contained bile. The feces were clay-colored and she suffered from constipation. The gallbladder could not be felt on abdominal palpation. On opening the abdomen, the stone was felt to the right side of the head of the pancreas, but as very extensive adhesions prevented the common duct from being exposed from the outer side the anterior wall of the second part of the duodenum was incised, the opening of the common bile-duct into the duodenum was incised upwards, and a **large gall-stone was removed**. The incision into the opening of the common duct was not sutured. The incision through the anterior wall of the duodenum was closed as follows: A continuous catgut suture passing through the coats of the bowel was first inserted, then the line of suture was covered in by a continuous suture of fine silk passing through the peritoneal coat alone; one or two Lembert's sutures were put in at the ends of the incision. The abdominal wound was then closed with three tiers of sutures. No drainage was employed. After the operation the patient was troubled with bronchitis, but eventually completely recovered. [M.B.T.]

New York Medical Journal.

July 14, 1900. [Vol. lxxii, No. 2.]

1. Primary Carcinoma of the Fallopian Tube. ELIZABETH MERCELIS.
2. Syphilis of the Brain. J. T. ESKRIDGE.
3. Atrophy of Ciliary Muscle. NORBURN B. JENKINS.
4. The Present State of the Galvano-caustic Operation of Bottini for Ischuria. GRANVILLE MACGOWAN.
5. "Floaters" in the Urine. WILLIAM F. BERNHART.
6. Two Unique Rectal Cases. SAMUEL G. GANT.
7. The Elements of a Good Climate. PAUL PAQUIN.
8. The Proper Care of the Infant's Nursing Bottle; an Apparatus for the Perfect Sterilization of the Same, combined with a Pasteurizer and Sterilizer for Milk. THERON WENDELL KILMER.

1.—Elizabeth Mercelis reports a case of **primary carcinoma of the fallopian tubes**. The determining points for primary development in the tube are: 1. The absence of malignant growth in the uterus, as shown by microscopic examination of curetings at the time of operation. 2. The presence of an old salpingitis, together with the freedom of the inner end of the tube from malignant change. 3. An enlarged tube, the lumen of which is filled with carcinomatous masses of even 2.5 cm. diameter. This change found throughout two-thirds of the tube, and with the existence of a pelvic tumor for more than fifteen months. 4. The advanced stage of the growth within the tube and fairly healthy condition of the outer muscle-layers. This, in view of the resistance of the tube to secondary invasion of the ovary, and that such, when occurring, usually involves the peritoneal surface first, the mucosa secondarily. 5. The ovary is not only small, but at the inner end free from the growth. The outer portion is widely invaded, but even here areas of ovarian tissues are found. 6. Microscopic evidence of a more rapid proliferation of the new cells in the ovary than in the tube. All of these force the conclusion that the growth in

the ovary is of more recent development than the advanced coexisting tumor of the tube. [W.K.]

3.—Jenkins reports a case of **atrophy of the ciliary muscle** following the use of improper glasses and the taking of belladonna for some 2 months. He says that glasses which give the eyes too much or too little work and the continued use of a mydriatic may cause an atrophy of this muscle. [G.B.W.]

4.—MacGowan believes thoroughly in the practical use of the **Bottini operation** in cases of prostatic hypertrophy. When first introduced sufficient current was not used in heating the incising blade and the results thus obtained were not promising because of their incompleteness. To properly heat the blade to a temperature which will actively destroy the tissue a current of 4 volts and about 40 amperes is required, and to obtain this amount of current MacGowan employs a storage battery which weighs some 80 pounds. An amperemeter should be always used and a test made beforehand of the amount of current required to heat the knife to a white heat. In most cases a local anesthetic is all that is required; a very good method is to inject into the empty rectum about 40 minutes before the operation a solution of antipyrin gr. xxiv, tr. opii gtt. x, in water f 3 iij, and then 10 minutes immediately preceding the cauterization to instill into the deep urethra an ounce of a 2% solution of cocain in a 10% solution of antipyrin. During the operation the bladder should be moderately distended with a borosalicylic solution. In most cases a single posterior incision is all that will be necessary, but some cases require lateral cauterizations, but the knife should never be made to burn in an anterior direction. [G.B.W.]

5.—Bernhart says the **floaters in the urine** of those having a chronic discharge after gonorrhea are composed of epithelial cells, mucus, and pus. After the acute stage has subsided the follicles and lacunae are involved in a general catarrhal inflammation. As time elapses and this chronicity continues, the mucous membrane and its glands atrophy, and the epithelium undergoes transformation from the cylindrical to the squamous variety. It is the product of this devastation that is washed out by the urine. These washings vary in density and composition, some being mainly epithelial cells, some mucus, others mucus and epithelium with varying quantity of pus, while others are composed almost entirely of pus. The combination of these elements varies so that a classification can be made only according to the one which predominates. As a result of the examination of 50 cases, 6 months to 5 years standing, he comes to the following conclusions: (1) The specific gravity of the urine is a prominent factor in the action of floaters; (2) the elements composing the floaters influence their action; (3) their suspension at different depths in the urine is greatly due to some mechanical interference; (4) upon filtration of the urine all but the very lightest floaters, those composed of flocculent mucus, will sink to the bottom of the beaker; and (5) the action of floaters does not alone depend upon their composition or the specific gravity of the urine. [A.B.C.]

6.—Gant report 2 cases of **rectal disease**. The first was one of rectal ulceration causing a chronic diarrhea which resisted all treatment until the cause of the disease was located. The ulcers were thoroughly cureted and touched with silver nitrate, and in six weeks they were healed and the patient was discharged cured. The second case was one of stricture of the rectum caused by pressure from a large bladder-stone. The stone, which after a good deal of trouble was removed through the perineal route, weighed 4½ ounces. The stricture of the rectum was broken up and the neighboring ulcers cureted, and in four weeks the patient left for home a cured man except for a perineal fistula which did not close until almost a year later. [G.B.W.]

Medical Record.

July 14, 1900. [Vol. 58, No. 2.]

1. Some Clinical Observations on Lupus Erythematosus; the Pathology of Lupus Erythematosus. J. A. FORDYCE.
2. Endocardial Murmurs of Organic Origin, Localized in the Pulmonary Area of the Heart. JOHN WINTERS BRANNAN.
3. Convulsions. CLARENCE KING.

1.—Several cases are reported which in their clinical features show some interesting points. In one case a symmetrical **lupus erythematosus**, which began two months after pregnancy, came on and disappeared in the latter part of pregnancy. The symmetrical arrangement of the eruption and its association with pregnancy pointed toward a possible toxemic origin of the disease. In another case of long standing there were marked general symptoms,—chills, fever, headache, and pain,—also indicating a probable toxemia. In the third case lupus erythematosus was apparently secondary to tuberculosis of the skin. This case was a support for the opinion that had previously been expressed that lupus erythematosus was due to the toxin of the tubercle-bacilli. In discussing the pathology of the disease Fordyce insists that it is important to fix the tissues properly in order to demonstrate the presence of mononuclear leukocytes in the capillaries. He uses formalin, absolute alcohol, and mercuric chlorid as fixing agents. The changes were divided into three groups—round-cell infiltration, peculiar degeneration of the connective tissue, and a secondary atrophy. There was no evidence in the sections of the tuberculous changes. The alterations are described in detail, the two early changes which are always present being a mantling infiltration of the capillaries and dilation of their caliber. There was no evidence of inflammation from a local septic cause. The change was not capillary thrombosis, because there was no evidence of clotting; fibrin was entirely absent. In summing up their results they conclude that the disease is one in which the blood-supply is interfered with, and the normal capillary pressure is raised. The capillary obstruction is probably primary, the infiltration secondary, and the connective tissue change thus results; or probably the connective-tissue change is primary. They do not think that the connective-tissue degeneration contains elastin, as Unna has stated. The collagenous substance does take a dark brown stain with orcein, but it does not react to the other stains for elastic tissue. [D.L.E.]

2.—Brannan describes 2 cases in which there were **systolic murmurs** in the pulmonary region of the heart, with enlargement of that organ, chiefly of the right side and upward, and with a systolic thrill in the pulmonary region. These were both apparently instances of acquired disease of the heart. There was no cyanosis and there had been no evidence of circulatory disturbances until the patients had attacks of rheumatism, the cardiac signs developing after this time; hence it was thought that they were not congenital. There was no evidence that the murmurs were cardiopulmonary, and Brannan decides that they were probably mitral murmurs transmitted to the point where they were heard through the medium of the enlarged appendix of the left auricle. [D.L.E.]

3.—King describes cases illustrating various forms of **convulsions**. One of them was of some interest in that it occurred after taking a dram of oil of tansy for the purpose of producing abortion. [D.L.E.]

Medical News.

July 14, 1900. [Vol. lxxvii, No. 2.]

1. Tendon Transplantation in the Treatment of Deformities of the Hand. WISNER R. TOWNSEND.
2. Some Remarks on the Artificial Feeding of Infants and the Regulation of the Milk-Supply in the Country. B. J. FINLEY BELL.
3. Subphrenic Abscesses Following Appendicitis; 2 Cases. J. F. BALDWIN.
4. Petroleum in the Treatment of Phthisis. WILLIAM DUFFIELD ROBINSON.

1.—Townsend reports 17 cases of **tendon transplantation** of the forearm, and the results obtained are so favorable that many cases of wrist-drop following cerebrospinal meningitis can be assured of fairly useful arms where formerly amputation would have been deemed advisable. All cases on which this operation is to be done should be most carefully studied beforehand to determine which muscles are active and can be relied upon to furnish activity to the paralyzed tendons. Muscles can be made to do work for which they were never intended, *i. e.*, an extensor muscle may be transplanted to a paralyzed flexor tendon, and the patient will then be able to voluntarily bend the finger or fingers

supplied by the transplanted tendon. The method recommended of uniting the two tendons is to split the tendon to which the attachment is to be made, and the end of the severed tendon, after it has been scored across to make it rough is drawn through the split and held there by 2 quilted sutures. Whether it is better to carry the transplanted tendon outside around the bones of the forearm or to pass them through the interosseous space is not yet decided, but good results have been obtained after practising the interosseous method. [G.B.W.]

2.—Bell gives a long and interesting discussion of the **modification of milk for infant feeding**. According to him, none of the artificial foods prepared by the various commercial companies are of any particular value. With nearly all of them the child develops signs of rachitis. Perhaps the most pernicious is condensed milk, which ordinarily contains too little fat, an excessive amount of proteids, and too little sugar. During lactation, human milk usually shows a diminished proportion of proteids, but in artificial feeding it has been the custom to increase the proportion of proteids gradually from .75 to 2.25%. Bell has found that in general a considerable reduction below this of the proteids is desirable. In 2 cases he found that 1.25% of proteids caused the production of casein curds in the stools, and that 1% was about the maximum quantity. Sometimes whey is much better borne than even modified milk. He calls attention to the differences between the constituents of human and cow's milk and then discusses the various methods used to modify milk. Finally, he discusses the subject of the production of as pure a quality as possible of cow's milk. In order to do this, it is necessary to reform the cow, the dairyman, and the distributor. The cow should be kept healthy, should be tested for tuberculosis, and her diet should be made suitable, including at least ten pounds of grain per day. The dairyman should be intelligent, should understand the necessities of the situation, and be able to practise continually rigid antiseptic precautions. The distributor should see to it that the milk is kept cold from the time it leaves the cow until it reaches the consumer. In addition to tuberculosis, any infectious disease of the nipples should be watched for and the cow possessing it at once excluded from the herd until well. If the milk is of good quality and maintains a reasonable number of bacteria, not more than 10,000 per cc., it is not necessary to pasteurize or sterilize it. Often under the most careful precautions children do poorly upon laboratory milk. Probably the most favorable conditions are home modifications in the country, where the milk can be obtained in an almost pure state, providing the dairyman possesses sufficient technical knowledge. [J.S.]

3.—Baldwin reports 2 cases of **subphrenic abscess following appendicitis**. The first was a woman, 49 years of age, who for some time had suffered from symptoms of chronic appendicitis, so that it was finally decided to remove the appendix. This organ was found to be greatly elongated and catarrhal, and its removal was followed by a rapid convalescence on the part of the patient. But in a little over 2 weeks there was a return of the pain and a rise of the temperature, and some enlargement of the liver was noticed. A few days later there developed every evidence of an abscess pointing at about the top of the twelfth rib, and an incision in this region evacuated an enormous amount of pus and opened a ragged abscess-cavity between the liver and diaphragm. Drainage tubes were inserted and the cavity healed very rapidly. The second case was that of a girl suffering from a very acute attack of appendicitis, and at the operation perforation of the appendix was found. The patient convalesced rapidly from the acute attack after the appendix had been removed, but shortly afterward fever, with sweats and rapid pulse, came on again, accompanied with enlargement of the liver. Operation revealed an abscess about the size of an orange, situated between the upper surface of the liver and the diaphragm, which, however, healed promptly after good drainage had been established. [G.B.W.]

4.—Robinson believes that **petroleum oil** is of considerable value in the **treatment of phthisis**. He gives large quantities, and his experiments have shown that practically all ingested may be recovered in the feces. He believes that its action is purely mechanical; that is to say, it dissolves and carries off the toxins formed in the intestines. It acts as a germicide by excluding moisture and light from the bacteria, and is an ideal solvent and diluent for many reme-

dies, such as creasote. Ordinarily its administration results in considerable gain in weight. There is no evidence that it has any true medicinal virtue. [J.S.]

Boston Medical and Surgical Journal.

July 12, 1900. [Vol. cxliii, No. 2.]

1. A Review of Recent Studies on the Nature and Origin of Cancer. J. COLLINS WARREN.
2. A Case of Mural Endocarditis. HAROLD WILLIAMS.
3. Cysts in the Abdominal Wall Structurally Identical with Ovarian Cysts. JOHN HOMANS.
4. A Case of Cesarean Section. THOMAS KITTREDGE.

1.—Warren has summarized some of the more important articles upon the subject of **carcinoma**. Regarding its distribution, he finds that it extends from Norway to the southern part of Europe, it is probably as frequent in Holland as anywhere else, and in the most southern parts as in the most northern parts of it is rather less common. It seems to be almost unknown in Northern Asia, and to be very rare in Southern Asia. It is also exceedingly rare in Africa, appearing only in Algiers and in Madeira. In the United States, it is probably more common in San Francisco than anywhere in the East, and it is fairly common in Australia. He believes from this that cancer is apparently a disease of the temperate zone and it seems to be somewhat more common in the western part of both hemispheres. Geologically, it seems to be less common in the oldest rock-formations. He then discusses the question of cancer-houses and the distribution of cancer in certain areas in cities, and also the fact that those who live much in the woods are perhaps more subject to the disease. He admits that cancer is becoming more frequent than formerly, but attempts no explanation. All these facts point to the existence of a local cause that acts endemically, but at present we are very far from any knowledge as to what this cause may be. As the disease appears to be as common in the carnivora as in the herbivora it is hardly likely that it is the food. He reports a number of cases of apparent contagion, and then discusses the experimental literature on the subject. He does not think that inoculations have led to much result, but admits that inoculations from animals to other animals of the same species are sometimes successful. None of the parasites hitherto described appear to have any etiologic relation to the disease, excepting the blastomycetes, and it is difficult to understand how these act. In conclusion he outlines the future work for the discovery of the parasite. [J.S.]

2.—Williams reports a case of a woman of 54 who had an attack of **dyspnea** with pain in the region of the heart. She was immediately put to bed and remained there until her death, nearly 3 months later. From time to time she had attacks of dyspnea with loss of pulse, but throughout the course of the disease there were no murmurs to be heard and no thrills to be felt in the heart. The heart sounds were weak. A diagnosis of fatty heart with sclerosis of the coronary arteries were made. At the autopsy, examination of the heart showed a superficial whitish layer in the left ventricle from 1 to 3 millimeters in thickness that could readily be moved about on the underlying muscle. This proved, microscopically, to be a proliferative **myoendocarditis** in which the inner layer of the heart-muscle had been replaced by dense fibrous tissue. There was segmentation of the heart-muscle. The interesting features of the case are the localization of the process on a portion of the wall of the left ventricle and the absence of cardiac murmurs. [J.S.]

3.—Homans, after operating on a patient for an enormous **ovarian cyst**, weighing with its contents 102 pounds, found, 2 months later, various cysts entirely independent of one another and of the abdominal contents, scattered about in the abdominal walls. They were removed, and one of them was examined at the pathological department of Harvard College, and the following report rendered: Of abdominal walls, microscope shows a dense fibrous tissue and fat and muscle, with a small area of more cellular fibrous tissue in which there appear epithelial structures of the type of ovarian cystadenomas, a single layer of cylindrical cells forming irregular gland acini: Malignant cystadenomata of ovary. The cysts were removed, but the patient died somewhat suddenly, apparently of a thrombus. [W.K.]

4.—Kittredge reports a case of **cesarean section** in a

patient having pelvis contracted in all diameters, the antero-posterior being less than 3 inches, with a very oblique superior strait. An unusual incident occurred on the third day after operation, when, during the temporary absence of the nurse from the room, the child began to cry, and the patient got out of her bed, walked across the room, took the baby from its crib, and carried it back to her own bed. Notwithstanding, the patient made an uninterrupted recovery, was able to nurse her infant and left the hospital in 3 weeks. [W.K.]

Journal American Medical Association.

July 14, 1900. [Vol. xxxv, No. 2.]

1. The Relation of Ethyl Alcohol to the Nutrition of the Animal Body. WINFIELD S. HALL.
2. Substitute Infant-Feeding. HENRY DWIGHT CHAPIN.
3. The Specific Treatment of Croupous Pneumonia. WILLSON O. BRIDGES.
4. Appendicular Fistula. JOHN B. DEEVER.
5. Education and Legislative Control of Tuberculosis. CHAS. DENISON.
6. Diagnosis of Apoplexy Unaccompanied by Motor Paralysis. WM. N. BULLARD.
7. The Plague in San Francisco. DOUGLASS W. MONTGOMERY.

1.—Will be treated editorially.

2.—Chapin gives some suggestions with regard to modifying milk for feeding infants. He also speaks of milk supplies and the methods of handling the milk from the time of milking till used. The article does not lend itself readily to abstract, and those interested should refer directly to it. [M.B.T.]

3.—Following the suggestions of A. H. Smith, Bridges has used guaiacol and the salicylates in the treatment of 8 cases of pneumonia. This treatment is based on antibactericidal grounds and from his experience Bridges states that he would rely upon these drugs as specifics in pneumonia, giving preference to the former in cases past the stage of congestion, in the enfeebled, or when there were heart-lesions. The addition of strychnia to the salicylate treatment obviates in part the depressant effect upon the heart, as does alcohol. As to the symptomatic treatment it is in no wise interfered with by this method. Bridges has found hot poultices more agreeable than cold; he advises venesection when there is an overloaded right heart with threatening symptoms; digitalis is reserved for an irregular and flagging heart; codein in small doses for the relief of pain and delirium; strychnia in increasing doses and alcohol for enfeebled heart-action; calomel and salines for constipation or sluggish portal circulation; oxygen gas is commenced at the first sign of cyanosis and in quantity sufficient to relieve; and, most important of all, the absolute recumbent posture until resolution is established. [M.B.T.]

4.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1271.

5.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1003.

6.—Bullard believes that apoplexy unaccompanied by motor symptoms is often overlooked by the general practitioner, or its manifestations are not understood, while even the specialist is at times in doubt in the more obscure cases. It is not, however, a very rare occurrence. Three cases of this kind are reported. These cases differ pathologically from cases of ordinary apoplexy with motor symptoms, probably only in the seat of lesion. Clinically we find usually a marked degree of mental involvement, on the whole more pronounced than in the cases with motor symptoms. The diagnosis, while evident enough if the initial attack is seen or carefully reported, is often difficult when the patient is seen later. The mental weakness, the dementia, and the loss of memory prevent the acquirement of an accurate history. The presence of partial aphasia might suggest a condition of this character, but does not necessarily prove it. In the differential diagnosis the most important evidence is the sudden onset of the symptoms. If motor symptoms, even though very slight, have been present, this favors the diagnosis. When we see a patient some time after the appearance of the mental affection and no history can be obtained, the diagnosis depends on the character of the mental impairment and the absence of symptoms pointing to paralytic dementia or to intracranial tumor. The second element in the differential diagnosis of the results of "primary" apoplexy from

paralytic dementia or other cerebral affections is the presence or absence of the symptoms characteristic of these affections, but not usual in the simple apoplexies. The condition of the pupils, tremor, or peculiar mental condition common in paralytic dementia, the severe headaches, optic neuritis or optic atrophy of brain-tumors, together with other symptoms common to these affections considered separately or as a symptom-complex, will enable one to determine the pathologic condition. [M.B.T.]

Annals of Surgery.

June, 1900. [Vol. xxxi, No. 6.]

1. The Leukocyte Count in Surgery. THEODORE DUNHAM.
2. Permanent (Congenital) Dislocation of the Patella. JOHN SHAW McLAREN.
3. Interscapulo-Thoracic Amputation for Osteomyelitis of the Humerus. GEORGE RYERSON FOWLER.
4. Thyroid Medication in the Treatment of Delayed Union of Fractures. FRANCIS W. MURRAY.
5. Splenectomy for Congestive Hypertrophy. J. WESLEY BOVÉE.
6. Operation for Cure of Large Incarcerated Hernia of Long Standing. J. C. WEIDMAN.
7. Radical Treatment for Curvature of the Penis. EUGENE FULLER.
8. Report of a Case of Exstrophy of the Bladder, with Remarks upon the Operative Treatment of that Condition. BRANSFORD LEWIS.

1.—Dunham mentions the following influences which may cause leukocytosis in patients who are undergoing surgical treatment: A hearty meal, the first years of life, hemorrhages, ether-anesthesia, and the absorption of iodoform; carcinoma apparently has a tendency to increase the leukocyte count and the same seems true of sarcoma. The blood-count is of greatest value in diagnosis of acute inflammatory conditions, however; if other influence can be excluded it is a safe guide, but it is important to make two or more counts at intervals. In the early stage of appendicitis, the stationary or downward tendency may point to the advisability of delaying intervention. Suppuration without leukocytosis may be present in patients who are greatly prostrated. Some details with regard to the technic of blood-count with the Thoma-Zeiss apparatus are given. Emphasis is laid on the fact that while the blood-count may be made by some one else its import should be interpreted by the surgeon in charge. [M.B.T.]

2.—McLaren reports a case of congenital dislocation of the patella. A girl of 19 had never walked securely, was never able to run, and was troubled by frequent falling. On examination the patellar fossa of the trochlear surface of the femur could be felt partly filled up and the patella was placed externally and high up. An x-ray photograph was also taken. The existing knockknee was corrected by an osteotomy and about 3 months later a U shaped incision was made over the knee. The outer extension of the quadriceps tendon was exposed without opening the cavity of the joint, allowing the patella to be brought easily to the middle line, 2 holes were then bored through its inner side and stout catgut sutures were passed through and sutured to the internal lateral ligament. Union by first intention resulted, but the sutures did not hold sufficiently long, and the bone gradually slipped back to its old position. About 8 weeks later the operation was again performed, stout silk being used instead of catgut. Uneventful recovery followed and the bone remained in its normal position. For 4 years the patella has retained its position, the patient walks with confidence without fear of falling, and is able to run. McLaren believes that the operation of transplanting the ligamentum patellae should be reserved for cases in which there is a high degree of outward rotation of the leg. He mentions 30 cases of congenital dislocation of the patella which have been collected by Appeal and he has added several to the number. [M.B.T.]

3.—A man of 39 fell striking on his left shoulder; pain developed which was treated by antirheumatics and fixation with a plaster-of-paris bandage without result. An abscess developed which was opened and several times cured; finally a resection of the head of the humerus was undertaken at the surgical neck. The bone was extensively diseased, as was the medullary cavity. The entire medullary

canal was cureted, an emulsion of iodoform in glycerin was injected and drainage was inserted. Temporary improvement followed, but 3 months later other pus cavities required evacuation and soon after shoulder-joint amputation was performed. Prompt recovery followed. The entire humerus was found to have been affected by osteomyelitis. Some 10 weeks later there was an extensive recurrence of infection in the glenoid cavity; the diseased portion of bone was removed, but later on it was found necessary to perform **interscapulothoracic amputation**, removing the remaining portions of the clavicle and scapula. The entire raw surface of the flaps was swabbed with 2½% solution of formaldehyd in equal parts of alcohol and water, and gauze wrung out in the same solution was packed in. The patient reacted well and was convalescent in a fortnight. [M.B.T.]

4.—Murray gives a short review of the literature in regard to the treatment of **fractures** by administering **thyroid extract**. He reports the case of a man of 28 who was struck by a locomotive, sustaining 2 simple fractures of the left femur, one at the juncture of the upper and middle third and the other at the lower third of the bone. At the end of 2 months there was nonunion and overlapping of the fragments. Freshening the ends and fixation with plaster of paris was given a thorough trial, and wiring was carried out on 2 occasions without any beneficial result. Some time after the second operation of wiring thyroid extract was administered in doses of 2 grains, gradually increased to 4 grains, 3 times a day. The result was not entirely satisfactory, but there has been gradual improvement since beginning thyroid medication, and Murray is inclined to give it credit, as there were no signs of progress until its administration was begun. [M.B.T.]

5.—A woman of 39 had noticed a tumor in her abdomen which had existed for 2 years. It increased in size until it extended from the diaphragm of the left side into the pelvic cavity where it was easily felt by vaginal examination. Examinations for the malarial parasite were made with negative results. The patient was kept in bed 8 weeks and general treatment administered without any improvement. **Splenectomy** was then performed and since the operation the patient has greatly improved and the condition of her blood is now normal. The spleen weighed 4½ pounds and on microscopic examination chronic passive congestion with hypertrophy of the pulp and follicles was found. [M.B.T.]

6.—A woman of 54 had an **umbilical hernia** which extended to the knees. On account of the **enormous size** of the hernia, operation was not thought advisable, but when ulceration of the wall of the sac resulted a few months later, it was considered imperative. On opening the sac it was found to contain part of the ascending colon and descending colon with the transverse colon and all the small intestines, except a small part of the duodenum and ileum; they were firmly matted together with adhesions. The abdominal ring measured about 14 inches in circumference. On account of the large size of the opening, part of the sac was used for covering to close the ring; after the operation there was severe persistent vomiting for 4 days, which is believed to have resulted from the pressure of the viscera against the stomach; recovery resulted, however, and the patient returned to her home in less than 4 weeks. [M.B.T.]

7.—A boy of 12 years contracted gonorrhea from his nurse, which ran a severe course and two years later resulted in stricture of the anterior urethra. Internal urethrotomy was performed by a prominent specialist. Considerable inflammation followed the operation and a permanent **curvature of the penis** resulted. Without knowledge of any attempt at radical cure of such deformity Fuller undertook the following **operation**: The perineum was laid open just in front of the rectum to the scrotum; the urethra was cut obliquely in the bulbous region; the penile portion was dissected free and the organ was pulled up and bent back over the pubes and a perineal vesical drainage-tube was inserted; the penis was left bent back and secured by transverse strips of plaster. The wound healed well and the result is considered successful two years after the operation. [M.B.T.]

8.—The case of a man of 27 is reported who suffered from **exstrophy of the bladder** and epispadias; by the aid of a rubber receptacle the patient is able to catch the urine as it emerges from the ureters. He does not suffer actual pain and is able to undertake ordinary labor. [M.B.T.]

Wiener klinische Wochenschrift.

March 8, 1900. [13. Jahrg., No. 10.]

1. A Study of the Normal Relations of the Thoracic Aorta with the X-rays. G. HOLZKNECHT.
2. A Case of Congenital Hypertrophy of the Pylorus. FRANZ HANSY.
3. Biology of Malarial Parasites. XAVER LEWKOWICZ.

1.—An article dealing with the results of radiography of the aorta. The most valuable pictures are obtained by examination in the sagittal direction and in the direction from left posterior to right anterior. [D.R.]

2.—A boy of 11 came under observation with abdominal distention and a tumor in the region to the left and below the umbilicus. As he had no relatives his history was obtained with difficulty. The boy had a good appetite, but had been vomiting indigested food with increasing frequency after meals. As the tumor could be plainly felt, operation was thought to be indicated. On opening the abdomen a circular uniform **hypertrophy** of the **pylorus** was found; the tumor was about 7 cm. in length, 2½ cm. in thickness. **Gastroenterostomy** with Murphy's button was performed. There was considerable vomiting the first days after the operation. But the latter course was favorable and since the operation the boy does not vomit, and he has a good appetite and digests all sorts of food. [M.B.T.]

3.—The author believes that there is a malarial fever that has a 22-day interval (**febris vigesimotertiana**), which is connected with the time required for the development of the malarial crescents. He is of the opinion that there is only one malarial parasite with a polymorphic character. Regarding the source of infection, he believes that the infection is direct, *i. e.*, the same mosquito that has stung the malarial patient transmits the disease to a healthy individual. The material by which the disease is carried from one year to another is the malarial crescents of chronic malaria, particularly as they can survive through the winter. It is the blood from cases having these crescents that gives rise to tertian fever in others, possibly by direct conveyance through the mosquito, or after the crescents have passed through certain metamorphoses in the insect's body. It is probable that the malarial parasites can live in the winter only in the human body. If this is so, then the link between the malarial epidemics of one year and those of the succeeding year is constituted by the chronic cases that pass through the winter. This link can be broken by means of quinin. The object can be accomplished by examining the blood of suspected chronic cases, or by subjecting the entire population in a malarial district to quinin treatment for one or two weeks during the winter. [D.R.]

March 15, 1900. [13. Jahrg., No. 11.]

1. The So-called Pericarditic Pseudocirrhosis of the Liver. VICTOR EISENMENGER.
2. Hematopolypus and Hematometra in Consequence of Congenital Atresia of the Hymen. E. TOFF.
3. The Diagnosis of Diverticulum of the Esophagus. VICTOR BLUM.

1.—In 1896 Pick described as a new nosologic entity a condition characterized by symptoms resembling cirrhosis of the liver, but presenting as a pathologic basis chronic adhesive pericarditis. Eisenmenger disputes the existence of this so-called **pericarditic pseudocirrhosis**. Pick had maintained that the circulatory disturbances in the liver produced an overgrowth of connective tissue which by interfering with the portal circulation led to ascites. This the author contends is not proved. Passive congestion of the liver does not lead to genuine cirrhotic processes; the only hyperplasia of connective tissue that is found affects the walls of the central vein and is incapable of producing ascites. He admits, however, that in cases of adhesive pericarditis high degrees of ascites without edema of the legs can occur, and that if the pericarditis be latent the symptoms are suggestive of cirrhosis of the liver. But the cause is not an overgrowth of connective tissue the effect of stasis, as maintained by Pick, but it may be a variety of conditions, among others, torsion, compression, or angulation of the inferior vena cava by reason of an existing pleural exudate, or through pericardio-mediastinal adhesions; secondly, through localized periton-

itis at the transverse fissure of the liver. The fact that the condition occurs more frequently in young individuals is also important, inasmuch as in youth the vessels of the systemic circulation have a better tone and are not so liable to transudation processes as they are in advanced age, while the vessels of the peritoneum are not so much under the influence of the age factor. Since, therefore, there is no single anatomic basis for the condition described by Pick, and since the term pericarditic pseudocirrhosis implies a diagnostic error as regards the liver-condition, the term should be abandoned. [It seems to us that the author's points are not altogether well taken. While it may, of course, be improper to consider the condition described by Pick as a distinct disease entity, it is important to know that adherent pericardium frequently gives rise to ascites. The existence of ascites in a case without anything in the history pointing to cirrhosis of the liver, may suggest the presence of an adherent pericarditis. The latter is generally very difficult of diagnosis, and when not before the mind is apt to be overlooked. If, however, in every case of ascites of obscure origin the heart is carefully examined, it may be that we shall make a diagnosis of pericardial adhesions more frequently. D.R.]

3.—A man of 66 had been troubled by his food not passing into the stomach; it seemed to lodge in the region of the larynx and by pressing with his thumb in the region of the right side of the larynx he was able to force the food out with a readily heard gurgle and the food, without being changed, was returned to the mouth. Sometimes food which had been ingested 24 hours or more could be forced out in this way. On examination with a large esophageal sound an obstruction was encountered which could not be overcome, 23 cm. from the teeth. The sound could not be carried to the middle line; sometimes it was even possible to pass one sound into the stomach while another met the obstruction at the same region. The esophagoscopic tube was inserted, but only normal mucous membrane was found. A **diverticulum** of the **esophagus** was suspected and 50 cm. of a 5% bismuth mixture was given; at the same time a closed rubber tube was inserted in the stomach and filled with mercury. An x-ray photograph was then taken and it showed an oval-shaped shadow in the region described, to the left of the median line. Blum recommends this as a very satisfactory method of making the diagnosis of diverticulum of the esophagus. [M.B.T.]

March 22, 1900. [13. Jahrg., No. 12.]

1. Cirrhosis of the Liver. RICHARD KRATZ.
2. Some Results of the Determination of Blood-Pressure in the Insane. ALEXANDER PILCZ.

1.—Kratz defines **cirrhosis of the liver** as "a focal, localized, recurring, chronic process, with intercalated regeneration of the parenchyma." The process begins as small foci of degeneration at the periphery of the acini, and is followed, aside from a disintegration of the degenerated portions, by a regeneration. The latter occurs primarily at the periphery of the acini in the zones of the tangential distribution of the portal vessels; in part also as an interpolation of young elements between the cell columns. Such an alternating degeneration and regeneration of functional parenchyma leads gradually to a transformation of the normal acini and to a change in their form, the process affecting particularly the capillary distribution, and in that way the nutrition of the parenchyma. Later, the more deeply-seated portions of the parenchyma are also involved. Here the disintegration brings about a destruction of the intraacinous portions and to a more active regeneration of the tangential parenchyma. Gradually the process leads in different places to a complete destruction of the acini and of the newly-formed parenchyma. Eventually the reproductive power of the liver-cells becomes exhausted and degeneration predominates over regeneration, and goes on to progressive atrophy, which in turn leads to death directly, from loss of hepatic function, or the individual dies from some intercurrent disease. [The principal point of this somewhat obscure theory rests upon the enormous reproductive capacity of the liver-cells, which manifests itself very early in the disease. D.R.]

2.—Pilcz has examined the **blood-pressure** with Gärtner's tonometer in various forms of **insanity**. The normal pressure is from 105 to 130 mm. mercury. In **general**

paralysis the blood-pressure in the beginning is about normal; later it falls progressively, reaching in the terminal states a very low figure (50 to 80 mm.). When a remission occurs the fall in blood-pressure seems to become arrested. In **hebephrenia** the blood-examinations were unsatisfactory, different cases giving different results. In **melancholia** the blood-pressure was always high. In **circular insanity** the variations in pressure were parallel with the changes in the psychic state; in the melancholic phases the pressure was very high, in the maniacal low. In **epilepsy** the author was able to take the blood-pressure during the attack in only two cases. In one he found in the transition from the tonic to the clonic stage the pressure to be 220 mm., and in the other during the clonic stage 150 mm. In the postparoxysmal stupor the blood-pressure sank in the first to 80, and in the second to 70 mm. Fifteen minutes later it was 135 in the first, and five minutes after, 125 in the other. [D.R.]

March 29, 1900. [13. Jahrg., No. 13.]

1. A Case of Intraabdominal Torsion of the Mesentery. J. HOCHENEGG.
2. Löwit's Hämmamöben in the Blood of Leukemic Patients. WILHELM TÜRK.
5. The Second Pulmonary Sound. ADOLF HECHT.

1.—A man of 41 years was taken ill with abdominal distention, nausea, and vomiting; the next day there was some improvement, but the symptoms recurred and grew worse. The abdomen was opened and immediately a large amount of bloody fluid escaped. A bluish-black **tumor of the mesentery** the size of a man's head, with largely dilated veins, was discovered. This tumor was 3 times twisted on its pedicle. The pedicle was ligated and the mass was excised. An uneventful recovery followed. From an examination of the literature Hochenegg believes this case to be unique. [M.B.T.]

2.—Türk believes that the supposed protozoan of **leukemia** described by Löwit under the name of "Hämmamöba leukemia magna" is nothing more than artefacts composed of mastcell granulations. [D.R.]

3.—Hecht discusses the significance of the **second pulmonic sound** of the heart, and gives some results of comparative studies with the Bettelheim Gärtner **stethophonometer**. The character of the second sound is the best index of changes in the pressure in the smaller circulation. In myocarditis the sound is not so loud as in endocarditis. It is less loud in relative insufficiency of the mitral valve than in organic insufficiency. If in the case of the latter there is intense accentuation, there is probably also stenosis of the auriculoventricular orifice. If the right ventricle becomes weak and relative tricuspid insufficiency occurs, the accentuation disappears again. The occurrence of accentuation in aortic disease is indicative of relative mitral insufficiency. In aortic insufficiency judgment is difficult, on account of the disappearance of the second aortic sound, which is the standard of comparison. In nephritis the accentuation of the second pulmonic sound may be readily overlooked when the second aortic is metallic. Congenital pulmonary stenosis with persistence of the ductus Botalli is characterized by a loud second sound. Respiratory diseases, particularly those associated with destruction of the capillaries and chronic emphysema, lead to increased pressure in the pulmonary circulation. The accentuation may, however, be brought about by conditions of resonance, as a neighboring infiltrated portion of the lung, a cavity, a pneumothorax, or a dilated stomach. Certain conditions of gallop rhythm are also associated with increased pressure in the pulmonary circulation. The second pulmonic sound is accentuated at times in perityphlitis, even in the absence of tympany. The cardiac second sounds are loud in nervous affections of the heart, in Graves' disease, in febrile states, in anemia, and in chlorosis. Hecht has measured the relative intensity of the aortic and pulmonic second sounds with the stethophonometer, and finds that this instrument gives very good results. He found the second pulmonic sound a little louder than the second aortic. [D.R.]

April 5, 1900. [13. Jahrg., No. 14.]

1. Alexander Operation for Retrodisplacement of the Uterus. E. EHRENDORFER.

2. Further Investigations with Regard to the Germs of the Female Urethra. FERDINAND SCHENK and LOTHAR AUSTERLITZ.
3. A Reply to Pick's Article on Pseudocirrhosis of the Liver.
4. Hämamöben in the Blood of Leukemics. M. LÖWIT.

1.—Ehrendorfer gives a historical sketch of Alexander's operation and its modifications, and a detailed description of Bassini's modification as to the **closing of the inguinal canal**. The indications for this operation are a simple retrodisplacement, a movable uterus combined with a moderate vaginal prolapse. A fixed retroflexed uterus with great enlargement, apparent disease of the adnexa, and unusual relaxation of abdominal wall, are contraindications to this operation. The value of this procedure is that the uterus is brought in a natural manner into an almost normal position, better than by any other operative method, and the malposition is cured more quickly and permanently than by the pessary treatment. There is no artificial fixation of the uterus, its movement is very little interfered with and its function not at all, all disturbances of pregnancy and delivery being avoided. Ehrendorfer considers Bassini's method of closing the inguinal incision as a very valuable addition to the inguinal procedure, since it at the same time forms a certain preservative against inguinal hernia. He mentions the fact that Polk, Edebohl and Goldspohn, in more than 100 cases of Alexander's operation, did not lose a case, that Johnson out of 250 cases had only one death from sepsis, and the record of 320 cases collected in Boston shows no death. [W.K.]

2.—Schenk and Austerlitz, as the result of their examination of the **urethral germs**, conclude that the vestibule, as well as the urethra, rarely contains pathogenic germs, that in about half of the cases the urethra both in pregnancy and puerperium was free from germs; that in the other half the germs found were mostly saprophytes of different kinds, such as frequently appear in the vestibule; and that in only 2 out of 59 cases of normal female urethras, pathogenic microorganisms were found. [W.K.]

4.—Löwit contends that his **hemameba of leukemia** is not to be confounded with mastcell granulations, as maintained by Turk. [D.R.]

April 12, 1900. [13. Jahrg., No. 15.]

1. The Relation of Korsakoff's Psychosis to Polioencephalitis Acuta Hæmorrhagica Superior. A. ELZHOLZ.
2. Retrograde Incarceration. DOMINIK PUPOVAC.
3. Concerning the Article by Schenk and Austerlitz on the Germs of the Female Urethra. RUDOLPH SAVOR.

1.—A lengthy view of the relationship between **Korsakoff's psychosis** and **polioencephalitis acuta hæmorrhagica superior**. Korsakoff's psychosis is a peculiar mental disturbance accompanying various forms of polyneuritis, particularly the alcoholic form. It is also designated as cerebropathia psychica toxemica, and bears some analogy to the condition described by Wernicke under the cumbersome title of polioencephalitis acuta hæmorrhagica superior, the anatomic lesion of which is an inflammatory process, with hemorrhages, in the central gray matter surrounding the fourth ventricle, the aqueduct of Sylvius, and the third ventricle. [D.R.]

2.—A case of incarcerated **femoral hernia** is reported occurring in a man of 80. Operation was undertaken partly under local anesthesia. On opening the hernial sac it was found to contain the vermiform **appendix**, which was situated with its extremity toward the abdomen. Unfortunately the man was taken with pneumonia 10 days after the operation and this caused his death. In a second case a man of 46 entered the hospital with an incarcerated right inguinal hernia. Radical operation was undertaken and the sac was found to contain a portion of the mesentery the size of the thumb; the bloodvessels were much distended, and thrombosis had occurred; the free end of the mesentery was directed toward the abdomen. A good recovery followed the operation. [M.B.T.]

April 19, 1900. [13. Jahrg., No. 16.]

1. The Cause of Labor. JOSEF THENEN.
2. The Influence of Alcohol on the Elimination of Reducing Substances in the Urine. ADELBERT GREGOR.

1.—Thenen advances a theory to account for the phenoma causing the beginning of birth. He believes that when the ovum becomes attached to the mucous membrane, a physiologic connection is established between the mother and child which continues so long as the nourishment to the fetus suffices for its needs. The growth of the placenta is comparatively much greater than that of the fetus during the first weeks of pregnancy; but later the placenta grows much less rapidly, and after the thirty-sixth week ceases entirely. The placenta becoming loosened terminates the connection between the two organisms, and the beginning of labor pains is but the first effort of the uterus to resume its normal function by expelling the fetus or foreign body. [W.K.]

2.—The author's conclusion is that ingestion of alcohol increases the reducing power of urine. [D.R.]

April 26, 1900. [13. Jahrg., No. 17.]

1. Hereditary Syphilis. E. FINGER.
2. Carcinoma of the Intestine in Children. ZUPPINGER.

2.—A girl of 12 had been suffering for 3 months with attacks of colic and severe pain at defecation. Blood frequently appeared in the stools and the abdomen was tympanitic and distended. The condition gradually became worse, stupor developed and death eventually followed. At the necropsy an ulcerating carcinoma of the sigmoid flexure was found; there were metastases in the lymph-glands, liver, omentum and peritoneum. Histologic examination showed a typical cylindrical-celled carcinoma. Zuppinger has found references in literature to a number of cases of **intestinal carcinoma in children**. [M.B.T.]

Münchener medicinische Wochenschrift.

May 1, 1900. [47. Jahrg., No. 18.]

1. Asses' Milk a Means of Nourishment for Infants. H. v. RANKE.
2. The Dangers of Anesthesia with Ethyl Chlorid. GEORG LOTHEISSEN.
3. The Difference Between the Temperature of the Rectum and the Axillary Space, Particularly in Suppurative Appendicitis. SCHÜLE.
4. Two Cases of Congenital Microcephalus. GEORG MICHAELIS.
5. Muscle Power under Hot-Air Pressure. v. LIEBIG.
6. Subcutaneous Rupture of the Spleen. TH. COHN.
7. Hystereuryasis. DECKART.

1.—In three infants that at birth were decidedly underweight and that did not thrive on artificial food nor on the milk of a wetnurse, **asses' milk** brought about a rapid increase in weight and an improvement in health. von Ranke believes that this milk is very suitable for the first months of life. It is, however, expensive and not readily obtainable. [D.R.]

2.—Lotheissen says that statistics show that **ethyl chlorid** as a **general anesthetic** stands, as regards its mortality, next to chloroform; chloroform giving one death to 2,075, ethyl chlorid one death in 2,550. As a practical anesthetic for general narcosis, ethyl chlorid presents the advantages of causing a very rapid insensibility, with little discomfort to the patient; and also that the unpleasant after-effects are almost nothing, the patient awaking very rapidly and vomiting practically never occurs. In one case of death reported by Lotheissen, the patient, a large and muscular man, became suddenly very much cyanosed; respiration gradually ceased, though the pulse was still perceptible at the wrist, and in spite of restoratives death occurred. At the postmortem eccentric hypertrophy of the heart, with fatty degeneration of the heart-muscle, marked arterial sclerosis of the coronary arteries, and slight sclerosis of the aorta, were found. Also, the heart and vein were filled with fluid blood, and there was edema of the lungs. [G.B.W.]

3.—Schüle has made a series of comparative **temperature-measurements** to determine the difference in degree between that found in the **axilla** and that found in the **rectum**. His results show that the axillary temperature is always less than the rectal; the difference sometimes being only .1 of a degree, sometimes going so high as 1.5 degrees. The average of 162 measurements made on 16 nonfebrile

persons was .6 of a degree. In patients with fever the difference is somewhat less, the average being .4. [G.B.W.]

4.—Michaelis believes that **fetal malformations** in the form of abnormally small or irregularly developed skulls are generally due to some mechanical cause, usually resulting from the insufficiency of the amnion, and from the amniotic scars or folds acting as bands which press upon and prevent the normal growth of the fetus, the head and the extremities being the parts most frequently affected. He reports 2 cases, the details of which tend to confirm this view. He accepts as correct the opinion of Winckel, that careful observation and examination tend to show that *all* obstructed fetal growths are due to mechanical causes. [W.K.]

5.—In the pneumatic chamber, under increased atmospheric pressure, the muscles unfold a greater power than under ordinary pressure. [D.R.]

6.—Cohn reports 2 cases of **traumatic rupture of the spleen**. The first was that of a man, 23 years old, who fell, striking the left side of his abdomen on the edge of a chair. As abdominal hemorrhage was undoubtedly present, and the pulse was weak and thready, laparotomy was performed 9 hours after the accident. A large quantity of blood was removed from the abdominal cavity, the hemorrhage having come from a tear in the spleen. The spleen was extirpated and the abdominal wound closed. The patient died the second day after the operation, and the postmortem showed anemia and edema of the lungs. The second case was that of a girl, 17 years old, who fell down a cellar, striking against the left side; rupture of the spleen with internal hemorrhage, was diagnosed, but operation was delayed for 2 days. Then, as the anemia was becoming greater and the pulse weaker, laparotomy was performed. A clot of blood was removed from the abdominal cavity; and the spleen, which was torn in several places, was removed. The abdominal cavity was closed, except for a gauze drain; the patient recovered, and two months after the operation was in apparent perfect health, with no perceptible enlargement of the peripheral lymphatic glands. [G.B.W.]

May 8, 1900. [47. Jahrg., No. 19.]

1. The Results of Examination of the Ear with a Continuous Series of Tones. BEZOLD.
2. The Relation of Fat Necrosis to Diseases of the Pancreas. M. B. SCHMIDT.
3. The Treatment of Actinomycosis. ALEXANDER STRUBELL.
4. Aortic Aneurysm. GISEBERT KIRCHGAESSER.
5. Primary Endothelial Carcinoma of the Pleura. A. SCHULZE-VELLINGHAUSEN.
6. The Treatment of Hereditary Luxation of the Shoulder. CARL GROTHE.
7. A New Improved Respirator. CARL KLEIN.

2.—Schmidt reports a case of **fat necrosis** in a man of 43 years, who had been crushed between the bumpers of 2 railway cars, and who died 58 hours after the accident with symptoms of intestinal obstruction. There was very little hemorrhage, despite the severe injury which the pancreas had sustained. The organ was torn vertically to a depth of from 1 to 2 cm. The author believes that the fat necrosis was due to the escape of pancreatic secretion. [D.R.]

3.—Strubell reports a case of **actinomycosis** of the face which was **cured by hot compresses** (temperature, 63° C. or 145° F.) and **carbolic acid injections**. The first dose of the latter was 12 cc. of a 3% solution. The compresses were continuously applied day and night, being changed every 10 minutes. [D.R.]

4.—The fluoroscope had shown a pulsating tumor in the neighborhood of the heart, and a diagnosis of aortic aneurysm was made. Autopsy showed **adhesion of the aorta and esophagus**, in consequence of a carcinoma starting at the cardia. [D.R.]

5.—A **primary endothelioma of the pleura** was found in a man 43 years of age. There had been a hemorrhagic pleural effusion, in the sediment of which, in addition to large lymphoid cells, rounded and polymorphic mononuclear and multinuclear cells have been found. The author points out the importance of an irregularity in the line of dulness in cases of tumor of the pleura. [D.R.]

6.—Grothe says that in cases of **habitual luxation of the shoulder-joint** the operative narrowing of the cap-

sule is a true radical procedure. The open method of incising the capsule before inserting the sutures is preferable to simply folding the loosened ligament on itself and possesses the advantages of allowing inspection of the joint whereby pathological conditions may be recognized and foreign bodies removed. He reports the case of a man, 27 years of age, who had a shoulder which became dislocated on the slightest provocation. He was operated on by the open method. Some 6 weeks after the operation the patient could move the arm freely in all directions without pain and there was no redislocation of the shoulder within the half-year following. [G.B.W.]

7.—Klein describes an improved and inexpensive respirator. [D.R.]

May 15, 1900. [47. Jahrg., No. 20.]

1. Immunity. v. DUNGERN.
2. Leukocytes and Bacterial Spores. NAKANISHI.
3. Cerebral and Cardiac Asthma. O. ROSENBAACH.
4. Polyclinics for Tuberculosis. B. FRAENKEL.
5. A Case of Aneurysm of the Internal Carotid Artery Following Tonsillar Abscess; Recovery after Ligation of the Common Carotid. P. WULFF.
6. Inflammation and Adhesion of Serous Membranes. G. MUSCATELLO.
7. Tuberculosis of the Lymph Glands. H. M. HIJMAN.
8. Results of Testing Hearing with Continuous Tone Series. BEZOLD.

1.—The lateral chain theory of Ehrlich receives strong support from the experiments of von Dungern on the **hemolytic action of blood-serum**. In order that the blood-serum of one animal should dissolve the red blood-corpuscles of another species, the blood must contain an immunkörper, which is specific, and a complement, which is nonspecific and is present in normal serum. The complement is the hemolytic agent and takes hold on the corpuscles through the medium of the immunkörper. The immunkörper and the complement are entirely independent of each other. The complement is found in the blood-plasma. Its origin is probably from cells, although probably not in any large quantity from phagocytes. In some forms of immunity the phagocytes may be largely concerned in the formation of the immunkörper; in others, they play only a subordinate role. [D.R.]

2.—The author has found by means of his vital staining method that the **leukocytes** can preserve their life for as long as from 10 days to 4 weeks after withdrawal from the body. By means of the stain he has also been able to study the formation of **bacterial spores**. Spore-formation and germination were found to proceed in the following steps: (1) Separation of the daughter nuclei towards the poles of the elongated bacterial cell; (2) cessation of cell-division; (3) clarification of the protoplasm in the spore half and concentration of the chromophilic substance about the nucleus; (4) the appearance of a membrane about the chromatin body, the gradual loss of staining properties, and the appearance of a fat-like refrangibility; (5) growth of the spore and consequent displacement of the vegetative half; (6) loss of the property of staining, both in the spore and in the protoplasm of the vegetative portion; (7) disintegration of the membrane and of the protoplasm, with the exception of the parts surrounding the spore, and consequent liberation of the spore; (8) swelling of the spore, loss of the refractive power, and visibility of the nucleus or nuclei of the spore; (9) bursting of the spore membrane and exit of the young bacillus. [D.R.]

4.—Fraenkel makes an eloquent plea for the establishment of **special dispensaries for tuberculous cases**. Such institutions would facilitate the early diagnosis of the disease, would strengthen the sanatorium movement by affording better means of selecting the cases, would be useful in spreading the doctrine of prophylaxis, and finally, would afford means of instruction. [D.R.]

5.—Wulff reports an interesting case of **aneurysm of the internal carotid** following an abscess of the tonsil. A girl, 8 years old, was brought to the hospital complaining of sore throat and dysphagia. In the left faucial region the tonsil and wall of the pharynx were markedly protruded which with the enlargement of the submaxillary glands on the left side gave a picture closely resembling postpharyngeal

abscess. But the tumor possessed a marked expansile pulsation, and aspiration brought away nothing except pure blood, so that the diagnosis of aneurysm was made. The history of the case was that during the opening of a tonsillar abscess the carotid artery was wounded causing the loss of a half a liter or more blood, the hemorrhage being controlled after the patient had fainted. The child recovered and the aneurysm gradually developed. Digital compression was tried for a while, but was given up because of the possibility of bursting the sac. The common carotid was then ligated just below its bifurcation. The wound healed by first intention and the pulsation of the aneurysm ceased and did not return. The clot in the sac, however, suppurated and required opening, and later a putrid discharge came from the left ear which, however, finally disappeared. The throat returned to its normal size and when last seen the patient was well in every respect. [G.B.W.]

6.—Muscatello makes some comments upon Heinz's article on the **inflammation of serous surfaces**. (See PHILADELPHIA MEDICAL JOURNAL, June 2, 1900, p. 1232.) He claims that in order for adhesion between two serous surfaces to occur the loss of endothelium is not a necessity. All that is necessary is the formation of a fibrinous exudate. [D.R.]

7.—Contrary to the view enunciated by von Noorden (see PHILADELPHIA MEDICAL JOURNAL, May 19, 1900, p. 1132), the author holds that it is **better not to remove tuberculous glands** unless certain conditions peremptorily demand operation. [D.R.]

Deutsche medicinische Wochenschrift.

May 24, 1900. [26. Jahrg., No. 21.]

1. Kraurosis of the Vulva. JUNG.
2. A Case of Glanders. ZAUDY.
3. The Use of Aspirin. HERMAN LIESAU.
4. The Pathology of the Blood. LIPOWSKI.
5. Gastroenterostomy and Gastrostomy. O. WITZEL and C. HOFMANN.

1.—Jung reports 4 cases of **kraurosis vulvae** observed by him as assistant at Martin's clinic, and also reviews the literature on the subject. The first case was operated upon several times, but the symptoms constantly recurred, and finally the tumor became inoperable. The other 3 cases had been successfully operated upon and there was no recurrence of the trouble at the date of writing. [W.K.]

2.—The man was admitted in a condition in general resembling typhoid fever. He had, however, a boggy swelling about the left temple, and there were small nodules on the left arm which were too large for typhoid spots. The swelling of the temple increased, the number of nodules increased, nasal breathing was obstructed, he grew worse, and finally died in a condition which appeared clinically to be one of septic intoxication. The postmortem examination confirmed the clinical diagnosis of **glanders**. The mucous membrane of the nasal cavities were found covered with ulcers, and there were numerous yellow pustules along the septum and in the muscles. Lesions were also found in the tonsils, larynx, lungs, dura, skin, muscular system, and in the periosteum. Bacteriological examination showed the presence of staphylococci, and a bacillus having the characteristics of the glanders-bacillus. [D.L.E.]

3.—Liesau reports his results from the use of **aspirin**, the drug having been tried in 40 cases. It was given in acute and chronic rheumatism, torticollis, sciatica, exudative pleurisy, pericarditis, in rheumatic pains, and in various other conditions. It was found to be very much better borne than the salicylates, and in only one case was there any evidence of intoxication, which in this instance consisted of ringing in the ears after doses of 1 gram 3 times a day. The same patient when taking salicylates had severe disturbance of the stomach, besides a buzzing in the ears. The drug had a marked diaphoretic effect; its antineuralgic action was pronounced, and it also was effective in reducing fever. In a note to the report he states that 40 further cases have been treated with aspirin with the same satisfactory results, and in only one was there ringing in the ears; in one other case there was tenesmus of the bladder. [D.L.E.]

4.—Lipowski first directs attention to the fact that the diagnosis of **pernicious anemia** is usually based upon the

fact that a severe anemia finally leads to death. At one time the presence of microcytes, macrocytes, and poikilocytes was considered distinctive, but this time is past. At the present time the appearance of macroblasts is considered the most important sign in the blood, but these are not infrequently absent. He describes the case of a woman of 31 who was admitted with very severe anemia which finally caused death, and with hemorrhages from the mucous membranes evidently the result of some poison the nature of which could not be determined. The blood, in spite of the profound anemia, showed no nucleated blood-corpuscles, which Lipowski attributes to the fact that the bone-marrow was not able to react to the stimulus. This supposition was made very probable by observing that 90% of the white cells were lymphocytes, and since the bone-marrow produces the neutrophile corpuscles it appeared evident that the function of the bone-marrow was severely interfered with. He puts the question as to whether this case can be considered one of pernicious anemia. He also directs attention to the fact that evidences of pernicious anemia may be present in the blood-count and in the general appearance of the case without there being present histologic signs of pernicious anemia. In the case which he reports there was constant decrease of the hemoglobin and red-corpuscles until the former reached 10% and the red cells reached 800,000. There were retinal changes, hemorrhages into the skin, irregular temperature-changes, but only shortly before death could he find microcytes; while polychromatic normoblasts and macroblasts were not present at any time. It was certainly a case of pernicious anemia with prolonged absence of the histologic evidences of this disease. In leukemia the blood-condition is usually distinctive, certainly much more so than in any other condition, but he notes a case of carcinoma of the intestine in which there was pronounced reduction of the hemoglobin, with an increase in the white cells as compared with the red of 1 to 18, and with numerous nucleated red cells and some myelocytes. Had a tumor not been found palpable in this case he considers that it would have been impossible to diagnose the case as anything but leukemia. He directs attention to Northagel's case in which actual leukemia was caused by metastasis in the bone-marrow of a lymphosarcoma. He also describes the case of a cook whose blood presented moderate reduction of the hemoglobin and red cells, with an increase of the leukocytes to 1 to 27, the increase affecting exclusively the polymorphonuclear neutrophiles; absolutely no mononuclear or eosinophile cells were found. A carcinoma of the liver was determined to be present. A few large mononuclear cells appeared about 10 days before death, but no lymphocytes were found until very shortly before death and then only in small numbers, and throughout the whole course of the case not a single eosinophile was found. The red cells during this period showed practically no changes in appearance and form, and no nucleated cells were present. The condition must be attributed to the chemotactic effect upon the neutrophile cells, but the absence of the other forms of leukocytes cannot be explained with our present knowledge. [D.L.E.]

5.—In concluding their article on **gastroenterostomy**, Witzel and Hoffmann report 7 cases, and as a result of their experience they claim the following advantages for the external method: First, It is possible to inflate the efferent loop of the intestine immediately after the operation by means of the tube, thus guaranteeing the proper flow of gall and pancreatic fluid on the first day; second, adhesions forming while the intestines are held in a good position by the tube, provide for a proper future outflow of the gastric contents, so far as direction is concerned; third, direct feeding can be easily accomplished by introducing proper food through the tube. [G.B.W.]

Deutsches Archiv für klinische Medicin.

December 13, 1899. [Vol. 66.]

Festschrift to Herrn Geheimrath Dr. Hugo von Ziemssen.

1. The Life and Work of Hugo von Ziemssen. A. SCHMIDT.
2. Practical Experience in the Treatment of Typhoid Fever with Cold Water. CH. BÄUMLER.
3. The Local Treatment of Laryngeal Tuberculosis. HELLER.
4. Compensatory Processes in Disease. LEUBE.

5. A Case of Acute Hemorrhagic Polymyositis. JOS. BAUER.
6. The Mechanism of the Movements of the Blood. V. HOSSLIN.
7. The Casuistry of Extrauterine Pregnancy. MAX STUMPF.
8. The Surgical Treatment of Intestinal Obstruction. A. SCHREIBER.
9. Contribution to the Knowledge of Lupus Erythematosus. KARL KOPP.
10. The Causal Relation of Heart-Disease to Epilepsy. STINTZIG.
11. A New Treatment for Thomsen's Disease. HERMANN GESSLER.
12. The Ear-Diseases of Diabetes. H. EULENSTEIN.
13. The Prognosis and Therapy of Cerebral Syphilis. RUDOLF V. HOSSLIN.
14. The General Sanatorium Planegg-Krailling, with an Account the First Month of its Activity. FERDINAND MAY.
15. The Simultaneous Occurrence of Brachy- and Hyperphalangism in the Hand. (With Progressive Extension of this Partial Degeneration in the Descendants.) H. RIEDER.
16. A Model of the Circulation for Assisting Study and Instruction. MORITZ.
17. Studies of Repair in Subcutaneous Fractures of the Long Bones; the Behavior of the Cartilage in the Formation of Callus. P. ZIEGLER.
18. Urethritis Non-gonorrhoeica; a Critical Study. R. BARLOW.
19. The So-called Erysipelas of the Larynx. GEORGE SITTMANN.
20. A Case of Fatal Opium Poisoning. EMIL BIHLER.
21. The Origin of Neurasthenia. L. HOFMAYR.
22. Contribution to the Knowledge of Intermittent Claudication. KARL GRASSMANN.
23. The Psychical Disturbances of Chronic Progressive Chorea. KATTWINKEL.
24. The Diagnosis of Unilateral Deafness. FRIEDRICH WANER.
25. A Contribution to the Casuistry and Therapeutics of Scleroderma. LUDWIG LINDEMANN.
26. Contribution to the Knowledge of the Excretion of Acetone. FRITZ VOIT.
27. Peptic Ulcer of the Esophagus. ADOLPH GLOCKNER.
28. The Effect of Astringents Upon Resorption in the Small Intestine. ADOLF GEBHART.
29. The Pathogenesis of Overexertion of the Heart; a Critical Study. WOLFHÜGEL.
30. The Frequency of the Occurrence of Urethral Shreds. BRAUSER.

2.—Bäumler contributes a valuable article upon the treatment of **typhoid fever** with cold water. In explaining its action he abandons the idea that it is merely the antipyretic effect that is advantageous, and is inclined to accept either some tonic influence, some stimulation of the circulation associated with increased activity of the kidneys, or some influence upon the nervous system; the latter particularly on account of the absence of severe nervous symptoms usually observed in the disease. The **statistical material** extends over the period from October, 1876, to September, 1899. Altogether there were 10,019 cases, with 95 deaths, a mortality of 9.32%. Of the fatal cases, however, 10 were moribund when brought to the hospital, and 5 died some months after apparent recovery, from the disease of tuberculosis. If these are excluded the total mortality was 7.9%, not differing greatly from that obtained by others in other parts of the world. Among the cases of death were 18 cases of perforation, 7 of intestinal hemorrhage, and 2 of other intestinal disturbances, 19 of bronchopneumonia, 6 of croupous pneumonia, and 1 of hemoptysis. There were 17 cases of sepsis, 2 of diphtheria, 9 of heart-failure, 2 of embolism into the pulmonary artery, and 2 of endocarditis. In addition, 5 patients died with pronounced nervous symptoms and 5 of tuberculosis. Deaths due to invasion of the respiratory system are of course due to inspiration of infectious material. This is greatly favored by dry conditions of the patients' mouths. Bäumler is in the habit of preventing this as much as possible by placing a few layers of gauze moistened with glycerin water over the face, or by allowing a steam spray to play in the immediate neighborhood of the

patient. There are a number of interesting clinical histories of patients in whom death was due to cardiac disturbance, and Bäumler notes that high frequency of the pulse may occur in the very beginning in young persons suffering from pulmonary disturbance, anemia, or obesity. Regarding the treatment, the patients are given a bath every 2 hours when the temperature is 39.5° in the axilla. The temperature of the bath is first 28° , then 24° or 20° . The exact temperature, however, depends largely upon the individuals. Alcohol, usually in the form of red wine containing 6 to 9%, is given throughout the course of the disease in quantities of one-half to three-quarter liters daily. In severe cases a little ammonia may be added to this. Among the cardiac tonics are camphor, ammonia, and, in very severe cases, musk. Bäumler is liberal in his nourishment, giving in general milk, but when the patient objects to this, coffee, cocoa, soup with egg, beef-tea, and sometimes expressed meat-juice. The patients are always allowed to have as much cold water as they will take. In conclusion he believes that the cold-water treatment has a prophylactic value, prevents weakness of the heart, the paralysis of the central nervous system, and probably protects the tissues by reducing the fever. The chief value of the treatment is probably the prevention of complicating infections. It is therefore important to commence it as early as possible. [J.S.]

3.—Heller believes that the following conditions are essential for any method designed to **cure or assist tuberculosis**. It must not be injurious, it must aid the patient, it must be as simple as possible and act upon some rational basis. For tuberculous ulceration of the larynx, or in fact for tuberculous ulceration anywhere, the first essential is cleanliness. This may best be obtained in the larynx by careful lavage, which may be accomplished with warm solutions of sodium chlorid played upon the glottis or into the larynx itself through a small tube that is preferably led through the nose. This acts in various ways. It moistens the secretion, separates it from the mucous membrane, and gives rise to sufficient irritation of the upper air-passages to produce vigorous cleansing coughing. He quotes as an illustration the history of one of his cases. He concludes with certain reflections upon the treatment of pulmonary conditions, believing that even for improvement it is essential that the purulent softened lung-tissue must be eliminated as thoroughly as possible, and must not be inhaled further into the lung either as a result of treatment or of forced inspiration. In fact it is essential that the disease-element and its products should be eliminated by the route by which they entered, that is, by the air-passages. [J.S.]

4.—Leube, in a thoughtful and valuable paper, calls attention to the various methods by which **certain portions of the body can in some way counteract the effects of disease in other parts**. He recognizes three methods by which this can be explained: (1) Supposing an organ to be partially diseased, the parts remaining healthy act with increased vigor, and therefore accomplish by themselves the functions of the whole; (2) by the development of activity in organs whose functions are approximately the same as that diseased; (3) by the increased activity in certain organs that remain healthy, but which have not functions similar to that diseased. Regarding the first type, he calls attention particularly to such a condition as hypertrophy of the heart-muscle or of the muscle of the gastrointestinal tract as a result of increased work. For the second there are quite a number of examples, thus—the skin under certain circumstances may assume the functions of the kidney, and it may even be desirable to increase its activity by drugs or other measures. Leube, however, calls attention to the danger of aiding diaphoresis in cases of general anasarca for fear of concentrating the fluid that remains in the skin, and therefore the amount of the deleterious substances that it contains. On the other hand, when there is no edema of the skin, active diaphoresis is indicated. Another example is the capacity of the stomach and intestinal tract to act reciprocally for each other. Thus, the functions of the stomach can be destroyed by the absence of sodium chlorid from the food, and yet proteids are digested; or the stomach may be removed, or, as a result of disease, have absolutely no normal secretion. Another example is the hypertrophy of certain blood-building organs in cases of anemia, such as the spleen, bone-marrow, etc. As examples of the third type he instances the increased activity of the eliminative organs, such

as the skin and kidneys in cases of collections of fluid in the pleural or peritoneal cavities. The elimination of bacteria by these organs. Leube, as a result of a case occurring under his observation in which the patient was relieved of a considerable ascites by a sharp attack of salivation, has endeavored to study the effects of ptyalism upon various forms of exudates. He usually employed for this purpose pilocarpin and found that it is often of considerable value. [J.S.]

5.—Bauer reports a case of **acute hemorrhagic polymyositis** occurring in a man 39 years of age which commenced with severe pains in the muscles of both legs. Subsequently, the calves became swollen; there was loss of appetite, and more or less insomnia. The spleen and liver were slightly enlarged, the heart-tones weak, and there was some swelling of the inguinal and cervical glands. The temperature was very slightly above normal, not exceeding $98\frac{1}{2}^{\circ}$. Other muscles became swollen, the pain was excessive and narcotics failed to give relief. Finally, about nine weeks after the disease commenced, the patient died quietly. At the autopsy the spleen and liver were found enlarged, the former was soft, the kidneys showed the changes of acute glomerular nephritis. Microscopically, the muscle-fibers showed more or less degenerative change, increase in the number of nuclei, and interstitial hemorrhages. There was also extensive round-cell infiltration in the muscles. Pure cultures of the *Staphylococcus pyogenes aureus* were obtained. [J.S.]

6.—v. Hosslin has undertaken to determine some of the **phenomena of the circulation** by application of certain theoretic formula based upon the data obtained by various experiments. He starts out with the assumption that in animals with similar internal organization, the mean amount of oxygenation of the blood in a unit of time is in direct proportion to the area of the cross-section of the mass of the body, that is to say, the relation may be expressed by taking the cube root of the square of the body weight; thus, as an example, a mouse will employ proportionately 29 times as much oxygen as a horse that weighs 24,000 times as much as it does. Of course, this implies that the relative proportions in the amount of blood expelled from the heart in a given unit of time is the same. In small animals, however, the pulse-rate is very much more rapid. Therefore, to accomplish a single contraction it is not necessary for the heart of the animal to be proportionately as large as is the heart of one of the larger animals. The blood-pressure is after certain modifications proportional to the mean body-weight. v. Hosslin has undertaken to make careful measurements of the size, length, and number of the capillaries in the muscles of various animals. The vascular system was injected with gelatin and then allowed to remain open for some time in order that the capillaries should return to their normal size. These injected capillaries then were carefully measured, and it was found that in all cases the diameter corresponded closely to that of the diameter of the red blood-corpuscle of the animal. The length of the capillaries was difficult to determine because it depended entirely upon the state of contraction of the muscle in which they were found. The unity of measurement adopted, therefore, was the transverse striation in the muscle-fiber, and as long as this exceeded 1.8 there was no tortuosity of the fiber. Very numerous observations showed that the proportion of the capillaries depended upon the mean amount of work performed by the muscle concerned. In similar muscles of different animals the length of the capillaries depended upon the size of the animal. In different muscles of the same animals it depended upon the amount of work performed. The arrangement of the capillaries was curiously similar in all the animals examined. v. Hosslin then enters upon a series of theoretical considerations concerning which we must refer the reader to the original. He criticises the results obtained by Zuntz and Tigerstedt who attempted to determine the amount of work performed by the heart in a second of time, claiming that a simple calculation will show that these results are very much too low. His own method is to determine the amount of oxygen used in the course of a day by the animal, the amount of blood which must be sent through the lungs in order to absorb this quantity; then, knowing the pulse-rate, it is easy to calculate the amount of blood drawn out in a second of time. Thus, a man weighing 64 kilograms uses 720 grams of oxygen in a day, that is, 0.5 of a gram in a minute, and in one contraction of the heart .0007 grams. This requires 9.1 grams of hemoglobin or 76

ccm. of blood. Of course the quantity of blood thrown out in a given period of time varies very considerably, depending upon the amount of work that is required. [J.S.]

7.—Stumpf reports two cases of **extrauterine pregnancy**, the first occurring in a woman, 35 years of age, who was brought to the clinic on account of irregular but persistent metrorrhagia. Examination under ether showed slight enlargement of the uterus and a tumor in the posterior vault of the vagina on the left side, apparently about the size of an egg. Nine days later, a second examination showed that the tumor was considerably larger, and a diagnosis of extrauterine pregnancy was made. The tumor was punctured and a small quantity of morphia injected. The symptoms rapidly improved. The second patient, a woman of 34, had profound menstruation and severe vomiting. Finally, fetal movements were felt as far upwards as the border of the ribs. The patient was profoundly anemic. There was a large tumor in the abdomen, somewhat irregular, and in part fluctuating. There were no fetal heart-sounds. The uterus was distinct from the tumor. A median incision was made and the sac found just beneath the peritoneum filled with offensive, gangrenous material. The patient recovered. In discussing these cases, Stumpf calls attention to the fact that if after repeated examination the tumor increases steadily in size, it is to be assumed that the embryo is still living. He advises treatment with morphia injection, and believes that in early cases of ectopic gestation, it is a desirable procedure, particularly when it can be performed through the vagina. [J.S.]

8.—Schreiber contributes an excellent discussion of the **treatment of obstruction in the intestinal tract**. Discussing the possibility of cure without surgical intervention, he states that the fact, apparently demonstrated by statistics, that one-third of the cases recover as a result of internal treatment, is likely to lead to some disastrous results. It is easy to understand how the neuropathic forms recover, but in those cases in which there is distinct mechanical hindrance that can only be relieved by the knife, an operation is indispensable. It is astonishing to note the number of cases that actually die. Statistics apparently show that at least 4,000 deaths occur in Germany in a year from this cause alone. At any rate, under the most favorable conditions at least two-thirds of the cases depend exclusively upon surgical treatment. Schreiber recognizes 3 forms of this condition—(1) acute strangulation; (2) obturation; and (3) paralysis, such as occurs in peritonitis. Strangulation is characterized by sudden development of severe pain usually after violent exertion. The patient is depressed, flatus ceases to be discharged, the pulse is small and frequent, and collapse rapidly develops. The coil of intestine that is obstructed rapidly becomes distended as a result of the decomposition of its contents, and occasionally there is an effusion of liquid sufficiently large to be recognized by palpation. So long as the individual coils can be percussed, complete paralysis of the wall of the muscle does not occur. The introduction of the entire hand into the rectum is to be deprecated. In obturation, the intense initial symptoms are usually absent, the coils of intestines are distended and show pronounced peristaltic contractions. These contractions often occur in separate attacks accompanied by pain. Often in these cases it is possible to distinguish the presence of the tumor. In the paralytic form of absorption, the enormous distention of the abdomen, the absence of any form of peristalsis, the collapse of the patient, are sufficient to determine the diagnosis. Schreiber then goes on to describe the various conditions that give rise to these different forms. The commonest cause of obstruction is the encapsulation or strangulation of a hernia. The most interesting cases are occasioned by the fact that small loops are sometimes obstructed, although the great mass of the hernia remains free. He reports a number of cases with the results of operation. Another cause of peritoneal adhesion is pseudo-ligamentous bands. In some cases these may be due to tuberculosis, to pelvic inflammation, or to abdominal tumors, and cases are described illustrative of some of these conditions. Meckel's diverticulum sometimes is the cause. Another group of causes is due to the twisting of the intestines upon the axis, that is volvulus. The majority of these cases occur in the sigmoid flexure, 45 of the 76 collected by Leichtenstern. Among the foreign bodies causing the obturation are intestinal stones, and one curious case in which the patient was in the habit of

swallowing pebbles for the purpose of winning bets and from whom 403 stones weighing altogether 2,200 grams were removed. Gallstones rarely produce this condition. The commonest form of the paralytic type is peritonitis, and this is usually due to inflammation around the appendix or cecum, of which a number of cases are reported. Finally, Schreiber discusses the neurotic form of ileus, of which the most important characteristic is the slight disturbance of the general condition. Among the mechanical conditions that can give rise to it is twisting of an ovarian cyst upon its pedicle. An interesting case of this nature is described. The remainder of the paper is concerned with the technic of the operation and discusses the methods suggested by various authors and the various complications and difficulties that may occur in the course of treatment. Unfortunately, it is impossible in a brief abstract to mention all the interesting points to which the author refers. [J.S.]

9.—Kopp believes that the evidence upon the question of the **relation of lupus erythematosus to tuberculosis** may be grouped under five heads: First, clinical; second, histological; third, the results of inoculation; fourth, of autopsies; and, fifth, the effect of treatment. It is unquestionable that many cases of lupus erythematosus have or develop tuberculosis. This may be explained in part by the great frequency of tuberculosis; second, that the patients suffering from this disease are apt to remain secluded, which is usually a powerful predisposing factor. With the exception of two authors, none has found the histological characteristics of tuberculosis in the excised tissue, that is—neither tubercle-bacilli nor giant-cells. Inoculation experiments have been entirely negative. The one positive case of Leloir was regarded by that author as being really a case of lupus vulgaris. In many cases that come to autopsy, tuberculosis is found in the internal organs, but this is no more significant than its clinical demonstrations. Finally, treatment seems to be equally futile as for lupus vulgaris. He reports 7 cases that bear upon this question. The first, a man with a somewhat atypical eruption, died 22 years later, and at the autopsy not the least trace of tuberculosis was found in any of the organs. The second, a young woman of 23, developed also an atypical eruption which was, however, examined by numerous dermatologists who agreed with Kopp. She was weak, had frequent attacks of apical catarrh, and died of pulmonary tuberculosis. The third case, a woman of 43, had suffered some years previously from tuberculous peritonitis. The eruption was characteristic. The fourth case, a woman, suffered for years with characteristic eruption on the face, and at the autopsy tuberculosis of the bronchial lymph-glands was discovered. The fifth case, after extensive scarification of the sores, developed symptoms of tuberculous meningitis from which he recovered. The sixth patient recovered after prolonged treatment. No trace of tuberculosis could be found in the internal organs. The seventh case, a woman who had nursed her husband who died of pulmonary tuberculosis, developed the eruption, but had herself no symptoms of tuberculous infection. Kopp, therefore, concludes that there is no evidence to show that lupus erythematosus is associated etiologically with tuberculosis. [J.S.]

10.—Stintzig reports 2 interesting cases of **epilepsy associated with heart-disease**. The first was in a girl of 23 who was under observation for 7 years until her death. Five years before admission to the hospital, she had been run over by a wagon and had the left arm broken. The wheel also passed over the breast, and from this time she suffered from palpitation of the heart and dyspnea. Some time after this, she began to have typical epileptic attacks. Under bromids, these diminished somewhat in frequency. Later the patient developed typical angina pectoris, and subsequently died as the result of some form of acute infection. At the autopsy the brain was normal, but there was extreme mitral and tricuspid stenosis. The second patient, a man of 32, had had epileptic attacks from his twenty-second year. When brought to the hospital, there were signs of tuberculosis of the lung, and a valvular lesion of the heart. On one occasion, when he left the hospital, he became profoundly intoxicated and died the next morning. At the autopsy the brain was normal, but there was marked mitral stenosis. Stintzig then commenced a long discussion of the possible relation of heart-disease to epilepsy. It is possible that under certain circumstances, the two diseases may be produced by the same cause, as for example, in cases of syphilis

or exophthalmic goiter. This, however, must be exceedingly uncommon. It is hardly likely that aside from acute dilation, the epileptic attack can affect the cardiac condition. On the other hand, it is possible that heart-disease might tend to develop epilepsy in a person already predisposed. Under these circumstances, it is necessary to prove that the heart-disease is present before the epileptic attacks developed, and other exciting causes must be excluded. As, however, the coincidence of the two conditions is very unusual, and as no improvement is usually produced in the epileptic attacks by treatment of the cardiac condition, it is not unlikely that the simultaneous occurrence of the two diseases is purely accidental. Of course, it is possible under certain circumstances that the epileptic attacks occur only as the result of the development of the cardiac lesion. Curiously enough, in spite of the violence of the epileptic attacks, they do not appear to influence unfavorably the presence of a severe lesion, such as was present in the first case. It appears that in certain cases a peculiar modification of the epileptic attack is produced by the heart-lesion, and they may sometimes be replaced by angina pectoris. [J.S.]

11.—Gessler, who is convinced that the **initial lesion in myotonia congenita** is really some alteration in the peripheral termination of the motor nerves, that is in the muscle-plates, and is associated with muscular hypertrophy, has reached the conclusion that some lesion to the nerve that would diminish its functional activity would probably cure the condition. Therefore, upon theoretical grounds, it occurred to him that stretching or even slight compression of the nerve might be of benefit. He reports a case, that of an apprentice, 20 years of age, who apparently from birth had noticed a curious loss of power in the limbs after a period of prolonged rest. If then he attempted any movement, the limb would become powerless and rigid, and he would often fall to the ground. During movement, force and flexibility gradually returned. All the muscles of the body were remarkably hypertrophied. The characteristic myotonic reaction was present. The first effort to apply novel therapeutics was made by simply over-stretching the limbs at the hips, keeping the knees straight. The patient was anesthetized and first one and then the other foot brought to a position behind the ear and kept there for about five minutes. No evil result followed. The myotonic reaction disappeared in the muscle of the calf, and the muscular movements were performed in a perfectly normal manner. Later, incision followed by stretching of the crural nerve, was performed with equally good results. About six months later the symptoms returned partially, and preparations are now being made for more complete operation. [J.S.]

12.—Eulenstein has collected all the recorded cases of **ear disease** occurring in patients suffering from **diabetes**, and reports 4 new cases, 3 observed by Körner and 1 by himself. The latter occurred in a man, 52 years of age; the others had acute purulent otitis media which was cured by paracentesis. Altogether there were 50 cases; 45 of these acute or subacute, 3 chronic, and in 2 the character is not given. In 22 cases the mastoid process was not involved. In one interesting case the patient presented all the symptoms of diabetic coma, but was rapidly cured by the evacuation of the exudate of the middle ear. The characteristic of the otitis of diabetes has always been supposed to be the rapid carious degeneration of the mastoid bone. Of course, as this is usually associated with very vascular granulations, hemorrhage is not uncommon, but cannot be considered as specific. Eulenstein, therefore, expresses himself as opposed to the view that there is a characteristic form of ear-disease for diabetes, for those in which the course is more rapid are merely the result of the weakened condition of the patient. The existence of diabetes cannot be regarded as in any sense a contraindication to operation. [J.S.]

13.—v. Hösslin reports 11 interesting cases of **brain-syphilis with the treatment** and its results. In nearly all of them there was a clear history, and it was remarkable what a large proportion of the cases had received thorough treatment. In 4 no treatment was employed, in 2 it was unknown or part treatment had been employed. In all the rest, inunction cures had been practised, often several times. Two of the patients died, 1 was improved, and all the rest recovered completely. The first patient, a man of 35, had several attacks of unconsciousness somewhat resembling epilepsy. Ophthalmic examination showed the presence of

retinal endarteritis. Vigorous treatment produced rapid cure. The second patient, a man of 37, was profoundly neurasthenic; he also had vascular changes in the eye and was only cured after several relapses. The third patient, a man of 31, was brought to the hospital in a state of profound coma which lasted 6 days. Hösslin calls attention to the great importance of feeding these patients through the esophageal tube in order to avoid the inspiration-pneumonia. The fourth patient had Jacksonian epilepsy. The fourth developed hemiplegia and died in spite of energetic treatment. At the autopsy a diffuse cerebral endarteritis was discovered which had advanced to such a degree that cure was no longer possible. The sixth patient developed aphasia, had attacks somewhat resembling epilepsy, and there was the characteristic changes in the retinal fields. The seventh patient had the symptoms of a gumma in the region of Broca with extreme disturbance of speech and hemiparesis. There was Jacksonian epilepsy. A year after his discharge there was slight relapse from which he rapidly recovered. The eighth patient had repeated attacks of apoplexy, in the course of one of which he developed hemiplegia and died in profound coma. There was extensive vascular disease of the brain. The ninth patient had attacks of dizziness and weakness in the left arm. Some of the symptoms led to a suspicion of general paresis, but complete cure was obtained. The tenth case was interesting, inasmuch as the patient had an attack which somewhat resembled apoplexy that was associated with marked loss of memory. Under treatment he completely recovered, but a year later developed general paresis and was transferred to an asylum. The eleventh patient complained of intense pains in the head and occasional fluctuating swellings in the scalp. These usually disappeared very quickly, but finally one was observed by the physician, who excised it and evacuated a considerable amount of pus. The base was formed of a carious bone and as a result all of the tender portions of the skull were examined and cureted. Complete recovery ensued. The treatment in all of these cases was similar. Blue mass was administered by inunctions, from 3 to 5 grams being given daily; potassium iodid by the mouth in doses of 3 grams daily. The patients were also frequently placed in hot-air baths at a temperature of about 122°. After the hot-air bath, the patient was usually sponged off or douched with cold water. Hösslin is of the opinion that hot-air baths are not in the least injurious, provided that, when given to patients not accustomed to taking them, the initial temperature is not too high. Relapses were treated in the same way as the original lesion. All the cases were characterized by a very oscillatory course. [J.S.]

14.—May discusses the **sanatorium** at Planegg-Krailling which is chiefly the result of v. Ziemssen's efforts. This consists essentially of a large park, over 16,000 hectares in area, in the midst of which are two large buildings, one containing the dormitories and wards; the other devoted to administration. It accommodates about 110 patients, is restricted exclusively to males suffering with thoracic disease, chiefly of course, phthisis, and is so constructed that, as nearly as possible, perfect cleanliness may be obtained; thus, throughout the entire building the corners are rounded. At present it is necessary for the inmates to pay a small stipend for their care. The same difficulty has been experienced that has been experienced in other institutions of a similar nature; that is—the physicians are very prone to send cases in advanced stages of the disease and not to select those still capable of improvement. Of 194 patients who left the institution but who had remained there a sufficient length of time to derive some benefit from the treatment, 32 were practically cured, 89 were much improved, capable of returning to work, and the remaining 73 were either slightly improved, not improved, or grew worse. In about half these cases tubercle-bacilli were found in the sputum. Among the points to which May calls particular attention is a scheme for recording pulmonary conditions, which consists essentially in drawing the signs upon an outline of the thorax. For receiving expectoration porcelain dishes are employed, partially filled with moist turf and enclosed in a tin box with a lid that can readily be lifted. Complete plans of the institution accompany the article. [J.S.]

15.—Rieder discusses the various **defects** which may occur in the **human hand**. Among these, he includes

polydactylia, modification of the number of the fingers; **polyphalangia**, modification of individual fingers; **hyperphalangia**, that is an excessive number of segments in the finger; and finally **syndactylia**, that is the formation of the membrane between two fingers. These are all forms of monstrosities as a result of excessive development. Among the opposite conditions he speaks of phocomelia in which the whole extremity is hypoplastic; adactylia or an oligodactylia in which certain fingers fail or are too small; and finally the fusion of certain groups of bones. Apparently in a separate group he includes brachydactylia or brachyphalangia, the shortening between certain joints. He reports various cases of these conditions, in one of which there was abnormal shortening of the fourth metacarpal bone on the left hand. This was congenital and perfect compensation had practically occurred. None of the subject's ancestors had had a similar deformity. One of nine children, a daughter, has excessive deformity of both hands. The changes in this case are as follows: The right upper extremity is somewhat shorter than the left and less developed; the right hand consists apparently of two digits, one representing the thumb without nail and without joints, the other representing a finger with three phalanges. In the left hand the skeleton is fairly well developed, but the first two fingers have grown together and are of equal length with the ring finger. The right foot has four toes, but they have practically all grown together, giving rise to almost a single mass. The joints are fairly movable; the left foot is even narrower than the right, and the two remaining toes are completely grown together, and have very slight motility. Various other deformities and other formations can be detected by means of the Röntgen-rays and are described. It appears from this case that the slight defect existing in the father was inherited by the daughter and became in her much exaggerated, apparently involving all the extremities. The case represents a brachyphalangia with syndactylia. There are also general changes in the skeleton. The case essentially belongs to the atavistic formations. [J.S.]

16.—Moritz has very considerably modified a model constructed by von Basch for the purpose of **illustrating the phenomena of circulation** by an ingenious arrangement of stop-cocks, valves, and manometers. He is able not only to demonstrate the normal features, but also to determine the phenomena that are produced by various cardiac lesions and by the modifications that may take place in the general circulatory resistance. It is impossible in an abstract to give either an adequate description of the apparatus or of the results of various experiments that he describes in great detail. He gives in brief form the following results of his work upon the valvular lesions in the left side of the heart: "In every case of uncompensated valvular lesion of the heart, whether it be insufficiency or stenosis, there is on the side of the valve in the direction of the circulation a diminution in the volume of blood passing, and a decrease in blood-pressure. On the side from which the circulation comes there is an increase in the quantity of blood, that is, passive congestion and increase in pressure. The compensation of valvular lesions, that is, the restoration of the normal pressure in the vascular system, is accomplished by a corresponding increase in the activity of certain portions of the heart. This in cases of stenosis consists in greater tension during the contraction; in case of insufficiency in the expulsion of a larger quantity; therefore, in order to compensate stenosis it is only necessary for the heart-chambers involved to be hypertrophied, whereas the chambers involved in insufficiency must also be dilated." By virtue of certain laws of contraction which Moritz describes in the earlier portion of his paper, the alteration in the activity of the heart produced by any valvular lesion has the effect of so influencing the heart that a tendency immediately occurs to produce compensation. Moritz believes that by means of his model, instruction can be given very satisfactorily. [J.S.]

17.—Ziegler has undertaken a series of **experiments upon guineapigs and salamanders, breaking the bones subcutaneously**, and then setting them histologically at varying intervals after injury. His histological technic consisted in hardening the bones either in bichlorid of mercury or in 4% solution of a formol and then decalcifying in a solution of acid. The stains employed were chiefly hemalaum and v. Gieson's method. In the guineapigs, the first appearance of a cartilage in the callus was observed on

the fifth day. The periosteum in this period had become considerably thickened and an almost purely cellular tissue had developed between it and the bone. Between the cells there was found a clear hyaline basal substance, and even on the fifth day a few small columns of bone could be detected. In salamanders, contrary to Ziegler's expectation, the process develops very much more slowly, and not until the twenty-seventh day is there any marked formation of new tissue. This appears as a mucoid connective tissue filled with delicate fibrilla and a moderate number of branched cells. The formation of a cartilage appears first on the fiftieth day. On the seventy-fifth day there is slight formation of bone beneath the periosteum, but none from the bone itself. It appears that the new bone is formed from the periosteum, usually as a large medullary cavity, and is supplied with bloodvessels which grow into it from the periosteum. Before these bloodvessels enter it, however, there appears a number of fibrilla that probably give rise to colloid substance. In conclusion, Ziegler states that the **healing of fractures** is accomplished by callus that develops from the periosteum which subsequently is changed directly into bone after preliminary vascularization. [J.S.]

18.—Barlow discusses the possibility of nonspecific urethritis. He insists that the following conditions must be observed before its existence can be accepted. There must have been no previous attack of specific urethritis, and upon this point the history of the patient cannot be accepted; therefore, careful search of the secretion must be made for gonococci. At the same time the presence of signs of chronic specific urethritis must be determined, and all other forms of infection of the genitourinary tract, such as tuberculosis, herpes urethralis, etc. Of course, the pathogenicity or nature of any form of bacteria that can be cultivated must be determined. After a careful review of the cases of constitutional urethritis in the literature, Barlow concludes that none is completely free of these defects, and that therefore constitutional urethritis cannot be considered as proved. Neither is there any proof that urethritis can be caused by irritant poisons that may have been injected. It appears that the traumatic urethritis may be produced by foreign bodies in the urethra or by direct traumatism to the external skin. Various forms of bacteria may under favorable circumstances cause inflammation of the mucous membranes. In only one case, however, has such a microorganism been proved to be the specific cause by inoculation-experiments. All the other causes are therefore more or less doubtful. In some of these cases, including one reported by Barlow himself, although there was abundant pus-formation, bacteria could not be found. [J.S.]

19.—Sittman, after a consideration of the inflammatory conditions of the larynx associated with edema and redness, that is, resembling erysipelas, reports a case of a man, 48 years of age, who, as the result of fracture of the bone 2 years previously, with resultant injury, had inflammation of the leg, in the course of which he was suddenly affected with difficulty in breathing and laryngeal stridor. There was considerable cough and although respiration subsequently became freer, edema of the lungs developed and finally caused death. The mucous membrane of the larynx was much swollen, the vocal cords were thickened and partially closed. The lungs were intensely edematous; otherwise the autopsy was negative. Cultures showed only the *Staphylococcus pyogenes albus* with the exception of a few contaminations. Histological examination of the mucous membrane of the larynx showed the presence of a considerable round-cell infiltration of the submucous layer. The case, therefore, represents **secondary erysipelas of the larynx** which would probably, had the patient lived longer, gone on to perichondritis and abscess formation. Evidently, the infection took place through the blood. [J.S.]

20.—Bihler reports a case of opium poisoning occurring in a waitress who had taken a large quantity, equivalent to 26 grams, of tincture of opium as an abortifacient. She complained almost immediately of intense dizziness, and no physician was called until she became unconscious and there was cyanosis of the extremities. Stimulants failed to cause any reaction and she died 48 hours after ingestion of the dose. At the autopsy there were found marked evidences of putrefaction, intense congestion of the veins in the brain, but no opium could be found in the tissues; but its presence, however, in the residual bottle from which she had

drunk and the fact that this bottle was given her by a woman who admitted placing opium in it, was considered sufficient evidence of the cause of death. [J.S.]

21.—Hofmayr combats the theory that neurasthenia is merely a form of exhaustion of the nerve-cells, because general observation teaches us that psychic injuries rarely produce lasting effects in healthy persons; for if this were not true we would have neurasthenic epidemics after severe campaigns, and this is not the case. More careful case-histories usually show that before the outbreak of the neurasthenia, there is usually some disturbance of the bodily functions, and that the psychic shock merely develops a condition that is latent. Among these preliminary states, excessive intellectual effort can be considered in the majority of cases as one of the predisposing causes. Healthy persons recover from it with rest, just as readily as they recover from physical exertion. All cases, however, show as a common quality disturbance of nutrition. Hofmayr, therefore, believes that neurasthenia is a form of autointoxication in part due to imperfect respiration, in part to imperfect absorption of nutriment from the gastrointestinal tract. He admits, however, that it is impossible at present to say whether some specific poison is formed, or whether a variety of poisons act together to produce this result. [J.S.]

22.—Grassmann reports the case of a man, 60 years of age, who six years before had been attacked while fishing with **intense pain in the left calf** which made it impossible for him to stand. He has been an **excessive smoker** during his whole life, consuming more than one hundred cigarettes a day, and frequently used alcohol to excess. At the age of 20 he had specific infection. He had always spent a considerable portion of the day on horse-back. The attack was characterized by a feeling of numbness in the leg which then became pale, cold, no pulse could be felt, and thrombosis was diagnosed. However, the leg returned to its normal condition in the course of 20 days, and a subsequent attack involving the right leg occurred a year later, and ultimately both legs became moderately atrophied. From this time on any attempt to walk usually occasioned intense pain in both legs. This lasted a few moments and then disappeared if the patient sat down. During the intervals of pain, there was a curious subjective sensation of cold in both feet; there was moderate cyanosis in both limbs that increased if they were allowed to hang down. Vigorous specific treatment and careful massage and the application of electricity to the paresthetic areas produced considerable improvement. It is probable that in this case **arteriosclerosis** was the chief agent in the causation of the condition, although it is difficult to understand why the syndrome of intermittent claudication does not occur more commonly when this condition or disease exists, or does not occur when one of the main arteries has been tied off. In the beginning of his paper, Grassman calls attention to a similar condition that is noticed in horses. [J.S.]

23.—Kattwinkel reports the case of a man of 58 who had chronic chorea and whose father had died of the same disease. There were also other cases of mental disturbance in the family, usually of this chronic hereditary type. The movements consisted in shaking the head, twisting of the thumbs and fingers, irregular movements of the feet and legs, and occasionally a slight swaying in the chair. Voluntary movement seemed to diminish the chorea. Careful investigation of the intellectual phenomena showed that the patient was able to recognize colors, had great difficulty in recalling familiar objects, such as the flowers or birds with which he was acquainted, had difficulty in recognizing the simple geometric figures, and in general showed great difficulty in fixing the attention. Recent events seemed to be fairly well remembered, but it was almost impossible for him to commit anything to memory. Slight differences between objects were not often recalled. The second case occurred in a man of 40, apparently spontaneously. After a severe injury resulting from an assault, he noticed difficulty in walking. The movements were exceedingly irregular and almost constant. They resembled voluntary movements, such as pulling the handkerchief out of the pocket, balancing on the toes, etc. In addition there was total anesthesia to touch, pain, and temperature, loss of the sense of position and bilateral concentric narrowing of the field of vision. In view of the chronic nature of the case and the psychic disturbances, Kattwinkel does not believe that hysteria, if it exists

is more than a complication. In testing this patient, Kattwinkel utilized the division of memory into the recognition of elementary objects, the recollection of old events, of recent events, and the ability to commit phrases, etc. Passing and recent events were thoroughly well remembered, and the patient could also recognize familiar objects, but otherwise the memory was poor, indicating a deficiency in attention. In addition the patient showed an irritable disposition. Kattwinkel concludes as a result of these investigations that the psychic changes in chronic progressive chorea cannot be regarded as dementia, but simply and chiefly as a loss of attention. [J.S.]

24.—Wanner, as a result of the careful testing of various cases of unilateral deafness by whispers, ordinary conversational speech, and loud speaking, and particularly the determination of musical notes, especially the upper and lower limits of the scale that is heard, also the duration of the perception and the comparison of aerial and osseous sound-conduction, arrives at the conclusion that the diagnosis of unilateral deafness can be made under the following conditions: First, when speech is heard equally well when both ears are closed, or when the sound ear is closed and the diseased ear has not been obstructed. Second, when the lower boundary of sound-perception is in the region of $\hat{a}$; when the sound of the tuning-fork is only heard in the healthy ear; when there is no persistence of perception in the diseased ear by bone-conduction. Finally, in testing the persistence of sensation of sound in the ear, it is found that in diseased ears, instead of increasing for the higher notes, it gradually decreases or disappears completely. [J.S.]

25.—Lindemann reports a case of **scleroderma** occurring in the right thigh, giving rise to the characteristic induration with paresthesia, which was at first treated with an arsenical water and lead plaster. This proving ineffective, energetic treatment with arsenic administered hypodermically was commenced, a solution being prepared so that one cubic centimeter equaled .01 gram of arsenic. The initial dose was .2 of a cubic centimeter (equaled $\frac{3}{32}$ grain arsenic), and this was rapidly increased to .1 of a cubic centimeter daily until a cubic centimeter was given. When there was marked evidences of arsenic poisoning, the dose was reduced and then gradually increased, and finally, after about a month of this treatment, the patient was discharged considerably improved and directed to take the arsenical water again. From this time on the sclerodermic areas were covered with reddish spots, became softer, and the subjective sensations improved. Three years later this improvement was still permanent. [J.S.]

26.—Voit has investigated the amount of **acetone excreted** by a dog in the urine and by the respiration in various forms of diet. He found that increase in the amount of meat given the animal caused a considerable increase in the amount of acetone, and that this increase was not affected by adding fat or starch. During starvation the quantity of acetone diminished very considerably, and contrary to the condition found in human beings, the amount of acetone in the expired air was always considerably greater than the amount in the urine, but even under these circumstances it represented such an insignificant quantity that it was hardly worth consideration. It is possible, however, that in cases of diabetes the amount of acetone excreted in this manner may be more considerable. [J.S.]

27.—Glockner reports an interesting case: the patient, a man, had been under treatment in the hospital for **gastric catarrh** from 1878 until 1890, the cause being excessive alcohol. At the latter date, he commenced to complain of some impediment of deglutition, and a long stenosis was discovered 21 cm. from the edge of the teeth. Warm food was particularly difficult to swallow. In the course of a year this difficulty disappeared. In 1897 he was examined. There was no pain and no discomfort when he swallowed. Death occurred the following year, and at the autopsy the following conditions were found: a girdle-like **ulcer in the lower part of the esophagus** with three deep excavated areas; hypertrophy of the muscle-wall of the esophagus; multiple hemorrhagic erosions of the mucous membranes of the stomach; gastric ulceration and peptic ulcer of the duodenum. Microscopically, the ulcerated areas of the esophagus were found to be denuded of epithelium, and surrounding the tube there was hypertrophy of the fibrous connective tissue which was apparently beginning to con-

tract. The other portions of the esophagus as well as the wall of the stomach and duodenum showed the existence of a chronic catarrhal inflammation. The apparent cause of these ulcerations was thrombosis in the bloodvessels of the walls. In some instances old organizing thrombi were discovered. [J.S.]

28.—Gebhard, dissatisfied with our knowledge concerning the **influence of the astringents upon the intestinal tract**, has undertaken a series of experiments which were performed upon a large hunting dog in whom a portion of the intestine had been separated from the continuity of the intestinal tract and sewed in the abdominal wound, both ends terminating in fistula. Into this small loop of intestine, various quantities of fluid containing albumin, sugar, etc., were introduced at a temperature of 37°, and then at the end of 15 minutes the entire contents carefully washed out, and quantitative estimations made. Various other substances were employed; for example, tannin, alum, lead acetate, silver nitrate, and bismuth subnitrate. Serial investigations made on the same day showed that the effect of the astringents continued for some time. Alkali tannate and albumin tannate had practically the same effect. His conclusions are as follows: that the absorptive power of the small intestine is diminished by the astringents, particularly tannin; that the effect of the drug is purely local; that its action continues for some time after the solution containing it has been washed from the intestine, but the albuminates of tannin are not as effective as the pure drug. [J.S.]

29.—Wolfhügel has undertaken a series of experiments for the purpose of determining the **effect of the Valsalva experiment upon the blood-pressure**. He found that when tested by von Basch's aneroid sphygmomanometer there was a persistent elevation of blood-pressure which was dependent upon the depth of the inspiration made before the forced expiration, and whether abdominal pressure was employed. If the preliminary inspiration was not greater than ordinary, the increase invariably occurred, and could be made to persist for some time, if, after the expiration, several rapid and deep inspirations were made. The experiments were made upon three powerful young physicians, the measurements being made upon the temporal artery while the patient was lying supine. The pulse was counted by an assistant, and every ten seconds its rate and the blood-pressure were noted. The result showed in general that the increase of blood-pressure was in excess of the increased pulse-rate, and that the effect of abdominal pressure was to increase very greatly the blood-pressure and moderately the pulse. In some cases in which a particularly deep preliminary expiration was made there was slight decrease in the blood-pressure. [J.S.]

30.—Brauser has made a series of examinations of the urine of males entering the service of Prof. Ziemssen, in order to determine in what **proportion of cases mucus or pus shreds is present**. All cases of obvious local inflammatory disease, such as cystitis, pyelitis, etc., and all cases with fever or other infectious conditions, were also omitted. Altogether, 300 patients were investigated, and it was found that 163 had pus shreds and 83 had mucous shreds, and only 54 were entirely free—that is to say, at least half of the patients investigated suffered from residual deep urethral inflammation. In these cases history of infection was very rarely obtained. In only 10 cases were typical gonococci discovered. [J.S.]

When to Operate in Appendicitis.—John B. Murphy (*Chicago Medical Recorder*, June, 1900) advocates operation within the first 24 hours, since during that time the operation can be done with a maximum mortality of 2%. The danger of operation increases with time because of the escape of septic material from the appendix, infecting lymphatics in the vicinity and causing septic cellulitis and septic peritonitis, which may be of a variety not to be controlled. He thinks the diagnosis can very readily be made within the first 24 hours. If the case is past the first 72 hours when he first sees it, he frequently allows it to proceed without operation, that is, if there is a circumscribed abscess with low temperature and no indication of great virulence of intoxication. [M.B.T.]

Practical Therapeutics.

Under the charge of

A. A. STEVENS, A.M., M.D.

The Treatment of Tuberculosis.—De Renzi (*British Medical Journal*, May 26, 1900), at the congress recently held in Naples, stated that putting aside prophylactic treatment and treatment in sanatoriums, the field of the therapeutics of tuberculosis was now much restricted. Of pharmaceutic remedies, two only need be considered—creasote and iodine. The former had been given in the most varied forms and doses, but the only definite effect which it produced was lessening of the expectoration; this was not to be wondered at, seeing that to obtain complete sterilization of a person of medium size in regard to Koch's bacillus, about 50 grams of creasote would be required, whereas the ordinary dose which may be given with safety is from 30 to 60 centigrams in the day. The substitution of guaiacol for creasote appeared at first to be a noteworthy improvement, but it had been found to be more toxic than creasote, while not more efficacious. With regard to the other remedy named, iodoform owes its reputation mainly to the large quantity of iodine which it contains. The sedative effect which it has on cough and the lessening of bronchial secretion are manifest; but no radical effect on the tuberculous process can be expected either from it or from other preparations of iodine—potassium iodid, di-iodoform, europen, aristol, iodol, etc. With regard to other remedies, De Renzi said that Koch's tuberculin had a very remarkable diagnostic value which in some degree compensated for its want of curative effect. In slight cases Maragliano's serum might be useful. He thought it needless to say anything about injections of camphorated oil, igazol, etc., because they had all shown themselves of little service in tuberculosis; only somatose and sodium cacodylate had prolonged life a little. Pure air and abundant feeding were the two great remedies on which the modern treatment of tuberculosis should rest. Roustan had tried sodium cacodylate in tuberculosis. The tolerance of the remedy varied in different individuals, some not being able to bear more than 8 injections successively, while others could bear 30 to 40. The injections, the dose of which was 1 cc. in the day, should therefore be suspended from time to time for a period equal to that during which they had been carried out. As results, he had observed an increase of strength, often a diminution of fever, recovery of appetite, and in some cases improvement in the local lesions. Gatti had tried various essential oils (myrtol, eucalyptol), certain camphors and antiseptics (phenol, thymol). He usually gave one injection a day for 10 days continuously, this period of treatment being followed by 5 days of rest. As results, he claimed decided and permanent increase of muscular power, mitigation of fever and sweats, diminution of cough, modification of physical signs, increase of appetite and body-weight, and diminution of the number of bacilli.

Tannigen.—Clark (*Therapeutic Gazette*, June 15, 1900) states that in all watery discharges from the bowels, no matter what the direct or secondary cause may be—whether it be nervous or inflammatory, or from acute dyspepsia due to overfeeding as well as overstimulation, which gives flatulence with foul-smelling serous discharges—he has had recourse to tannigen in combination with bismuth subcarbonate and resorcin. In leukorrhea he has found the following combination highly efficient:

R.—Tannigen 1 dram.
Boric acid 2 drams.
Zinc sulfate 10 grains.
Fluid extract of hydrastis 2 drams.

Dissolve this in a cup of hot water before adding it for injection to a 3-quart fountain syringe filled with water as hot as can be borne. Use the injection at bedtime and in the recumbent position with an obturator pipe.

Treatment of Gonorrhea in the Female.—Montgomery (*International Medical Magazine*, February, 1900), recommends rest in bed, saline purgatives, and light food with local treatment as follows: Hot hip-baths twice every 24 hours, and irrigation every 2 or 3 hours with 1 in 3,000 corrosive sublimate or 1 in 2,000 formalin while the symptoms

are acute. When the pain has subsided the vagina should be swabbed out with stronger disinfectants through a speculum, 1 in 1,000 formalin, or 1 in 2,000 corrosive sublimate, and after drying, the vagina packed with iodoform gauze. Silver nitrate, 10 or 20 grains to the ounce, or ichthyol ointment, 1 part of ichthyol to 4 of lanolin, may be used to paint on the vaginal mucous membrane. The uterus should be curetted at once if there is the slightest suspicion that the disease has already infected the endometrium. After curetage iodoform gauze packing to provide drainage is recommended.

An Explosive Mixture.—A correspondent (*Bulletin of Pharmacy*, June, 1900) writes the *Druggists' Circular*, has had two or three complaints that the following mixture has blown out the cork or has broken the bottle after standing a couple of days:

Tincture of nux vomica 1 ounce.
Dilute nitrohydrochloric acid to make 6 ounces.

Recently, having had the mixture in the store for 4 days, he was startled by a loud report, and found that the cork had been blown out, and in the violent effervescence that followed about a quarter of the contents left the bottle. The gas coming off smelled like nitric acid fumes and was inflammable. The editor is of the opinion that the decomposition is due to a reaction between the chlorinated nitrogen compounds contained in the nitrohydrochloric acid and one of the constituents of the nux vomica—igasuric acid—which Höhn regarded as a kind of tannin.

Heroin.—Floekinger (*New Orleans Medical and Surgical Journal*, May, 1900) states that he has employed heroin quite frequently during the last year in various acute affections of the respiratory tract, comprising pneumonia, bronchitis, pleurisy, laryngitis, and the respiratory complications of the acute infectious diseases. At first he employed heroin in doses of $\frac{1}{4}$ of a grain, but as these doses in several cases excited gastric disturbance and vertigo, he has of late administered the drug only in $\frac{1}{8}$ grain doses, repeated more frequently, when necessary. In none of his later cases was gastric disturbance observed. Under the influence of heroin, breathing became deeper and less frequent, and expectoration facilitated. In general, however, it took 4 days before the secretion became looser and the sputa more abundant. In some cases of acute bronchitis, a copious expectoration occurred 2 days after the administration of the drug, and on the third day recovery commonly took place. In colds it is desirable to give a strong laxative in order to cleanse the gastrointestinal tract of toxic products, and also because heroin is slightly constipating. In cases of simple colds, attended with pains in the back and limbs, heroin was prescribed in the following combination:

R.—Heroin hydrochlorid $\frac{1}{8}$ grain.
Salophen 10 grains.
Sugar 3 grains.
One powder every 2 hours.

In pneumonia and pleurisy with severe pains heroin was not efficient when given by the mouth, but the hydrochlorid was given subcutaneously with excellent results. A dose of $\frac{1}{8}$ grain was injected, and repeated in 2 hours when necessary. After these injections no lassitude was observed, such as is noticed after the administration of morphin. In 6 cases of acute laryngitis heroin, neither by the mouth nor hypodermically, was so efficient as morphin. In neuralgias the narcotic effect of heroin was far inferior to that of morphin. In the dyspnea of uremia and cardiac disease, heroin acted favorably. Cases of chronic bronchitis without decided emphysema were most favorably influenced by the drug. In 3 cases of chronic bronchitis a combination of heroin with potassium iodid proved very serviceable. In asthma good results were obtained, the patients being able to sleep in the recumbent position as early as the second day. In the attack itself, however, the preparation was useless. In 2 cases of reflex cough and hysteria heroin failed to exert the least influence. The distressing cough of phthisis was influenced by the administration of heroin, although the results in the last stage were not so encouraging as in the first. The night-sweats were not affected by the drug. The circulation is entirely uninfluenced by heroin. The writer concludes that heroin is an excellent sedative for the respiratory tract, which is devoid of the narcotic effect of morphin and codein, and therefore in physiologic doses is entirely uninjurious.

Original Articles.

A BACTERIOLOGIC RESUME OF THE SAN FRANCISCO PLAGUE.¹

BY ERNEST S. PILLSBURY, M.D.,

of San Francisco, Cal.

Professor of Pathology and Bacteriology, College of Physicians and Surgeons of San Francisco, Cal.

IN a recent article, R. C. Cabot² says, "I am sometimes appalled when I see how innocently, how literally, how trustfully, physicians accept laboratory verdicts as decisive." "The bacteriologist knows that some of his verdicts are relatively final—others less so and more subject to modification, according to various other circumstances. He knows when his technic has been above suspicion, or when (either from the condition of the material furnished him, or the nature of the test attempted), his results are to be taken less seriously."

It is well known among bacteriologists that there are families or groups of bacteria, each variety of which bears a certain marked resemblance to each of the other varieties of the group. In the colon group, for instance, we have the coli communis, the para-colon, and the typhoid, each resembling the other in so many respects that it is necessary to make many cultural tests to determine the variety in hand. Again, every bacteriologist recognizes the difficulty in distinguishing, both with the microscope and with the cultures, between the true diphtheria-bacillus and the pseudodiphtheria-bacillus, of which latter there have been several varieties described.

To rely, for a positive diagnosis, on a microscopic examination of any of the bacteria known, without a knowledge of its clinical source, one must be ignorant of the similarity of these groups of bacteria. The tubercle-bacillus may easily be mistaken for the lepra-bacillus or the smegma-bacillus, and much more difficult would it be to distinguish between the human, the avian and the other varieties of the tubercle-bacillus.

The pest-bacillus we have described by Kitasato as a small, short rod, with rounded ends, of the nonspore-bearing variety; and by Yersin as a cocco-bacillus, almost as broad as long and about 2μ in greatest diameter. The B. septicaemia haemorrhagica, as described by Sternberg, is a small, short rod, with rounded ends, 0.3μ to 0.5μ in width and from 1μ to 4μ in length; occasionally the bacilli appear like cocci. The colon-bacillus may also answer this description, and like the above two varieties it is completely decolorized by Gram's stain.

The pest-bacilli and the Bacillus septicaemiae haemorrhagicae stain readily with the ordinary anilin dyes. They show as cocco-bacilli, staining more deeply at the poles than in the center and sometimes forming chains of three or four elements. Here again the colon-bacilli may show a certain similarity as it occasionally presents this bipolar staining. The influenza-bacillus is another bacillus showing this bipolar stain, though it is somewhat smaller.

As has been demonstrated by Federal Quarantine Officer Dr. Kinyoun, the Diplococcus pneumoniae may

easily be mistaken, after a most careful microscopic study by the most expert, for the true plague-bacillus.

To prove, bacteriologically, the pest-bacillus, it will be necessary, as I have shown above, to differentiate with cultures and with animal inoculations, between it and the B. septicaemiae haemorrhagicae which it so closely resembles. In Surgeon-General Wyman's description of the pest-bacillus, he states: "In bouillon, under ordinary conditions of temperature, it forms flakes or flocculi, which rapidly sink to the bottom of the flask or test-tube, leaving the liquid above clear. This is characteristic. Microscopic preparations from this bouillon show the bacilli in chains of 3 or more elements." "Haffkine has proposed to take advantage of the fact in the diagnosis of plague, he having shown that in ordinary agar-agar to which is added 2 to 3.5% of common salt, the bacilli within 24 hours undergo these degenerative changes. When grown on this media the bacillus is found to be swollen up, forming spheres, spindle-shaped or oval bodies which cannot be mistaken for any other well-known microbes." The B. septicaemiae haemorrhagicae produces an even cloud throughout the bouillon. No special tendency to form chains being shown.

Both of these bacteria are pathogenic to the lower animals, the pest-bacillus killing rats in 24 to 48 hours, guineapigs and rabbits in 3 to 6 days. The B. septicaemiae haemorrhagicae kills rabbits and guineapigs in 24 to 48 hours and the rats in 2 to 5 days, the time varying in each case according to the virulence of the germ.

Of the specific cases of supposed plague in San Francisco, that of Cheu Yee Yan, a physician and tailor, who died June 2, was reported by the city bacteriologist as the most typical form of the pneumonic variety of plague that he had seen. This patient had not been seen alive by any white physician, and the only clinical history obtainable was his friends' statement that he had been sick over a year; had been gradually getting worse under his own treatment, till 5 days before his death he took to his bed. When seen by us his lips and finger-tips were cyanotic, pupils normal, and sclera normal; there was a slight discoloration of the dependent portions of the head and trunk. The rectal temperature, $3\frac{1}{2}$ hours after death, was 102.5° F.

I removed from this man a gland from the neck and one from the groin; these were apparently the largest glands of the body, that from the neck was about 15 mm. in its longest diameter; that from the groin, about 10 mm. From these glands smears were made which showed, in apparently pure culture, microorganisms resembling, microscopically, the pest-bacilli. There was a complete decoloration by the method of Gram.

Plates prepared from the neck-gland showed two varieties of bacilli, one a gas-producer in glucose agar, the other not gas-producing. All stab-cultures taken directly from this gland showed a marked gas-production. Evidently the gas-producer could not be the pest-bacillus, so no further attention was paid to it other than to demonstrate a complete decolorization by Gram. The other variety was provisionally assumed to be the pest-bacillus, as it answered the description thus far of that germ. It was further tested as to its growth on gelatin, agar-agar, with 3% salt, agar with glucose, potato, and bouillon. There were slight differences to be noted between the growth of this bacillus and that of the pest-bacillus on gelatin, agar-agar, and on glucose-agar, while on potato and in bouillon these differences were

¹ Read in part before the San Francisco Clinical Society, June 20, and followed, after discussion, by a unanimously adopted resolution to the effect that, in the belief of the members of the society, there had been no bubonic plague in San Francisco.

² THE PHILADELPHIA MEDICAL JOURNAL, April 7.

more marked. On potato, the growth was a smooth, shiny white or waxy layer; while the pest-bacillus grows as a scanty, whitish-gray coating. In bouillon, there was a quickly formed cloud, the bouillon remaining cloudy with a fine sediment after 10 days' growth. The pest-bacilli grow in flakes or flocculi and, settling, leave the top liquid clear. On the 3% salt-agar after 24 hours' incubation, there were no involution-forms to be seen, while the pest-bacillus produces many involution-forms in this medium. The plates from the gland removed from the groin gave the above described bacillus in pure culture. Stabs taken from the gland direct into glucose-agar gave no gas-production.

To the bacteriologist, these differences are quite sufficient to throw much doubt on a positive diagnosis of plague, especially when it is taken into consideration that the bacillus just described agrees in every particular with that described by Sternberg as the *B. septicaemia haemorrhagicae*, familiarly known as the chicken-cholera bacillus.

This microorganism produced death in a rabbit in 36 hours. At the seat of inoculation there was a necrotic area about 1 cm. in diameter, the central portion of which was broken down. The nearest lymphatic gland was enlarged and broken down in the center, while the next gland in the chain appeared normal. From this enlarged gland, pure cultures of a bacillus like that obtained from the man were obtained in great abundance. The rat died in 6 days, apparently from septicemia caused by this same bacillus.

Because this bacillus is commonly known as the chicken-cholera germ, there is no reason why it should be confined to the lower animals as pathogenic. Sternberg describes it as a widely disseminated germ, and says that it is sometimes found in the salivary secretions of man. In these cases of supposed bubonic plague, it must be noted that the glands of the neck are most frequently enlarged while the glands in the groin are rarely enlarged, so that it is possible we have in the chicken-cholera bacillus the germ causing this disease, to which the Chinese seem to be so peculiarly susceptible. This germ has been found in three of the cases, to my positive knowledge, and it has been the finding of this bacillus on which a diagnosis of plague has been made.

Theobald Smith³ says: "It is not improbable that the process of making pathogenic bacteria is going on now in the animal world, to be noticed only when these bacteria have been transported by some accident from their unseen habitat to species which happen to be susceptible. Then a disease appears, and we become cognizant of the disease-germ. It is difficult to explain the incidence of certain animal diseases, especially the explosive septicemias, in any other way. It is difficult, for instance, to conceive the colon-bacillus as acquiring pathogenic or invasive properties by a saprophytic life in the intestinal tract of man without at the same time inducing immunity in the race. It is not so difficult to conceive of colon-bacilli living in such an environment in the intestinal tract of certain animals as to acquire at the same time pathogenic properties towards man. Thus, microorganisms causing acute disease are out of place or else endeavoring to create a new habitat. Disease itself is a temporary disturbance of relationship largely accidental at first, but tending to become permanent as a form of parasitism."

Continuing this theory with the germ found in these

Chinese, and considering it to be the chicken-cholera bacillus, we have a germ known to be pathogenic to the lower animals, and causing in such animals just such conditions as have been found in the Chinese, where this bacillus has been found—that is, an enlargement of the neighboring lymphatics, with death from a rapidly-developed toxemia.

To the pathologist, it is interesting to note that in the so-called pneumonic forms of plague here discovered, that there is no enlargement of the bronchial glands other than would be found in other old cases of pigmentation from an anthracosis; and that, so far as known, there has been no infiltration of the tissue about the enlarged glands which have been described as not over 2 cm. in the longest diameter, in those cases said to have represented the bubonic form of plague.

Eleven to thirteen cases of this terribly contagious disease have been reported, each of which is sporadic—that is, no possible connection can be shown between any two. What is more wonderful, not a house-mate nor even a room-mate has been infected, and this without any precautions whatever among people who live 2 to 8 together in the same small, ill-ventilated room. Neither houses nor even rooms have been fumigated, except in two instances, during the last month, and in no instance has an individual house been quarantined; but instead, the quarantine included 10 blocks, with 10,000 to 15,000 inhabitants, and in several of these blocks not a single death had occurred.

Thus we present to the world 11 *atypical* cases of the dreaded black plague, each sporadic, in a city previously free from the disease, and to which port no infected ships have arrived; each different in its clinical history, so far as clinical histories have been obtained, from that of any recorded case of plague; each different in its pathologic condition from any description of such a well-known disease; and each diagnosed by the bacteriologic examination alone, the fact of death following inoculation into guineapigs being accepted as conclusive proof of plague.

A CASE OF PRIMARY ADENOCARCINOMA OF THE GALLBLADDER WITH SECONDARIES IN BOTH ADRENALS, MELANOSIS OF SKIN (ADDISON'S DISEASE?), VITILIGO, AND HYPERTROPHY OF THE PANCREAS.

By ALDRED SCOTT WARTHIN, M.D., PH.D.,
of Ann Arbor, Mich.

Assistant Professor in Pathology, University of Michigan.

(Concluded from page 84.)

SINCE gallstones occur more frequently in women the percentage of primary gallbladder cancer is found to be proportionately greater in women. The occurrence of gallbladder cancer is also greater in regions where cases of cholelithiasis are numerous.

Two theories are held concerning the association of cholelithiasis and gallbladder cancer: First, that the gallstones lead to the production of the new growth through irritation; second, that the concretions are formed secondarily to the cancer, the growth producing an obstruction to the outflow of bile and so favoring the deposit of biliary ingredients through concentration of the bile. The latter view is supported almost entirely by theory, the actual evidence favoring it being extremely slight. It has been shown that in secondary

³ PHILADELPHIA MEDICAL JOURNAL, April 7, 1900.

carcinoma of the liver and gallbladder with obstruction to the outflow of bile that the formation of gallstones is relatively rare. Beadles¹ found gallstones in four cases of primary gallbladder carcinoma, but none in 36 cases of secondary cancer of liver and gallbladder. The evidence, on the other hand, as shown above is in the direction of proving that the majority of cases, if not every case, of primary gallbladder cancer is associated with gallstones. The small number of cases in which the stones are not found may be explained by the supposition that the stones were originally present, but had passed from the bladder either through the duct or by perforation, or had undergone degeneration. The passage of stones is of such relatively common occurrence that it would be surprising if cases were not found where the stones had been discharged. Such cases have been reported, as the one by Quetsch, in which stones were passed through a cutaneous biliary fistula for three years before signs of cancer appeared; and another case cited in the literature of cholelithiasis of 15 years' standing terminating in cancer and on autopsy containing no stones in the gallbladder. In a number of other cases in which the bladder contained no stones there were present scars and strictures of the ducts which point to the former presence of stones. My case is a striking example of cancer developing in a patient who gave absolutely no history of cholelithiasis and on autopsy showed no stones in the gallbladder, but containing encapsulated in inflammatory connective tissue near the liver three undoubted biliary concretions composed of cholesterolin and bile-pigment, the growth of the carcinoma having progressed to such an extent after the escape of the stones as to cover up all traces of the perforation.

It is also well known that gallstones may undergo disintegration and be discharged even through a narrowed duct in the shape of fine debris. A number of cases of cancer have been reported in which the bladder contained only a granular debris. Both Zenker and Ames report cases of an apparent disintegration of the calculi. Theoretical arguments have also been brought forward against the "concentration" theory; Zenker holds that the growth in the bladder and ducts would tend to prevent the entrance of bile into the bladder and so rather lessen the conditions favoring the formation of gallstones than increase them. Others hold that the small size of the bladder in the great majority of the cases of cancer is against the formation of calculi.

But one case² has been reported in which the formation of the calculus was definitely shown to be later than the development of the cancer, and this stone was not composed of bile-pigment or cholesterolin, but consisted of carbonate and phosphate of lime. It can, therefore, hardly be considered a true biliary concretion, but was more probably a degeneration product.

When the possibilities of the discharge of the calculi through the ducts or through fistulous openings, or of the disintegration of the stones are considered, the number of cases of gallbladder carcinoma which are not associated with gallstones must be very small indeed. The frequency, then, of the association of these two conditions is too great for us to believe that it is accidental, and the causal relation may be accepted with safety. Indeed, the majority of pathologists now state without reserve that gallstones have a direct etiologic relation to the origin of the carcinoma.

Zenker holds that the irritation of the stones upon the mucosa of the gallbladder produces first an adenoma

which may further develop atypically into an adenocarcinoma. In my report³ of two cases of "Multiple Carcinoma" I had arrived independently at the same conclusion. In one of the cases of primary gallbladder carcinoma included in that report the origin of the carcinoma from an adenomatous polyp was clearly evident. In the second case the tumor had its origin from the cells of a mucosa which showed a polypoid hyperplasia. As further mentioned in this paper the mucosa of the gallbladder in a large number of cases of cholelithiasis without cancer showed this same polypoid hyperplasia. This development of carcinomata through the stages of adenoma, adenocarcinoma to carcinoma forms in which all gland resemblance is lost does not seem to me to have been sufficiently considered in the study of the etiology of carcinoma.

MELANOSIS OF SKIN.—(ADDISON'S CACHEXIA?)—The microscopic examination of sections of the skin taken from the pigmented areas of the body shows that the pigment is in the cells of the rete, is of a yellowish-brown color, and does not give the reaction for iron. In all respects it is similar to melanin, and from its location must be considered as such. In the connective tissue of the papillae immediately below the epidermis numerous branched chromatophores are easily seen and their pigmented processes can be seen in a few instances passing up between the epithelial cells of the rete. The small capillaries of the upper portion of the corium and in some cases as far down as the sweat-glands contain similar chromatophores in their walls. These pigment-bearing cells are certainly endothelial cells and perithelial cells, and the study of the sections leads to the impression that melanin is a product of endothelial-cell activity, being formed in the walls of the small blood and lymph vessels of the corium and transferred thence to the cells of the rete. No inflammatory or degenerative processes could be made out in these vessels. That the pigment formation here is a recent process and not an old sunburn is shown by the large number of chromatophores present.

The degree and localization of the abnormal pigmentation is at once suggestive of Addison's cachexia. That the combination of symptoms included under this term, especially those of the gastrointestinal tract, could have been separated clinically from those caused by the gallbladder condition is obviously very difficult or impossible. The degree and extent of the melanoderma were also partly concealed by the intense icterus present making it impossible to say how much of the skin discoloration was due to jaundice or to some other pigmentation. Moreover, the mucous membrane showed no characteristic markings. The microscopical study of the case, however, bears out the diagnosis of Addison's disease, as a condition of the adrenals and per-adrenal tissue is discovered which, in a certain number of cases, has been found associated with Addison's.

Carcinoma of the adrenals has been observed in a number of cases of Addison's, though the proportion of such cases is small. The carcinoma may be primary in the adrenals or secondary to cancer of the stomach, mamma, etc. I have been unable to find any other case where the primary was in the gallbladder, though in 2 of the 100 cases analyzed by Musser, metastases were found in the adrenals without giving rise to symptoms of Addison's. Carcinoma of the adrenals may, however, exist without any pigmentation of the skin, as in my own experience, where one case of primary carcinoma of the left adrenal and one of

secondaries in both adrenals from a primary cancer of the stomach showed no abnormal pigmentation. Nevertheless, the association of the two conditions in a certain number of cases is, I think, sufficient justification for including this case of abnormal pigmentation among those of Addison's. The short duration of the case would also warrant the diagnosis of acute Addison's.

The careful microscopic study of the adrenals and of the neighboring tissues throws no new light upon the pathology of this cachexia. The medullary portions of both organs are almost completely replaced by carcinoma, and scattered nests of the tumor-cells are found throughout the cortex of each one. In some parts of the organ, more especially in the case of the left, large areas of medullary substance are preserved. The cells of these areas show a beginning postmortem change. In other portions the medullary tissues are represented only by bands of unstriped muscle and large nerve-trunks which show no apparent change. The capsule of the right adrenal was firmly adherent to the under surface of the liver and gallbladder tumor by thick inflammatory adhesions extending almost entirely around the organ, which, however, showed no signs of compression. The microscopical examination of this pericapsular thickening shows it to be made up of connective tissue, in the lymph-spaces of which there are everywhere nests of carcinoma cells. The unstriped muscle and fat tissue of the capsule show the same infiltration. The pericapsular ganglia are surrounded by this connective tissue, and in some cases the nests of carcinoma-cells lie just outside of the capsule of the ganglion. In one of the ganglia the capsule is thickened and there is an increase of interstitial tissue throughout the ganglion, with an increase also in the number of wandering cells, but hardly great enough to be called a small-celled infiltration.

The ganglion-cells are heavily pigmented with a greenish brown or yellowish pigment, which cannot be distinguished from the bilirubin which is found in large quantities in the wandering cells and connective tissue cells of the pericapsular tissues, especially in the fat. This pigment is arranged crescentically around the nuclei of the ganglion cells. Its color and the conditions of its occurrence lead me to believe that the pigment is bilirubin and not an autochthonous pigment. It gives no iron reaction, but in those portions of the organ which were fixed in mercuric chlorid it is distinctly grass-green in color, thus confirming the diagnosis of bilirubin. Some of the nuclei of the ganglion-cells contain large vacuoles, the nucleoli remaining clear and distinct. Others are granular and have lost both nucleus and nucleolus, the protoplasm of the cell in some cases appearing light and hazy as if undergoing liquefaction. Such cells have also lost the nuclei of their capsules. These changes occur in that part of the ganglion nearest the cancer cells.

The nerve-trunks of the adrenal plexus show no apparent change. They are likewise surrounded by an increase of connective-tissue which contains carcinoma-cells. This accompanies them as far as the semilunar ganglion and solar plexus. The connective-tissue surrounding these likewise contains nests of tumor-cells which bridge over the vertebra to the left semilunar ganglion and along the left adrenal plexus to the pericapsular tissue and medullary portion of the left adrenal. No changes were observed in the semilunar ganglia or in the Pacinian corpuscles of this region. The sympathetic was not further examined.

The almost complete destruction of the medullary portion of both adrenals and the involvement of the pericapsular ganglia through increased connective-tissue growth form a characteristic picture of the pathologic changes found in the great majority of all cases of Addison's in so far as the adrenals and neighboring structures are concerned. The most important changes are undoubtedly those of the pericapsular ganglia, knowing as we do that destruction of the medullary portion of the adrenals does not in itself produce the cachexia. The findings would appear to bear out the conclusions of Alezais and Arnaud⁴ that Addison's disease is dependent upon the changes in the pericapsular ganglia and not upon those in the semilunar ganglia or in the parenchyma of the adrenals. But, as mentioned above, the case throws no new light upon any of the problems of Addison's, and is of value only as a unique example of pathologic conditions leading to or associated with this disease.

It is perhaps worthy of further note that the adrenals did not present any macroscopic evidences of the pathologic changes found in them. They were of normal size and shape, the medullary portion appeared unchanged. This failure to undergo the usual postmortem change 9 hours after death was commented upon to my class at the time of the autopsy, and both adrenals were preserved for microscopic study. According to Lewin about 12% of cases of Addison's with typical pigmentation showed no changes in the adrenals. Those cases in which this diagnosis rested upon the gross appearances only are too doubtful to be considered as evidence.

VITILIGO.—Cases have been described of vitiligo following jaundice and also of its occurrence in Addison's disease. Mathieu⁵ has reported a case of vitiligo which he regarded as "most probably symptomatic of Addison's disease." The combination of these conditions is, nevertheless, a very rare one, and vitiligo itself is spoken of in the majority of textbooks on pathology and skin diseases as being of rare occurrence.

Although the condition has been known clinically even from very ancient times, the pathogenesis of vitiligo has been but little studied, and the literature of its pathologic histology is extremely scanty. Before 1882 only a few scattering observations had been made, to the effect that the rete-cells of the vitiliginous area contained no pigment, but no description was given of changes in the corium, the bloodvessels or the nerves. Even at the present time the histologic changes in the condition are dismissed with little or no attention in the textbooks. The related condition, syphilitic leukoderma, has received greater prominence clinically because of the diagnostic value attached to it, but its histology has likewise been studied but rarely.

Apparently not until 1882 was a careful microscopic study made of skin taken from cases of idiopathic vitiligo. Then Leloir⁶ from the histologic study of two cases asserted that the disease was a trophoneurosis of the skin. In sections of skin taken from two cases of vitiligo occurring in association with chronic pulmonary tuberculosis (in the one case excised from the living body, in the other removed at autopsy) he found the skin atrophied, the epidermis thinned, and the cells of the rete destitute of pigment. The atrophic corium contained few bloodvessels and those were of diminished size. He found further that the medullated nerves of the diseased areas were atrophic or showed degenerative changes, the axis-cylinders either completely destroyed or in a

condition of fragmentation, and the medullary sheath broken up into little droplets. The condition of the nonmedullated fibers he does not mention, but, nevertheless, bases his diagnosis of a trophic neurosis upon the changes in the nerve-elements. His theory gave a great impetus to the clinical teachings concerning the nervous origin of vitiligo, and numerous cases were reported in individuals who showed also diseases of the central and peripheral nervous system.

In 1884 Ehrmann studied the skin of vitiligo from the standpoint of the much-disputed question of pigment-formation, and decided that the white patches were the result of the destruction of the chromatophores in the uppermost layer of the corium. He regarded the condition as a pigment-atrophy and his interpretation of the changes came to be accepted in the majority of textbooks on the diseases of the skin. In 1889 Wermann made investigations concerning the pigment cells in this condition and found numerous "mastzellen" containing pigment in the corium of the nonpigmented areas. He believed that these "mastzellen" were wandering cells whose function it was to transport the pigment from the corium to the epithelium, and that the absence of the pigment in the rete-cells of the vitiliginous areas was due to a failure of this transportation. Jarisch and Riehl believed that the nonpigmentation was due to a removal of the pigment by wandering cells, but could not support their view histologically. Karg believed that he saw such a removal of the pigment by leukocytes in transplanted negro's skin, and Jadassohn, Jarisch, and Schmorl found in other conditions that the regional lymph-glands contained pigment. This fact was made a strong argument for the support of the "Pigmentverschleppung" theory.

Kaposi found the rete, papillae, and papillary vessels to be normal in vitiligo. Caspary examined vitiliginous skin taken from the back of the hand with especial reference to the presence of pigment-forming cells, but was unable to find them in the nonpigmented skin.

Marc⁷ made a very careful study of the changes in pieces of skin excised from a living case of vitiligo, and his report is the most complete that I have been able to find in the literature. The results of his studies may be summed up as follows: In the vitiliginous areas there is atrophy of the entire skin, thinning of the rete, flattening of the papillae, diminution of the bloodvessels, and a narrowing of those present, atrophy of the medullated nerves, complete absence of chromatophores and of pigment, and excessive numbers of "mastzellen." The collecting of the "mastzellen" he looked upon as the result of the degenerative condition of the skin. From these changes he concludes that vitiligo is a form of skin-atrophy and not merely a pigment-atrophy, and that it is most probably of angioneurotic or trophoneurotic origin, that through the influence of unknown changes in the nervous system the vessels of certain skin-areas become atrophic, the manufacture of pigment ceases and the epidermis, since no more pigment is brought to it by the chromatophores, gradually loses its old pigment in the physiologic manner through the horny layer.

The histologic findings in my case correspond in the main to those noted by Marc. In sections extending across narrow vitiliginous areas from one pigmented portion to another the examination with the low power brings out very strikingly the differences between the

pigmented and the nonpigmented skin. The pigmentation of the rete-cells ceases abruptly, there is no gradual decrease in the amount of the pigment toward the borders of the nonpigmented areas; on the other hand, there is in many cases an absolute increase in the amount of pigment immediately at the border. Coincident with the absence of pigment there is a marked flattening of the papillae; in many places these are completely atrophied, so that the upper layer of the corium is entirely flat. The epidermis of the nonpigmented areas is thinner than that of the pigmented, and the rete-cells are smaller and lower. In the corium of the nonpigmented areas there is a remarkable disappearance of bloodvessels, those remaining are very small, with partially or wholly obliterated lumina. This obliteration is due to a connective tissue proliferation or to a hyalin deposit underneath the endothelium. The atrophy of the vessels is most marked in the uppermost layers of the corium. The corium itself is thinner than that of the pigmented areas, and its connective tissue is poorer in nuclei. Its fibrils have a more uniformly horizontal arrangement, differing very strikingly from the irregularly whorled structure of the corium of the pigmented skin. The sweat-glands show no change.

On staining with orcein, according to the method of Unna-Taenzer, this horizontal arrangement is found to be due entirely to the fibers of elastic tissue, which are drawn into closely-lying parallel bundles, owing to the disappearance of the intervening collagenous tissue. The bundles run horizontally to the surface of the skin. They are so numerous that the impression is obtained of an actual increase in the number of elastic tissue fibrils, but I am not able to say that this is true. There is as sharp a break in the arrangement of the elastic tissue as there is in the pigmentation, and the horizontal arrangement is coincident with the loss of the pigment. It is evident that the collagenous tissue is chiefly affected in the atrophy of the corium.

No chromatophores can be found in the corium of the nonpigmented areas. There are very few leukocytes in these areas, and none containing pigment were found. I have seen nothing which would lead me to believe that there was a removal of the pigment by wandering cells.

The staining for "mastzellen" with dahlia and methylene-blue did not reveal any unusual collection of these in the vitiliginous areas, but in sections stained with Unna's polychrome methylene-blue large numbers of cells showing reddish granules in their protoplasm are found in the corium of the nonpigmented regions. These cells have large protoplasmic bodies, are for the greater part irregular in shape, possessing long branched processes, and have oval or spindle-shaped nuclei. No distinctive differences can be made out between their nuclei and those of the other connective-tissue cells of the corium. The protoplasmic granules are large, in some cases larger than those of eosinophile leukocytes. The coarser granules are usually grouped near the nucleus, but they may also be found in the processes.

These cells are most abundant near the vessels and are found in their walls just outside of the endothelium. They are also found throughout the corium away from the vessels, but always most numerous in the upper layer beneath the epidermis. Few of them are found in the corium of the pigmented areas. A few cells of the same size and shape with granules staining blue with the polychrome methylene-blue are found also in

the corium of the vitiliginous skin. These are probably the "plasmazellen" of Unna. As in a few instances the nuclei of the "mastzellen" appear to be fragmented, I am inclined to believe that these cells are most probably degenerating connective-tissue cells. In none of them have I been able to find any pigment granules.

To sum up, the histologic changes shown in this case of vitiligo are: Atrophy of the collagenous tissue, papillae, bloodvessels, nerves and chromatophores with disappearance of the pigment; preservation and horizontal arrangement of the elastic tissue with apparent increase of the same; and the presence of numerous large branched cells showing reddish granulation with polychrome methylene-blue (mastzellen).

All of these appearances with the exception of the striking arrangement of the elastic tissue were observed by Marc. The fact that vitiligo is secondary to an excessive production of melanin in the corium must not be overlooked. The latter phenomenon cannot at present be explained beyond the theories of angio- or neurotrophic origin. The microscopic study of the pigmented portions shows an increase in the number of chromatophores and connective-tissue cells in the upper portion of the corium, evidences of an increased cellular activity. As soon as the borders of the nonpigmented areas are approached, "mastzellen" are found in numbers, and there is a general disappearance of the cells of the corium. From these findings vitiligo would appear to be an atrophy of the more highly specialized cells of the corium secondary to an increased activity of the same.

HYPERTROPHY OF THE PANCREAS.—The lobules of the organ are enlarged in comparison to those of normal cases. This enlargement is due partly to a slight increase of the intralobular connective tissue, partly to small collections of leukocytes throughout the lobules, but chiefly to a true hypertrophy of the parenchymatous cells. These are well preserved throughout the gland; there are no evidences of postmortem change found in any part. The majority of the alveoli are larger than normal; in many of them a distinct lumen is seen. In the majority of cases the central part of the alveolus is filled with a hyalin, homogeneous substance which frequently shows a vacuolation and occasionally containing leukocytes. The nuclei of the alveolar cells are large and deeply staining; the protoplasm is finely granular, staining but slightly with hematoxylin. No star or spindle-shaped cells are to be seen in the central portion of the alveoli.

The areas of Langerhans are in many cases 2 to 5 times the size of those usually seen in the pancreas. Such enlarged areas consist of convoluted cords of cells having in some cases a slight lumen, in a few instances appearing cyst-like. This is lined with endothelium, and in some cases contains blood, in others a finely granular precipitate. The chief part of the enlargement is due to the dilation of these blood or lymph-spaces. The nuclei of the cells of the areas are smaller than those of the alveolar cells, but stain more deeply; the protoplasm is much less granular and takes but little stain with hematoxylin. The connective-tissue framework of the enlarged areas is also more prominent than usual. Wandering cells are found both in the cords of epithelial cells and in the interstitial substance. These appearances in many ways are similar to those found by me⁸ in the pancreas of a case of hemorrhagic pancreatitis with fat-necrosis.

The bloodvessels of the organ show moderate congestion; this is most marked in the interlobular adipose tissue. The collecting ducts show no change. The interlobular connective tissue is not increased and the adipose tissue is not in excessive amount. There are small foci of small-celled infiltration in the fat-tissue, and occasional small hemorrhages from the distended capillaries. There is also slight edema of the interlobular tissue. No fat-necrosis was seen. Metastases of the gallbladder tumor could not be found, though these were abundant in the neighboring lymph-glands and about the nerve-structures behind the pancreas.

The existence of a true hypertrophy of the pancreas is denied by most authors. Orth and Lancereaux express the common opinion when they say that hypertrophy of this organ is extremely doubtful, the reported cases of enlargement being inflammatory in character. There is without doubt an acute pancreatitis in my case, but the slight edema, hemorrhages, and small foci of leukocytes are not extensive enough to account for the greatly increased size of the organ. Moreover, the fact that the lobules and with them the alveoli and areas of Langerhans are actually hypertrophic, makes this feature of the case much more important than the slight inflammatory changes present. The hypertrophy outweighs the latter in importance, and must, I believe, be considered as a primary condition and not secondary to the inflammation. The increased size of the cells, the enlargement of the lumen of the alveoli and of the areas of Langerhans point to an increased glandular activity. It is possible that this is compensatory in character, or the enlargement may be associated with the pathologic changes in the nerve-structures behind the pancreas, as has been thought to be the case in hemorrhagic pancreatitis. The infiltration of these structures with tumor-cells and leukocytes may be the exciting cause behind the pancreatic condition, and the changes in the organ may represent an early stage of pancreatitis. The same cystic enlargement of some of the areas of Langerhans was found in the case of pancreatitis with fat-necrosis mentioned above.

On the other hand there is strong clinical evidence to support the belief that the pancreatic condition is secondary to that of the liver. Korte and Riedel have both observed in operations for gallstones that the entire pancreas or portions of it, usually the head, was enlarged and much harder than normal. The latter⁹ reports a number of cases of this nature. In 3 cases of operation for gallstones he found the pancreas to be enlarged and hardened to such an extent that carcinoma of the organ was suspected. The enlargement in these cases disappeared in from 1 to 2 years after the removal of the gallstones. In one case only was there an opportunity for a microscopic examination, and in this patient, who died after the operation, the pancreas showed a chronic interstitial inflammation. Riedel emphasizes the fact that even at operation it is impossible to differentiate between these benign tumors of the pancreas and carcinoma of the organ. Since the condition is apparently dependent upon the presence of gallstones, he believes that the presence of these must be regarded as the chief differential factor.

The inflammatory enlargement, however, occurs whether the stones are in the gallbladder or the common duct. It cannot be explained by an extension of an inflammation from the biliary passages into the pancreas, and is apparently not associated with the presence of microorganisms. It does not occur in all cases

of cholelithiasis. It is difficult to explain its origin on the ground of irritation by calculi. All of the cases in which it is found presented extreme icterus. In my case no stones were present in the ducts, the icterus was of recent standing due to the growth of the gall-bladder carcinoma, and the pancreatitis was slight in proportion to the hypertrophy. It is, therefore, possible that this hypertrophy is in the nature of a compensatory one, that with the abridgement of the liver function that of the pancreas is increased, resulting in a true hypertrophy. This is borne out by Riedel's cases in which the pancreatic tumor slowly disappeared after the reestablishment of the liver-function and the disappearance of the icterus. Secondary to the hypertrophy is the inflammation, which if life had been maintained longer would probably have assumed the character of a chronic interstitial process.

In conclusion, I should say that the theoretic relations existing between the various pathologic conditions found in this case are of great interest. Reviewed briefly they are as follows: cholelithiasis followed by primary carcinoma of the gallbladder, obstructive jaundice, compensatory hypertrophy of the pancreas; carcinomatous infiltration of the adrenals, melanosis of the skin (Addison's), followed by vitiligo.

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THREE CASES OF TUBERCULOSIS OF THE SKIN DUE TO INOCULATION WITH THE BOVINE TUBERCLE-BACILLUS.¹

By MAZYCK P. RAVENEL, M.D.,
of Philadelphia.

From the Laboratory of the State Live Stock Sanitary Board of Pennsylvania.

THE relation existing between tuberculosis in the bovine species and man, and the danger to man from the consumption of products containing the bovine organism is one of the most important subjects before the bacteriologist and hygienist today. Bitter discussion has been waged, and extreme statements have been made on each side. Some have gone so far as to assert that residence of the tubercle-bacillus in cattle so changes its character that its pathogenic power is lost for man, and vice versa. I quote this opinion only to show the reckless extremes to which men go in the face of strong evidence, and without a single observation to support their view. I wish to enter a protest against such unsupported expression of opinion, and to say to those who belittle the danger to man from tuberculosis in cattle, that they are at least exhibiting a lack of precaution in a case where health and life are at stake, which they would consider most foolish in a money transaction, where only dollars were in the balance. The question is one which can be finally determined only by careful observation of facts and laboratory experiments, and with this end in view I wish to record the following cases of accidental inoculation of man by the tubercle-bacillus from bovine sources:

CASE 1.—Late in the year of 1896, while making a post-mortem examination on a tuberculous cow, Dr. E., a veterinarian of Pennsylvania, accidentally wounded the knuckle of his forefinger. The wound healed badly, and a nodule soon formed which showed a decided tendency to ulcerate. After some weeks he had the nodule removed and the excised portion was sent to me for examination. Unfortunately it had been kept for some 10 days in alcohol before I received it, and the diagnosis was therefore necessarily limited to the examination of sections. In the layer of tissue immediately underlying the skin was seen a mass of round cells with a considerable number of epithelioid cells, and one large giant-cell containing many nuclei arranged about the periphery. I have not been able to demonstrate bacilli in these sections in an entirely satisfactory manner, but the clinical history of the case with the histologic lesions leave no doubt that it was one of tuberculosis due to inoculation. The nodule recurred after excision and was then treated by the hot-air apparatus, which resulted in a cure. Up to the present time there has been no return of the trouble.

CASE 2.—On January 1, 1900, my assistant, Mr. G., while performing a postmortem on a goat which had succumbed to experimental inoculation with a culture of bovine tubercle-bacillus, scratched his knuckle on the broken ends of the ribs. Within a half hour the wound was washed out with a 1:1000 solution of mercuric chlorid, and sealed. It healed promptly, but about 3 weeks after became reddened, swollen, and sensitive, especially on motion. It was protected but grew worse, and on February 27 Dr. C. H. Frazier excised the nodule, with a margin of healthy skin. With one half of the nodule we inoculated 2 guineapigs subcutaneously, and the other part was prepared for sections. These sections show an infiltration-process which encroaches on the papillary layer of the skin, some of the papillae being destroyed. No typical giant-cells can be made out. None of the sections were stained for tubercle-bacilli. On May 5, one of the inoculated pigs died and the other was killed. Both of them showed a generalized tuberculosis involving the chest-cavity as well as the abdomen. There has been no return of the lesion so far.

CASE 3.—This case has been reported before, though not to this society, and the connection of the individual in whom it occurred with the Laboratory of the State Live Stock Sanitary Board, and the fact that the examination was made by Dr. Guitéras at the University of Pennsylvania, makes me feel justified in calling it to your attention. The patient is a well known veterinarian of this city, who, in making an autopsy on a tuberculous cow, wounded the knuckle of his forefinger. Between 3 and 4 weeks after, the scar was noticed to be enlarged, reddened, and somewhat sensitive. As it showed no tendency to improve, but rather grew worse, some 6 weeks after it was first noticed it was excised by Dr. H. W. Cattell, and the wound cauterized with bromin, since which there has been no return. The nodule was examined by Dr. John Guitéras, who demonstrated its tuberculous nature by finding tubercle-bacilli in sections.

The value of such cases as I have reported in proving the virulence of the bovine tubercle-bacillus for man has been questioned on the ground that the lesions resulting from inoculation are usually slight and remain localized, the conclusion being forced that the bovine tubercle-bacillus has little virulence for man. The fallacy of such reasoning is shown by the fact that the history of these accidents is that, as a rule, whatever the source of the infection, the resulting lesion remains localized, and seldom leads to systemic infection. Says Osler in his *Practice of Medicine*: "In man tuberculosis is not often transmitted by inoculation, and when it does occur the disease usually remains local."

All observers agree that the skin offers a very poor soil for the growth of the tubercle-bacillus, as indicated by the slow evolution of skin-lesions, and the small number of bacilli found in them as a rule. Chauveau failed entirely to infect calves by superficial scarifications and punctures of the skin, the nodules which sometimes formed soon disappearing spontaneously.

¹ Read before the Philadelphia Pathological Society, June 14, 1900.

Even the guineapig, which is one of the most susceptible animals known, resists invasion by the skin. In the experiments reported by Bollinger not once in six series of experiments did he succeed in infecting guineapigs by cutaneous inoculation made after the manner of vaccination, though in every case the control-animals, inoculated under the skin or into the peritoneal cavity, became tuberculous.

In general the solipedes, sheep, goat, swine and dogs resist even subcutaneous inoculation with the tubercle-bacillus, or develop a small tumor which passes away by resolution, or by abscess, no general infection resulting.

Reports of two other cases of accidental inoculation occurring in veterinarians while making autopsies on tuberculous cows may be mentioned. In one, reported by Tscherning, of Copenhagen, cure followed removal of the growth by the knife; but in the other, reported by L. Pfeiffer, the result was not so fortunate. The patient was a man of good family history and in good health. He wounded the thumb of his left hand, the point of the knife probably entering the articulation between the first and second phalanges. The wound healed without suppuration, but after six months a cutaneous tubercle formed about the scar, and the joint was attacked. The lungs became involved, and the man died 18 months after the accident. The cartilage of the joint of the thumb was necrosed, and the articulation filled with a caseous mass which was extraordinarily rich in tubercle-bacilli.

With these facts in view, it is manifestly unfair to consider the local character of the lesion produced by superficial inoculation of man by bovine tubercle-bacilli as an indication of lessened virulence for man.

The total results of comparative inoculations of tubercle-bacillus from bovine and human origin in almost all of the common animals, show a much greater virulence for the bovine organism than for the human, and until some good reason to the contrary is shown, it is fair to assume that this increase of pathogenic power will hold good for man also. The five cases given above prove conclusively that the bovine tubercle-bacillus is not devoid of pathogenic power for man, and while the number of cases is too small to enable us to draw sweeping conclusions, the indications are that, by this method of inoculation, the pathogenic power is at least as great as that possessed by the tubercle-bacillus from human sources.

A SYSTEM OF PERSONAL BIOLOGIC EXAMINATIONS THE CONDITION OF ADEQUATE MEDICAL AND SCIENTIFIC CONDUCT OF LIFE.¹

By GEORGE M. GOULD, M.D.,
of Philadelphia.

THE ranchman has his annual round-up; the merchant his yearly account of stock and balancing of books; the machinist gives his engine a thorough going-over at regular intervals; every military organization has its reviews and inspections, every government its budgets—indeed, every financial hair of the commercial head is noted, and not a sparrow of the hunter, Success, falls to the ground unnumbered; those that do not fall are even more accurately numbered. But it is

not so concerning the one piece of mechanism that conditions all these things, and that is the most valuable of all earthly possessions—the human body. For all practical consideration a man's body is his life, and yet civilization has come so far without any systematization of the business and mechanics of the entire single and personal life. The science of bodily living in its complete extent still awaits its discoverer. Numberless philosophers treating of the conduct of life have soared in superficial inexactness and easy generality over the heads and hungers of the individual liver, but they have utterly failed to formulate the physiologic and pathologic conditions of success and failure. All the biologic and medical special sciences have struggled toward an unreachd unity; all are single rays, as it were, awaiting the lens of a focalizing intelligence to illumine the concrete image of our total physical appearance here. War has devised a rough and crude system of physical examinations for the would-be soldier; insurance companies have more accurately examined the bodies and life prospects of their policy-holders to estimate their financial risks; through the Bertillon system, criminology has still more perfectly fixed the anatomic measuring of the bodies of the lawbreaker; the Amherst and Harvard examinations have looked into the muscular functions of a few students for four years of their lives; the psychophysics laboratory has measured a few neurologic reactions; the medical practitioner has found out a few ways of reaching backward to the etiology of some single diseases; a few hundred school children have been subjected to some tests as to growth and the influence upon organization of poverty and wealth. But all these, I believe, are sporadic and ineffectual hints of a coming science of man, based upon a thoroughgoing and repetitive system of physiologic and pathologic examinations which will ultimately give us a genuine and all-comprising science of anthropology based upon all the data, morphologic, physiologic, and pathogenic, of the entire individual life. Prophecy and prognosis are based upon a thorough knowledge of the past and present fact, a rigid understanding in a scientific sense of the evolution of the organism and of its present departures from a normal standard. For his children a foresighted man must wish such an accounting, such a prophecy and prognosis, and as to himself every intelligent adult, when he awakens to scientific consciousness, must try to look down through the years, and reckon up his powers and possibilities of life. This most important function of provision has heretofore been left to the gypsies, the palmists, the astrologists, and the clairvoyants! Is it a wise way for science to leave the individual struggler, unconscious and ignorant of his own body and its fateful laws, incapable of learning the scattered and ununified half-sciences blindly converging to some far-off unity of mutual helpfulness and life? The crowning work of scientists is to turn Science into Prescience. The unification of the sciences dealing with the conduct of life, the making practical and useful our knowledge of the individual organism, and lastly to establish a scientific prescience,—such are the ideals of a living anthropology.

Is it not at once plain that these ideals can be realized only by a system of periodic examinations and records made every year, or every five years, throughout the life of the individual organism? Such a system of records may be held generally to comprise the following elements:

¹ Read before the Section on Medicine, American Medical Association, Meeting of 1900, at Atlantic City.

1. *The Hereditary Datum.* The endowment at birth, the influence of heredity, must in every way govern and condition the development of the organism, and modify every reaction to environment. It is wise, therefore, in all ways possible, to fix, at the opening of life, what is this datum of inheritance. Nationality, ancestral and genealogic histories, craniology, cerebrology, etc., etc., help to make up the estimate of this factor.

2. *The Developmental and Historic Record.* Especially during the period of growth (childhood and adolescence), the space between the annual or quinquennial systematic examinations should be historically epitomized. The strains, work, illnesses, and tasks conquered or incomplete, are surely a necessary part of the life-chronicle.

3. *The Morphologic or Anthropometric Examination* is fundamental. In this the Bertillon system, modified, perfected and expanded, or something similar, should form the basis of such a system of physical measurements, descriptions and records, statistic and graphic, that any future variation of the organism would be detected in later examinations, and thus would be preserved the morphologic picture of the individual for the whole life.

4. *The Physiologic Record* would include the testing and tabulation of all the significant reactions and functions. These would be made up of all necessary dynamic tests of the muscular system, of statements of accurately observed metabolic and nutritional functions, the reactions and reflexes of each of the special senses, and of those of the neurologic and psychophysiologic systems. The profound influence of habits, both positive and negative, innocent or harmful, should also be remembered.

5. *The Psychic or Intellectual Datum* is one too carelessly ignored in scientific and anthropologic studies. The fundamental qualities of character, disposition, memory, sentiment, religion, reason, morality, education, etc., are powerful influences acting upon and reacting to the environment and to disease, and if they are left out of the count a most valuable determinant of scientific prescience is lost.

6. *The Pathologic Element* is one heretofore almost or utterly ignored in anthropologic studies and in instructions as to the conduct of life. The profession should urge its profound importance. The examinations at stated periods should in large part consist of the records of the findings of expert medical specialists, secured by all the arts and instruments of diagnosis at their command. All departures from health and normality that indicate pathologic results or tendencies in any organ, or in the organism as a whole, are absolute conditions of estimate as to present powers or prospects. One is almost inclined to think the savings in medicolegal cases by such a system of examinations would defray the expenses of making them. Some time ago a railway company, after several years of legal proceedings, was forced to pay a man \$10,000 damages for intracranial hemorrhage, said to have been caused by a fall from a car. When the man died a bullet was found in his brain, received 25 years ago in the Franco-Prussian War, and this had produced all the nonfeigned symptoms, for which the railway had to pay.

7. *The Factor of Heredity* closes the circle, with the possibility of making more accurate the knowledge of the transmission of the individual endowment to the child. Successive generations are but the completing and extension of a single personality. The family is the realization of the incomplete individual.

Leaving out of consideration the questions of the

onerousness of the task proposed, and the apparent impossibility of carrying out so many observations, one may ask as to the feasibility of keeping the records of such a series. The answer to this query points to the most remarkable plasticity and adaptability of the modern plan of record-making by the card-system, with its ever-variable and extensible use of loose leaflets or cards of different colors, numbers, ear-marks, sizes, etc. Photography, the kromskope, the phonograph, the instruments of the physiologic and psychophysiologic laboratories, and those of every specialist in medicine, make it easily possible to condense the chronicles of all tests and examinations in an inexpensive and effective way. The postmortem records, and the preservation of the brains, and perhaps of the skulls, of the subjects, would supplement the work.

As has been intimated, we already have the beginnings, the sporadic attempts, and detached parts of such a system of examinations. The Bertillon criminal records of the police bureaus, the anthropometric data of military examinations, the results of athletic and gymnasium tests, those of psychophysiologic laboratories, the medical examinations of school-children, and those especially of life-insurance companies, etc.,—all these indicate the thought, labor, and expense which civilization is giving to the problem. But the most important of all contributions might be the case-books, hospital records, and patients' histories of physicians. Hardly a tithe of the precious material, however, is utilized. The waste of biologic data, wasted because not systematized and unified, in the lost records of physicians is appalling. The most valuable books in the world are the oldest city directories, scientific statistic records, etc., and more valuable still would in future years be the present-day case-books of scientific physicians, if they were well kept and illuminated by a statistical and scientific judgment. We now dump them into the pulp-mill!

Is it a foolish dream, is it an unrealizable ideal, that all these things might be preserved, and rendered of use to science and humanity by some institution carried on by the Government, by a university, or by a union of scientific and medical men, whereby the records of individual lives might be made so frequently, so continuously, and so scientifically that we should at least gather the inductive data for a genuine science of anthropology, pathology, and ethical biology? If Government could be prevailed upon to devote to this work one-tenth of the money now squandered in war; if legislators could be prevailed upon to give to it a small portion of their stealings and political plunderings; if a fraction of the money poured into the pocket of the ward and city bosses could be got; if a small percentage of that spent on comic opera could be shunted this way; if these are idle dreamings is it not perfectly possible that in future ages some wise legislator of some civilized government may convince his fellows that not only is this the duty of the national administration, but that the very beginnings of the system are already in operation in the fact of the national census-taking. In this the mechanism is really inaugurated, and needs but the inclusion of the civil-service examination, the soldiers' entrance-tests, and the governmental pensioners' medical examinations, to bring it a long way towards perfection. With the plan once determined upon, and the brain once found to gather the haphazard and discrete parts to an organismal unity, but little additional expense would be incurred over that now spent in the

separate systems. Indeed, the scheme itself is only an extended and a perfected bureau of vital statistics. Once that such cooperation were started, the city and State with their criminologic statistics, the insurance companies with their accurate vital and pathologic records, and especially the medical profession with its systematized records of individual and social morbidity, and many other agencies, would be drawn into cooperation, and the bases of a truly inductive and physiologic science of civilization would thus begin to be laid.

While we wait for that millennial palace of science we physicians need not be idle,—nay, we may be at work in the quarries. Our first duty is to reorganize, systematize, and make scientific our case-books and recordings of patients' histories. Let us study this great and neglected art so that these most precious fruits of our life-work shall not end in the pulp-mill. The lack of literary workmanship in making and keeping our records of disease is altogether deplorable. What is left to science of the life-work of a million physicians whose business has been with the most precious biologic facts of the world? Can we not perfect some bridge whereby the results of our life-labors can be carried over the stream of death and become the property of general biologic and pathologic science?

Surely, then, our second duty is to make our science prescient by means of the repeated examination at stated intervals of those patients whom we can convince of the necessity and wisdom of such a proceeding. It is a shame of medicine that in the one department of our science which we are most foolishly inclined to look down upon with too much superciliousness, its practitioners have outrun us. The dentists have long recognized the need of periodic examinations of the special organ, regardless of symptoms, and they have at last driven the knowledge into the minds of their patients. Thousands of patients have their teeth periodically examined for beginning and for preventing wants and disease. If this is wise as regards the teeth, how infinitely more wise it would be as regards the kidneys, the eyes, the heart, arteries, etc., and the person as a whole. It is the shame of medicine and the basis of quackery, this symptom-treating and symptom-killing. What a horrible fact—this of the vogue of the pain-deadeners! Millions of dollars are capitalized in the business, and half or three-fourths of the work of our lives is devoted to the mere stopping or deadening of symptoms. But, as we all know, true medicine is to stop the causes of symptoms, to prevent the symptoms from ever arising. For many years, in my specialty, I have been begging and commanding every patient to have annual or biennial ocular examinations made, regardless of "no trouble," regardless of "perfect satisfaction." Absence of symptoms is no evidence whatever of absence of disease. No eye should ever be left over two years without reexamination. No spectacles can remain correct two years, because no eye ever preserves the same refraction, balance, and powers for that period of time.

And what good, also, is the enucleated eyeball, or any piece of dead tissue, in the hands of the pathologist? Certainly only to prevent other living eyes and organs from becoming as these dead ones have become. True pathology is surely knowledge of disease in the making. The pathologist's final problem is to prevent pathologic specimens from ever coming into his hands. Quâ pathologist he must commit scientific suicide. Most of our fashionable pathology is the paleontology, not the biology, of disease; but was it not said of old

that it is better to be a living dog than a dead lion? How is disease in the making ever to be discovered except by examinations, continuous observation, of the living, supposably well, organism?

Is it not even true of living disease that one-half the patients seen by the doctor are seen far too late? For paresis, locomotor ataxia, etc., and for many psychic diseases, we do nothing, because we recognize their existence so late that nothing can be done. Had they been seen earlier, injury could have been prevented. Surely in more than 25% of my patients, many years or whole lifetimes of suffering and disease could have been obviated. It is doubtless as true in general medicine. All good medicine inevitably tends to become preventive medicine; all good physicians labor to stop disease before it arrives. The whole ingenuity of the trained diagnostician is now expended on the problem of the earlier symptom. He is the greatest discoverer who discovers the presymptom, or the symptom of the symptom; the greatest therapist is he who cures before the disease exists; he who starves the bacillus to death; he who stops the evil habit, thus preventing the malfunction that finally becomes organic disease. The best cat is the one that kills the rat that eats the malt that lies in the house that Jack built. It is a truism that gout exists in the patient's system long before it causes a twinge of pain; the kidneys are ruined before the slightest subjective symptom is manifest. There may be heart-changes indicating the existence of nephritis, which a single urinalysis may not detect; arteriosclerosis may be present prior to subjective symptoms, and the objective examination would detect it; there may be unsuspected diabetes without symptoms until examination of the urine reveals it—and yet, even with our crude prescience, early urinalysis of the apparently well would often reveal the hidden evil at work sapping and mining toward the vital centers. Every oculist has often discovered albuminuria before the general physician suspected it. There are a hundred known intimations and auras of oncoming disease, but there are a thousand undiscovered ones, presymptoms, advance scouts, and forerunners, to be learned when the slight and unconscious departures from normality are studied by examinations of the supposably well. Pathogenesis, not therapeutics, is the ultimate study of all medicine. And all pathogenesis is by no means running bugs to their holes! A number of life-wasting diseases are not bacterial in origin, and even the growth of the bacterial diseases depends upon the soil in which they are sown.

I picture to myself a new field of work opening out before the poor plundered general practitioner. It must often seem to him that as general he has been stripped of both army and enemy. One by one the specialists have robbed him until he has left hardly a soldier or a patient. The surgeon first took almost a half of his army, and now threatens to relieve him of colonels appendicitis, typhoid, and heaven knows of how many more officers which he formerly considered as his very own. Then the aurist, the oculist, and the rhinologist deprived him of his special senses, and the laryngologist rendered him aphonic. If the obstetrician and gynecologist left him one or two of all his women-folk, the rest-cure man and the nerve-specialist soon alienated the affections of these hysterics—and they lived unhappily ever after. The pediatricist stole his babies, and the psychiatrist his mind; and, lastly, now the gastrologist will not allow him to have all to himself even a simple stomachache!

The truth seems to be that of all the specialists the generalist has been squeezed into the narrowest specialty, and the surgeon is grasping avidly at his one or two remaining comforts. Even the diseases of the lungs, stomach, and kidneys are now claimed, and we may soon expect to see such advertisements in the religious and daily newspapers as: "A new operation for neurasthenia; craniotomy for unselfishness; preventive inoculations in case of threatened breach-of-promise; vaccinations for antivivisectionists; damaged heart-valves surgically repaired and while you wait; kidneys transplanted immediately following the next electrocution, and complete maturation of the artificially fertilized ovum in our new twenty-first century incubator."

The family physician's function seems to be fast becoming that of adviser in general and referrer to others; the "last straw" is that ethics will not permit these others to divide their fees with him. Nothing in fact is left to him except to have permanent anorexia and to move to a climate in which house and clothing are not necessary—Porto Rico and the Philippines, for example, providentially supplied without doubt for this and similar tariff-purposes.

But, seriously, have we not gone too far with our specialism, and are we not thereby in danger of losing the coordinating sense and oversight of the organism as a whole? The specialist cannot be dispensed with. By his aid and through his accuracy medicine must progress—but neither should the generalist be squeezed aside. He is even more necessary. It is his duty to teach his under-officers, the specialists, their proper places, and by his sane and large grasp of all the facts supplied by these subalterns, by his coordination of the work of each and of all with his own overlook of organism and life as a whole, he brings cosmos out of chaos, and organic unity out of hundred-eyed and selfish diversity. The specialist is fatally inclined to treat the disease; to the generalist must be left the far more important treatment of the patient.

It may seem hard and impertinent to say to an audience of generalists that the generalists have been robbed because of their own fault and negligence. The so-called stealings of the specialists are in reality helpful, and if rightly understood they leave the generalist his proper work. Life, it has been said, is made up of little things, and yet life itself is not a little thing. So it is with health, fulness of years, and utilization of powers; they all depend, medically and physiologically, upon little things, and yet compositely, they are "the greatest thing in the world." In the vogue of the specialist, the generalist is more than ever needed. If the aristocrats have usurped power, there is the chance and demand for a powerful king. The specialists are, or may be made, the assistants of the general physician, who needs their help and all the data they can supply, and whose supreme function it is to fuse the whole to a higher unity and to establish the secret relations in reality existing in all. There is no specialist who is not willing and glad to make full and systematic reports to the general physician of all his findings. It is his duty to the patient and it is the specialist's self-interest to do it well. He is not so stupid as to offend the referrer of patients. In this function the generalist has the whip-hand—and he should use it at times.

And thus it transpires that the desirable system of personal biologic tests sketched need not await the action of Government, the university department, the city or State institute, the union of anthropologic so-

cieties, or the anthropometric and pathologic institution founded by private endowment. Let us earnestly pray and work for any or all these things, but in the meantime much may be done by medical men and societies to prepare for the larger and more perfect outworking of the scheme,—nay, much may be done toward the realization of its more distinctively medical features.

Based upon the fact acutely felt by every physician, that a series of systematized periodic examinations of patients apparently well, would often reveal beginning diseases, prevent future illnesses, and increase the vital values of life, every one can prevail upon certain patients, students, members of his family, etc., to undergo the tests, etc., necessary. The more intellectual and well-to-do citizens will soon realize the self-evident value of such work, and not only submit to it for themselves and children, but will be willing to pay an annual fee for the service. Specialists will be willing to contribute their results. The examinations may be only of the more fundamental and simple factors at first until the goodwill, machinery, funds, and recognition of the significance and usefulness of the work grow.

In several ways these examinations themselves are the means of a striking self-education of the physician:

1. In systematizing and perfecting a method of record-keeping there is a subjectively psychologic as well as an objectively scientific result of inestimable good. It is a sort of liberal education. To adapt and perfect the card system to this useful end; to summarize the results of all diagnostic methods; to formulate prognoses; to classify and epitomize so that the whole shall look to the personal advantage, as well as toward the progress of preventive medicine; and finally, to dovetail the combined result into general biologic science and a clarification of the laws of heredity—all this is labor worthy of the wisest selfishness and the best intellectuality.

2. In rendering accurate and mathematic all the known and recognized methods of medical testings, there is much to be learned. It is in catching sight of the forerunning indication of disease, the symptom of the symptom, the functional beginnings of organic abnormalism that a large deal of progress lies. Who, *e. g.*, as yet, measures the blow or stimulus in taking the patellar tendon and other reflexes, with machine-shop accuracy, and also the resultant excursion or reaction, chronicling the same in his notes with absolute or approximate precision?

3. In the excursions into the borderland but still closely related domains of cerebrology, craniology, psychophysics, criminology, sociology, public hygiene, and all the rest,—in learning to make these tests, and in chronicling the results required in these studies, one enlarges the range of his subjects, broadens his personal and scientific outlook,—in a word, annexes with justifiable imperialism and expansion the adjacent territories of his special science. Each gives his light, and, as in all beneficence, by giving each increases his own as well as the general illumination. The stars go out, but the day dawns!

Blackwater Fever in India.—Reports from the populous districts in and around Sylhet, India, show that blackwater fever has been assuming the proportions almost of an epidemic. Although it is not so rapid in its fatal effects as plague, very few cases are said to recover. Treatment seems to be of little avail.

ARE CONSANGUINEOUS MARRIAGES INJURIOUS TO
THE RACE?*By LAWRENCE IRWELL, M.A., B.C.L.,
of Buffalo, N. Y.

It is popularly believed that the intermarriage of persons nearly related by blood leads to evil consequences in the offspring, and in proof of this it has been pointed out that such diseases as idiocy, insanity, deaf-mutism, and various other disorders are much more frequently found among the children of parents who are close blood-relations than among those who are not so related. That all the imperfections above mentioned and some others are met with among the children of consanguineous marriages is true, and that they occur here more frequently than among the general population may be true; but that this condition is due to the mere fact of blood-relationship in the parents is a popular fallacy.

It cannot be said that consanguineous marriages are repugnant to nature, although custom and religious teaching have developed a repugnance thereto in civilized man. From the early history of mankind we learn that marriages between very close blood-relations were both legal and common. Abraham wedded Sarah, his half-sister; Isaac his cousin once removed; and Jacob his first cousin. Lot became the father of two powerful chieftains by his own daughters. Esau married a cousin, and Jacob married Rachel and Leah, daughters of Laban, cousins of still closer degree of consanguinity. Joseph, Judah, Levi, and Simeon were the offspring of close alliances. Jochebed, the daughter of Levi, married Amram, her own nephew, and became the mother of children who were the result of at least five generations of consanguineous marriages; and they were neither idiots, blind persons nor deaf-mutes, but one of them was Moses, the greatest statesman of his time, another was Aaron, his eloquent brother, and a third was Miriam, the prophetess.

The Persians, Tartars, and Egyptians sometimes married their sisters and their daughters; and even the members of the royal families of antiquity seem to have had no objection to the closest matrimonial alliances. The laws of the Arabs, up to the time of Mahomet, permitted consanguineous unions; and the Jews, notwithstanding the strict injunctions of Moses, continued them for a great number of years.

Nevertheless, the frequency of imperfections in the children of nearly-related parents has been noticed from a very early date, as is proved by the fact that all the great moral codes—Mosaic, Roman, Mussulman, and Christian—have alike discountenanced such unions. The Roman law, for example, prohibited marriage between ascendants and descendants, a prohibition extending to relations by adoption. In the collateral line, the prohibited degrees included brother and sister, and all cases where one individual stood *in loco parentis* to the other, as uncle and niece. This law and all the other laws upon the subject appear to have been founded on the belief, which is still generally accepted by those who have not studied the matter, that the unhappy results so often following consanguineous marriages depended upon the mere fact that parents were of the same blood. This view, however, has upon inquiry proved to be erroneous; yet this discovery has in no degree lessened the practical utility of the law forbidding the marriage

of blood-relations. In fact, I hope to convince you that there is more need of a strict observance of this rule in the nineteenth century among our highly civilized communities than there was among the primitive peoples to whom it was promulgated as a religious ordinance.

The limited time at my disposal makes it impossible for me to give you any elaborate statistics, even if anything of vital importance could be proved by mere figures. The most I can do is to draw your attention to the labors of some of the chief authorities upon this subject, and to place before you the conclusions which, in my opinion, can be legitimately drawn from the evidence at our disposal.

The following diseases have at some period in the world's history been attributed to consanguineous marriages. First come phthisis and leprosy, the true etiology of which is now known to be microorganic. Then follow idiocy, insanity, epilepsy, cretinism, hydrocephalus, abnormally-sized heads and prognathous jaws, hare-lip and cleft palate. But this does not complete the catalog, since rickets, goiter, chorea, deaf-mutism, tuberculous meningitis, ichthyosis, retinitis pigmentosa, spina bifida, albinism, hydatids of the liver,² dwarfing, and sterility have all been explained by the simple fact that a blood-relationship existed between the parents of the victims.

The true cause of many of the complaints which I have named is now recognized, but as I am not a physician (much less a trained pathologist), I can only refer you to the various works upon the etiology of disease which may be found in any medical library.

The earliest important examination of the influence of the marriage of near kin upon the offspring was made by Mr. August Voisin,³ the French alienist, in 1865. He investigated the condition of 46 families resulting from consanguineous unions, and he showed very clearly that neither idiocy, insanity, cretinism, deaf-mutism, epilepsy nor pigmentary retinitis existed among any of these families to any greater degree than among the general population.

In 1866, Dr. Down,⁴ of London, selected 20 families united by the ties of consanguinity. He found 138 children, of whom 75 had average health and intellect; 28 were idiots; 8 were stillborn; 11 were "consumptive;"⁵ and 19 died prematurely. To make his observations complete, Dr. Down selected 20 other families in which the parents were not kindred, but had idiotic children. The whole number of children was 145, of whom 83 were in average health; 26 were idiots; 1 was "consumptive;" and 34 died prematurely. In all these families about one-fourth of the idiots were the first-born children, a phenomenon upon which you must place your own explanation.

As long ago as 1869, the New York State Medical Society appointed a committee to investigate the influence of consanguineous marriages, and its report, published in the *American Journal of Insanity* for 1870, leads us to believe that if the family be free from degenerative taint, marriage among its members in no way diminishes the chances of healthy offspring. The opinion of the committee is summed up in the following words: "The objection to consanguineous marriages lies not in the bare fact of their relationship, but in the fear of their having similar vitiations of constitution."⁶

In 1875, Mr. George Darwin, now professor of astronomy at the English University of Cambridge, inquired

* My original intention was to read this paper before the Sociological Section of the American Association for the Advancement of Science. Its length, however, made that course impolitic, if not impossible.

into the consequences of the marriage of first cousins, and his opinion, printed in the *Journal of the London Statistical Society*,⁷ while most valuable, is not conclusive.

His words are: "It seems probable that in England, among the aristocracy and gentry, about 4% of all marriages are between first cousins; in the country and smaller towns between 2% and 3%; and in London perhaps as few as 1.5%. Probably 3% is a superior limit for the whole population. Turning to lunatic and idiot asylums, probably between 3% and 4% of the patients are offspring of first cousins. Taking into account the uncertainty of my methods of finding the proportion of such marriages in the general population, the percentage of such offspring in asylums is not greater than in the general population, to such an extent as to enable me to say positively that the marriage of first cousins has any effect in the production of insanity or idiocy, although it might still be shown by more accurate methods of research that it is so. With respect to deaf mutes, the proportion of offspring of first-cousin marriages is precisely the same as the proportion of such marriages for the large towns and the country, and therefore there is no evidence whatever of any ill results to the offspring in consequence of the cousinship of their parents."

Mr. Darwin found no evidence that the marriage of first cousins had any effect upon the production of deaf-mutism, idiocy, or insanity, but he observed a slightly lowered vitality among the offspring of first cousins, and a slightly higher death-rate than among the families of nonconsanguineous marriages. His statistics justify, to some extent, the belief "that offspring of first cousins are deficient physically, while at the same time they negative the views of alarmist writers on the subject."⁸

The most thorough inquiry into the results of consanguineous unions was made by Mr. A. H. Huth, in 1875.⁹ His volume of 359 pages, of which a second edition was published in 1888, contains an exhaustive examination of the subject. The only work of any note which has appeared since 1875 is that of a Danish physician, Dr. Mygge (published in 1879), of which there is no English translation. Mr. Huth's conclusion is that there is no greater amount of disease or deformity among the offspring of parents related to each other by blood, than among the children of parents not so related, always provided that the parents are free from general deterioration and from tendencies to disease, conditions which, it must be admitted, are very seldom fulfilled.

Where the error lay in the old doctrine upon which was founded the prohibition of consanguineous unions, was not in asserting that disease was more often met with in the children of these than in those of other unions, which is true, but in attributing these unfortunate results to the mere fact that the parents were blood-relations. Over and above the fact that consanguineous marriages are almost certain to transmit in an accentuated form any defect or tendency to disease already present in the family, there is, in all probability, no reason why such marriages should not take place. I have said "in all probability," because the most careful investigation that I have been able to make has left me without any definite opinion upon the following question: Does such inbreeding as occurs among civilized humanity tend toward either sterility or dwarfing? The vast array of experimental evidence usually presented upon this topic, from the self-fertilization of plants, carried out by our great mas-

ter, Charles Darwin, to the prolonged inbreeding of rabbits undertaken by Sir John Sebright, has no value in determining the consequences of the marriages of blood-relations, as we are not concerned with the closest possible inbreeding.

In reference to both dwarfing and sterility, the evidence is most contradictory. One can find a considerable number of isolated communities where intermarriage has been the rule, but, in almost every instance, while one observer considers that the people are abnormally small, or are becoming sterile, another either denies those facts or discovers some different explanation of the phenomena.

Man cannot be subjected to experiments like those tried in the case of other animals, and habitual intermarriage of the *nearest* relatives has long ceased to be an everyday occurrence. Incestuous unions were known to have prevailed among the Egyptians and Persians; but, according to Mr. Adam,¹⁰ there is no proof that physical deterioration ensued. We must remember, however, that, among these nations, marriage did not always take place between closely-related persons; and cattle-breeders inform us that the mixing-in of even one drop of unrelated blood is sufficient to neutralize the injurious effects of long-continued close interbreeding.

Mr. Huth¹¹ asserts that, although the Ptolemies habitually married their sisters, nieces and cousins, they were neither sterile nor particularly short-lived. Mr. Galton,¹² upon the other hand, says: "The result of Ptolemaic experience was distinctly to show that intermarriages are followed by sterility."

The Veddahs of Ceylon are probably the most in-and-in-bred people that ever existed. Among them the practice of a man marrying his younger sister was the rule. Mr. Bailey¹³ tells us that it was *the* proper marriage. With the Bintenue Veddahs this custom may be said to have been extinct in 1865, while among those of Nilgala it was at that time only gradually disappearing. Mr. Bailey believes that close intermarriage is quite sufficient to account for the short stature as well as the weak and vacant expression of these people. But he did not find any traces of insanity, idiocy, or epilepsy—the maladies which such marriages, according to popular belief, are supposed to produce. He writes: "The injurious effects of this custom would seem to be plainly discernible. The race is rapidly becoming extinct; large families are all but unknown, and longevity is very rare."

Pitcairn Island, in the Pacific, which was uninhabited until 1790, was in that year peopled by the 9 mutineers of H.M.S. "Bounty," who brought with them 6 men and 12 women, natives of Tahiti. There were in 1878 about 125 inhabitants upon the island, and up to that date all observers agreed that they were muscular, tall, and generally healthy. I must mention, however, that during the past 50 years a few strangers have joined the colony, and that men-of-war have often visited the island.

Upon the other hand, Captain Dyke, of H.M.S. "Comus," who visited the island in April, 1898, and found that the population, which was 136 in 1894, had increased to 149, says:

"The question whether the constant intermarrying that has taken place in 107 years is physically degenerating the younger members is a very interesting one. However, one curious trait is very noticeable in them, viz., the loss of the front teeth. To be correct, the teeth

are not lost, but broken off. Some attribute this defect to the food eaten by the inhabitants, such as bananas, yams, etc., but this is not noticed among the negro races in various parts of the world, or even in the Tahitian natives close at hand, who live on the same sort of food. Again, an American missionary and his wife, who have been on the island since June, 1896, superintending the school, both assured me that the want of intellect among the young was simply appalling, and they had no hesitation in putting it down to this intermarrying. In fact, they had given up all hope of improvement, and intended leaving on the first opportunity. I was told the morals of the community were not what they should be."

Mr. Hunter, Judicial Commissioner, who visited the community recently, says:

"The children are bright, merry little things, the only redeeming feature in the place, whereas the adults, with the exception of one or two of the older ones, have a tired, hungry look, very different to what I expected to see, from accounts that I had previously read of this unique island and its people.

"They begin and end their day with prayer; they neither drink nor smoke; and they appear to be almost vegetarians. If they are questioned, the questions must be put in plain, simple language, or they do not understand."

The rugged island of St. Kilda, in the Atlantic, 40 miles from the Scotch coast, with no regular communication to the mainland, has a population of less than a hundred inhabitants, in good health, although the infant-mortality below the age of 5 is nearly ten times that of England generally. Dr. Mitchell¹⁴ attributed this condition to the continued intermarriage of a population already too closely related. Mr. Huth considers it a result of the diet of the mothers, which consists chiefly of seabirds, a very oily food. The population of St. Kilda is undoubtedly on the decrease.

Mr. Augustus Smith, for many years owner of the Scilly Isles, 27 miles off the southwestern coast of England,¹⁵ believed that the inhabitants of some of the outlying islands, who never formed external connections, had degenerated very seriously. But Dr. Beddoe¹⁶ remarks on these same islanders that "their proportions certainly give the lie to the current notion that men and quadrupeds must degenerate in small islands," and McCulloch calls them a healthy people.¹⁷

I think it best to abstain from quoting any more examples of isolated communities, as the facts always admit of more than one interpretation. In every instance it must be noticed that we have peculiarly healthy people to deal with—men and women to whom disease is almost unknown—and therein lies the secret of such marriages proving innocent of evil to the offspring. Were such unions common among the neurotic, decrepit, and otherwise degenerate dwellers in our great cities of today, the result would be very disastrous.

In the year 1851, according to Oesterlen,¹⁸ 20% of all marriages in Great Britain were unproductive; 16 years later, according to Simpson,¹⁹ 11.7% were childless. In 1884, Matthews Duncan placed the figure at 15%.²⁰ Dr. Irving C. Rosse, of Washington, in Witthaus & Becker's "Medical Jurisprudence,"²¹ published in 1894, writes: "It does not appear from the recent researches and discussions of this much-controverted subject of the marriage of near kin that consanguinity in itself has the slightest action upon fecundity. Records show that marriages of cousins are not apt to be sterile. Dr. Tidy

remarks that "whereas in the average of marriages 1 woman in 8 is barren, in those between relatives only 1 in 10 is so."

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- ³ "Contribution à l'histoire des mariages entre consanguins." (Memoir de la Société d'Anthropologie de Paris, 1866.)
- ⁴ London Hospital Reports for 1866, vol. iii, p. 225.
- ⁵ This term is destitute of scientific precision. Dr. Down's investigation was made 15 years prior to the discovery of the Koch bacillus.
- ⁶ While the English of this opinion is defective, the meaning is plain.
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- ¹⁸ Oesterlen, *Med. Statis.*, p. 195.
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(To be concluded.)

PERITONITIS IN THE FETUS.

By J. A. PORTER, M.D.,

of Brooklyn, Mich.

I WAS called, March 3, 1900, to attend Mrs. H., aged 25, who was taken with labor-pains during the early part of the day. She is a large blonde woman, and has had very good health. This was her second pregnancy. She had a normal labor about 2 years ago. She is somewhat fleshy but muscular. She has had some dispute with her husband, and left him, asserting that the great sexual appetite of her husband, who was over 50 years of age, was annoying to her. She was very considerably enlarged abdominally, and there was evidence of a large quantity of amniotic fluid. Much pain preceded expansion of the os uteri. I, however, did not rupture the bag of waters until expansion was abundantly sufficient, although it required a wait on my part of about 8 hours. There was vertex presentation, third position, and the course of labor was slow, but otherwise normal in given position until birth of the head (as far as could be noticed), but with large flow of liquor amnii. After the head was delivered the child failed to come forth under several expulsive efforts of great vigor. Aid was given by bringing down arms and shoulders. I then waited during a few more pains, and began to draw on the child carefully under the axillae. With some effort, delivery was affected, and then it was noticed that the child gave one or two unnatural inspirational movements and was dead, and in spite of the various reviving means I tried, I could not get any response.

I then noticed that the abdomen of the child was abnormally large. I found it filled with a brownish-green fluid. This full abdomen had caused the delay in the birth. I was not prepared to make a critical examination, but did as well as the light and absence of suitable implements would permit. I found evidence of peritonitis very plain in the child. The intestines were matted together with soft lymph adhesions. The mesentery was deeply congested as well as the peritoneum. Lymph of a greenish color was abundant. I could not discern any anatomic cause.

I wish this description recorded because I have not seen any description of a fetus coming to full time of birth, and giving evidence, though slight, of life, and presenting evidence of a peritonitis of recent seizure, but of sufficient endurance to show the appearances above described. The mother was taken in apparent labor 4 weeks previous to my attendance, but the pains ceased in about 24 hours, normal action at normal time succeeding. The mother is now well.

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GEORGE M. GOULD, M.D., *Editor*

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See Advertising Page 8.

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To Encourage Hysteria.—A prominent physician is advertising a book for the laity, in which the "wholly unique feature" is "to enable the user to discover at once the nature of his malady,"—"a vast cyclopedia of physiology, hygiene, and the treatment of disease." "No household is complete without a copy." If the author had been content to instruct the members of every household in matters of hygiene and physiology, it would have been well, but the attempt to instruct them in the diagnosis and treatment of disease is a very different proceeding. In hundreds of serious diseases the result will be to postpone consultation and scientific treatment until it is too late. No layman can possibly be instructed, certainly not by a book, to make correct diagnosis or institute proper treatment in such cases. The plan is also likely to encourage morbid introspection and hysteria of many kinds. It is a sad blunder that a physician should have subscribed himself as the author of such a volume.

The Honorary-Degree Business is taking on a ludicrous phase, which may save it from becoming unlimitedly stupid. Legislation has long been called in to prevent the scandalous sale of medical diplomas, and one wonders how soon the same means may be employed to prevent men from buying and institutions from selling certificates of erudition. In origin and in history the degree of Doctor of Laws, or of Doctor of Divinity, certifies that in the judgment of those qualified to know the recipient of the degree was possessed of exceptional scholarship in a certain department of knowledge. But we are fast changing all that, and the degree of LL.D., for instance, now has nothing whatever to do with erudition, but only means that the new doctor of laws has been an expert lawbreaker or a shrewd law-maker, that he has been or promises to be very generous to the degree-giver, etc. We do not understand why an electrical engineer should covet a degree in dentistry, or why an expert money-maker should wish the reputation of being an expert scholar. It is in fact incomprehensible that a political boss or a patent-medicine seller should wish to be called a doctor of laws or a doctor of medicine. If the real reasons should be published which moved the trustees of learned institutions to grant their last 100 honorary degrees, we should have all the subjects for opera bouffe desirable for the

next generation or two. There is no longer any pretense that to great erudition is due its former token of the degree. What are the scholars to do now, poor things? The worst anti-medic and profession-hater is most proud of his degree of M.D. Senator Hanna and Mayor Harrison are among this year's lot of LL.D.'s.

Dr. Thomas Story Kirkbride, Jr.—Two weeks ago reference was made in these columns to the death of an illustrious physician to whom the final summons came at a time when his work on earth, so large and so well done, was almost finished. Since then death has taken one who was on the very threshold of a career of rare promise, and for whom a host of friends had confidently predicted a life of signal usefulness. Dr. Thomas S. Kirkbride had given many faithful years to preparing himself for his work as a teacher and investigator in pathology, and seemed to be just within reach of success and renown when a fever removed him forever. Dr. Kirkbride's most striking characteristics were an intense earnestness and a boundless enthusiasm with which he quickly infected all those who came in contact with him. This capacity for infusing his spirit of zeal into others had enabled him to organize on splendid lines the laboratory of which he had charge. His death is deeply felt by the younger generation of medical men of this city, by whom he was esteemed and beloved for his sincerity, his goodfellowship, and his scholarly attainments.

Another Death by Faith Cure.—Another case apparently of malpractice by religious fanatics has just occurred in this city. The two malpractitioners have been held by the Coroner for criminal negligence in causing the death of an infant. The testimony reads like a page out of medieval literature, but it is of a kind that the public should be accustomed to by this time. This was a "faith-cure" outfit, and its apostles displayed all the primitive ideas, and indulged in all the meaningless language which are now so familiar to most readers. The Coroner did his duty in holding these men for answer before a jury, and we trust the Court will demonstrate to the public that in this country the liberty to kill children is not part of the liberty to worship God.

As we have said before, it is useless to argue with these people or with their supporters—and supporters

they have in reputable churches and among persons of some religious influence. They are lawbreakers and nothing less. As lawbreakers they should be apprehended, and allowed to meditate in solitude on the practical limitations of the liberty of conscience. That this liberty is not identical with the liberty to practise medicine has not dawned with sufficient clearness upon the minds of some of them. The days of human sacrifice have gone by, and if any degenerate and half-crazed evangelist attempts nowadays to make a shrine of Moloch out of his own personal altar, he should be suppressed. A low grade of popular intelligence can alone account for the prevalence of these various superstitious rites, and it is therefore the duty of educated men and reputable journals to unite to eradicate them. It is to the credit of the newspaper press that, as a rule, it does its duty in this matter, but this cannot be said of all the churches.

The Increase of Insanity in Philadelphia.—In his annual report to the managers of the Pennsylvania Hospital for the Insane, Dr. John B. Chapin, physician-in-chief, presents an interesting table which illustrates some phases in the real and apparent increase of insanity. The table was compiled by Dr. A. R. Moulton, senior assistant physician to the hospital, and is based on official figures. As for the Pennsylvania Hospital itself, the figures are quite uniform and do not show an increase in the number of new cases in an exact ratio with the increase of population of the city. It has been claimed that the increase in insanity in our large centers of population is seen in the indigent rather than in the affluent classes, the latter of whom, of course, pay the cost of the care of their insane. The statistics of hospitals in New York, Boston, Hartford, and Providence seem to prove that this claim is correct, just as do these figures of Dr. Moulton. It will be seen that the Pennsylvania Hospital and the Friends' Asylum, both of which mainly receive well-to-do patients, have not admitted an increased percentage of new cases from this city, but that their percentage has been less during these last ten years, with one exception (1891) than in the first year (1890) of the period. Only in the last year (1899) has the percentage again risen to what it was in 1890. At the other extreme, the Philadelphia Hospital, which receives the indigent insane only, has shown an almost steady increase in the percentage of new cases which it has received, ranging from 41% up to 60%. The Norristown Asylum, which holds a rather intermediate position, has on the other hand shown almost as steady a decrease, but this, we think, must be due to its overcrowded condition. The cases tabulated are those only which have been certified from Philadelphia. Of course they do not include either the new cases treated in private or the very small proportion of these cases which are taken from this city to hospitals outside of the State or in more remote parts of the State.

These figures go to prove that there is not an undue increase of insanity among the affluent classes—a conclusion which may have to be slightly discounted in consideration of the fact that possibly more of these patients are treated in private than formerly. On the other hand the increase in the indigent insane may be more apparent than real, for it is doubtless due in part to a greater tendency in this class to seek the hospitals, and a greater readiness on the part of practitioners to make a diagnosis of insanity.

TABLE SHOWING THE NUMBER OF NEW CASES OF INSANITY IN PHILADELPHIA, THE RATIO OF NEW CASES TO POPULATION ANNUALLY, AND THE DISTRIBUTION OF CASES TO HOSPITALS.

Year.	Population.	Annual Number of New Cases.	New Cases: Ratio of to Population.	Admitted to Philadelphia Hospital.	Admitted to Norristown Hospital.	Admitted to Pennsylvania Hospital and Friends' Asylum.
1890	1,044,894	685	{ 1 to 1525	283 .41	299 .43	113 .16
1891	1,070,404	686	{ 1 to 1560	278 .41	280 .41	128 .18
1892	1,096,914	880	{ 1 to 1245	497 .56	257 .30	126 .14
1893	1,116,424	807	{ 1 to 1385	466 .58	236 .29	105 .13
1894	1,146,936	877	{ 1 to 1307	479 .54	289 .33	118 .13
1895	1,176,447	926	{ 1 to 1259	522 .56	274 .30	130 .14
1896	1,214,467	961	{ 1 to 1264	591 .61	263 .27	107 .12
1897	1,266,977	986	{ 1 to 1285	592 .60	267 .27	127 .13
1898	1,300,489	1009	{ 1 to 1289	598 .59	270 .27	141 .14
1899	1,334,991	1013	{ 1 to 1317	609 .60	243 .24	161 .16

Average for 10 years, 1 new case to 1333 of population.

Estimated number for 1900 = 1013 new cases.

In the last three columns, the figures in the upper right-hand corners show the percentage distribution of new cases to the several hospitals in Philadelphia and Norristown, and does not include cases brought to the hospitals from the State at large, or out of the State.

The Health of the False Prophetess.—An interesting story comes from Concord, N. H., that Mrs. Eddy, the grand exalted Fakir of Christian Science, is the victim of "creeping paralysis." What creeping paralysis is, we have not the faintest idea; but if Mrs. Eddy has it, she will probably soon be convinced that there is more pathology in this cruel world than is dreamed of in her philosophy. She is reported to have an understudy, who is exhibited to the credulous devotees as the real old lady, and who answers every purpose. This story is denied by the aiders and abettors of the concern, and is said to be without proof, but it suggests some interesting thoughts. As these impostors claim not to believe in disease, they of course would not hesitate to deny its existence in Mrs. Eddy, even though she were at the last gasp. This would be a casuistry of which they would be quite capable; therefore, their testimony on the subject would be most untrustworthy. There have even

been rumors that the false prophetess is dead, and that her quondam fellow conspirators have been keeping up a fake sanctuary behind the veil, somewhat after the manner, we presume, of the veiled prophet of Khorasan. The health of this woman is, of course, not a matter of public concern, except as she and her followers have chosen to make it a test for the validity of her foolish doctrines. In the order of nature she will some day die, and then, perhaps, her cult will gradually die out;—but even this is by no means certain, for this country is such a hotbed for crude half-baked doctrinaires that possibly some one will be found to perpetuate the schemes of the defunct but still immortal priestess of pseudo-religious quackery.

Goethe's Relation to Medicine.—The almost universal celebration of the one-hundred-and-fiftieth anniversary of Goethe's birth all over the German empire, and, one may almost say, all over the world, last year, brought out many interesting facts with regard to his life and work. We have just received an interesting pamphlet with the above title by Dr. P. H. Gerber, of the University of Königsberg (published by Karger, Berlin, 1900), in which many facts of special interest to the medical profession are given. Attention is called to the sturdy ancestry from which the poet was descended, his grandparents on both sides all having lived to be 72 years or over. We are told that through the lack of skill in the midwife the world came near losing a great genius. Goethe was a blue baby and at first looked so black and lifeless that there was thought to be no hope of resuscitation. This accident of his birth was not without its good influence, however, for, taking a lesson from this his grandfather helped to introduce a law making instruction of midwives compulsory. The next incident of medical interest was an attack of smallpox of unusual severity, during childhood, the entire face and body being completely covered with pustules so that the child was unable to see for several days, and we are told the dried secretion came off the face like a mask; however, he was not greatly pitted. This illness led Goethe, in later years, to use his best influence to promote the introduction of inoculation against smallpox, a second service of considerable importance to medicine. As a result of unsuitable diet, much drinking of heavy Merseberger beer and the use of large quantities of coffee during student days, Goethe suffered a severe illness during which he lost considerable quantities of blood. There is a difference of opinion as to the source of hemorrhage, some believing that the attacks of indigestion indicated gastric ulcer as the cause, while others believed that it came from the lungs; the fact that Goethe suffered from suppurating tuberculous glands of the neck at about this time seems to give some support to the latter view. The influence which led Goethe to take a personal interest in medicine and natural history began at Leip-

zig, but it was chiefly at Strassburg University, where he began his studies in 1770, that this interest was cultivated. In Leipzig Goethe associated much with students of natural history and medicine and lived in the pension of Hofrat Ludwig, where he heard little but medicine at the table. But at Strassburg the influences were even stronger; the medical faculty at this time had reached the highest point of fame, and Goethe studied just enough law to pass his examinations successfully but devoted his best efforts to the study of chemistry under Spielmann, anatomy under Lobstein, who has been called by Virchow the greatest anatomist and surgeon of that time, and besides this he attended the clinics in internal medicine by Ehrmann. Meiszner, in a paper on Goethe as a jurist, has expressed the opinion that probably he would have made as good a physician as he was a bad lawyer. From his interest in these studies it seems not at all improbable. In later years, during his residence in Weimar and Jena, Goethe was in constant association and correspondence with the most eminent anatomists of the time and was specially interested in those studies in osteology which afterward led him to his discoveries with regard to the intermaxillary bone and to his theory that the skull is composed really of metamorphosed vertebrae. These studies were closely allied to those in botany with regard to the metamorphosis of plants. Gerber has even inclined to credit him with the theory of evolution. In his "Tag- und Jahresheften" of 1791 he finds the following: "I was fully convinced of a general type running through the entire organic creation through metamorphosis, which may be observed in all of its parts and in a certain degree throughout all nature." At about the beginning of 1805 Goethe suffered from the severest illness of his later years, an attack of renal colic, and for several days it was doubtful what the outcome would be. Eighteen years later he had an attack of pericarditis. In the winter of 1831-32 he contracted a severe cold about the middle of March, and this led to catarrhal fever; he complained of cough, pain in the chest, loss of appetite, and general malaise. For a few days his condition improved, but in the night of March 19 and 20 he had a heavy chill followed by a great difficulty in breathing; his condition gradually became worse and death resulted March 22, at about 12 o'clock. About two hours previously he spoke those now famous words, "more light" ("Macht doch den Fensterladen im Schlafgemach auf, damit mehr Licht hereinkomme"). In his early years he lived a somewhat careless life and drank considerable quantities of beer, wine, and other spirituous drinks, but during his later years he is said to have led a very temperate life. In personal appearance, we are told, that the poet is flattered by portraits of Kaulbach, Jaeger, and others; his face was not regular, his body not normally proportioned; the left side of his face was longer than the right, the right eye was deeper, the nose was prominent, the mouth full and

sensitive, the lines of the chin were strong; he was not much above middle size and was of the South German brunet type with a somewhat pale face.

Aside from the influence which his medical associations and studies had upon his discoveries in anatomy and natural history we cannot doubt that they did much more for Goethe. No profession comes in such intimate contact with the real lives of men, and no doubt much of the insight which he gained into human nature came through his early medical associations. The medical profession is justly proud of the famous names that it has furnished to literature, but there are no doubt many other eminent writers, who like Goethe, were strongly influenced at some period by contact with medicine and medical men.

Cleaning fingernails with the teeth is one of the filthy habits which in some communities is considered proper form. Physicians and dentists do not even seem to be excepted. A certain physician recently lost the clientage of a wealthy family because he was observed chewing his fingernails. Among all people the physician should be a model for cleanliness, both as to his person and habits. Carelessness of personal habits will in time beget carelessness in other important matters.

Perforation in Typhoid Fever Operation.—G. G. Davis (*University Medical Magazine*, May, 1900) reports 3 cases of perforation in typhoid fever and gives the result of operation in each. The first patient was a man 33 years old, who had suffered from enteric fever some 3 weeks. Suddenly symptoms of perforation appeared and an operation was performed. Evidences of mild peritonitis were found: there was an excess of abdominal fluid, and the intestines were highly injected. No perforation was found. The abdomen was thoroughly flushed out and closed without drainage. All symptoms of perforation disappeared and the patient recovered. In the second case, a man, 26 years old, who had been treated for typhoid fever for 7 weeks, was taken with sudden pain in the right iliac fossa, tympanites and other symptoms of perforation. The abdomen was opened and free pus found in the abdominal cavity, a small perforation was found 10 cm. from the ileocecal valve. The perforation was closed, the abdomen irrigated, and drainage inserted. The patient recovered. In the third case, a woman, 29 years old, had symptoms of perforation after suffering from typhoid fever for 3 weeks. On operation the appendix was found perforated. It was ligated and removed, another perforation was found more than a foot above the ileocecal valve. The abdomen was treated in the usual way but the patient died. [M B T.]

Gangrenous Umbilical Hernia: Enterorrhaphy.—George Wilkinson (*The Quarterly Medical Journal*, Feb., 1900) reports a case of strangulated, gangrenous umbilical hernia in a fleshy woman, 49 years old. The hernia had persisted for 26 years and during the past 10 years had been irreducible. It became gangrenous and an operation was performed. A loop of the transverse colon, 12 inches long, was involved in the gangrenous process. The whole was removed and large sized Paul's tubes were tied into the open ends of the colon, and brought out the wound, forming an artificial anus. Six weeks later a second operation was performed. The two ends of the divided colon were brought together with a large Murphy button. Three weeks later the button was passed. The patient made a somewhat slow but good recovery. [M.B.T.]

Correspondence.

THE STOMACH CONDITIONS IN INTESTINAL INDIGESTION.

By BOARDMAN REED, M.D.,
of Philadelphia.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

THE very able and scholarly paper by Dr. Porter, the publication of which was concluded in the JOURNAL of May 26, calls for a few words of comment. All must concede the profound and accurate acquaintance with the physiologic chemistry of the digestive processes which it shows, and a full meed of praise should be given Dr. Porter for such a lucid exposition of a most important subject.

I trust, however, that neither Dr. Porter nor others will consider me hypercritical when I call attention to one or two points on which the paper is liable to mislead practitioners who have not carefully investigated these digestive problems for themselves. These points are not only highly important from the practical side, but illustrate strongly the impossibility of considering satisfactorily intestinal digestion apart from a precise study of the gastric functions both secretory and motor.

There are various possible causes of intestinal indigestion, and Dr. Porter has done a real service in emphasizing the great frequency with which it results from eating the wrong food, as well as from eating excessive quantities of even proper kinds of food, relative to the amount of exercise taken, *i. e.*, an alimentation out of proportion to the oxygenation. And it is also true that in a large proportion of these cases, the primary injury is to the cells of the liver and intestinal glands. But very certain it is, that in nearly all, if not all, cases, the stomach is either primarily or secondarily involved, and that when it is, we cannot safely afford to ignore it.

In a majority of cases of gastric indigestion, whether primary or secondary to the intestinal form, there is at first an excess of hydrochloric acid secreted. My own observations prove this fact beyond question, and any clinician who ignores it, will meet with many failures.

Dr. Porter in discussing treatment advises the prescription of hydrochloric acid in intestinal indigestion without any previous examination to determine whether or not its secretion is deficient. In hyperchlorhydria, the most frequent form of gastric indigestion, it would be manifestly useless and, in fact, decidedly injurious to put into the stomach more of a substance already present in excess. Indeed, the first effect of overeating and too rapid eating is often to increase largely the secretion of HCl and other elements of the gastric juice, nature trying in this way to meet the excessive demands made upon her, and the hyperacid chyme passing into the duodenum is one of the most potent and frequent causes of intestinal derangement.

Another active cause of the latter is stagnation and fermentation of the stomach-contents in consequence of deficient motor power in the gastric muscular apparatus—a condition which often goes on to atonic dilation. One who has frequently seen the exceedingly sour and often foul-smelling mixture washed out of an atonic stomach 5 to 6 hours after a meal, can easily understand how disease must inevitably result from such foul stuff passing into the intestines.

Not only the wrong medicines, but the wrong diet must

often be prescribed unless we know the functional condition of the stomach; for all the acids, condiments, and according to many good authorities, even meat, increase the excessive secretion of HCl when once hyperchlorhydria has been set up.

CONVALESCENT HOMES.

By ALFRED JAMES OSTHEIMER, JR., M.D.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

MY own experience in enjoying the benefits of a convalescent home for scarlet fever prompts me to believe that a description of the place and an exposition of its purposes may not only be of interest to other members of the profession, but may also have some weight in instigating a movement for the formation of such homes in the United States. So far as I know, the only home exclusively for convalescents from scarlet fever is the one I am about to describe; *i. e.*, the Mary Wardell Convalescent Home for Scarlet Fever, founded by Miss Mary Wardell in 1884. It is situated on the top of Brockley Hill, near Stanmore, Middlesex, England, about 450 feet above the sea level, on a gravelly soil, with a substratum of clay, with a good southern and western aspect, and is about ten miles northwest of the Marble Arch, London. There are four acres of ground, part of which serves as a pleasure ground for the convalescents (and includes lawn tennis and croquet grounds), the remainder being laid out as kitchen garden, orchard, etc., forming an outer belt to which patients are not admitted, so that they cannot approach the boundary fence.

The house itself consists of a dining-room and drawing-room, each with a southern aspect, for the use of convalescents paying for first-class accommodations; a large day-room looking southwest and north, for the ordinary class-patients; a matron's office and library, with the usual servants' office on the ground floor, beneath which is a well-lighted and ventilated basement, in which are the furnaces for heating the warming apparatus and the hot-water supply to the bathrooms, etc., so that the sitting-rooms are thoroughly protected from damp.

On the first floor are the bedrooms and bathrooms for first-class patients, the matron's bedroom, and the linen-room, while the top floor contains the dormitories and bathroom for the second-class patients, as well as the dispensary and nurses' room.

The annex, containing closets, slop sink and lift, is built apart from the house, with glazed brick walls and tiled floors, and communicates with the house on each floor by means of a short passage, shut off at either end by a swing door. A private omnibus belonging to the home fetches the patients from the hospitals or their own houses. This ambulance can also be sent by rail for patients from a distance. The house is planned for the reception of about 40 patients. A complete disinfecting apparatus is situated in a building especially erected.

The home is intended for the reception of persons recovering from scarlet fever, who have arrived at the stage of the illness when removal from the confinement of one room (where the acute stage has been passed) to fresh air and outdoor life, under careful supervision, is most beneficial. This change, under ordinary circumstances, cannot be effected without danger to others, until many weeks have passed.

Though originally intended for the benefit of the working classes, the founder was led, at the earnest request of the then leading members of the medical profession of London,

to provide accommodations also for persons of a class able to pay the cost of their maintenance. The total number of patients admitted since the home was opened in 1884 is 3,274.

The institution is supported by public subscription and patients' payment. Each patient costs the home about £3 a week. The first-class patients pay from 3 to 5 guineas a week, while the second-class convalescents contribute from 10 to 15 shillings weekly.

Self-interest alone should dictate the establishment and support of such homes to all who dread the disease for themselves or families. The common mode of expressing these fears has no practical result further than to increase the danger by the inducement to deception and concealment it offers to those who are suffering from a misfortune caused by no fault of their own, and to whom candor brings no aid, but only entails ruin.

Convalescent homes, such as have been described, would relieve the fever hospitals at times of epidemics, and would afford means of passing the tedious time of convalescence and desquamation in a healthful environment, as well as in the company of one's fellow creatures.¹

It follows, therefore, that nowadays, in every large community, on account of the ubiquity of scarlet fever, convalescent homes for scarlet fever are not a luxury, but an absolute necessity.

THE INCREASE OF GENERAL INFORMATION BY TRAVEL, ETC.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

WE all agree as to the advantage arising from the periodic assemblies of medical men, especially such as lately graced the National Capital. If these gatherings in Washington have been productive of no other good, they at least act as object-lessons to our visiting brethren, many of whom, pardon the remark, are sadly deficient in general information.

Among many little incidents of the kind may be cited that of a professor in a leading medical school in one of our large commercial centers, who did not know that the National Almanac is prepared in Washington; that the time of the 75th meridian is calculated from here; that the time ball in New York is dropped daily by electric contact with our Naval Observatory; that ships' chronometers are rated in Washington, etc., etc.—in fact he did not know that there was such a thing as the Naval Observatory.

Another, who has for several years had charge of a large clinic, thought all our big guns were made by Carnegie; consequently the Washington gunyard with its splendid plant and over 2,000 workmen was a revelation to him. Like many others this man did not know the difference between the navy and the revenue marine, and all attempts to explain the respective distinctness of the Marine Corps and the Marine Hospital service were simply hopeless. When it came to explaining the respective functions of the legislative, executive, and judicial branches of the government things were still more at sea.

A specialist at one of the large metropolitan medical schools was ignorant of the fact that the largest hospital for the Insane is at Washington, in fact did not know that there was one here, and made quite a disparaging remark as to

¹ *British Medical Journal*, August 30, 1879. *British Medical Journal*, March 18, 1882.

the unappreciativeness of our local physicians, when examining some specimens of prehistoric trephining; yet he did not know that one of the persons addressed had written exhaustively on that subject as well as on cephalometry and craniometry and had perhaps handled more skulls than any man in the United States.

We are accused of being dull and provincial in our parliamentary city, and I dare say we are, when judged by commercial standards. On the other hand, to a person in the habit of visiting the clubs of New York for instance, one of the most apparent things is the paucity of conversational topics, which seldom go beyond stocks, Wall Street, and the latest erotic play at the theaters. However enlivening a little of this may be, life at the great Yankee capital is broader, notwithstanding its reputation for intrigue and empty talk, and with the possible exception of Rome no other city offers to the observant and receptive visitor so many object-lessons.

M.D.

Washington, May 30.

Removal of Both Uterine Appendages During Pregnancy.—J. Wesley Bovée (*Virginia Medical Semimonthly*, May 11, 1900) details a case of double pyosalpingitis complicating 2 months' pregnancy in which both appendages were removed by the abdominal route and the patient made a good recovery. At the expiration of the 9 months' period she was delivered by forceps, after a tedious labor, of a still-born child. He concludes that the third and fourth months of pregnancy seem to be the most satisfactory period for operation, since after that period the size of the uterus would interfere with the operation. There would seem to be more danger of interruption of pregnancy in removing the appendages for tubal disease than for ovarian conditions, since in the latter the pedicle may be left longer and the ligature placed further from the uterus. The beginning of the uterine pains should be a positive indication for the free use of morphin. [M.B.T.]

Two Cases of Interscapulothoracic Amputation.—J. William White (*University Medical Magazine*, May, 1900) reviews the history of interscapulothoracic amputation and reports 2 cases. In the first, a man 22 years old, the right shoulder-joint had been enlarged, painful and stiff for some 2 years. The pain was dull and elicited by deep pressure. There was uniform enlargement of the head of the right humerus. The swelling extended deeply above and below the clavicle toward the median line. The condition was believed to be due to a malignant growth, and an interscapulothoracic amputation was performed. On microscopic examination, the capsule was found undergoing osseous changes in certain areas. In other areas the cell arrangement suggested sarcoma, the enlarged lymph-glands showed areas of softening, areas of hemorrhagic infiltration and increase in the glandular elements. There was an infiltration of spindle cells between the muscle fibers. In the second case, a man 34 years old had received a severe shock from a live wire, which deprived him permanently of the use of the arm. The arm was soon after broken, was greatly swollen and became indurated. Several operations were performed on the arm in the attempt to induce union and in removing sequestra. Finally amputation became necessary. Nine months after the electric shock, the ordinary shoulder-joint amputation was done, hemorrhage, however, being very great. Six months later the patient returned to the hospital with a new growth resembling granulation tissue in the cicatrix at the shoulder. This growth on microscopic examination proved to be sarcoma. An interscapulothoracic amputation was done, the operation being remarkable for the great amount of hemorrhage. The patient entirely recovered. In both of these operations the subclavian artery and vein were ligated before proceeding with the operation. White says the mortality for this operation should not be more than 10%, but that the prognosis as to recurrence is very unfavorable, probably not more than 20% remaining permanently cured. [M.B.T.]

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Dr. Alfred J. Ostheimer, Jr., of Philadelphia, has just received the degrees of M.R.C.S. and L.R.C.P. in London.

Bequest to the College of Physicians.—By the will of the late Dr. John Ashhurst, the College of Physicians of Philadelphia has the privilege of selecting from his medical books a total number not exceeding 1,500 volumes.

A Christian Healer failed to restore the hearing of a patient at Camden, N. J., and is also alleged to have failed to account for \$1,000 which he had been given power of attorney to look after while the patient resorted to prayer. The aid of the court of chancery has been sought to recover the cash.

Dairy and Food Commissioner to Visit Philadelphia.—The expected visit of Commissioner Cope to Philadelphia is to be the signal for a more active campaign against impure foods and the unwholesome condition in numbers of stores in the poor sections of this city. The primary object of the visit is said to be the disposition of the cases against oleo dealers and others who are held for alleged infractions of the pure food law.

Medical Requirements in New Jersey.—The State Board of Medical Examiners met at Newark, N. J., July 5, 1900, and passed resolutions to the effect that licenses of any State Board of Medical Examiners in the United States will be indorsed in lieu of an examination, provided that the candidate shall present satisfactory evidence of having the academic and medical education required by this Board, and that the license shall have been issued after a State examination of the same grade and kind as that required by the Board.

Dealer in Impure Butter Held.—Charged with selling renovated or process butter without marking it as such in compliance with the law, Seltzer & Hinchman, of Ambler, Pa., were held in \$300 bail for court, July 17. The defendant firm claims to have been imposed upon by a wholesale firm in Philadelphia which sold the renovated butter for pure butter. It was decided that the best course to pursue was to return the case to court, where it can be dropped if the county authorities see fit, in case the firm supplies legal information against the Philadelphia wholesaler who sold the product.

Alleged Leper Wanders Abroad.—Sam Lee, the Olyphant Chinaman believed to be suffering from leprosy, has been the object of the closest attention on the part of medical men, while the vicinity of his laundry is shunned by every one. A special meeting of the Olyphant Board of Health was held July 17, and the State Board of Health has been notified. Later the Olyphant authorities relaxed their vigilance and he left for parts unknown. The Board of Health has been severely censured. The alleged leper was found in Boston, Mass., on the 24th, and was examined by the medical staff of the Board of Health, but was found not to be afflicted with leprosy. The house was under police surveillance as soon as it became known, but the street was filled with Chinamen and many citizens living in the district, who were filled with dismay at the rumor of an alleged leper about to make Chinatown his abode.

Philadelphia Charities.—At a recent meeting of the Board of Charities and Correction the reports of the outdoor physicians, 50 in number, for the month of June, showed that during that period there were 4,344 visits paid to 1,504 patients and 4,459 prescriptions were compounded. The Committee on Charities reported that the inmates of the Almshouse and Hospital at the present time number 3,684, including 1,104 in the outwards, 1,409 in the insane department, 963 in the hospital, and 208 children. Upon the recommendation of the committee a resolution was adopted that certain inmates who are constantly being recommitted to the hospital, being addicted to the use of liquor, and are on

the verge of delirium tremens, receive medical treatment, and when improved be committed in due legal form to the House of Correction, where they must work or be punished. Dr. M. B. Hartzel and Dr. E. S. Gans were elected dermatologists to the institution.

Physician Held for Not Reporting Case.—Dr. O'Reilly, of Philadelphia, was arraigned before Magistrate Eisenbrown, July 23, charged with failing to report a case of diphtheria to the Board of Health. Theodore M. Hudson believes his child would not have contracted the disease had he known there was a case of diphtheria next door, and holds Dr. O'Reilly responsible for the death. Dr. O'Reilly testified that he had not reported the case next door because it was follicular tonsillitis. The court sustained Dr. O'Reilly, discharging the case.

Vital Statistics of Philadelphia for the week ended July 21, 1900:

Total mortality		564
Disease.	Ca es.	Deaths.
Cholera infantum 89, cholera morbus 2		91
Inanition 23, marasmus 34		57
Tuberculosis of lungs		45
Inflammation of stomach and bowels		42
Apoplexy 13, paralysis 17		30
Convulsions		30
Heart disease		27
Carcinoma		17
Sunstroke		17
Old age		12
Diphtheria	42	9
Congestion of brain		8
Uremia		8
Measles		6
Typhoid fever	40	5
Scarlet fever	46	3

NEW YORK.

Bushwick Central Hospital.—Dr. H. W. Lincoln has been appointed gastrologist.

An Epidemic of Diphtheria in Brooklyn recently is said to be caused by refuse matter used to grade some streets.

Tuberculosis to be Reported.—Physicians of Montclair, N. J., have decided to report all cases of tuberculosis that come to their attention to the Board of Health.

Rabies Fatal Three Months after Bite.—Dr. James Haley, a veterinary surgeon, died in Bellevue Hospital, New York, July 23, from hydrophobia, the result of a dog's bite received last May.

Fortune Left to Christian Scientists.—An estate valued at \$70,000 has been left to the Christian Scientists of Rome, N. Y., by Mr. and Mrs. M. M. Davis, to erect a Christian Science Temple at that place.

Symptoms of Yellow Fever at Hoffman Island.—A Syrian woman, one of the passengers of the steamer *Havana*, who was detained on Hoffman Island, died suddenly on July 18, and the autopsy shows some indications that she died of yellow fever.

Milk Famine Threatened in New York.—On account of the hot weather, there is a decreased supply and an increased demand for milk in New York, which threatens to develop into a famine. The price has been advanced, and if the present hot weather continues the poor will feel sharply pinched.

St. John's Floating Hospital.—The twenty-fifth anniversary of the beginning of the floating hospital service of St. John's Guild was celebrated, June 19, by appropriate exercises on board the *Emma Abbott*, which was the first boat fitted up by the guild. Since 1875 she has carried 826,312 mothers, sick babies, and delicate children.

Fresh Air for the Poor.—Over 500 women, children, and babies have already been kept for a stay of 2 weeks at Sea Breeze, the summer home at Coney Island of the New York Association for Improving the Condition of the Poor. There are hundreds on the list awaiting their turn. There have been 15-day excursions, on which 5,000 have been taken from the city for a day's outing.

Car Cleaning a Menace to Health.—At a meeting of the Central Labor Union of New York, July 22, it was decided to send a complaint to the Board of Health against the Manhattan Elevated Railroad Company because the cars of this company are cleaned at night when people living near the track are obliged to close all windows on account of the dust.

Buffalo Academy of Medicine for the session of 1900-1901. The chairmen of the different sections are as follows: Of Medicine, Eli H. Long; Surgery, Marshall Clinton; Obstetrics, Albert J. Colston; Pathology, Eugene A. Smith; Ophthalmology, Otology, etc., F. W. Hinkel. A prize of \$50 is offered by Dr. Marcel Hartwig, president of the Academy, for the best paper presented to the Academy, by a Fellow thereof, during the session.

Prayer Failed to Cure Lockjaw.—Because of her faith in her prayers and her certainty that they would be answered, Mrs. Annie Tunstead, of East Orange, N. J., did not call for the services of a physician for her son and the lad is now in a most critical condition from lockjaw. He shot himself through the forefinger of his left hand on July 4. Recently he became worse and he suffered a great deal. The mother then sent for Dr. William B. Graves, who, as soon as he came, detected the symptoms of tetanus. The hospital authorities do not entirely despair of saving him.

Effects of Milk Inspection.—As an example of the work of the New York Board of Health the Borough of Manhattan is divided into 9 milk inspection districts. There are 10 milk inspectors, and each district comprises about 600 or 700 milk stores. In 1899 these inspectors made 8,047 inspections, examined 48,832 specimens of milk, and caused 117 arrests. As an example of the effects of this vigilance, it may be noted that only 84 quarts of milk were destroyed in the year 1899, although 10,000,000 pounds of foodstuffs were condemned in that year by the Health Department. Since 1896 every milk dealer has been required to obtain a permit from the Health Department, which is issued only after satisfactory inspection of the place from which the milk is to be sold. If a dealer has been arrested and convicted twice for selling milk below the required standard, this permit is revoked and the dealer is no longer allowed to continue in business. As a result of this oversight there has been a vast improvement in the milk-supply of New York, although much remains to be improved in the matter of cleanliness. Dr. Betz, of the Health Department, has estimated the comparative amount per capita of milk consumed in the following cities:

London.....	4 ounces ($\frac{1}{4}$ pint)
Paris	7½ ounces ($\frac{1}{2}$ pint)
Munich.....	20 ounces (1½ pints)
New York.....	18 ounces (1½ pints)

NEW ENGLAND.

Death Due to Glanders.—Lyman C. Albee, of Fitchburg, Mass., died July 22, from glanders which he contracted while caring for a horse. He had been ill about 8 days. His son now has the same disease.

Disease from Refuse Used on Farms.—More malaria and fevers exist in the 2 wards of New Haven adjoining Hamden than in the other 13 combined. The cause is believed to be the garbage and refuse matter from the city which is used as fertilizer on the truck farms of Hamden. The Board of Health has been notified.

Measles on the "Newport."—The naval training ship *Newport* returned to Newport from Boston July 23 with several suspicious cases of measles on board. During a recent visit of the *Newport* here an epidemic of measles developed, and the sick cadets at the time were sent to the Naval Hospital, on Coasters Island. All recovered, and the ship sailed with the belief that the sickness had entirely disappeared.

Tuberculosis in New England.—The mortality from tuberculosis in New England is steadily decreasing. The latest report of the State Registrar of Vital Statistics for Maine demonstrates that such a diminution has been in pro-

gress for a number of years. In 1892 there were 1,352 deaths, and in succeeding years 1,299, 1,262, 1,195, 1,172, 1,128, and 1,021. The State Board of Health issued its circular on the prevention of tuberculosis 11 years ago, and since then it has repeatedly been published in large editions which have been distributed in every town.

French Canadian Fecundity.—A French Canadian living in a Rhode Island town was recently presented by his third wife with his forty-first child. His first wife gave birth to several pairs of twins, and his second presented him with three sets of triplets. Of the children 36 are living, and many have families of their own. Of the grandchildren 8 are also parents. This patriarch, according to the *British Medical Journal*, may be congratulated on a "fecundity" which should satisfy even the large ideas of M. Zola on the subject. The case here quoted, though remarkable, is by no means a unique instance of the fidelity with which the French Canadians carry out the precept "Increase and multiply," which is so generally neglected by their cousins in the mother country.

CHICAGO AND WESTERN STATES.

Fresh Air for City Waifs.—The Bureau of Charities of Chicago has been giving each week a 2 weeks' outing to about 400 children under 15 years of age.

Smallpox in Wisconsin.—A case of smallpox has developed in a lumber camp at Wentworth, Wis., and the entire camp has been quarantined.

The Cincinnati Academy of Medicine is to receive, by the will of the late Dr. Charles P. Judkins, at the death of his widow, two-fifths of an estate valued at \$100,000.

Pure Water for St. Louis.—The Meramec Springs, at the base of the Ozark mountains, about 70 miles from St. Louis, are to be tapped and their water piped to the city. The cost will probably be \$30,000,000.

Fatal Headache Powders.—Benjamin V. Beckes died July 19 from effects of an overdose of headache powders, at his home east of Vincennes, Ind. He was 53, a wealthy farmer and belonged to an old aristocratic family.

Chicago Hospitals Get Legacies.—By the will of the late T. B. Blackstone the following hospitals received legacies: Passavant Hospital \$25,000; Relief and Aid Association \$25,000, Chicago Orphan Asylum \$25,000; St. Luke's Hospital \$25,000.

Fined for Using Milk Preservative.—The Health Department in Chicago has been sustained in a test case charging a milk dealer with the use of formalin as a milk preservative. He was fined \$20 and costs for violating the city ordinance, which prevents the use of any preservative.

Defective Eyes in Chicago.—Naval officials, especially of the marine branch of the service, believe that people of Chicago are subject to eye troubles more than those of any other city in this country. The statistics of the marine recruiting officer show that nearly 50% of the rejections have been on account of defective vision.

Mob Would Lynch Divine Healer.—On July 21, at Mansfield, O., a mob attacked Cyrus B. Flockler, a divine healer, and, had it not been for the police force, would have tarred and feathered or lynched him. Flockler gathered a flock at Mansfield and, by his refusing to have physicians called, several infants died under his faith-cure treatment, and several of his "Zionist" followers were driven insane.

Dr. Senn Offers Services in China.—Dr. Nicholas Senn, of Rush College, Chicago, chief of the operating staff of the army in the field during the Cuban campaign, has offered his services to the United States Government as surgeon in China. "The United States will not be caught napping again in the hospital service," he said. "The lessons learned in the Cuban War will stand the nation in good stead now."

Typhoid Fever Rages in Golf Club.—The Midlothian Country Club, of Chicago, is stricken with typhoid fever; 47 members and employes are ill and 2 have died. Poor water

is the cause given for the outbreak of the malady. The club's supply is obtained from 2 deep wells. During the recent hot spell the golfers and attendants drank freely, and soon cases of the fever became prevalent. A bacteriologist found typhoid germs in the water.

Decreased Mortality in Chicago.—A reduction of 47% in the death-rate of Chicago for the week ended July 14 compared with the same week of July, 1899, is attributed to a more general observance of the health directions given out by the Health Department and to the improved sanitary quality of the water-supply as shown by the wonderful decrease in the number of deaths from the impure water diseases—80 last week as against 182 last year.

Illinois Pharmaceutical Association.—Methods for preventing competitors from selling patent medicines at cut rates were discussed at the meeting of the Illinois Pharmaceutical Association, June 18. A member of the executive committee of the national association said that an agreement had been signed which aims to increase the druggist's profit on patent medicines, and at the same time drive the cut-rate dealer out of business. The druggists were so enthusiastic over the work of the association and the prospective raise in prices that nearly \$1,150 was raised by subscription to push the work. Resolutions were adopted to be presented to President McKinley and Secretary Gage, requesting that the pay of United States hospital stewards be raised to \$1,200 per year, and that they have all the perquisites and privileges of surgeons in government employ. The Louisiana Association has already presented these resolutions.

SOUTHERN STATES.

W. S. Halsted, F.R.C.S.—During the recent centennial exercises of the Royal College of Surgeons, England, Professor W. S. Halsted, of Johns Hopkins University, was made a fellow.

Smallpox in Texas.—At Jefferson, Texas, 12 new cases of smallpox have been officially reported. There have been many exposures and an epidemic seems almost certain. Thus far the disease is in a mild form.

Correction.—The news note in our issue of June 21, to the effect that Dr. W. H. Welch had been appointed professor of therapeutics and materia medica at Johns Hopkins University, is incorrect. We trust that Professor Welch will long retain his position as professor of pathology.

New Orleans Water-Supply.—At a meeting of the Sewerage and Water Board of New Orleans, on July 19, the water-supply of the city was discussed. Exhaustive experiments will be carried out as to purification and sources of supply. Superintendent Earl submitted a report as to the purification methods in other cities.

Memorial to Dr. Rohe.—The memorial tablet to be placed in the rooms of the Medical and Chirurgical Faculty, Baltimore, in honor of the late Dr. George H. Rohe will be completed in time to be unveiled at the November meeting of the Maryland Public Health Association. In addition to the bronze portrait tablet the committee hopes to establish in the same room with the tablet what will be known as the "Rohe Collection of Books." Already on hand is a nucleus of books in the shape of German and French monographs, which belonged originally to Dr. Rohe.

The Orleans Parish Medical Society.—On July 14, 1900, Dr. S. P. DELAUP read a paper on the **anatomy of the kidney**, and Dr. HERMANN B. GESSNER on the **physiology of the kidney**. Dr. Gessner exhibited a patient from whom he had excised the left half of the lower maxilla, for osteosarcoma. The operation had been followed by splendid results; there being present comparatively little deformity. The patient is apparently cured of his original affection. The States of Louisiana and Texas have, through their respective Boards of Health, signed agreements whereby most articles of freight will be permitted to pass the quarantine lines, in the event of the occurrence of fever in either State this season. These agreements will greatly lessen the usual embargo placed upon commerce by recent outbreaks of fever.

CANADA.

Ontario Association for the Prevention of Tuberculosis.—The interest of medical men in problems of hygiene, especially those connected with the spread of contagious disease, is manifested by the formation in Ontario of an association for the prevention of tuberculosis. Dr. James Thorburn is president of the association. By recent provincial legislation local municipalities have power to establish sanatoria directly under the control of the Government, and it is the object of this association to stir up a general interest in limiting the spread of this disease, and the ultimate establishment of as many properly endowed sanatoria for the care of consumptives as possible.

MISCELLANY.

Dr. Thomas M. Lippitt, the surgeon in charge of the marines sent as a legation guard to Peking, and who is supposed to have been massacred, was an assistant surgeon in the Army. He was born in Berryville, Va., in 1873, was graduated from Starling Medical College in 1897 and was commissioned assistant surgeon in the Navy June 27, 1898.

Cure For Yellow Fever.—The first patient treated with the yellow fever serum at Vera Cruz by the young Brazilian experimenter, Dr. Bellinzaghi, is reported fully convalescent. Other patients treated are said to be progressing favorably. There is intense interest in the experiments. Patients very low with black vomit have been treated, and the effect of the serum is marvelous.

Surgeons Ordered to China.—The following assistant surgeons have been ordered to San Francisco for duty in China: S. M. DeLoffre, Omaha, Neb.; W. E. Chapman, Sheboygan, Mich.; H. C. Many, Honesdale, Pa.; R. W. Newton, Barre, Vt.; W. W. Reno, Detroit, Mich.; M. J. Rowe, Bridgeport, Conn.; L. A. Spaeth, Jersey City, N. J.; L. A. B. Street, Brookline, Mass.; I. M. Unger, New York; E. E. Lamkin, St. Louis.

"Medical Ethics Killed Two" was the subject of a paragraph in a daily journal. It seems that a family physician complained to his patient because the latter called another physician without consulting him. The son of the patient took up the grievance and doctor and son stepped outside the house and drew their pistols. The result was that both were killed. The patient was then at liberty to call in any doctor he chose.

Obituary.—THOMAS STORY KIRKBRIDE, JR., of Philadelphia, July 19, aged 31.—JAMES S. GILLESPIE, of Philadelphia, July 19.—JOHN B. CHAMBERLAIN, of Moss Point, Miss., July 13, aged 36.—SAMUEL RUSSELL WELLS, of Waterloo, N. Y., July 13, aged 76.—ELLIS S. PEABODY, of Taylorville, Ills., July 20, aged 87.—F. A. BLACKMER, of Albert Lea, Minn.—A. BUSKIRK, of Madison, W. Va., July 21, aged 50.—OSWELL B. FINNLY, of Onancock, Va., July 23.

Female Nurses on the Transports.—The *Grant* and the *Sumner*, which are now on the way to China, are carrying 25 trained female nurses, a part of the 30 recently requested for service in the reserve hospitals in the Philippines. Both of these vessels will touch at Nagasaki, and it is possible some or all of these nurses will be diverted for the benefit of the Chinese expeditionary force. It is hardly thought that any of the female nurses will be ordered to shore duty in China, certainly not further inland than Taku. But it is quite possible that if a base hospital is established at Nagasaki some of them will be detailed to duty there.

Pure Water for Troops.—A requisition for over \$14,000 for apparatus to supply the troops of the Chinese expedition pure drinking water has been made. The department already has placed orders for sterilizers and distilling plants which will furnish 82,500 gallons of pure water a day. These will be used inland, where foul water and suspicious well water is encountered. The distilling plants will furnish 7,400 gallons a day and can be used if needed on the sea coast, where salt water will be rendered fit for drinking. This is the most expensive water-purifying plant the United States ever has attempted to send with an army in the field. It is thought that with the addition of boiling water on the port-

able cooking ranges this will furnish an adequate supply for the whole army.

Yellow Fever Among Troops in Cuba.—Yellow fever has broken out in the barracks of the Seventh United States Cavalry and the First United States Infantry in Pinar del Rio, Cuba. There have been 8 deaths during the present month, and 11 cases are now under treatment in the hospitals. Tuesday General Lee ordered the camp moved 3 miles into the country, and quarantine will be strictly enforced. The chief surgeon has received orders to institute a thorough investigation into the cause of the outbreak, and special preparation is being made for a thorough disinfection before the First Infantry embarks for the United States. General Wood says the country districts in Cuba are healthy and the troops have been exceedingly well. There were only a few cases of yellow fever this year, and these were directly traceable to large cities.

Bad Liquor in Manila.—The military authorities at Manila have determined to obliterate the illicit manufacture and sale of bad liquor. A test case has been brought against one firm whose immense stock of this material was seized by order of General MacArthur. The authorities have been impressed with the large number of applications that come in daily, especially from the Chinese requesting license to manufacture wine, whisky, etc. The traffic is not, however, confined to Chinamen. Many Americans and Europeans have gone into the business with every appearance of profit. Army officers at Manila officially express the opinion that the license which has prevailed in regard to sellers of bad liquor is accountable for the disorder which prevails in some quarters. It has excited men to disobedience of orders and insubordination. The latter situation points to the necessity of maintaining Army canteens to be conducted on a strictly military basis.

Smallpox Rages at Nome.—The pesthouse at Nome is full and overflowing with patients afflicted with smallpox and the Government officials are erecting two large structures, one of which, with adjuncts, will cover an acre of ground. The disease has spread rapidly and many cases are quarantined in the tents in which they were discovered. Every Government and city official and doctor in the camp is working night and day with the disease, but it seems useless to try to stop it. Dr. J. J. Tyler reports 200 cases of smallpox in the pesthouse and around the camp, and says the people are being taken down at the rate of 17 to 20 a day. Later reports state that the condition at Cape Nome was exaggerated and that the disease is apparently not spreading. Captain J. C. Cantwell, of the revenue cutter *Nunivak*, which operates in the Yukon River, says in a letter: "The situation as regards disease at Nome is grave, and it is hoped that the true state of affairs will be known in the States in time to prevent more people from crowding into that camp, which is already in a condition of congestion that will have to be seen to be appreciated. The lack of sanitation even in the crudest form has rendered the place a quagmire of disease-breeding filth, and the wild struggle constantly going on for every foot of space renders it impossible to get anything done in the way of cleaning up the town. It will be a merciful Providence if there is not a plague started there before the end of the summer, and if the smallpox cannot be subdued before the cold weather sets in nothing on earth can prevent its spreading to all the adjacent camps."

Medical Missionaries in China.—"The principal reason why the missionaries have been tolerated in China is because of their medical work," said a New Orleans doctor. "That fact is recognized by the church authorities, and for years past the new people sent into the field have nearly all been regular graduates in medicine. All the large Union Mission stations in China have hospitals in connection, and, as they are obliged to put up their own prescriptions, they generally maintain immense pharmacies. It was only 4 or 5 years ago that the sick natives began to trust themselves freely in the hands of the foreign devils, but then they came with a rush, and at present the out-of-door clinic records of the leading mission hospitals are simply astonishing. The number of cases treated runs into the hundreds of thousands, and such establishments are, of course, a tremendous boon to the common people. Their popularity has undoubtedly been a

most important safeguard to the missions proper, for, no matter how bigoted a Chinaman may be, he isn't going to kill off his family physician on account of a difference of opinion in religion. China is a fascinating field for an enthusiastic young doctor, because so many strange and interesting cases are encountered, and some of the missionaries have done very brilliant work, especially in surgery. They are frequent contributors to the leading European medical journals. All nonsense to the contrary notwithstanding, the native Chinese doctors are 'fakirs,' pure and simple. Their remedies are based on childish superstition, and they hold that all febrile disorders originate in a certain artery which they call the 'fever vein.' The treatment is to compress the vein. If the missionaries are driven out, there will be a big jump in mortality in the cities."

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended July 20, 1900:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
ILLINOIS:	Chicago	July 7-14	2	
KANSAS:	Wichita	July 7-14	2	
LOUISIANA:	New Orleans	July 7-14	11	5
"	Shreveport	July 7-14	3	
MARYLAND:	Baltimore	July 7-14	1	
MASSACHUSETTS:	Fall River	July 7-14	1	
NEBRASKA:	Omaha	July 7-14	2	
NEW HAMPSHIRE:	Manchester	July 7-14	1	
OHIO:	Cleveland	July 7-14	29	
PENNSYLVANIA:	Philadelphia	June 8-16	1	
S. CAROLINA:	Greenville	July 7-14	1	
UTAH:	Salt Lake City	July 7-14	2	
WASHINGTON:	Tacoma	July 1-7	1	

SMALLPOX—FOREIGN AND INSULAR.

BRAZIL:	Bahia	June 2-9	2	
ENGLAND:	Liverpool	June 23-30	5	
"	London	June 23-30	16	
FRANCE:	Lyons	June 16-23		1
"	Paris	June 23-30		4
"	Roubaix	May 1-31		1
GREECE:	Athens	June 23-30	4	2
INDIA:	Bombay	June 5-12		12
ITALY:	Genoa	June 8-16	3	
MEXICO:	Vera Cruz	July 1-7		9
SCOTLAND:	Glasgow	June 22-July 6	170	3
SWITZERLAND:	Geneva	June 8-16	1	

YELLOW FEVER.

ARABIA:	Goree Dakar	May 30-June 16	3	2
COLOMBIA:	Barranquilla	June 23-30	9	6
"	Cartagena	June 22-29	11	9
CUBA:	Havana	June 27-July 4		5
"	Santa Clara	June 26-July 7	7	
MEXICO:	Cordoba	July 1-8	Reported.	
"	Progreso	June 23-July 8	3	2

CHOLERA.

INDIA:	Bombay	June 5-12		72
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PLAGUE.

ARABIA:	Aden	June 8-16	3	3
AUSTRIA:	Sydney	June 2-16	14	6
INDIA:	Bombay	June 5-12		117
JAPAN:	Osaka	June 15-19	1	
"	Shidzuoka	June 15-19	1	

Changes in the Medical Corps of the U. S. Army for the week ended July 21, 1900

SHIMER, First Lieutenant IRA A., assistant surgeon, is granted leave for 1 month, from about June 23, with authority to leave the limits of the division of Cuba and apply for an extension of 1 month.

POTTER, Major SAMUEL O. L., surgeon, will proceed to the Presidio for temporary duty.

CLEARY, Lieutenant-Colonel PETER J. A., deputy surgeon-general, is granted leave for 20 days.

FULLER, MARION O., acting assistant surgeon, is relieved from duty at Madison barracks and will proceed to Fort Columbus and report to the commanding officer, Third Battalion, Fifteenth Infantry, for duty to accompany that battalion via San Francisco, Cal., to the Philippine Islands.

ALLEN, H. EUGENE, acting assistant surgeon, is relieved from temporary duty at Fort Sam Houston, and will proceed to Fort McPherson, and report not later than July 22 to the commanding officer, Company M, Fifteenth Infantry, for duty to accompany that company via San Francisco, Cal., to the Philippine Islands.

FULLER, First Lieutenant LEIGH A., assistant surgeon, the orders of June 20 which relate to him are amended so as to direct him to proceed to San Francisco, Cal., via Washington, D. C., reporting en route not later than July 19, to the Acting Surgeon-General of the Army for instructions.

POND, ARLINGTON, acting assistant surgeon, will proceed from Rutland, Vt., to Fort Preble for duty to relieve Acting Assistant Surgeon Lewis T. Griffith. Acting Assistant Surgeon Griffith, after being thus relieved, will upon the expiration of his present leave, proceed via San Francisco, Cal., to Manila, P. I., for assignment to duty.

APPLE, W. EDSON, acting assistant surgeon, now at Fort Columbus, will proceed to West Point, N. Y., for duty to accompany Company E, Battalion of Engineers, to San Francisco, Cal., and upon the completion of this duty will return to his proper station.

FOGG, JOHN S., acting assistant surgeon, is relieved from temporary duty at Columbus Barracks, and will proceed to Fort Myer for duty to accompany a squadron of the Third Cavalry to the Philippine Islands, and upon arrival at Manila will report to the commanding general, division of Philippines, for assignment to duty.

BARNEY, CHARLES N., acting assistant surgeon, will proceed from Fort Edward, N. Y., to Fort Monroe for temporary duty.

CORBUSIER, Major WILLIAM H., surgeon, will proceed from San Francisco, Cal., to Washington, D. C., and report to the Acting Surgeon-General of the Army for further instructions.

BORDEN, Captain WILLIAM C., assistant surgeon, is granted leave for 1 month, from about July 25.

DARNALL, First Lieutenant CARL R., assistant surgeon, will report to the commanding officers of the hospital ship "Relief," and the second reserve hospital, Manila, for duty.

DESSEZ, PAUL T., acting assistant surgeon, will report to the commanding officers of the hospital ship "Relief," and the second reserve hospital, Manila, for duty.

MAY, JAMES V., acting assistant surgeon, now in Manila, P. I., is authorized to appear before the examining board for examination for appointment as assistant surgeon, U. S. Army.

SHORTIDGE, EDMUND D., acting assistant surgeon, now in Manila, P. I., is authorized to appear before the examining board for examination for appointment as assistant surgeon, U. S. Army.

SHEPARD, JOHN L., acting assistant surgeon, now in Manila, P. I., is authorized to appear before the examining board for examination for appointment as assistant surgeon, U. S. Army.

DESSEZ, PAUL T., acting assistant surgeon, is authorized to appear before the examining board for examination for appointment as assistant surgeon, U. S. Army.

KNEEDLER, Captain WM. L., assistant surgeon, will report to the chief surgeon of the division of the Philippines, for duty as attending surgeon for the board of commissioners to the Philippine Islands, and such other professional duty as may be required of him.

STUCKEY, HARRISON W., acting assistant surgeon, is relieved from duty at Columbus Barracks, and will proceed at once to Fort Myer for duty to accompany a squadron of the Third Cavalry to the Philippine Islands.

CURRY, JOSEPH J., acting assistant surgeon, now at San Francisco, Cal., will proceed to Washington, D. C., and report to the Surgeon-General of the Army for instructions.

BROWN, WILMOT E., acting assistant surgeon, will proceed from Taylorville, Ill., to Denver, Col., and report to the commanding general, department of the Colorado, for assignment to duty with troops to be sent from that department to the Philippine Islands.

SMITH, CHARLES F., acting assistant surgeon, will proceed from Whitehall, Mich., to Denver, Col., and report to the commanding general, department of the Colorado, for assignment to duty with troops to be sent from that department to the Philippine Islands.

STOECKLE, CHARLES H., acting assistant surgeon, will proceed from Philadelphia, Pa., to Denver, Col., and report to the commanding general, department of the Colorado, for assignment to duty with troops to be sent from that department to the Philippine Islands.

WALL, FRANCIS M., acting assistant surgeon, will proceed from Warren, Ind., to Denver, Col., and report to the commanding general, department of the Colorado, for assignment to duty with troops to be sent from that department to the Philippine Islands.

NAGLE, JOHN S., acting assistant surgeon, will proceed from Chicago, Ill., to St. Paul, Minn., and report to the commanding general, department of Dakota, for assignment to duty with troops to be sent from that department to the Philippine Islands.

MORF, PAUL F., acting assistant surgeon, will proceed from Chicago, Ill., to Omaha, Neb., and report to the commanding general, department of the Missouri, for assignment to duty with troops to be sent from that department to the Philippine Islands.

FISCHER, CHARLES H., acting assistant surgeon, is granted leave for 1 month, from about August 15.

GORHAM, GEORGE H., hospital steward, Fort Banks, will be sent to Fort Columbus, to report to the commanding officer of the battalion of the Fifteenth Infantry to accompany that company to its destination, for duty.

A board of medical officers, to consist of Major WILLIAM B. DAVIS, surgeon; Major JOHN M. BANISTER, surgeon, and Captain CHARLES M. GANDY, assistant surgeon, is appointed to meet at West Point, N. Y., August 25, for the examination of such can-

didates for admission to the United States Military Academy as may be ordered before it.

The following named officers will report to the commanding generals of the departments indicated below for assignment to duty: Department of Northern Luzon—First Lieutenant GEORGE A. SKINNER, assistant surgeon, and Acting Assistant Surgeons, JAMES V. MAY, EDMUND D. SHORTLIDGE and JOHN L. SHEPARD. Department of Southern Luzon—First Lieutenant BENJAMIN J. EDGAR, Jr., assistant surgeon, and Acting Assistant Surgeons FRANK R. MAURA and ALBERT L. MILLER. Department of Mindanao and Jolo—Major FREDERICK J. COMBE, surgeon.

The following assignments and change of station and duty of officers are announced: Lieutenant-Colonel CHARLES L. HEIZMANN, deputy surgeon general, will report to the commanding general, department of Northern Luzon, for duty as chief surgeon of that department, relieving Major LOUIS M. MAUS, surgeon. Major MAUS will report to the chief surgeon of the division of the Philippines for duty in his office for the purpose of making such inspections of hospitals and sanitary inspection of troops as may from time to time be ordered from these headquarters. Major EDWIN F. GARDNER, surgeon, will report to the commanding general, department of Northern Luzon, for assignment to duty in that department.

Changes in the U. S. Marine-Hospital Service, for the week ended July 19, 1900:

CARRINGTON, P. M., surgeon, upon expiration of sick leave of absence, to proceed to Point Pleasant, N. J., for special temporary duty.
PERRY, T. B., surgeon, upon return of Surgeon McIntosh from leave of absence, to proceed to Wilmington, N. C., and assume command of the service, relieving Passed Assistant Surgeon C. P. Wertenbaker.
WERTENBAKER, C. P., passed assistant surgeon, to proceed to Washington, D. C., preparatory to receiving orders to assume command of the service at New Orleans, La.
MATHEWSON, H. S., assistant surgeon, to proceed to Philadelphia, Pa., and report to medical officer in command for duty.
WHITE, M. J., assistant surgeon, upon being relieved from duty at Philadelphia, Pa., to proceed to San Francisco, Cal., and report to medical officer in command for duty and assignment to quarters.
HOBBS, W. C., assistant surgeon, bureau order of June 27, 1900, directing Assistant Surgeon Hobbs to proceed to Honolulu, revoked, and directed to proceed to Savannah, Ga., and assume command of the service.
BILLINGS, W. C., assistant surgeon, is granted 15 days' extension of leave of absence from July 15.
ROBINSON, D. E., assistant surgeon, upon being relieved from duty at Memphis, Tenn., to proceed to Seattle, Wash., and assume command of the service, relieving Acting Assistant Surgeon Eagleson.
FOX, CARROLL, assistant surgeon, relieved from duty at Port Townsend Quarantine, and directed to proceed to Dutch Harbor, Alaska, reporting to medical officer in command for duty.
KORN, W. A., assistant surgeon, upon being relieved from duty at Evansville, Ind., to proceed to Philadelphia, Pa., and report to medical officer in command, for duty.
VOGEL, C. W., assistant surgeon, is relieved from duty at San Francisco, Cal., and directed to proceed to San Francisco Quarantine and report to medical officer in command, for duty and assignment to quarters.
LLOYD, B. J., assistant surgeon, is relieved from duty at San Francisco Quarantine, Cal., and directed to proceed to Cape Nome, Alaska, and report to Assistant Surgeon B. H. Earle, for duty.
BURKHALTER, J. T., assistant surgeon, upon being relieved from duty at New York, N. Y., to proceed to Mobile, Ala., and report to medical officer in command, for duty and assignment to quarters.
MCCOY, G. W., assistant surgeon, is relieved from duty at St. Louis, Mo., and directed to proceed to San Francisco, Cal., and report to medical officers in command, for duty and assignment to quarters.
CRAIG, R. C., acting assistant surgeon, is granted leave for 7 days.
GREENSTREET, A. G., acting assistant surgeon, to proceed to Wilmington, N. C., and report to medical officer in command, for duty and assignment to quarters.

Changes in the Medical Corps of the U. S. Navy, for the week ended July 20, 1900:

FITZSIMONS, P., medical director, detached from the naval examining board, Annapolis, Md., and ordered to duty in charge of the naval hospital, Newport, R. I. July 21.
BABIN, H. J., medical director, detached from duty as president of the medical board of examiners, Naval Laboratory, Brooklyn, N. Y., and ordered home and to wait orders. July 25.
HENEGER, L. G., surgeon, detached from the Naval Hospital, Newport, R. I., July 21, and ordered to duty as member of the board of medical examiners, Naval Laboratory, Brooklyn, N. Y. July 25.
MCCORMICK, A. M. D., passed assistant surgeon, detached from the "Chicago," and ordered to the "Montgomery."
WHITING, J. R., assistant surgeon, detached from the "Montgomery," and ordered to the "Chicago."
FISKE, C. N., assistant surgeon, detached from the Navy Yard,

Boston, and ordered to duty with marines at San Francisco, Cal., and then to duty at the Naval Hospital, Mare Island, Cal.
PAYNE, J. H., Jr., assistant surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the Asiatic Station with the fifth battalion of marines.

PROSPERI, A., pharmacist, detached from the Naval Academy, July 21, and ordered home and to wait orders; retired from July 3, 1900, under the provisions of section 1143, Revised Statutes, upon his own application after 40 years' service.

Foreign News and Notes.

GREAT BRITAIN.

Hospital Ship the Gift of a Maharajah.—In the House of Commons, July 23, the Secretary of State for India announced that the Maharajah of Gwalior had offered the Government a fully-equipped hospital-ship for service in China. It was accepted.

The Housing of the Working Classes Amendment Act.—The bill to amend Part III of the Housing of the Working Classes Act, 1890, as altered by the committee of the House of Commons, has been printed. The Act of 1890 deals in its first part with unhealthy areas—that is, large areas; in its second, with unhealthy dwelling-houses and small areas, including the power of dealing with obstructive buildings; whilst the third part is entitled "Working Class Lodging-Houses." The last-named part, it will be remembered, is adoptive—that is to say, any urban authority in England or Wales, or the city of London, or the London County Council, might adopt this part of the Act, and any rural sanitary authority under certain conditions. The bill as amended enables any council, other than a rural district council, who shall have adopted this part of the Housing Act, to go outside their district, if they deem it desirable, in order to provide such lodging-houses. The bill will enact that the council of any rural authority may, with the consent of the county council, adopt Part III, either for the whole of their district, or for any contributory place within it. In sanctioning such action the county council must, however, have regard to certain points set forth. In the third clause provision is made for the adoption of the Act by the new metropolitan boroughs and the allocation of their expenses. In the fourth section it is directed that the expenses of the council under Part III of the 1890 Act in rehousing persons displaced under other powers, may be treated as expenses under those powers, but the account must be kept separate. The fifth section enables a nonrural authority outside London, with the consent of the Local Government Board, a London Council with that of a Secretary of State, and a rural district with the sanction of the county council, to lease any land acquired by them for the purposes of Part III; but enacts that certain conditions providing for the legitimate use of such land and buildings for the purposes of the Act shall be inserted, and that the deed of demise shall be endorsed with notice of the subsection. The sixth section deals with the title, and excludes Scotland and Ireland from the provisions of the bill.

CONTINENTAL EUROPE.

Smallpox in Piedmont.—There appears to have been no recrudescence of the outbreak of smallpox with which Italy was threatened last April through the landing at Naples of a number of infected persons belonging to a large party of American tourists, but two cases of hemorrhagic smallpox imported from Toulon and Marseilles are reported at Cuneo in Piedmont. One case has proved fatal and in the other the patient is not expected to recover.

The antimalarial campaign in the Argo Romano has now fairly begun, the 8 ambulances organized for it by the Red Cross Society have left Rome for their various stations. On the first day a large quantity of preventive remedies were distributed and had cases of malaria sent to the Hospital of Santo Spirito. This crusade will be the means of relieving much suffering and saving many lives. To the same object the experiments which the Society for the Study of Malaria

are again inaugurating in Latium for the malarial season will no doubt contribute. Experiments of similar nature will be prosecuted in Tuscan Maremma and in Salerno and Bari.

MISCELLANY.

The Shah Has Gout.—The Shah of Persia is at present at Contrexeville, where he is under treatment. Drs. Hollander, Dieulafoy and Taccond have ascertained that he had symptoms of gouty diathesis. The Shah is a very punctual patient and follows exactly the orders of his doctors.

Chinese Drugs Become Scarce.—The troubles in China and the consequent falling off of the products of the interior have caused an advance of from 25 to 33½% in the price of drugs shipped from that country, the chief articles of which are cassia barks, oil and buds, oil of aniseed, nutgalls, and Chinese vermillion.

Obituary.—HENRY BURFORD NORMAN, of Chesham, June 11, aged 81.—RICHARD TRUMAN FITZHUGH, of Nottingham, June 15, aged 28.—CORRADO TOMMASI-CRUDELI, of Rome, aged 86.—THOMAS WALLER BARROW, at Woolwich, July 1, aged 83.—JAMES CREAGH, near Kroonstad, July 6.—HENRY EWBANK, of Cheltenham, aged 44.—FRITZ RUBENSTEIN, of Berlin, aged 37.—H. BENEDIKT, of Vienna.—DONALDSON CUMMING, of Aberdeen, at Para, Brazil, June 20.

Modern Famines.—The worst famines of modern times were the famine in Ireland, in 1846-7, in which 1,000,000 people perished; the Indian famine of 1866, which claimed 1,450,000 victims; the Indian famine of 1877, in which 500,000 people perished; and the great famine in China, in 1878, in which 9,500,000 died. The latest reports from India are more favorable. Excellent rains have fallen in many parts and the agricultural prospects in Central India are generally satisfactory.

Cholera in Bombay.—The Governor of Bombay telegraphed to the Secretary of State for India that there were 9,928 cases of cholera in the famine districts during the week ended July 7, of which 6,474 were fatal, and that in the native States there were 9,526 cases, of which 5,892 were fatal. The total number of deaths on the relief works was 5,870. There has been a good rainfall in Surat, Khandeish, and the western part of the Deccan, and rain has begun in parts of North Gujerat, where the numbers demanding relief continue to increase. In Central India there were moderate general rains. The sowing of crops has partly commenced. There has been insufficient rain in the Punjab for dry-land sowing. Notwithstanding the improved prospects no diminution of relief is possible. The condition of the surviving cattle in Western India is deplorable. The health returns from the Central Provinces are satisfactory. The total number of people on relief was 6,148,000.

The Plague.—Only 319 deaths from plague are reported for all India during the week ended June 23. For the previous week 417 were recorded. In the city of Bombay 97 plague deaths occurred, and 32 in the Bombay Presidency exclusive of the city. During the third week of June 1,183 deaths from all causes occurred in Bombay, a high rate when compared with the average for the past five years of 478. Plague is therefore no longer a serious factor in the vital statistics of the city; and the causes are to be found in the destitute state of the people owing to famine in the surrounding districts. Cholera claims a large number of victims. In Calcutta the number of plague deaths during the week ended June 23 numbered 125, and in Bengal, exclusive of the metropolis, 37. During the week ended July 7, 65 fresh cases of plague were notified in Hong Kong, and 68 deaths from the disease. This is a great improvement on the previous week, when the numbers were 99 and 98 respectively. Japan is declared free of the plague at present. In Formosa, however, the disease still lingers. At Smyrna a death from plague occurred on July 4, and 16 cases have been reported up to the present. The total number of plague case in Rio de Janeiro, Brazil, since the commencement of the outbreak until June 29 amounts to 200 cases with 11 deaths. In no outbreak of plague ever recorded has the death-rate been only 5½% of cases attacked, and there is some reason to question whether plague actually exists in South America. Only

7 new cases occurred in Sidney, Australia, during the week ended May 26. The total number of cases since the outbreak is 247, of whom 89 have died. The total number of cases reported in Queensland up to date is 47, of which 16 have died. Of these cases 14 have occurred in Brisbane, 5 of which proved fatal. The latest reports from India indicate a satisfactory decline in the number of deaths from plague. From April 21 to June 16, the number of deaths were respectively in each week: 4,100, 3,365, 2,498, 1,771, 1,214, 975, 746, 503 and 417. In Bombay City the number of deaths from plague during the fortnight ending June 16 was 281. In the Bombay Presidency beyond the city 160 deaths occurred. With all the improvement, however, the mortality from plague alone is twice what it was at this time last year. Plague deaths in Calcutta during the weeks ended June 9 and 16 numbered 122 and 138 respectively. Plague in Calcutta has behaved as though the disease were endemic, while in Bombay epidemics have been the rule. In Hongkong the statistics for the 3 weeks ended June 30 were as follows: Fresh cases, 74, 63 and 99; deaths, 57, 64 and 98 respectively. The Hongkong Chinese thwart the work of the Government in every way. In May the sanitary officials discovered 20 plague cases only by a house-to-house visitation. The crisis in China is bringing an enormous increase of trade to the port and of residents to the town, and the presence of plague in the port is calculated to cause anxiety as to an active spread of the disease. Plague continues to appear in some localities in Japan. The most recent notification of the kind comes from Nakanogo, where, during the third week in May, an alarming outbreak occurred. The number of cases and deaths for all Formosa since the commencement of the year up to May 5 were 379 and 273 respectively. At Smyrna a death from plague was recorded on June 20. The announcement that it had reappeared at Oporto, in Portugal, caused considerable anxiety in Western Europe. The most recent information is, however, that only 1 case of the disease has been met.

Neurotic Muscular Atrophy.—Dercum reports 2 cases (*Journal of Nervous and Neurotic Diseases*, June, 1900), one occurring in a woman, the first symptoms being noted at the age of 42, and involving the feet and legs, later the hands. There was considerable pain along the course of the nerve-trunks, and at the end of 5 years decided loss of sensation. The other case occurred in a man, 57 years of age, who had had pain, commencing in the thighs, for several years. Subsequently, there was wasting of the muscles, loss of power, but no disturbance of sensation. The author gives a brief summary of the findings in those cases that have come to autopsy. [J.S.]

Curettage of the Male Bladder for Chronic Cystitis.—Nathan W. Soble (*Buffalo Medical Journal*, May, 1900) advocates the use of the curet in cases of nontuberculous chronic cystitis that will not yield to ordinary treatment, or even the radical surgical means, such as drainage of the bladder by either the perineal or suprapubic routes. He relates a case in point in which—the ordinary medical means having failed—suprapubic cystotomy was done, followed by irrigation with a silver nitrate solution, all without improvement. One month after operation it was decided to curet the mucous membrane of the bladder through the suprapubic incision for the purpose of removing what seemed to be a thickened, reddened and diseased epithelium, in the hope that a new, healthy layer would be formed. On operation, it was discovered that what seemed at first to be a highly-inflamed epithelial layer was really a plastic deposit, in some portions of the bladder a half inch and more thick, an exudate covering the entire mucous membrane of the bladder, and rendered smooth and glistening by hydrostatic pressure. It required a second curetment to remove all of this tissue. After the completion of the operation the cavity of the bladder was considerably increased and improvement was immediate; the urine became clear almost immediately and in 3 weeks was nearly normal; in 6 weeks the external wound was healed and the patient was walking about, urinating every 2 hours during the day and less often during the night. He has gained 30 pounds in weight. [M.B.T.]

The Latest Literature.

British Medical Journal,

July 7, 1900. [No. 2062.]

1. Use of Borax and Formaldehyd as Preservatives of Food. W. D. HALLIBURTON.
2. Seventy-two Consecutive Cases of Removal of Goiter by Operation (Extirpation or Enucleation). JAMES BERRY.
3. Some Unusual Sequels to Epityphlitis. ARTHUR E. BARKER.
4. Degeneration of the Neuron. FREDERICK W. MOTT.
5. Antistreptococcus Serum in Erysipelas. A. W. HARRISON.
6. Impaction of a Bean in the Air-Passages, Tracheotomy, Expulsion Through the Wound; Recovery. BRUCE HAMILTON.
7. Separation of Chondro Sternal Junction without Fracture. S. GROSS.
8. A Simple Method of Fixing Blood-Films. ALEXANDER EDINGTON.
9. Pseudo-Hemoptysis in an Infant. W. MACFIE CAMPBELL.
10. Case of Nasal Granuloma, Probably Tuberculous. HUNTER MACKENZIE.

1.—Halliburton gives the result of his experiments on the use of borax and formaldehyd as **preservatives of food**, and takes the ground that the use of foreign substances as preservatives of foodstuffs should be abandoned and if possible be replaced by a more wholesale use of the method of cold transport and storage, for he says: 1. An antiseptic is inimical to the life of the organisms that cause putrefaction; it cannot, therefore, be harmless to the vital processes in the higher animals. 2. Numerous clinical observations have been recorded which show that dyspeptic and other troubles follow the use of foods which have been treated with commonly employed preservatives like borax. 3. Even if, as in the case of boric acid and borax, the poison is not cumulative, the continuous passage of foreign substances through the kidneys cannot be beneficial to those organs. Besides experimenting with borax and boric acid, he gives his results of the influence of formaldehyd on the gastric digestion of proteid, on the pancreatic digestion of proteids, on the pancreatic digestion of starch and the action of formaldehyd on the rennet-curdling of milk. His experiments appear to prove conclusively the injurious effect produced by even minute quantities of certain preservatives on the activity of the enzymes concerned in ordinary digestion and to furnish a cogent reason why the use of these substances should be prohibited for the preservation of food-materials. [A.B.C.]

2.—Berry has written quite an extensive paper on the **removal of goiter** by operation and based on a record of 72 cases, in 33 of which extirpation was practised, and in 39 enucleation, the removal of a tumor or cyst from within the gland, was done. In the majority of these cases the indication for operation consisted in the production of dyspnea caused by the mechanical compression of the trachea by the tumor. In 5 cases only was the operation done because of the deformity present and in 3 patients the gland was removed on account of suspected malignancy. The two forms of goiter which are most dangerous, *per se*, are the rapidly-growing parenchymatous variety occurring at puberty, which in 24 hours are liable to produce extreme if not fatal dyspnea, and the variety in which the growth is situated very low down when a lobule is apt to become displaced and get caught between the sternum and trachea. Unilateral goiters are seldom dangerous even when attaining enormous size. Berry believes that a general anesthetic in cases where there is much dyspnea is fraught with a great deal of danger and in most of these patients it is better to do the operation under morphin, or cocain, or eucain. The incision should be in simple cases transverse in direction and where more room is needed the oblique cut along the sternomastoid is by far the best. In extirpating the gland, all large bloodvessels should be caught and tied before being cut and especial care taken to preserve intact the recurrent laryngeal nerve. In an enucleation the operator should work skillfully and

quickly as the bleeding is apt to be very severe. The results obtained in the 72 cases were very satisfactory, the large majority of the wounds healing by primary union. Of the whole number there were 3 deaths. [G.B.W.]

3.—Barker reports several cases of **epityphlitis followed by somewhat unusual sequels**. The first was one of a subphrenic abscess, which as a sequel of epityphlitis is probably a more common occurrence than is generally supposed. The second was one in which the pus had burrowed up behind the colon and had finally opened into the lungs causing a septic pneumonia. The third case shows the disastrous results of leaving a perityphlitic abscess too long unopened. An artificial anus developed and required the performance of intestinal anastomosis to effect its closure. In the fourth case an intestinal concretion had ulcerated through the appendix and had become imbedded in a mass of adhesions. On separating these adhesions it was found that the concretion had caused the development of an ulcer which opened up the small intestine at a height considerably above the ileocecal valve. In the fifth case the appendix itself without the presence of an irritating concretion had become so inflamed that it had almost ulcerated through into the colon. All of these cases under appropriate operative treatment made good recoveries. [G.B.W.]

4.—Mott says that atrophy of the tangential fibers of the frontal and central convolutions is an early and constant change in dementia paralytica, but it may occur also in alcoholic and epileptic dementia. The **Marchi method** is now adopted by investigators for determining the path, not only of tracts, but of individual fibers in the central nervous system. The chemistry of the Marchi stain does not depend upon the fact that the proteid of the axon has become degenerated into fat, but, as the author has shown, it depends on the differential staining of the phosphoreted fat contained in the myelin (protagon) from ordinary non-phosphoreted fat, such as olein, palmatin, stearin, etc. Not only in **general paralysis**, but in any degenerative process affecting the nervous system if extensive enough choline can be detected in the blood. Mott has discovered that the myelin (protagon) in its degeneration splits up into simpler bodies with the elimination of cholin; this latter escapes into the cerebrospinal fluid and then into the blood where it causes a fall in arterial pressure, partly due to its action on the heart but mainly due to dilation of the peripheral vessels, especially in the intestinal area. Neurine was not found in the blood. In general paralysis a much greater amount of proteid material than normal was found. By examination this was found to contain phosphorus and, therefore, most likely a nucleoproteid. Since a nucleoproteid favors coagulation and stasis, it is probable that this accounts in part at least for the intravenous coagulation and even thrombosis of the lateral sinus sometimes seen in this disease. The Marchi reaction applied to the central and peripheral systems shows there is a rapid disappearance of the products of degeneration in the peripheral nerves as compared with the central nerves. The existence in the former of a chain of tuberculous mesoblastic cells, which compose the sheath of Schwann, probably bears some relation to this difference. There are two forms of **degeneration**: 1. Secondary (Wallerian) degeneration due to interruption of the axon when it is cut off from the cell, and which may be considered of traumatic origin. 2. Primary degeneration, which arises as a result of altered conditions in the blood and lymph, generally by the introduction of some toxic substance. [A.B.C.]

5.—Harrison reports in detail a case of **severe facial erysipelas** in which the temperature had gone to 105. The patient was practically moribund, but began to recover at once on the injection of 20 ccm. of Burrough's and Wellcome's antistreptococcus serum under the skin of the abdomen, repeated twice a day at first by 10 ccm. then once a day. After 2 or 3 days the patient made a complete and rapid recovery. He observed the almost complete absence of sleep, although hypnotics were given at frequent intervals. He is of opinion that the antistreptococcus serum saved the patient's life. [A.B.C.]

6.—Hamilton reports a case of a boy of 12 getting a haricot bean down his trachea. The foreign body at first lodged evidently at the bifurcation of the trachea obstructing the entrance of air to the right lung. Later on the bean became dislodged, causing such dyspnea that it was necessary to per-

form **tracheotomy** to save the boy's life. After quite a large opening had been made into the trachea the bean was forcibly coughed out and the patient made a good recovery. [G.B.W.]

7.—In this case of **separation of one of the costal cartilages** from the sternum the nature of the injury was not recognized until 3 or 4 days after the accident, at which time a distinct click could be felt at the seat of separation. [G.B.W.]

8.—Edington gives a simple method of **fixing blood-films** by making use of a bell-jar which is open at the top. The diameter of it is 135 mm., and the height to the lower border of the neck about 150 mm. The opening at the top is closed by India-rubber cork on the bottom of which is glued an ordinary cover-glass. He uses vapor of formaldehyde. [A.B.C.]

9.—Campbell reports the case of an infant 5 days old, which had blood coming from its mouth, and its stools, which had begun to change, were dark. There was a condition **simulating hemoptysis**, but a repeated close examination showed a very small crack in the mother's nipple, and it was proved that the child swallowed the blood. [A.B.C.]

10.—Mackenzie reports a case of **nasal granuloma** containing giant-cells so that the pathologic diagnosis of **tuberculosis** was most probable. The growth was very friable and bled freely when touched, and after its removal the hemorrhage was so great that it was necessary to pack the nares. Recurrence has not taken place within six months. [G.B.W.]

Lancet.

July 7, 1900. [No. 4010.]

1. The Degeneration of the Neuron. FREDERICK W. MOTT.
2. The Present State of our Knowledge Regarding Visual Sensation. R. MARCUS GUNN.
3. Unusual Complication Following Gastrojejunostomy. W. H. BROWN.
4. A Case of Primary Carcinoma of the Vermiform Appendix. With Remarks. H. D. ROLLSTON.
5. The Treatment of the So-called "Hay Fever" or Summer Catarrh. KARL GRUBE.
6. Exercises in the Treatment of Lateral Curvature of the Spine. NOBLE SMITH.
7. One Hundred Consecutive Cases of Abdominal Section in Hospital Practice without a Death. WILLIAM DUNCAN.
8. Suppurative Peritonitis; Spontaneous Evacuation; Recovery. JAMES R. WALLACE.
9. Contagious Catarrh or Roup in Fowls, and Diphtheria in Man. J. GORDON SHARP.
10. Hydatid Cyst in a Native of India. W. J. BUCHANAN.
11. Note on a New Medium for the Growth and Differentiation of the Bacillus Coli Communis and the Bacillus Typhi Abdominalis. ALFRED THEODORE MACCONKEY.
12. A Case of Obstruction due to New Growth of the Sigmoid Flexure; Inguinal Colotomy, Followed later by Resection of the Growth; Reestablishment of the Intestinal Tract; Recovery. W. H. BATTLE.
13. A Case of Pneumonic Plague Treated by Large Doses of Carbolic Acid; Recovery. J. BELL.

1.—See abstracts of *British Medical Journal* for July 7.

3.—Brown reports a case of operation for pyloric stenosis at which he joined a loop of jejunum to the stomach using Senn's plates in the anastomosis. At the end of 2 weeks symptoms of obstruction appeared, the patient soon being as badly off as before operative intervention. Reopening the abdomen he found that, although the **gastrojejunostomy** externally was quite satisfactory, internally the bone plate had disappeared and all trace of the opening was absent. Pressing firmly with the finger along the edge of the former incision he tore through a **membrane** by which the **opening** had been **occluded**. Following this the patient recovered rapidly. He has no idea as to what caused the formation of the occluding membrane. [M.B.T.]

4.—An appendix was removed from a woman aged 26, March 27, 1900, following the fourth attack of **appendicitis**. The appendix contained a mass a little larger than a marble, appearing like a tuberculous lesion; the patient recovered from the operation, but June 27 she was reported as rapidly losing flesh and strength, with symptoms of

the development of secondary growths in the abdomen. At this time microscopic examination of the vermiform appendix showed most unexpectedly that it was the seat of a spheroidal-celled **carcinoma**. The facts that the growth was most extensive in the mucous coat, that it could be traced outward into the muscular coats, and that there was no growth on the outside of the peritoneum, showed that the growth originated in the mucous membrane of the appendix, and that it was not a secondary growth either implanted on the peritoneum or arising as a result of embolism with its substance. In the few cases reported of **primary malignant disease of the appendix** it is noteworthy that there were practically no clinical symptoms other than those usually in appendicitis. [M.B.T.]

5.—Grube states that **hay-fever** or summer catarrh is not confined to the summer months, but is more prevalent then. It may occur at any time of year. He says that most cases are among patients having gout, or of gouty tendency, or with a history of gout in the family. All cases successfully treated were those connected in some way with gout. Consequently treatment should be directed against both the gout and the summer catarrh. Five cases were treated by the author; 4 of the patients were gouty, or had a history of gout in the family; the other was free from this complication. A strict regulation of the diet, and the local application of the Neuenahr waters in the form of inhalations, gargle, and nose-douche effected a cure in the 4 of gouty tendency. The one without this tendency was not cured. Hot baths and massage proved of benefit in those suffering from muscular and articular pains in addition to the catarrh. [A.B.C.]

6.—Smith gives a fully illustrated article considering the **effects** which may be produced upon a **crooked spine** by specified **muscular exercise**, either by correcting the shape and of strengthening the joints or strengthening any particular set of muscles connected with the deformity. He justly states that it is impossible to lay down unvarying rules for gymnastic exercises by which to deal with every instance of curvature since cases differ to such an extent and that what is suitable to one individual would be totally wrong for another. The article does not lend itself readily to abstracting and those interested would do well to refer to the original. [M.B.T.]

7.—Duncan reports **108 consecutive cases of abdominal section** without the loss of a patient. This includes all his cases of abdominal section from October, 1897, to the present time. There was no selection of cases. The patients were all women and causes for operation included most of those within the field of gynecology. The author discusses at some length his method for preparation of the patient, the operator and his assistants, and the instruments. He also discusses sponges, flushing, drainage, and after-treatment of the patient. Shock and tympanites from intestinal paralysis are the great dangers in abdominal section. The former he combats by hypodermic injections of strychnia; he attempts to prevent tympanites by passing a soft rectal tube up the bowel every 4 hours. If this is not satisfactory an enema consisting of an ounce of oil of turpentine to a pint of warm water is given. [A.B.C.]

8.—Wallace relates a case of **subacute general peritonitis**, probably **tuberculous in origin**, with effusion tending to suppuration, in which laparotomy was recommended. As a preparation for operation the abdomen was thoroughly cleansed and a layer of sterile boric cotton used as a protection over the abdomen and kept in position by a binder; the next day on removing the dressings they were found adherent above the umbilicus, and in the effort to remove them the tissues beneath peeled off and instantly a stream of pus welled up in a jet quite 6 inches high and continued flowing until not less than 24 ounces had escaped; there was immediate improvement and 17 days after the **spontaneous rupture of the abdominal wall** the patient was discharged cured. [M.B.T.]

9.—Sharp's conclusions and deductions are: 1. **Roup, like diphtheria** (including the somewhat indefinite term "croup") varies in its malignancy, sometimes being mild with only one or two deaths in a large hen-run, while the next epidemic may almost clear out the whole coop. 2. The disease does not appear to be transmissible to man, for those handling the affected birds without any precautions do not suffer. 3. Paralysis was, according to my observations, ab-

sent in roup cases. 4. The disease is evidently a highly contagious catarrh and may correspond to the *morve* or fowl glanders of the French. 5. Roup probably differs entirely from "fowl diphtheria," so called. 6. Bird fanciers distinguish between a "dry" roup and a "wet" roup. Dry roup is most likely a simple benign catarrh corresponding to the recurring croup affecting children, especially those inhabiting valleys and near a river bank. Wet roup, on the other hand, in its malignancy resembles diphtheria and membranous croup. 7. The microorganism of the roup (the wet variety) probably lives for a considerable time at least in the earth near the surface and thus it is readily spread from animal to animal. 8. Conditions of soil and surroundings favorable to the spread of diphtheria would likewise appear to favor the spread of roup in fowls. [A.B.C.]

10.—Natives of India are comparatively exempt from **hydatid disease**, therefore Buchanan records a case which occurred in a native of Bhagalpur who had never left his home. The patient died from a suppurative cyst in the right flank, which did not connect with the peritoneal cavity, and the hydatid cyst was discovered postmortem. [M.B.T.]

11.—MacConkey says in this **new medium** advantage is taken of two well-known facts: (1) That the salts of bile are precipitated by acids; and (2) that *Bacillus coli communis* produces acid in the presence of lactose, while *Bacillus typhi abdominalis* does not. The composition of the medium is: Sodium glycocholate, 0.5%; peptone, 1.5%; lactose, 0.3 to 0.5%; agar, 1.5%; and tap-water, q. s. The lactose is added after filtration. If stab-cultures be made in this medium with *Bacillus coli communis* and *Bacillus typhi abdominalis*, and incubated at 42° C. for from 24 to 48 hours, it will be found that the tube inoculated with *Bacillus coli communis* has become cloudy, while the tube containing *Bacillus typhi abdominalis* remains quite clear. If glucose be used instead of lactose both tubes become cloudy, but the cloudiness due to *Bacillus coli communis* begins from below and that due to *Bacillus typhi abdominalis* from above. In plates made with the glucose medium, incubated for 48 hours at 42° C. and then left for from 3 to 4 days exposed to the light at room temperature, the colonies gradually become orange-colored. [A.B.C.]

12.—Battle describes a preliminary **colotomy** for obstruction of the bowels in a man aged 41; relief followed and the patient's condition steadily improved for 3 weeks, when further operation to remove the cause of obstruction was had. Finding a hard mass at the lower part of the **sigmoid flexure**, with some scattered hard mesenteric glands, about 6 inches of the bowel was removed. On section, it was found that the lumen was almost closed by a **columnar-celled carcinoma**. The patient looked bronzed and well 11 weeks after operation, having gained 7 pounds in weight; the bowels acted regularly and without difficulty. There was a small sinus at the seat of the former colotomy opening, from which there had been a little discharge. [M.B.T.]

13.—Bell reports that a young man of 24, suffering from gonorrhea, was admitted to the Government Civil Hospital at Hongkong. It soon appeared that the patient was suffering from **plague**, and examination of the sputum proved this to be true. He had the characteristic symptoms of plague, his temperature running to 106.4°. He was treated early with hypodermic injections of digitalis and strychnin every 4 hours, and 12 grs. of pure **carbolic acid** in solution were given every 3 hours. The temperature soon commenced to fall, and by the end of the fourth day of this treatment had reached the normal. The man made a good recovery, having taken in all 280 gr. of pure carbolic acid. Bell recommends that this remedy be tried by others. He says it is now being tried on every case admitted to the Plague Hospital, and so soon as 50 cases have been thus treated a report will be made. [A.B.C.]

New York Medical Journal.

July 21, 1900. [Vol. lxxii, No. 3.]

1. The Pituitary Gland as a Factor in Akromegaly and Giantism. WOODS HUTCHINSON.
2. The Prevention of Colds. LORENZO B. LOCKARD.
3. Syphilis of the Brain. J. T. ESKRIDGE.
4. A Brief Consideration of Gangrene and Mortification of the Extremities. THOMAS H. MANLEY.
5. The Etiology and Cure of Hysteria. F. WALTER.

1.—Hutchinson makes the following summary with reference to **giantism**: 1. The greater part of the overgrowth is found at or near the tips of the segment crescents, as in **akromegaly**, differing from the latter mainly in that it is not exclusively confined to the tip of the segment or last division of the limb. 2. The facial part of the skull is enlarged out of all proportion to the cranial, particularly in the region of the lower jaw. 3. The condition, whether it be regarded as normal or morbid, is one that distinctly tends to shortness of life, and would appear to have an average duration of scarcely more than 20 years. 4. The mental and physical vigor of the giant is distinctly below par, and his death usually comes either from a steady progressive increase of this weakness, or from some trifling accident, or usually mild, intercurrent disease. 5. The sexual powers appear in the great majority of cases to be far below normal. 6. There is a decided preponderance of males among the victims of this condition; in all of which statements there is a decided parallelism with akromegaly. Last of all, and from the point of view of this essay of greatest interest, is the fact that the one morbid condition which is peculiar to both these disturbances of nutrition, the enlargement of the pituitary body, is found to be present in a large majority of cases of both. We may conclude, until some evidence to the contrary can be adduced, that akromegaly and gigantism are simply different expressions of one and the same morbid condition; in other words, that akromegaly is a general overgrowth tendency which does not, for some reason, begin to express itself until after adult stature has been reached, and which consequently expends itself upon those points in the body at which growth last ceased—the extremities of the segment crescents and the distal extremities of the appendages. Second, that gigantism in a large majority of cases is this same condition manifesting itself in childhood or before complete stature has been reached, and the growth in consequence is more symmetrical and less strictly confined to the last segment of the arches and appendages. The author reviews the literature of the subject and says that out of 54 autopsies held in cases of akromegaly and gigantism there were only 5 in which the pituitary body was not enlarged. Its hypertrophy in most all cases was very manifest. [A.B.C.]

2.—Lockard lays great stress on the use of the bath, exercise, and proper clothing to prevent **colds**, and consequently the graver maladies which arise secondary to them. The care of the child should begin with the proper hygiene of the prospective mother. During the first 12 weeks of life the infant should be bathed daily in water at 95° F.; during the next 12 weeks the temperature should be 93° followed by sponging at 90°; during the last half of the first year the temperature of the daily bath should be 90°; later the temperature is gradually reduced to 85° with sponging at 80°; after the third year the temperature of the water should be 80° followed by sponging at 75°. Any individual younger than 60 years may, by proper exercise, correct dressing, the daily cold bath, and living in the open air and properly ventilated rooms, so "harden" himself as to be almost or quite immune to colds. Even those beyond 60 can do much to prevent colds by carrying out more carefully the plan outlined. [A.B.C.]

3.—Eskridge quotes Hjelmman as saying that from 1½% to 2% of those contracting syphilis develop **syphilis of the brain**. Of those having tertiary syphilis the same authority says about 12% have syphilis of the brain. Syphilis of the brain may develop at any time after contracting the disease; there is no time during the subsequent life of the patient when it may not develop. The gumma is the typical specific lesion of the brain. Its formation is always attended by inflammation and tissue formation. It never becomes highly organized, and its tendency is to degenerate, either by caseation or by fibrous degeneration with the formation of cicatricial tissue. If treated before degeneration sets in the gumma can be entirely removed and a cure effected, but if treatment be postponed till degeneration sets in contracting bands of cicatricial tissue will form which cannot be removed by medication because they are nonspecific and secondary to the specific lesion. Gummas are most frequently found at the base of the brain, in the interpeduncular space. The sixth and branches of the third cranial nerves are often affected. On the cortex they occur most frequently in the motor area, and hence lead to impairment of bodily motions. The effect of syphilis on the arteries of the brain is well known, like-

wise its effect on the meninges. The author considers at some length the symptoms of syphilis of the brain. He says obliterating disease of the arteries of the brain before the age of 45, and epilepsy occurring after 30, when not traumatic, may be set down as due to syphilis. He divides treatment into—prevention, general management of the patient, and antisiphilitic medication. Under prevention he recommends potassium iodid in 10 to 15 gr. doses thrice daily for 2 or 3 weeks with an interval of probably 4 months. The anti-siphilitic treatment consists in the use of mercury and potassium iodid. As to which shall be used and how, depends not on the time since the initial lesion, but on the virulence of the process. [A.B.C.]

4.—Manley quotes a number of definitions for **gangrene**, and agrees with that from Boyer, who says: "Gangrene implies the dying state of the tissues; mortification their complete death." The author says gangrene has set in, its destructive work has *begun*, but the member is not dead, *is not mortified*; it is in a state of impending death, but is not dead, and in the traumatic type of gangrene of a limb in a healthy subject, by appropriate radical treatment, it should always be saved. He discusses senile gangrene and its treatment. [A.B.C.]

5.—Walter says, if a massive culture of the colon-bacillus, the original colony of which was taken from a noninfectious source, be administered to a case of **hysteria**—that is to say, of the active or convulsive type—latent or posthysterical phenomena, such as paralysis being excluded, the symptoms disappear in from 24 to 48 hours, and the patient is restored to health so far as the hysteria is concerned; debility or neurasthenic phenomena may remain for an indefinite period. The uniformity with which this occurs justifies the placing of this remedy in the class of specifics; indeed, the action of quinin in malarial fever is no surer or more uniform in its results. Two views are advanced to account for this alleged phenomenon: One assumes the existence of a specific organism causative of hysteria not to be differentiated by our present methods from the *Bacillus coli communis*; the other, that in the intestinal tract of predisposed subjects the otherwise harmless colon-bacillus may take on toxic properties. In either event the offending organism is simply displaced by the method of treatment here advocated. [A.B.C.]

Medical Record.

July 21, 1900. [Vol. 58, No. 3.]

1. The Evidences of Prostatic Atrophy after Castration. EDWARD L. KEYS.
2. Neglected Clinical Opportunities in American Medical Centers. S. A. KNOPF.
3. Does "Cross-eye" Affect the General Health? AMBRCE L. RANNEY.
4. Report of a Case of Porro-Cesarean Operation. WILLIAM J. GILLETTE.

1.—Keyes, in a lengthy article, condemns castration for **hypertrophy of the prostate**. His conclusions are as follows: 1. Experiments, whether on man or the lower animals, relating to the normal prostate do not of necessity apply to the enlarged prostate. 2. I know of no direct pathologic evidence that castration has ever caused atrophy of a hypertrophied prostate. 3. There is direct pathologic evidence that in a few cases castration has failed to cause atrophy of the hypertrophied prostate. 4. The majority of cases reported thus far have been labeled "cured" or "improved" so soon after operation that many of them are doubtless instances of local depletion. 5. Clinical evidence of this is afforded by relapses occurring months after the operation. 6. Of the permanent cures some may well be instances of permanent advantage derived from reduced congestion. 7. The clinical evidence as to the actual atrophy of the prostate after castration lacks, as yet, its scientific confirmation, and has failed thus far to prove its title to the surgeon's credence. [M.B.T.]

2.—Knopf recommends that the medical colleges in medical centers should combine in the use of all **clinical material** in their city, and that all medical men attached to hospitals should be clinical teachers independent of college affiliations. Hospital physicians should be appointed only

when well qualified both as clinicians and teachers. Other details are suggested. [D.L.E.]

3.—In a lengthy article Ranney concludes as follows: 1. A small percentage of subjects in whom **cross-eye** exists owe their existing disfigurement entirely to errors of refraction. Proper glasses alone will correct the disfigurement of such patients. Extreme nervous phenomena may coexist in this type of case with the cross-eye, and disappear entirely when the refractive correction is properly made by glasses. 2. Extreme and constant disfigurement from cross-eye, which does not prove to be the result of refractive errors, does not as a rule entail eye-strain or tend to create reflex nervous disturbances. 3. Those who suffer only occasionally from cross-eye and at other times show no cast are peculiarly liable to reflex nervous diseases. 4. Extreme cross-eye inward or outward (convergent or divergent squint) is occasionally due to the fact that both eyes are adjusted either too high or too low in the orbit. 5. Some subjects are unconsciously able to adjust for very high degrees of "latent" squint, and actually to maintain binocular single vision most of the time. The red-glass test in such cases usually develops unconquerable diplopia at once. 6. The "phorometer" and "tropometer" are often essential to the proper recognition of the causes of cross-eye and the particular muscles at fault in individual cases. 7. The "exclusion test" is of great value in cases of squint. It is often extremely difficult and sometimes almost impossible to teach patients afflicted with cross-eye to abandon their unconscious habit of suppressing visual images. The "exclusion test" then becomes the chief reliance of the oculist in determining both the form and degree of maladjustment that exists, and in many instances which operative step to take first. 8. When vertical and lateral squint coexist, it is usually wise to correct the vertical maladjustment (either entirely or in part) prior to operation upon the lateral muscles. 9. The old methods employed in operating for cross-eye have been so modified since the discovery of cocaine that the most extreme deformities can be rectified today without pain and even with no confinement to the house. [M.B.T.]

4.—Gillette reports the sixth successful case of **Porro-Cesarean section**, so far as he is able to learn, in the State of Ohio. A fibroid tumor the size of a child's head so blocked the pelvic outlet as to render it difficult to reach the cervix, and it was so impacted by the contractions of the uterus that it could not be moved at all. The patient was operated upon 60 hours after labor began. A healthy living child was delivered through an incision in the uterus, after which the tumor was with difficulty enucleated from its position, a rubber ligature thrown about the cervix, thus controlling hemorrhage, and the uterus amputated. The patient made a good recovery and was able to nurse her child. [W.K.]

Medical News.

July 21, 1900. [Vol. lxxvii, No. 3.]

1. Appendicitis and Typhoid Fever. H. A. HARE.
2. The Physiological Effects of Preparations of the Ductless Glands. R. H. CUNNINGHAM.
3. Iodid of Iron in the Treatment of Certain Forms of Infective Arthritis. J. C. WILSON.
4. Moulds in the Stomach. J. H. KELLOGG.
5. A Simplified Apparatus Without Valves for the Administration of Nitrous Oxid Alone or in Combination with Ether. S. ORMOND GOLDAN.
6. The Continued Use of the Antiseptic and Eliminative Treatment of Typhoid Fever Without Any Deaths. T. VIRGIL HUBBARD.
7. Brief Notes on Rheumatic Joints Treated by Hot Air. HOMER GIBNEY.

1.—Hare calls attention to two groups of cases, viz.: (1) Cases in which symptoms, developing in the neighborhood of the appendix, indicate the rapid development of **appendicitis**, yet in which these symptoms gradually subside and the patient passes into an attack of **typhoid fever**, and (2) cases already well advanced in the progress of typhoid fever which develop appendicular symptoms. He illustrates the first group by citing the case of a young man of 21 who had not been feeling well for several weeks, and

who suffered from headache. On being admitted to the hospital he developed the typical symptoms of appendicitis. Keen and Hearn agreed with the author that the symptoms were those of appendicitis, but as now the tongue appeared typhoidal operation was postponed and under the use of mild salines and an ice-bag to the region of the appendix all symptoms of appendicitis passed away and an otherwise typical attack of typhoid fever set in. Another case running a very similar course was cited. The author says he has met these cases now so frequently that he no longer considers them rare. He is of opinion that one of two conditions may be present at the caput coli, viz.: (1) There is ordinary appendicitis due to the pathologic conditions which produce this disease which happens to occur simultaneously with the onset of the typhoid fever, or (2) the case may be one of those in which the general symptoms of typhoid are mild, yet the intestinal lesions are marked. To make a differential diagnosis is very difficult if not well nigh impossible, but the author thinks a blood count will often assist to make the diagnosis, as it is well known that in appendicitis there is marked leukocytosis, but this is not the case in typhoid fever. [A.B.C.]

2.—Cunningham discusses the various **animal extracts** that are obtained from the organs of animals. He calls attention to the fact that during their preparation, which often involves serious delays, opportunity is offered for numerous chemical changes to occur. The pituitary body apparently causes an increased katabolism of tissues rich in phosphorus and poor in nitrogen. It has been most frequently used in akromegaly, and in some cases, Cunningham thinks, it has served to reduce the headache. It often causes increase in weight in cachectic subjects. Adrenal extract does not appear to be poisonous or even to have much effect if taken by the alimentary tract. Locally, as is well known, it produces increase of blood-pressure. In 24 cases of Addison's disease collected by Cunningham, 14 were temporarily improved and 10 unaffected by the administration of the gland. It seems to be of some use in exophthalmic goiter, although Cunningham's own results have not been encouraging. The thymus had been used in exophthalmic goiter with occasional good results—that is, in 3 of 10 cases treated by Cunningham. It causes increase in weight. Occasionally the thyroid is substituted for the thymus by the apothecary. The thyroid gland has a distinct action and causes the well-known symptoms of thyroidism. The interesting part of Cunningham's communication is the statement he makes, that in many cases of myxedema the purified colloid obtained by Hutchinson's method is far more efficacious in reducing the diseased condition and does not produce toxic symptoms. He does not regard the iodothyron as a very active preparation. [J.S.]

3.—Wilson advocates the use of large doses of the **sirup of the iodid of iron** in various forms of **infectious arthritis** and cites the following cases. A girl, 18 years of age, had polyarticular rheumatism, followed by signs of intraarticular effusion in the knee. There was marked leukocytosis. The knee was finally aspirated and the fluid yielded a growth of staphylococci. There was also a severe leukorrhea. As sodium salicylate failed to have any effect upon the case, she was given the iodid of iron, and in the course of a few days there was notable improvement, and finally the patient was completely cured. The maximum dose was about a teaspoonful 4 times a day. The second case, a man of 22, had had specific urethritis, and about a year later developed stiffness of the joints and finally swelling and pain in the knee-joints. As salophen was ineffective, iodid of iron was commenced and led to rapid recovery. The third patient, a similar case, yielded also to the treatment. [J.S.]

4.—Kellogg states that **moulds** are very frequently found in the stomach-contents, 457 times in 7,000 analyses made by him. Among those found were the *Oidium lactis* which enters with milk, the *Aspergillus fumigatus* and *A. flavescens*, which apparently enter with bread. These moulds seem to have an injurious effect in some instances, and in Italy produce the disease known as pellagra. In one case of hypopepsia, 800 colonies were found in 1 ccm. of fluid. [J.S.]

5.—Goldan describes an apparatus for the administration of nitrous oxid gas alone or in combination with ether. Illustrations accompany the description. [A.B.C.]

6.—Hubbard describes the antiseptic and eliminative

treatment of **typhoid fever** which he has used with great success in his practice. This consists of giving when first called to the case a capsule containing calomel $\frac{1}{2}$ gr., guaiac-col carbonate 2 grs., podophyllin $\frac{1}{10}$ gr. to $\frac{1}{8}$ gr. every two hours for one or two days or until four or five evacuations have been obtained for two successive days. When these have occurred the calomel is replaced by $\frac{1}{2}$ gr. of menthol. Constipation is then checked by the administration of Hunyadi water or salts. If the temperature remains high at the end of five days the calomel is repeated. If the skin and kidneys fail to act well enteroclysis with normal salt-solution is employed. Antiseptics do not get rid of all the bacteria; nevertheless, they serve to get rid of a very large number of them, and therefore to diminish the strain upon the tissues of the patient. The ulceration of the bowel is of course merely a local symptom and not in the majority of cases the most serious element in the disease. Therefore, as the poison of typhoid fever is to be found in almost every tissue of the body, and as there is no direct chemical antidote to it, it is important to aid its elimination as much as possible. Hubbard's statistics include the results of 20 cases which he treated by this method without any deaths. The improvement is usually most marked in the general condition of the patient. [J.S.]

7.—Gibney reports a number of cases treated by the **hot-air method**. They involve various forms of chronic joint-disease and all were very much improved by the treatment. [J.S.]

Boston Medical and Surgical Journal.

July 19, 1900. [Vol. cxliii, No. 3.]

1. Milk; Its Production, Its Care, Its Use. T. M. ROTCH.
2. General Remarks on the Pathology and Symptomatology of Acute Pelvic Suppurative Processes in the Female and Their Treatment by Posterior Colpotomy. CHAS. GREENE CUMSTON.
3. Parturition Complicated with Suppurating Fibroids. E. H. STEVENS.
4. Glandulopenile Hypospadias; Two Urethras, One Extending to the Bladder, the Other $2\frac{1}{2}$ Inches Long and Terminating in a Blind Pouch. J. COPLIN STINSON.

3.—Stevens reports a case of **suppurating fibroids** as a complication of pregnancy. A patient of 39 had been married 10 years. There was a miscarriage at 3 months 9 years ago. Her health was always good until about 16, previous to her confinement. She was delivered of a healthy female child weighing about 8 pounds, 20 hours later was awakened with a chill. Other chills followed later, and a complete hysterectomy was done on the seventeenth day. The patient died on the twenty-first day with a temperature toward the last of 106°. She had suffered greatly from a rash which covered the entire body and finally became confluent, resembling the rash following the injection of diphtheric antitoxin. Antistreptococcus serum had been used and the question suggested to Stevens was whether it had done harm. He did not believe it had, although he thought it did no good. At the first warning of trouble the uterus and vagina were thoroughly cleansed, and the patient's condition appeared hopeful for some time. He, however, believes an earlier operation in such cases would be better. [W.K.]

4.—Stinson reports the case of a youth of 17 having **hypospadias**. At 15 he had gonorrhea, but there was no operation on the urethra or penis. The glans penis is drawn downward and is fixed at about a right angle to the shaft of the penis. This is probably due to adhesions, and contraction of scar tissues. There are two urethras, one extending to the bladder, the other $2\frac{1}{2}$ inches long passing parallel with the main tube, but ending in a blind pouch. The external orifice of urinary urethra is situated in the penile urethra about one-half inch posterior to proximal portion of glans; the opening is small, admitting about a 16 French sound. It is situated slightly to the right side of median line. The canal of urinary urethra is apparently of normal caliber. The incomplete urethra is situated close to the left of the urinary urethra. Its external orifice is small, but readily admits the bulbous end of a pocket-case probe, which passes downward along the median line for $2\frac{1}{2}$ inches, where it terminates in a blind pouch which does not communicate with the urinary urethra. [M.B.T.]

Journal American Medical Association.

July 21, 1900. [Vol. xxxv, No. 3.]

1. Obstetrics and Gynecology. Chairman's Address. W. E. B. DAVIS.
2. A System of Personal Biologic Examinations the Condition of Adequate Medical and Scientific Conduct of Life. GEORGE M. GOULD.
3. Laryngology and Its Relations to General Medicine. J. SOLIS COHEN.
4. Human Temperature in Disease. NORMAN BRIDGE.
5. Surgery of the Tear-Passages. S. G. HUIZINGA.
6. Differentiation of Chorea and the Disorders Simulating it. AUGUSTUS A. ESHNER.
7. Recent Progress in the Röntgen-Ray Method of Diagnosis. CHARLES LESTER LEONARD.
8. Acute Tonsillar Diseases and their Sequelæ. JOSEPH H. ABRAHAM.
9. Sarcoma of the Stomach. GEORGE DOCK.
10. Value of the Angiotribe in Vaginal Cystotomy. J. H. CARSTENS.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, No. 23, page 1276.

2.—See PHILADELPHIA MEDICAL JOURNAL, Vol. VI, No. 3, page 126.

3.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, No. 23, page 1295.

4.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, No. 18, page 993.

5.—Huizinga speaks of the absolute necessity of careful attention being paid to the nasal mucous membrane in many cases of **operation on the tear-ducts** in order to avoid unfavorable results. He does not advocate dilation nor conversion of the canal into a groove in epiphora, but proceeds as follows: The punctum is dilated that a knife made for this operation may be introduced with the least possible injury, for ordinarily it does not need to be cut. Having first ascertained the exact location of the stricture by means of probing, the knife is passed into the canal with the back of the blade firmly hugging the wall of the canaliculus toward the border of the lid, so as to injure the mucous membrane as little as possible. The stricture is cut by a sawing movement. In the lower canaliculus the cut is made downward, and in the upper it is made upward. In this way little or nothing is cut except the stricture, and the direction in which it is cut is such that it in no wise interferes with the proper physiologic function of the organ. The after-treatment consists of irrigations with boric-acid solutions and the regular use of a No. 8 Bowman probe. [M.B.T.]

6.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, No. 23, page 1288.

7.—Leonard, in speaking of the **advantages** gained **through the use of the x-ray**, particularly alludes to the avoidance of much interference with dressings in cases of fractures, and the obtaining of definite and absolute knowledge in fracture examination, without pain or discomfort to the patient. By the x-ray many forms of apparatus to produce immobility have been shown useless. Great variations have been shown to exist from the representations in textbooks, enforcing attention to the necessity for careful study of the mechanical elements involved in each fracture. So-called inaccuracies and fallacies of the x-ray are usually due to errors in technic. Skiagraphs do not form any basis from which to assess damage in suits at law, since disability does not necessarily depend upon a symmetry which can be shown, but often upon lesions of the soft tissues that cannot be recognized in a skiagraph. The x-ray is especially valuable in the diagnosis of renal calculi, affording opportunity for operation early, when the mortality is but 2% or 3%, instead of waiting until danger from suppuration increases the mortality to even 25%. The exact localization of the calculus is of great advantage, limiting the field of operation. In vesical calculi the method of diagnosis is valuable, determining the size and number of calculi present, in showing partially encysted calculi lying in a diverticulum, or in detecting calculi in the pocket behind an enlarged prostate gland. [M.B.T.]

8.—Abraham emphasizes the fact that the tonsils are the portals through which many pathogenic microorganisms enter the system, reviewing the literature and citing cases.

He advocates careful investigation of each case of **tonsillar disease**, treating the attacks energetically. Pus should be evacuated so soon as demonstrated. The isolation of all cases of acute lacunar tonsillitis is advisable, since this is an infectious disease. Recurring attacks of acute tonsillitis are an indication for the partial or complete removal of the tonsils. A careful systematic examination and treatment should be applied during and after an attack of acute tonsillitis. [M.B.T.]

9.—Dock relates a case of **sarcoma of the stomach** in which the patient did not present features admitting of a differential diagnosis, and diagnosis of dilation from tumor at the pylorus, probably in the scar of an old ulcer, was made. The patient laid much stress on the history of a paroxysmal pain, with a soreness in the epigastrium, vomiting, etc. Although there was no history of hemorrhage, the symptoms in the early stages had not been carefully observed. There was evidently an adhesion between the liver and the stomach tumor, and on account of the history, long duration and absence of more positive evidences of malignancy, this pointed rather to a hypertrophic scar than to a new growth. Pylorotomy was done February 5, 1900. The part removed represented about one-third of the long axis of the stomach and about 2 cm. of the duodenum, while the tissue seemed to be well clear of new growth at its extremities. No metastases could be found, and uninterrupted recovery followed the operation. Microscopic examination of the tissue removed showed it to be a lymphosarcoma with a well-developed reticulum containing small cells in its meshes. Dock reviews the literature, and establishes the fact that diagnosis of the condition has rarely been made in life. Enlargement of the spleen and swelling of the follicles of the tongue, thought to be common in lymphosarcoma, may sometimes enable one to recognize gastric sarcoma correctly in a late stage, but so far as the earlier stages are concerned we have no specific symptoms of sarcoma of the stomach, and even when tumor is present it can not be positively differentiated from cancer. It is important to discover the affection of the wall early and if possible to carry out either radical or palliative operative treatment, without taking time to make a histologic diagnosis from the clinical features. [M.B.T.]

10.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, No. 23, page 1276.

Deutsche medicinische Wochenschrift.

May 31, 1900. [26. Jahrg., No. 22.]

1. A Case of Carcinoma of the Esophagus Treated by Canula. C. A. EWALD.
2. Changes in the Cells of the Pyramidal Tracts in Paraplegia. G. MARINESCU.
3. Experience with Diseases of the Pancreas. J. ISRAEL.
4. Symptomatology of Hysterical Deafness. ERNST BARTH.

1.—Ewald reports an interesting case of **carcinoma of the esophagus**, treated by leaving a canula in place so the fluid might pass through the constriction into the stomach. The patient was 64 years of age. He had noticed dysphagia for about a year previous to his entrance into the hospital. The lumen at the constriction was so small as to only allow a bougie about the size of a small leadpencil to pass through; consequently a canula was inserted and left in situ. The patient felt easier and could swallow with greater facility, and gained about 3.1 kg. in weight. Up to the time of death he never experienced any difficulty or discomfort from the presence of the canula. [G.B.W.]

2.—The changes described consisted in **atrophy** and disappearance of the ganglion-cells in the cortex about the fissure of Rolando, more particularly in the upper third. They were replaced by granular neuroglia cells. The question was as to whether the cortical lesions were primary or secondary to degeneration of the pyramidal fibers. The second view is considered most probable. [D.L.E.]

3.—Israel first reports a highly interesting case in which the entire pancreas was found to be extremely movable. The nature of the mass was not known until operation was undertaken. When the patient was lying upon her back there was a sensitive tumor in the epigastrium, but when the body position was changed it moved about with the greatest ease and very widely, the limits of its movement varying between the middle line and the anterior axillary line, and

vertically from the level of the eighth rib to the level of the twelfth rib. Operation showed that there was a pancreatic cyst, and that the pancreas itself was extremely mobile. It is the first **case of movable pancreas** reported. The second case reported was one of movable pancreatic cyst. This was curious also in the fact that the contents of the cyst showed the presence of no ferments, but the fluid coming from the fistula some days after operation contained ferments. The other case was interesting because aspiration of the cyst resulted in complete cure. In the fourth case operation disclosed pancreatic necrosis with peripancreatic abscess. [G.B.W.]

4.—The case reported occurred in a girl who had previously had an attack of complete **deafness** following an emotional shock which had spontaneously disappeared. The attack which was described was similar in its onset, and it also vanished very suddenly. The diagnosis of the **hysterical** nature was rendered more secure by the interesting observation which is reported. The child was entirely deaf to words and apparently to all other sounds with the exception of the fact that she could sing various songs entirely correctly, giving the proper musical tones and intervals, and if a note was struck on the piano she always began her song in the same key. If the key were changed she sang in the corresponding key, always correctly, and if the key were suddenly changed with the second verse of the song she also changed her key properly. In spite of this she could not hear piano music. This is considered an interesting confirmation of the belief that hysterical anesthesia, whether it is of touch or of sound, is a purely psychic anesthesia. This child had no conscious perception of sounds, but she evidently appreciated sound unconsciously. [D.L.E.]

June 7, 1900. [26. Jahrg., No. 23.]

1. A Case of Aneurysm of the Abdominal Aorta. E. v. LEYDEN.
2. Two Cases of Cortical Epilepsy with Operative Treatment. M. A. LUNZ.
3. Concerning Relapses. LIPPMAN.
4. Oxidation Ferments. H. STEUDAL.
5. Autoinsufflation of the Stomach. C. D. SPIVAK.

1.—Leyden describes a case of **aneurysm of the aorta** which was easily diagnosed, a round tumor with expansile pulsation being readily felt. An interesting point in the case was the observation of a marked diastolic murmur which was heard even to the region of the aortic orifice. There were none of the signs of aortic regurgitation, and the tumor decreased in intensity as one advanced upward in ausculting. It was, therefore, attributed to the aneurysm. Such cases have been reported before, particularly by Scheele, and Leyden believes that these authors' explanation of the occurrence of the murmur is correct, *i. e.*, that the opening in the aneurysm is narrower than the lumen of the aorta above. The result of this is that during diastole the blood flows upward in the aorta from the aneurysm, and thus produces the murmur. [D.L.E.]

2.—Lunz reports two cases of **cortical epilepsy**, both of which were operated upon. The first was a woman of 53, who began to have epileptoid seizures $2\frac{1}{2}$ years previous to her entrance into the hospital. Examination showed slight paresis of motion of the left arm and left leg, though sensation was normal. She was in the hospital 7 months before operation, during which time she had 19 attacks. The attacks began by jerking of the left toe and spread upwards until finally unconsciousness occurred. Operation consisted in turning down an osteoplastic flap from over the region of Rolando's fissure. No pathologic conditions except a slight adhesion between the dura and the skull could be found, so the dura was reunited and the osteoplastic flap put back into place. The wound healed in 12 days, and for 4 months after the operation there were only one or two insignificant convulsions noticed. Case No. 2 was a woman 22 years old, whose attacks began about 6 months previous to her admission to the hospital. There was considerable loss of power in the right hand, while movement of the head, especially bending forwards, caused dizziness. The epileptic attacks were very frequent and very severe; they generally began by jerking at the right angle of the mouth or in the right side of the face. Bromids and antisyphilitic medication were given without result, and operation was decided upon. A large

osteoplastic flap was turned down from over the region of the fissure of Rolando and of Sylvius; there were adhesions between the pia and dura mater and a diseased area about the size of a walnut was found in the lower part of the central gyrus. Another area of softening about the size of a pea was found just above the Sylvian fissure. The diseased areas were carefully removed, and the adhesions between the dura and pia excised. The wound healed by first intention, and for a while the patient was free from attacks, but in 2 months the attacks returned to almost their former severity. [G.B.W.]

3.—See Editorial, PHILADELPHIA MEDICAL JOURNAL, August 4, 1900.

5.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, page 309, February 3, 1900.

June 14, 1900. [26. Jahrg., No. 24.]

1. The Tonsils probably the Entrance Gate for Tuberculous Infection in Young Children. F. F. FRIEDMANN.
2. Does Night Work Cause Amblyopia? P. SILEX.
3. Dangers of Lumbar Puncture. F. GUMPRECHT.
4. Isolated Deltoid Paralysis. ADOLPH STEINHAUSEN.
5. Blood Diseases. THEODOR KLEIN.

1.—Friedmann reports his observations of material obtained by necropsy and by tonsillectomy. Of the postmortem material he mentions a case in which there was **tuberculosis of the tonsils** with the usual morphological appearances and with the presence of the tubercle-bacilli, but in which the most careful search showed no evidence of tuberculosis in any other part of the body. This was probably a food tuberculosis. In another case there was tuberculosis of the tonsils with involvement of the glands of the neck, and subsequently general miliary tuberculosis. In another case the tonsils were probably the earliest seat of tuberculosis, with subsequent development of the disease in the cervical and bronchial glands and death from miliary tuberculosis. There were other cases in which the tonsils were probably the primary seat of the disease. There were also a series of cases in which the tonsils were involved but were probably not the primary seat. In all the cases mentioned tubercle-bacilli were found. He describes a series of 7 cases also in which without the presence of tuberculosis elsewhere in the body the typical morphological appearances of tuberculosis were seen in the tonsils, but tubercle-bacilli were not discovered. This case cannot definitely be called tuberculous. There were also 8 cases in which, with extensive tuberculosis of other organs, tuberculosis of the tonsils was seen. In 4 cases in which there was tuberculosis of other organs the tonsils were found free from tuberculosis. He also mentions other cases in which, with tuberculosis elsewhere, sections of the tonsils showed the absence of bacilli and of typical morphological changes, but smear-preparations from the surface of the tonsils showed bacilli. This is good evidence that animal injections do not provide satisfactory evidence of tuberculous disease of the tonsils. As to the material from living cases, there were 46 instances in which no evidences of tuberculosis were seen, and in 6 cases with marked enlargement of the glands of the neck the results were likewise negative. In 1 case the result was doubtful, and in 1 case in an apparently healthy child one tonsil was found to be tuberculous. The conclusions which he reaches are that tonsillar tuberculosis may arise from primary local infection from the food, and from a secondary infection through the sputum. The first method of infection has been considered questionable, but some of the cases, particularly the first one mentioned, seemed to prove its existence as well as it can be proved, and he believes that tonsillar tuberculosis in children usually comes from the food. [D.L.E.]

3.—Gumprecht calls attention to the possibility of **death following lumbar puncture**. One accident which he says is very liable to happen, and to which little attention has been drawn, is the breaking of the needle by some movement of the patient or doctor. In searching through the literature he finds 15 cases of sudden death following tapping of the spine. He reports 2 cases from his own experience. The first case was that of a girl 20 years of age; the puncture was made at 10 o'clock in the morning, when 5 cc. of light cloudy liquid were withdrawn; the pulse became immediately irregular and small, necessitating the withdrawal of the needle; the patient died suddenly at 9.15 the evening of the same day. Necropsy showed dilation of the fourth and lat-

eral ventricles, and a glioma of the right thalamus. The second case was that of a man of 29, who died 2½ hours after the lumbar puncture. Necropsy showed a brain-tumor about the size of an apple, situated on the posterior two-thirds of the thalamus and the splenium of the callosum; and on the quadrigemina. The lateral ventricles of the cerebrum were markedly dilated, especially the inferior horn; though the fourth ventricle was narrow. [G.B.W.]

4.—The case reported presented indubitable evidences of **paralysis of one deltoid** while the other shoulder-muscles were unaffected. Within 3 weeks after the case was first observed, the arm could be raised. There is no other evidence that paralysis of the deltoid does not make adduction of the arm impossible in all cases. Steinhausen thinks that the previous teaching as to the influence of the scapulohumeral muscles and the scapulothoracic muscles in raising the arm is incorrect. He believes that the deltoid and the other scapulohumeral muscles raise the arm to about 120°, and that the rotators of the scapula carry out the remaining actions, that is, they raise it through only about the upper 60°. Previous teaching has been that the deltoid raises the arm to about 90°, and the serratus does most of the remaining work, that is, carries it through the remaining 90°. As proof of his belief he describes another case in which the deltoid was paralyzed, and in which at the same time there was paralysis of the infraspinatus; the scapula was rotated well in this case, but the arm was scarcely at all abducted, and it was possible to raise it voluntarily only when assistance had been given through about 140° of movement. [D.L.E.]

5.—The case reported is one of **hemophilia** which persisted for years and repeatedly caused very grave hemorrhages. [D.L.E.]

June 21, 1900. [26. Jahrg., No. 25.]

1. Fourth Account of the Occupation of the Malaria Expedition. R. KOCH.
2. The Relations of the Mosquitos to the Malarial Parasites in Kamerun. HANS ZIEMANN.
3. The Value of Courmont's Serum-Reaction in the Early Diagnosis of Tuberculosis. M. BECK and LYDIA RABINOWITSCH.
4. The New Nauheimer Saline Spring Rich in Carbonic Acid Gas. Spring No. 14. LEPSIUS and SCOTT.
5. A New Surgical Instrument for the Nose. JAENICKE.

1.—**Koch's report** contains no facts that are strikingly new or important. He found that, as he had considered probable before, the whole coast of German New Guinea was infected with **malaria**. Of the French Islands the largest was found entirely free from malaria. In earlier years malaria was present in these islands. In the Island of Deslaos, however, he found nearly all the children who were examined infected with malaria. He insists again that it is possible by the methods recommended by him to make regions practically free from malaria, but it is of the greatest importance to recognize the obscure latent forms of the disease in order to overcome the possibility of transmission of the disease. [D.L.E.]

2.—Ziemann states that in spite of the **investigation of sections of many hundreds of mosquitos** in Kamerun he was unable for a long time to find any evidence of the presence of infection with malarial parasites, and had come to doubt the mosquito theory. He found several instances of infection of mosquitos with filaria embryos. Subsequently, however, he found several examples of infection of anopheles with the malarial parasite, and in a number of houses he afterward found infected mosquitos. He observed in the anopheles's stomach pigmented coccidia-like bodies which formed the so-called sporozoids, and they were ultimately found in the salivary glands. [D.L.E.]

3.—The authors report their results from the investigations of the **agglutination reaction for tuberculosis** in a series of cases in which the results were controlled by looking for tubercle bacilli in the sputum and by using the tuberculin test. In all, 73 persons were investigated. There were 17 with beginning tuberculosis of the lungs and 5 who were suspected of tuberculosis and who gave a positive reaction to tuberculin. There were also 2 cases of lupus, 1 of tuberculosis of the kidney, 1 of healed tuberculosis proved by autopsy, and 1 of tuberculous meningitis. In the first group only 6 gave positive agglutination reaction,

and of the 5 suspicious cases only 1 reacted; only 1 of the lupus cases reacted. The case which proved upon postmortem to have healed tuberculosis reacted, but the tubercular meningitis did not. Two cases of leprosy did not react. On the other hand 2 out of 3 cases of croupous pneumonia, 2 out of 3 of bronchitis, 1 of 3 cases of rheumatism, 1 case of cirrhosis of the liver, and 1 healthy person reacted. The other cases investigated were negative. Normal serum which had been inoculated with cholera and typhoid cultures also showed reaction. They decide that the reaction cannot be used in the diagnosis of tuberculosis, that it is not a specific reaction, occurs in men and animals who have not tuberculosis, and is often absent in cases of tuberculosis. [D.L.E.]

5.—Jaenicke suggests an improvement in the ordinary **nasal snare**, which possesses the advantage of allowing the operator to use the same loop over many times and also enables him to enlarge or decrease the size of the loop after the instrument has been inserted into the nose. The difficulty with the older instruments is that the loop is bent to a very sharp angle by its being retracted into the canula. Jaenicke overcomes this by passing the wire through two tubes, the ends of which diverge so that a small bridge 3 mm. in breadth can be placed between the divergent ends. When the loop is tightened the wire is pulled against the bridge and cannot pass into the tubes, this keeps the loop from being bent at a sharp angle, and when it is pushed back it instantly regains its proper oval form. Various modifications are made to suit the different operations in which a snare is needed, and one is adapted for the galvanocautery. [G.B.W.]

Münchener medicinische Wochenschrift.

May 22, 1900. [47. Jahrg., No. 21.]

1. Investigations of Rhodan Compounds. TREUPEL and EDINGER.
2. Recurrence of Symptoms after Gallstone Operations. HANS KEHR-HALBERSTADT.
3. The Pathology and Therapy of Graves' Disease. DINKLER.
4. Conditions found after Death by Strangulation. MESSENER.
5. Hysteric Aphonia. MAX OPP.
6. Ophthalmia Nodosa. BAYER.
7. Varieties of Temporal Arteries and their Relation to the Determination of Blood-Pressure. A. GROTE.
8. A Mammary Gland on the Thigh. STEMBORN.
9. Cerebral and Cardiac Asthma. O. ROSENBAACH.

2.—Kehr in speaking of the **recurrence of symptoms after operation for gallstones** divides them into the true and pseudo relapses. The former consisting of a redevelopment of the stones and the latter of symptoms due to the intentional or unintentional leaving of one or more stones in the gall-passages, to renewed inflammation of the gallbladder, to the formation of adhesions, or to the development of a hernia in the seat of the wound. Kehr says that he has never seen a true relapse in which the formation of new stones has taken place and therefore will confine his remarks to the pseudo forms. First as regards leaving concretions in the gall-passages after the operation; this he has done 19 times in 491 laparotomies for the removal of gallstones, but he believes this can be overcome in the future by a more thorough technic. In 12 cases a return of an inflammation of the gallbladder was observed and in each of these, cultures showed the presence of the Bacterium coli and they were cured by reestablishing drainage for a few weeks. In 302 operations hernia followed in 21, i. e., in 7% of the cases collected. The most frequent source, however, for the return of symptoms is the formation of adhesions. Eleven per cent. of the cases showed this condition, but by far the greater part of these followed cystostomy, while cystectomy and choledochotomy gave very little trouble from this source. Because of the above possibilities it should be the duty of the surgeon, to be sure of his diagnosis, to choose a method of operating which will make the removal of all the stones possible and prevent the subsequent development of inflammation, to limit the adhesions to the smallest amount possible, to prevent hernia, and by proper diet and hygiene to stop the barely possible formation of new stones. [G.B.W.]

3.—Dinkler has made studies on 2 fatal cases of **Graves' disease**. One was complicated with hemiplegic and bulbar

and psychic symptoms. In the other a unilateral strumectomy was done on account of compression of the trachea by the goiter. The patient died twelve hours after operation. In the first case, contrary to the observations of others in similar cases, the author found, but only with Marchi's method, decided changes in the central nervous system. Regarding the thyroid gland, the first case showed those features usually characteristic of Graves' disease, viz., the formation of solid epithelial ducts and alveoli. In the second case, in which there was an enormous hyperplasia of the thymus also, the thyroid showed follicles like those of the normal gland, and the author believes that the microscopic picture of the thyroid in exophthalmic goiter probably depends on the **condition of the thymus**. The more marked the hyperplasia of the latter the less atypic is the structure of the thyroid gland. There was no increase in the arteries of the gland in either case, but the veins and capillaries were much dilated. He agrees with Moebius in considering exophthalmic goiter of thyrogenic origin. [D.R.]

5.—The characteristic features of **hysteric aphonia** are:

1. Exclusive involvement of the constrictors of the glottis, some of the modes of voice-production being still preserved.
2. Disturbances in sensation in the pharynx and at the entrance of the larynx.
3. Preservation of the electric and reflex excitability of the laryngeal muscles. A cure of hysteric aphonia is sometimes achieved by psychic emotion, such as fear, fright, or rage. Sometimes it may be relieved by massage of the larynx or compression of the thyroid cartilage or hyoid bone. Sprays, inhalations, and local applications may be of value, but the surest method is treatment with **electricity**, especially the faradic current. Anesthesia, cold douches, venesection, and apomorphin occasionally do good. Relapses are apt to occur, and the more often they occur, the more hopeless is the prognosis as regards cure. It is well after a cure has been achieved to use the faradic current daily for from 1 to 2 weeks. [D.R.]

6.—Bayer reports an interesting case of **ophthalmia caused by the hairs of a caterpillar**. The patient while haying was struck in the eye by a large brown caterpillar. Immediately the patient experienced a sharp, burning pain in the upper lid, which did not disappear, though it became somewhat better after 10 days or so. Three months after the accident he presented himself at the clinic, when it was found that he was suffering from ophthalmia nodosa of the cornea and iris, complicated by an iritis plastica. The treatment consisted in the application of leeches and the instillation of atropin, later in the temporary widening of the palpebral fissure and a careful paracentesis of the anterior chamber. The eye was greatly improved, though not entirely cured, by this treatment, and on close inspection two brownish bodies were seen in the lower nasal quadrant imbedded in the deeper layers, which bodies proved, on closer examination, to be hairs from the caterpillar. [G.B.W.]

9.—A lengthy speculative article in which the author discusses the so-called **cerebral asthma and nightmare**. [D.R.]

May 29, 1900. [47. Jahrg., No. 22.]

1. Agglutination of Intestinal Bacteria by the Blood-serum in Enteric Fever. F. KÖHLER and W. SCHEFFLER.
2. Therapeutic Application of Iron Nuclein. M. CLOETTA.
3. A Case of Beri-Beri. W. SEIFFER.
4. Three Cases of Intracranial Complication with Middle-ear Suppuration. BEZOLD.
5. Two Cases of Congenital Malformation. WOLF.
6. Investigations of Rhodan Compounds. G. TREUPEL and A. EDINGER.
7. Conditions Found After Death by Strangulation. MESSENER.

2.—**Ferratogen** is useful in **chlorosis** in those cases in which the stomach rebels against iron preparations. The drug is prepared by the manufacturers in the following way: Yeast is cultivated on a ferruginous medium. The iron-nuclein formed is isolated, digested with gastric juice, and then washed with acid alcohol until the iron reaction disappears. The preparation contains about 1% of iron. [D.R.]

3.—The author reports a case of **beriberi** presenting characteristically the symptoms of multiple neuritis. There was protracted anesthesia, particularly on the inside of the legs, even after convalescence. The patient had been attacked on board a sailing vessel after leaving India. Several

other members of the crew had the disease, which in the beginning was associated with symptoms resembling scurvy. The disease did not develop until 3 months after the ship had left the harbor where beriberi was prevalent. All of the 5 seamen attacked were Germans, an argument against the prevailing view that Europeans are immune to beriberi. [D.R.]

4.—Bezold reports three interesting cases of **intracranial suppuration** in acute **middle-ear disease**, and emphasizes the importance of acute disease of the ear in the causation of intracranial suppuration. In the first case, within 4 weeks after an acute otitis media, symptoms of sinus-phlebitis, pyemia, and metastatic foci in the lungs developed. Two operations were done and the patient recovered. In the second case an acute middle-ear disease had developed after erysipelas. The mastoid was opened. As the fever did not subside a further operation was done and the lateral sinus was laid bare and punctured. Normal blood appeared and nothing further was done. The patient recovered. The third case was one in which a cerebral abscess complicated an acute otitis media. A timely operation saved the patient's life. [D.R.]

5.—A family in which the mother and 2 children were born **without patellas**. The grandchildren possessed this bone. The movability of the kneejoint in the apatellar members was unimpaired, but the joint easily became tired. The 3 persons were also without thumb nails. The second case concerned a family in which a large number of members had a deformity of the hand, consisting in ankylosis of the first interphalangeal joint of the little finger. [D.R.]

6.—The authors found in a very careful series of experiments that **sulphocyanid of sodium** had no bactericidal or bacterio inhibitory action. [D.R.]

7.—A very interesting essay on the **pathology of suffocation** through action on the neck. Rapid suffocation through mechanical causes can be brought about in various ways: It occurs in diphtheria, in edema of the glottis, in spasm of the glottis, in pressure from goiter, and through foreign bodies. Mechanical suffocation is sometimes also brought about through holding the mouth and nose closed, or in some cases the mouth has been stuffed with hay. The aspiration of vomited material or of blood can produce suffocation. It can further be brought about through drowning, and by compression of the thorax in crowds or under heavy banks of earth. Suffocation may also result from mechanical influences acting on the neck from without. This form is known as death through **strangulation**, and is divisible into 3 sub-forms—hanging, strangling, and throttling. The first two are brought about through the medium of a rope, and the last through that of the hand or hands. In all 3 forms the suffocation is caused by pressure of the base of the tongue against the wall of the pharynx, also at times by closure of the glottis. In hanging and strangling there is in addition a closure of the carotids, which explains the rapid oncoming of unconsciousness in those modes of death. Frequently the external marks permit a conclusion as to the manner of death. In hanging and strangling there is a mark on the neck—**rope-mark**. There are two kinds—the pale or soft, and the yellow or leathery rope-mark. The mark in the case of hanging is situated higher up on the neck than the strangling mark. The former shows at some part of the neck an interruption, while the strangling mark is continued. In throttling there are usually finger-marks to be found. The **general lesions** in strangulation are **those of suffocation**. These are cyanosis, hemorrhages in the skin and mucous membranes, occasionally incarceration of the tongue between the teeth. The blood is fluid and dark. Ecchymoses are seen on the serous surfaces; there is stasis hyperemia in the lungs, injection of the mucous membrane of the bronchi, trachea, and larynx; also stasis hyperemia in other organs, especially the brain, kidneys, etc. When a body is found it is often important to determine whether there has been a crime, a suicide, or an accident. Usually the question is between suicide and homicide. Hanging is a very common mode of suicide because it is easy. Strangling is also occasionally a method of suicide, while throttling practically never is. It becomes at times a question whether a body that has been found hanging was not hung after having been killed. The points to be observed are that when a dead body is suspended the signs of suffocation will be absent and there will be no hemorrhages in the neck

as in cases of hanging during life. The rope mark itself does not give any clue. Very difficult are the cases in which postmortem hanging is combined with intravital strangling or throttling. Other points are given by the author aiding in solving important medicolegal questions in this particular field, and by way of illustration a gruesome case is cited in which a burglar strangled three women. [D.R.]

Neurologisches Centralblatt.

June 1, 1900. [19. Jahrg., No. 11]

1. Contribution to the Question of Hereditary Transmission of Acquired Pathological States. OBERSTEINER.
2. Reciprocal Change of the Inequality of the Pupils Produced Experimentally in Progressive Paralysis. PILTZ.
3. A Case of Trumpet Stuttering. KALMUS.

1.—Obersteiner, as a result of a publication of Sommer's, discusses the nature of the **transmission of epilepsy** that occurs in guineapigs. This appears to have been definitely settled not only by the original observations of Brown-Sequard, but also by the confirmatory observations of Westphal and Obersteiner. Therefore, although Sommer was unable to find any trace of epilepsy in 23 descendants, it seems likely that his experiments were not sufficiently extensive. Obersteiner operated upon more than 100 guineapigs and obtained even among them very variable results. Later, Gutnikow and Karplus performed similar operations in the laboratory and found that at least half of the subjected animals had no symptoms at all. It appears curious that the guineapigs have in late years seemed to be so refractory to this operation, and Obersteiner is inclined to ascribe it to the more careful operative antiseptics. Nevertheless he is firmly convinced that acquired pathological conditions may be transmitted to the descendants. [J.S.]

2.—Piltz in this portion of his paper gives the conclusions that he was able to deduce from his experiments as follows: There is a **congenital inequality of the pupils** that may experimentally be altered as a result of the fact that reaction to light and accommodation varies in the two sides. In progressive paralysis this alteration may be produced by altering the illumination, by altering the accommodation, or by voluntarily closing the eye. When one pupil reacts to light and the other does not the illumination of the immobile pupil may cause a consensual contraction in the other. He gives a little diagram to explain the course of the light-reflex which to his mind shows that we must assume direct communication between the centers of the sphincter on either side. [J.S.]

3.—Kalmus, in continuing the consideration of his case, calls attention to the similarity of the symptoms suffered by the patient (temporary spasm of the lips when attempting to play the horn) to those manifested by stutterers. The lips, mouth, and accompanying parts resemble very closely the mechanism of the larynx. The spasms usually remain local. Sometimes, however, they involve the muscles of respiration and occasionally are accompanied by movements of the other parts of the body. There are numerous stigmata of degeneration. Nevertheless, careful treatment according to Guntzmann's method practically cured the patient in the course of five weeks. It appears, therefore, that this was a true case of **trumpet stuttering** and to be compared with the neuroses, such as writer's cramp. [J.S.]

June 15, 1900. [19. Jahrg., No. 12.]

1. The Vicarious Functions of the Muscles Arising from the Condyles of the Arm in Cases of Complete Paralysis of the Proper Plexus of the Forearm. BERNHARDT.
2. Isolated Atrophic Paralysis of the Musculocutaneous Nerve with Remarks upon Compensatory Muscular Activity. HOFFMANN.
3. Phosphorus Neuritis. HENSCHEN.

1.—The case reported by Bernhardt concerns a man of 28, who was attacked by roughs, knocked unconscious, and fell upon the right shoulder. When he arose he noticed that he could not move his right arm. Careful examination showed that there was **atrophy of the muscles** of the shoulder, of the muscles of the fossae of the spine, of the scapulae, of

the biceps, and of the brachialis. Nevertheless, flexion of the arm was readily performed whether the arm was in pronation or supination and whether the hands were flexed or not. As the supinator longus remained completely relaxed during this operation, the only muscles that could be active were those arising from the inner condyle of the humerus, that is, the flexor carpi ulnaris and the flexor digitorum profundus. Bernhardt has observed this condition in two other cases. The case was evidently one of traumatic paralysis of the brachial plexus. He is unable to decide whether it was due to compression of the plexus between the clavicle and the first rib or between the clavicle and the processes of the fifth and sixth cervical vertebrae. He calls attention to the interesting fact that Erb's point for the electrical stimulation of the brachial plexus was situated somewhat below its usual position. The electrical reactions of the muscles were normal. [J.S.]

2.—The patient, a man of 36, was accustomed to carrying heavy baskets on the left shoulder, supporting them with the right arm held above the head. After 2 years of this work, he noticed severe pains in the right arm, followed by gradual diminution in the force of the muscles. When examined some months later, it was found that the biceps and brachialis internus were almost completely atrophied. There was slight contraction of the biceps, and the arm was usually held in a position of semiflexion. Flexion, however, could be readily accomplished by the supinator longus and accessory muscles. There was, in addition, a slight area of anesthesia on the radial side of the forearm. The case represents a **paralysis of the musculocutaneous nerve** which had probably become severe on account of the neglect of treatment. [J.S.]

3.—Henschen reports 6 cases of **phosphorus poisoning**, in all of which nervous symptoms were present. These varied from slight paresthesia in the extremities to multiple neuridites with distinct paralyses. Curiously enough, in some of the cases—as, for example, the second—there was distinct extensive hyperalgesia; in several there was some dissociation of sensation, particularly a slight disturbance of the temperature-sense. In the sixth case all the symptoms were most intense. The patient had taken 3 small doses of the drug, and a month later suffered from severe pains in the back. There were extensive paresthesia and pains and slight diminution in the tactile and temperature senses, associated with extreme hyperalgesia, particularly along the course of the nerve-trunks. From time to time there were twitchings in the left arm, associated with weakness in the same member. The patient recovered completely. Although the presence of hyperalgesia (and we might add disturbance of the temperature-sense) might possibly indicate some central involvement, Henschen is inclined to regard the alterations as due essentially to a neuritis. [J.S.]

Deutsche Zeitschrift für Chirurgie.

April, 1900. [Band 55, Heft 3 u. 4.]

11. Covering of Defects in the Wall of the Stomach by the Transplanting of the Omentum. ENDERLIN.
12. Glancing Bullet Wounds of the Skull, with Isolated Fracture of the Base. R. STIERLIN.
13. Eosinophile Cells and Bone Marrow, Particularly in their Relations to Infectious Diseases of Surgery and to Tumors. HANS NOESSKE.
14. The Functional Results Obtained by the Use of Bardenhauer's Extension Method in Fractures of the Lower Limbs. BLIESNER.
15. Acquired Occlusion of the External Auditory Canal, and Operation for the Relief of the Same. CARL DEUTSCHLÄNDER.
16. Dermoid of the Penis. M. GERULANOS.
17. Acute Progressive Peritonitis and its Surgical Treatment. H. VON BURCKHARDT.
18. Pressure Hyperemia. GEORGE PERTHES.
19. Gunshot Wounds in the Boer War. PAUL SICK.
20. Gastrostomy in Connection with Operations on the Pharynx and Esophagus. HELFERICH.

11.—Enderlin has carried out a series of experiments on cats and dogs to determine the practicability of **covering defects of the stomach-wall** by transplanting a portion of the omentum. His results show: 1. That it is possible to

close defects of the stomach-wall by transplanting the omentum. 2. That defects produced experimentally are lessened by the contraction of the stomach and by the shrinking of the transplanted omentum. 3. The transplanted omentum becomes covered with epithelium, and this epithelium is cylindric in type. 4. Within 6 weeks there is a formation of tubules, which tubules differ greatly in size and may possess a marked spiral form. 5. Mother-cells and investing-cells disappear before the sixty-eighth day. [G.B.W.]

3.—Stierlin reports an interesting case of **bullet-wound of the skull**, occurring in a man of 34 years of age, who had committed suicide. The bullet did not penetrate but simply grazed the skull, causing a linear defect with more or less comminution of the surrounding bone. The brain-substance escaped from the wound. The patient died a few days after the injury, and at the postmortem a large cerebral contusion was found in the region of the fracture, with numerous splinters of bone scattered through the brain-substance. A most interesting and also unusual finding was an oval fracture of the roof of both orbits. There was a contused area in the temporal lobe, directly opposite the seat of injury. Stierlin, in looking over the literature of cases in which there has been fracture of the orbit, following injuries to the skull, finds 22 cases in which the orbital roof was in some manner involved in the fracture. The production of fracture of the orbital roof in these cases is probably due to the fact that this portion of the skull is the thinnest part, and that when the internal pressure is heightened by the compact of the bullet it naturally gives way. Various writers have taken exception to this theory, but the pathologic findings in Stierlin's case strongly support the above idea. [G.B.W.]

13.—Noesske has written an elaborate article on the part played by **eosinophile cells** and the medulla of bones in the various **surgical infectious diseases**, and also as to their occurrence in tumors. He says that under certain conditions the growth of the tubercle-bacillus in rabbits assumes a form very like that of the actinomyces boy's, and terms it the ray-fungus form. In the earlier stages of this fungus form, that is after 10 or 25 days, an accumulation of granular substance is formed, which granules stain very markedly with eosin. These granules disappear as the disease grows older. The various staining methods show that these granules are typical acidophiles, and probably are granules from disintegrated eosinophile cells. Further research showed that these eosinophile bodies were not identical with the substance of the fungus-like growth, but on the other hand it was found that in all those cases in which the ray-fungus form was not produced the eosinophile cells and granules were either very few or entirely absent. It is most probable that the production of these eosinophiles did not follow any known rule, but was due to some reaction process on the part of the diseased organism, still unknown to science. It has not been possible in any fatal cases of pyemia produced by the staphylococcus or streptococcus to find eosinophile cells in any large amount, and indeed it seems most probable that there is a lessening instead of an increase of these cells. It is found that in subacute and chronic miliary tuberculosis the internal organs show great scarcity of the eosinophile cells, and in chronic tuberculosis of the lungs there is a like scarcity. There does not seem to be any relation between the formation of these cells and the extent and destructiveness of the tubercular processes. The eosinophile cells are also very scarce in the fatal cases of pyemia and septic diseases in man. The increase of the eosinophiles in the blood and cells in the individual organs does not hold any relation to the number of other leukocytes, so that accumulation in the blood of the eosinophile cells, in cases of disease of the blood-producing organs, such as the spleen and bone-marrow, is not of any diagnostic value. Careful examination of numerous tumors, both malignant and benign, show apparently no regularity in the production of eosinophile cells; however, two classes of cases may be distinguished: (1) those in which there are very few or no eosinophiles, including marked inflammatory processes or tumors which are shut off from the external world by the surface of the body, the skin, or mucous membrane, and also benign tumors over which the epidermis is still intact; and (2) those from which these cells are never completely absent, such as tumors of the mucous membrane, *e. g.*, carcinoma of the lip or of cervix uteri. The metastases produced

by this second variety of tumor are, however, as a rule free from the eosinophiles.

As the result of these findings, it seems that the eosinophile cells play the role of protector against the invasion of bacteria as they appear on surfaces exposed to infection. It was found that the eosinophile cells can undergo a retrograde metamorphosis, and it is very possible that the Charcot-Leyden crystals are composed of the remains of these cells. It seems also possible that the eosinophilic granules may be changed into pigment particles, an example of which is found in the fine granular pigment in the cells of the cutis. The correlation, that where an inflammatory process exists there exists eosinophile cells, cannot stand, but the reverse of this may be considered as established, namely, that where eosinophile cells are, there has once been an inflammation. A necrosis does not cause the production of these eosinophile cells but may in fact possess towards them a negative chemotaxis. The eosinophiles are produced as the result of a reaction against a certain localized irritation, and this reaction is a protection against matter which may cause inflammatory processes. As has been shown by Ehrlich, the medulla of bone is responsible for the greater part of the production of the eosinophile cells, and therefore, as shown by the above observations, bone marrow plays a most important role in the protection of the system against the various infections. [G.B.W.]

14.—Bliesner has carried out a large series of experiments to determine the value of **Bardenhauer's "extension method"** of treating fractures. The number of fractures from which he draws his conclusions as to the value of this treatment range upwards of 2,000, dating from 1890 to 1897. In general the idea consists in applying an adhesive strip to the injured member, so that various weights can by means of pulleys be applied so as to cause extension to the lower fragment. In this way he treats fractures of the toes, of the metatarsal bones, of the tarsus and lower leg, thigh, and so on. In the application of the adhesive strips to fractures of the astragalus and the os calcis he used the following method: Two long strips of adhesive plaster, carried on each side of the leg from the knee downwards, are fastened to about 15 pounds of weight; another strip is carried around the angle, crossing over the instep and again over the sole of the foot, forming a figure of 8, and attached to about 4 pounds of weight; directed so as to pull at right angles to the direction of the leg. After about 8 days, massage and passive movements are begun, and in about 14 days the figure of 8 strips are removed. In treatment of the fractures of the malleoli and lower leg the shortening is overcome by extension applied in a direct line with the leg, and the lateral or anteroposterior displacement rectified by extending the foot by some such means as described under fracture of the astragalus. The treatment of fractures of the malleoli last from 2 to 3 weeks, and for fractures of the lower leg from 4 to 6 weeks. In fractures of the femur, extension with from 20 to 30 pounds is used in adults, and in some cases this simple extension is all that is required. Where there is angular deformity some such method as the following is needed: The limb is surrounded by 2 adhesive strips, one broader than the other, and both placed transversely to the axis of the limb; the smaller strip is looped through a slit in the broader one and the limb put through the loop of the smaller strip. The smaller loop is placed so that it passes directly over the point of angular deflection. From 6 to 10 pounds are fastened to the smaller strip, and from 4 to 6 pounds to the larger. The treatment of fracture of the thigh lasts from 5 to 6 weeks. It is very necessary in this extension method of treating fractures that a frequent and careful watch be kept over the parts so that no malpositions shall be formed; the adhesive plaster used should be of good quantity and of sufficient strength. It is claimed for this method that the bones can be kept in the best position with the least disturbance to the functions of the muscles and joints. [G.B.W.]

15.—Deutschländer reports an interesting case of a severe scalp-wound occurring in a Chinaman of 52. The flap which was loosened by the accident carried with it the external ear, separating this from its bony attachment; and in spite of all preventing measures, such as tamponing the external canal, the healing process was attended by complete **closure of the external auditory canal**. After a large granulating surface had been covered with skin-grafts, and the

wound had completely healed, an operation was performed for the relief of the stenosis of the auditory canal. A curved incision was made behind the right ear and the cutaneous portion dissected out of the canal, and the posterior wall cut across close to the insertion of the tympanic membrane. Two parallel incisions were carried from the transverse cut through the posterior wall of the canal, through to the antihelix. The flap thus made was freed from the anterior wall and turned upwards, thus making at the position of the old atresia a space of about one centimeter in diameter. This flap, and the remaining portions of the external ear, were stitched to the posterior wall of the curved incision, and the new canal packed with iodoform gauze. The final result of the operation was most satisfactory. [G.B.W.]

16.—Gerulanos divides the cystic tumors of the external genital organs of the male into four classes: 1. The traumatic epithelial cysts. 2. Adenocystoma, which are true neoplasms and probably originate from the sebaceous glands. 3. Atheroma, which are in a strict sense cysts of the follicles of the skin. 4. Dermoids. He reports a case of **dermoid of the penis** occurring in a boy 6 years of age. The tumor was a sausage-shaped growth, 5 cm. long, situated on the under surface of the penis directly in the middle line corresponding to the median raphe. Under narcosis the tumor was easily removed from its surrounding structures and the wound healed readily by first intention. Examination of the specimen showed the contents of the cyst to consist of horny epithelium, fine debris and cholesterol crystals, but no fat nor fat crystals could be found. The wall of the cyst was composed of stratified epithelium which in some places was folded into papilla-like projections. The diagnosis of dermoid seemed undoubted. [G.B.W.]

17.—Burckhardt writes a rather extensive article on **acute progressive peritonitis**, and reports 11 cases. He divides this progressive peritonitis into 4 groups. The first group consists of those cases in which the infection and inflammation of the peritoneum occurs from the rupture of some extraperitoneal inflammatory center; in the majority of these cases the primary seat of inflammation is in one of the organs of the abdominal cavity which is covered over by peritoneum, though it may possibly come from some external positions. The second group consists of the narrow class of cases in which an encapsulated center of inflammation lying intraperitoneally breaks through the adhesion and gains entrance to the general abdominal cavity. The third group consists of cases in which the inflammation has extended to previously healthy peritoneum from the primary infective centers by means of the lymph-channels; in other words, extension by continuity. An example of this would be suppurative epityphlitis, in which no perforation exists. The fourth group is composed of those cases in which the infective element causes pain outside of the body; such cases are those in which infection follows operative procedures, traumatic perforative wounds of the abdominal cavity, or originate as the result of some other mechanic traumatism. In practice it is very necessary in making a diagnosis not only to recognize that the peritonitis actually exists but also to determine the cause of the infection, as the removal of the primary lesion is the only possible way to stop the progress of the disease. As a help to diagnosis we find that localization of the pain is often confusing, for instance in a case of perforation of the appendix, or when the peritonitis originates from diseases of the uterus or adnexa, the pain is first felt in the region of the umbilicus or stomach. More importance can be attached to the position of greatest tenderness, as elicited by palpation. The severity of the pain does not furnish any measure of the malignancy of the disease; the only symptom which never fails in the later stages of slowly developing cases is meteorism, and when this is present the contour of the abdomen may be somewhat flattened by the action of the abdominal muscle. Fever furnishes very little guide as to the severity of the attack. Likewise the pulse is not a very valuable factor, though cardiac failure of course is always a very serious symptom. As far as operations are concerned for the relief of a progressive peritonitis it is recognized that it is impossible to cleanse an inflamed peritoneum with antiseptic solution, and that the only procedures of value are to remove the infecting center, thus stopping the further entrance of infective material, and to furnish drainage so that all collection of various fluids and secretions may be readily removed. In many

cases this treatment suffices to check the disease, but in many others all operative procedures are useless. [G.B.W.]

18.—Perthes reports an interesting case of **congestion of the neck and head caused by compression** of the thorax. The patient was a woman of 27, who had her body caught between two opposing pieces of machinery which forcibly compressed her abdomen and thorax without touching the upper part of her body. The face and neck instantly became greatly congested and the eyes very much protruded. When brought into the hospital 2 hours after the accident the tissues of the face were swollen and dark blue, and the lids even with the marked exophthalmia present could be separated for only the smallest distance. The black-blue color did not disappear on pressure and was dotted over with small, red, petechial spots. This discoloration extended about half way down the neck and was separated from the normal skin by a very sharp line; it also appeared on the right shoulder and upper arm. There was a fracture of the left clavical and two ribs. The swelling had disappeared by the eighth day, and only a few blotches of the extravasated blood could be seen. In experiments on 2 white rabbits carried out by Braun and Willers, dilation of the veins of the ears and lips were noticed, but no extravasation of blood could be produced. The ability of compression of the trunk in man to cause extravasation is probably due to the peculiar arrangement of the veins and to their not possessing sufficient valves. [G.B.W.]

May, 1900. [Band 55, Heft 5 u. 6.]

22. Experiments on the Plastic Operations of the Bladder. ENDERLEN.
23. An Incarcerated Inguinal Hernia Containing a Volvulus of the Cecum. OSCAR KAISER.
24. Castration or Resection of the Epididymis in Tuberculosis of that Organ. OTTO LANZ.
25. An Experimental Research on the Living Intestine of Animals and Man. HANS BUCHBINDER.
26. Bacteriologic and Clinical Researches over Vioform. E. TAVEL.
27. An Unusual Sequel of Acute Osteomyelitis. A. BECKER.
28. Gastric Hemorrhage following Cholecystectomy. MEINHARD SCHMIDT.
29. Book Notices.

22.—Enderlen has carried out a series of experiments on dogs as to the possibility of **covering in defects of the bladder** with transplanted portions of the intestinal wall or of enlarging the size of the bladder by making an anastomosis between the bladder and an isolated portion of intestine. He sums up his article with the following conclusions: 1. In both the transplanting of a portion of intestinal wall and the forming of an anastomosis between the bladder and an isolated piece of the intestine the two kinds of epithelium retain their identity. 2. The epithelium of the bladder can grow for a short distance over the intestine in either the transplanting or anastomotic operation. 3. The intestinal wall at times shows slight atrophic changes. 4. The intestinal epithelium not only remains existant but also retains its functional activity. 5. The operation of transplanting a flap of the intestinal wall over defects of the bladder has in actual practice a very limited use and the same may be said as regards the forming of an anastomosis between the bladder and a portion of gut which has been isolated from the continuity of the intestinal tract. 6. The infection of the kidneys as a consequence of these operations is regarded as quite a possible happening. [G.B.W.]

23.—Kaiser reports an interesting case of **volvulus found in an inguinal hernia**. The patient was a man of 49, who for some years had had a large right-sided scrotal hernia but which had been held in place by a truss and had always been easily reduced. During a hard muscular strain the hernia was forced out and could not be replaced; accompanying this there was sharp pain and vomiting. Operation was performed early the next day. The hernial sac was filled with foul-smelling, cloudy yellowish fluid and the intestine was greatly distended and of a dark blue color and had lost its usual shiny appearance. Both large and small intestine were found in the sac. After enlarging the first incision upward and carefully examining the relation of the different parts contained in the hernia it was seen that the small intestine which was an occupant of the hernial sac was a con-

tinuance of a loop lying in the abdominal cavity which was markedly distended and discolored and whose mesentery was twisted into a funnel-shaped figure constricting the supplying bloodvessels. The large intestine was also found to be twisted on its long axis for some 180 degrees, but the torsion was not sufficiently tight to hinder the supply of blood. The incarceration of the large gut was caused by the constriction at the hernial opening and the ring-formed mark of the constriction was situated just distal to the ileocecal valve. The various twists of the intestine were unwound and the gut placed in the abdominal cavity without further handling. The patient sank rapidly after the operation and died in about 12 hours. The postmortem showed an exceedingly long mesocolon which would readily allow of torsion of the gut. [G.B.W.]

24.—Lanz reports a case of **tuberculous disease of the epididymis** in which an attempt was made to remove the epididymis alone and leave the testicle in situ. After removal of the epididymis, the testicle, as far as one could determine, seemed without disease, but to be sure, the organ was cut open longitudinally for its whole extent. Unfortunately the testicle was then found to contain numerous tubercular foci so that it was necessary to remove it as well as the epididymis. Lanz, however, believes that there are cases in which this particular operation would be very applicable, and the method of splitting the testicle furnishes sufficient insight into the organ to determine the exact condition. [G.B.W.]

25.—See editorial columns.

26.—Tavel in his research over **vioform** made a series of experiments with vioform, loretin and iodoform, to determine their comparative value as germicides. The results showed that vioform had the greatest power to stop the growth of bacteria and is therefore the best antiseptic powder of the three. Experiments showing the power to kill directly living germs were satisfactory and not conclusive. Toxicological experiments showed that vioform could be injected in large doses subcutaneously without causing any general symptoms. Locally, after large doses permanent swellings were formed, sometimes abscesses which, however, were always sterile showing the chemotactic action of the drug. Practically vioform because of its being nonpoisonous, non-irritating and odorless is a useful antiseptic powder, but its greatest utility lies in the fact that it is not easily destroyed by the action of other drugs, and can therefore be used as a medium for the application of carbolic acid, lysol and other like remedies. [G.B.W.]

27.—Becker reports 3 cases of **osteomyelitis** complicated by tumor-like formations due to the development of connective tissue around isolated sequestrums. The important feature of these cases was the making of a diagnosis between the condition present and sarcoma. In two of the cases this was fairly easy, due to the mobility of the tumor, the lack of pain, and emaciation. In the third case, however, the diagnosis of sarcoma was seemingly justified by both the clinical picture and the pathologic findings of the mass after its removal. In the other two cases the examination of the specimen obtained by the operation demonstrated the existence of a central cavity, containing an isolated sequestrum and communicating by a strand of granulation tissue with the internal condyle of the femur. In all of the cases the microscopic appearances of the granulating tissue forming the mass of the tumor, resembled almost exactly that of round cell and spindle cell sarcoma. [G.B.W.]

28.—The case of **gastric hemorrhage following cholecystectomy**, reported by Schmidt, occurred in a woman of 58. The cholecystectomy was done for supposed dilation of the stomach from stenosis of the pylorus, probably of a benign nature. On opening the abdomen, however, the stomach and pylorus were found to be perfectly normal, and instead the gallbladder was felt greatly distended and filled with stones. The bladder was attached to the liver, omentum, transverse colon, and pylorus by a few light adhesions which were easily torn through; it was then opened and removed, and drainage carried down to the stump with closure of the greater part of the abdominal wound. On the fifth day after the operation the patient vomited a quantity of a blackish fluid (blood) and continued doing the same for 5 or 6 days. Also numerous stools were passed, markedly tinged with blood, but the condition finally cleared up and the patient made a most excellent recovery. A possible expla-

nation of the etiology of the hematemesis is that during the operation some manipulation of the pylorus or the tearing and ligaturing of the adhesions led to postoperative ulceration of the stomach or pylorus. [G.B.W.]

Archiv für klinische Chirurgie.

[Band 61, Heft 1.]

1. Three Cases of Intestinal Occlusion from Meckel's Diverticulum. OTTO HOHLBECK.
2. The Finer Changes in the Venous Walls in Cases of Varix. R. JANNI.
3. The Value of Plastic Operations on Voluntary Muscle Tissue. MARIANO CAPURRO.
4. Spondylitis Typhosa. A. SCHANZ.
5. As to the Value of Portable Apparatus in the Treatment of Scoliosis. A. SCHANZ.
6. The Covering in of Tracheal Defects by Plastic Operations. H. AUE.
7. Fracture of the Base of the Skull with Paralysis in the Region of the Tenth and Twelfth Cranial Nerves. R. STIERLIN.
8. Traumatic Ossification of Muscle. C. RAMMSTADT.
9. The Surgery of Hepatic Abscess. JOSEPH SMITS.
10. A Few Statistics and the Operative Treatment of Cancer of the Rectum. JOSEF FICHLER.
11. New Researches over the Bacillus Pyocyaneus and its Color Production. HANS NOESSKE.
12. Smaller Communication: Remarks over the Publication of Minervi about the Catgut Question, etc. E. SAUL.

1.—Hohlbeck reports 3 cases of **Meckel's diverticulum** causing intestinal obstruction. The first is a lad, 18 years old. Three days before his admittance to the hospital he developed signs of acute intestinal obstruction and when operated on an ileocecal intussusception $\frac{1}{2}$ foot in length was found. The intussusception was easily reduced when a diverticulum about the size of a walnut was seen. The patient died a day or two after the operation. The second was a child, $4\frac{1}{2}$ years old, who had suffered often with intestinal complaints. The patient was suddenly seized with abdominal symptoms which led to the diagnosis of intestinal obstruction from a Meckel's diverticulum. The operation confirmed the diagnosis. A portion of intestine 27 cm. in length was removed with the diverticulum and the abdomen closed with drainage, but the child died the following night from shock. The last patient was a married woman 39 years of age. She had never had any gastric or intestinal disturbances until 3 days ago when she developed symptoms of intestinal obstruction. At the operation a diverticulum 23 cm. in length was found causing occlusion of the gut. The intestine peripheral to the diverticulum was dilated and markedly injected so that 80 cm. had to be resected. The abdomen was closed except for an iodoform gauze drain. The patient made a good recovery. [G.B.W.]

2.—Janni says that in **varicose veins** besides the retrograde changes caused by the passive dilation of the walls, there is occasionally a new formation of connective tissue. This later is found chiefly in the intima and appears in the form of a nodular or plate-like endophlebitis. In these endophlebitic areas there is a necrosis of the inner elastic membrane which is occasionally accompanied by a marked new formation of elastic fibers. At the places where the nodes and plates have formed there is often a limiting layer of newly formed connective tissue in the innermost part of the media. This endophlebitis is a primary lesion, and is not a compensatory condition following some other disease. [G.B.W.]

3.—Capurro has carried out a series of experiments on dogs to determine the value of **transplanting flaps of muscle**. His results are as follows: The transplanting of unattached flaps of striated muscle, whether in animals of the same or different species, gives negative results, no matter what the method of operating is. The muscle thus transplanted, in the majority of cases, is destroyed by an ischemic necrosis, but in some there is a gradual metamorphosis of the muscular fibers into connective tissue. The plastic transplantation of pedicled flaps accomplishes two purposes, the mechanical strengthening of the part and the restoration of the normal functional movements. The contractability

of the flap depends upon the method of transplantation. 1. It is greater, when other conditions are equal, in the partial flaps than when the whole muscle had been used, in flaps of moderate tension than when tightly stretched, in flaps which are attached to muscles running parallel and in the near neighborhood of the muscle from which the flap was raised than when fastened to distant and nonparallel muscles. 2. It is greater the acuter the angle at which the flap stands from its mother muscle, and in simple twisting and bending of the pedicle. 3. It is greater when a portion of the covering aponeurosis is transplanted with the muscle than when only the muscle tissue itself is transplanted. 4. It is markedly reduced by laxness of the flap, by marked tension, by transplantation into yielding tissue without autochthonous movement. 5. It is not perceptibly influenced by the position of the pedicle, by the antagonism or synergy of the receptive to the mother muscle, or by the relation of the aponeurosis or sheath of the primitive muscle. [G.B.W.]

4.—Schanz reports a case of spondylitis following typhoid fever occurring in a woman 36 years old. By treatment with plaster-of-paris and leather corsets she finally made a good recovery. He goes on to say that though the symptoms of **spondylitis typhosa** vary a great deal, the cases generally tend towards recovery. This disease often resembles tubercular spondylitis very closely and is to be distinguished by the acuteness of the onset and the sudden development of pain and tenderness. Also in the typhoid spine there is very apt to be an inflammatory edema over the diseased vertebra and other neighboring foci. The Widal's test generally gives a positive reaction. The treatment consists in the application of plaster-of-paris casts and supporting corsets. [G.B.W.]

5.—Schanz says that in very favorable cases, good external cosmetic results can be obtained in **scoliosis** with the portable apparatus, but that treatment with the stationary supporting apparatus when the proper care is exercised is in suitable cases a perfectly rational method of handling these patients. But one must always remember that if a lasting cure is to be obtained it is necessary to correct the cause rather than the deformity. [G.B.W.]

6.—Aue reports a case of **tracheal defect** following the swallowing of a mouthful of boiling water some 12 years previous. The deformity consisted of an opening in the anterior wall of the trachea measuring 5 cm. long and from 2 to 3 cm. broad and in marked stenosis of the larynx and trachea from the abundance of connective-tissue formation. The operation for remedying this unfortunate state of affairs consisted first in the removal of the connective-tissue and the covering of the raw surface with a flap of skin taken from the neck. The anterior wall was formed by an osteocutaneous flap possessing skin on both surfaces of the bony portion. It was made as follows: An incision was made along the left edge of the sternum for 8 cm. and another run across the sternum at right angles from the original one for 6 cm. A piece of the anterior surface of the sternum was chiselled free and the skin-flap was folded over it so as to surround both sides of the bone. After healing had taken place this osteocutaneous flap was freed and after freshening the edges was stitched over the tracheal defect. At a third operation the raw surface on the sternum was covered in and the final result was most satisfactory. [G.B.W.]

7.—Stierlin was only able to collect 4 cases of **fracture of the base of the skull** with paralysis of the ninth to the twelfth cranial nerves. His own case is as follows: The patient, a man 58 years of age, fell from a height on his head, but was soon able to get up and walk to the house. Immediately after the accident he was unable to speak plainly, had difficulty in swallowing, and saw double towards the left. His condition on examination was: Paralysis of the left external rectus muscle due to involvement of the left abducent nerve, paralysis of the right half of the tongue from involvement of the right hypoglossal nerve, paralysis of the right half of the soft palate, marked paresis of a right vocal cord, involvement of the recurrent laryngeal, paresis of the right constrictor of the pharynx supplied by the descendens hypoglossi, and irritation of the right spinal accessory nerve. Seven weeks after the accident the patient died and at the postmortem a fracture of the base of the cranium extending obliquely from the frontal bone to the foramen magnum was found, and the presence of bony callus causing pressure on glossopharyngeal and hypoglossal nerves. [G.B.W.]

8.—Rammstedt has collected from literature 12 cases of **ossification of muscle-tissue** following traumatism, but in which no fracture has existed. Besides these he gives in detail 2 cases which have come under his own jurisdiction. The first of his own cases was an ossification of the vastus internus of the left thigh in consequence of a kick from a horse some 3 weeks earlier. The greater part of the bony deposit was removed and the function of the leg was completely restored. The second case was much the same except that besides the bony deposit a cyst had developed, evidently as the result of a large extravasation of blood from rupture of a branch of the profunda artery. The result in this case was that after the lapse of 6 months or more there was normal motion both in extending and flexing the knee-joint. Of the whole 14 cases reported, in 11 the vastus femoris was affected and the triceps brachii, the brachialis internus and the gluteus maximus each once. In all of the 14 the trauma was the result of some severe direct force, in 9 cases horse kick, and the following ossification took place within from 19 days to 7 weeks. The osseous tissue was intimately connected with the muscle and consisted of more or less compact spongy bone. A careful study of all these cases demonstrates that at different times repeated hemorrhages had taken place in the various muscular layers, and that each of these hemorrhages was followed by a new formation of bone. Also that the hemorrhage within the muscle, the following proliferation of connective tissue and the further metaplasia into bone and cartilage held one to the other an inseparable etiological connection. Therefore taking also into consideration the form and position of the bony deposit it must be accepted that the formation of bone does not come from the periosteum, but is of intramuscular origin. The treatment should always consist in the removal of the ossified muscle. [G.B.W.]

9.—Smits has had in his own experience, during the past 8 years, 22 cases of **abscess of the liver**. Of these one was not recognized until the postmortem. All the others were operated on, with 3 deaths and 18 recoveries, and in the cases which died the necropsy showed the presence of multiple abscesses which had not been diagnosed during life. In all the cases there was only one woman and the greater majority were of the Caucasian race. Eleven of the abscesses were caused by malaria and 4 by dysentery. The first principle in the surgical treatment of these cases is, as soon as the presence of the abscess is suspected, it must be located and as soon as this is done free drainage must be established. The diagnosis is based on the presence of tenderness in the hepatic region causing disturbed respiration and on the variations of inflammatory fever, especially when physical examination proves the absence of disease within the chest itself. Some cases are easily recognized while in others a diagnosis seems almost impossible. Swelling over the region of the liver is a very changeable sign and sometimes when there is great bulging the pus may lay very deeply. Palpation often gives important data as to the size of the organ, especially in regards to the lower border, but percussion alone will allow one to recognize the level of the upper limit of the liver, and this later is of far greater importance as far as hepatic abscess is concerned. Pain and tenderness over the liver is an almost constant symptom, and pain over the scapula is quite pathognomonic of lesions of the liver. Though fever is generally an early accompaniment of the disease there are cases which have died without any rise of temperature having taken place. The fever is usually of a hectic type, though in the so-called tropical abscesses it may resemble closely that of malaria. Cough shows that there is extension to the pleura or involvement of the lung itself, and when perforation into the lung has really taken place putrid expectoration may be present. Exploratory puncture will remove all doubts when once the pus has been found thereby. It should be done with a large needle of some 2 or 3 mm. diameter, which may be inserted in almost every direction, even through the pleura or lung itself. The dangers of this puncturing are sepsis, hemorrhage, and the injuring of some neighboring organ such as the gallbladder or colon. The abscess may be treated either by drainage through a large puncture opening made with trocar and canula or by an open incision. Smits employed the open incision in the following manner: An incision is made over the prominence of the liver and a strip of gauze introduced between the parietal and visceral peritoneum and left in

place for six days. This produces adhesions which prevent the pus when it is being evacuated from getting into the abdominal cavity. The opening of the abscess is accomplished by locating its position with the exploring needle and incising with the cautery. A large drainage-tube is then introduced and the wound dressed. [G.B.W.]

10.—Pichler says that the sacral method of operating on **carcinoma of the rectum** possesses the advantages of a more open approach, the possibility of an easier and more exact checking of the hemorrhage, the establishing of a better drainage and the more radical removal of the disease. He reviews the statistics which have been reported by the leading German surgeons and adds 119 cases operated on by Professor Hochenegg. Of these 119 cases 72 were men and 47 women and they ranged in age from 21 to 72 years. The contraindications to operation are metastasis, marked cachexia and firm fixation of the tumor in the pelvis from an extension of the disease. In all of the 119 cases the method of operating was practically the same, differing slightly in individual cases, depending on the size and extent of the disease. Since the last three years the section of the sacrum has been made in the shape of an arch with the convexity upwards, thus saving the tuberosacral ligaments. The results obtained show: 10 deaths immediately following the operation, 14 cases from which no report of their subsequent history could be obtained, 40 deaths from return of the disease with or without metastasis, of which 5 took place after three years had elapsed after the operation, 8 cases died from other disease than the return of the cancer, 15 have not been heard from as to the final result, and 32 are living today well and strong. Of these latter there are three which have not yet passed the 3-years limit. As to the local result, there were 34 cases of complete control over the bowel, 77 were left with an anus sacralis and 8 possessed an anus in the normal position but without a sphincter. [G.B.W.]

11.—Noesske says that since 1896 it has been recognized that the **color production of the Bacillus pyocyaneus** is not increased by a rapid growth of the microorganism, but is proportionally less as the speed increases with which the germ develops. The color is probably due to the production of the various salts of sulphur and magnesium. The blue coloring-material of the *Bacillus pyocyaneus* is characterized by its nonsolubility in water and alcohol and its solubility in chloroform and it consists chiefly of a leukobase. But further research is required both quantitatively as well as qualitatively before our knowledge of the color production of this microorganism will be at all complete. [G.B.W.]

Deutsches Archiv für klinische Medicin.

March 20, 1900. [Band 67, Heft 1 u. 2.]

1. Pulsion Diverticulum of Zenker. (The Pharyngo Esophageal Diverticulum.) STARCK.
2. Contribution to the Knowledge of Diverticula of the Esophagus. BROSCHE.
3. The Fate and Action of Acid Sodium Urate in the Perineal and Articular Cavities of the Rabbit. HIS, JR.
4. Nucleated Red Blood-Corpuscles in the Human Blood-Stream. JÜNGER.
5. The Atactic Form of Alcoholic Polyneuritis. (Neurotabes Peripherica.) HÖNIG.
6. The Effect of Muscular Work Upon the Action of the Heart. STAEHELIN.
7. Acute Transverse Hemorrhagic Myelitis in Typhoid Fever. (Death in 18 Hours.) SCHIFF.
8. Brief Communications. The Influence of Creatinin Upon Trommer's Test in Urine Containing Sugar. NEUMAYER.

1.—Starck contributes the first part of an article upon a particular form of **esophageal diverticulum**, that is practically a critical summary of the literature upon this subject. He defines the condition as a sac-like extrusion of the posterior or lateral wall of the esophagus just where it touches the pharynx, which has arisen either as a result of a continual internal pressure or has been developed as a result of this internal pressure. Several theories of its course have been suggested. It was supposed that it could arise as a result of some persistent defect in development. This theory seems to find little support from the congenital anomalies of

the esophagus, and many of the ideas upon which it was based have been shown to be also. It was also supposed to be due to imperfect closure of the branchial clefts, but the diverticula are not found in situations where the fistulas resulting from this defect ordinarily occur. Albrecht has suggested that it represents the return to a primitive type, that is the type of a pig, camel, or elephant; but as a matter of fact, the *aditus esophagous* is not found in the same situation as the diverticulum. Zenker believes that they are due to the internal pressure upon some weakened area in the wall, and Starck suggests that this weakening may be due to some injury to the esophagus during deglutition producing a tear not only in the mucous membranes but in the muscular wall; the tear in the muscle-wall remaining unhealed. He also believes that there is sometimes a congenital weakening in the muscle at the point where the pharynx joins the esophagus. In this weakened area, pouching may occur which subsequently may result in a diverticulum. A point in favor of the congenital theory would be the occurrence of a complete muscular sac. This has not been found certainly in a single case as yet. In conclusion, Starck reiterates that there is no foundation for the belief of the congenital origin of this diverticulum, it may result from wounds or from congenital weakness in the muscles. [J.S.]

2.—Brosch gives a classification and discusses the various forms of **diverticula of the esophagus**. He considers first the pulsion-diverticulum. It does not seem certain that injury to the muscle-wall can produce this. He gives in tabulated form all cases of this condition hitherto reported. He does not consider the existence of a muscle-layer as an essential for the belief that these forms of diverticula are congenital. They may occur in any portion of the esophagus, and usually possess a more or less perfectly formed muscular layer. When, however, there is no muscular layer, we speak of the condition as *esophagocele*. As a result of the consideration of this and other forms, Brosch gives the following classification:

- A. True diverticulum.
 - No. 1. Pulsion.
 - (a) complete with all the walls.
 - (b) esophageal consisting only of mucous membrane.
 - No. 2. Traction-diverticulum.
 - (a) simple.
 - (b) combined, probably the result of perforation by a gland or by an abscess.
- B. Mixed forms.
 - No. 1. Traction pulsion-diverticulum.
 - No. 2. Traction-diverticulum.
- C. Pseudo-diverticulum.
 - No. 1. Completely formed with fibrous wall.
 - No. 2. Pathologic varieties, such as abscesses, cyst, etc.

The results of these various forms differ. Pulsion-diverticula have a tendency to enlarge. The traction-diverticula, and even the deep-seated pulsion-diverticula often continue without symptoms. The pseudo-diverticula when completely formed are rather a discomfort than a dangerous condition. The differential diagnostic point between the pulsion and the pseudo-diverticula is the ability in the former under certain conditions to regurgitate the accumulation of food. [J.S.]

3.—His has continued the experiments of Freudweiler on the **introduction of uric acid or urates into the body**. He has prepared some crystals of acid sodium urate and injected quantities varying from $\frac{1}{2}$ to 1 gram into the perineal cavity and into the joint cavities. Apparently, though, an intense local reaction was produced, the animals suffered from no discomfort. The necrosis produced by the injection differs from that produced by ordinary foreign bodies in that it commences earlier and reaches a greater intensity and extension, and even involves neighboring parts. Therefore, the substance acts partly as a foreign body and partly as a weak tissue-poison. If the salt is injected in amorphous forms it sometimes crystallizes, but at any events it is absorbed by the mucous membranes in the course of 8 or 10 days. It is probable that in acute human gout, the same course of events occurs. In chronic gout, however, the ability to react is diminished. Therefore, in the treatment of gout it is important to consider not only the chemical but the vital condition of the patient. [J.S.]

4.—Jünger has made some careful investigations of the blood in order to determine the **nature and frequency of the nuclei present in the red blood-corpuscles**. He stained his preparations first in picric acid and then in very weak hematoxylin and eosin. In the blood from a case

of leukemia, he was able to study all the processes of division of these cells which apparently take place by karyokinesis. The technical description of the nuclei in the various stages cannot be given, but Jünger believes that in general the process has no characteristic peculiarities. The fate of the nucleus appears to be somewhat as follows: There is first a shrinking with increased tinctibility, the nucleus then assumes a peripheral position, it may break up into small parts that may be either separated or united, there is then a moderate karyolysis and finally it disappears completely. [J.S.]

5.—Hönig reports an interesting case of a man of 55 years of age who 7 years before had had luetic infection, and who was in the habit of consuming large quantities of alcohol every day. He suddenly felt a severe tingling in both feet, the lower extremities then became cold, very weak, and occasionally severe pains were felt in the muscles. The gait was markedly affected, and finally it was only possible for him to walk by the aid of a cane. Then paresthesia developed in the upper extremities associated with severe pain particularly at night. There were no disturbances in the functions of the cranial nerves; the fingers were spread and continuously extended, but the muscle-power was well preserved. There was pronounced ataxia in the movements of both the upper and lower extremities. Touch, pain, and temperature-sense were preserved. The localization-sense and the muscle-sense were almost completely lost. All the reflexes were preserved excepting the plantar and patellar reflexes. The functions of the sphincters could not be compared. There was slight atrophy with partial reaction of degeneration in the muscles of the hand. A diagnosis was made of **alcoholic polyneuritis simulating locomotor ataxia**. As a result of the withdrawal of alcohol, the patient rapidly recovered and was able subsequently to return to his occupation. In discussing the literature of this condition Hönig calls attention to the fact that in cases of long standing, alterations are found in the spinal cord, and that the condition, therefore, cannot be reckoned to the pure peripheral nervous diseases, but the symptoms must be considered in part due to the associated central alterations. [J.S.]

6.—Staehelin has made a series of observations upon 12 patients convalescing from **typhoid fever**, in order to determine to what extent muscular exercise affected their hearts. The patients were obliged to do a certain definite amount of work—that is, to raise their own bodies, like climbing stairs, a certain distance in a given time, and the pulse was counted before and after the exercise. The increase in its rate was very considerable, sometimes amounting to as much as 30 or 40 pulsations in a minute. It was found to be greater in those cases in which the disease had been very severe, and particularly in women. Careful study made in order to determine the rapidity with which the heart returned to the normal showed that it did so very much more slowly in these cases than in normal persons, and sometimes as long as half an hour after the exercise it was still elevated. When the exertion was repeated, it was found that the ability to recover diminished considerably, and Staehelin believes that we should be exceedingly careful in avoiding all exercise or any form of work in these cases. Eight patients convalescing from pneumonia were also tested in this manner, and it was found that the increase in the pulse-rate was not nearly as great. Sometimes, in fact, there was decrease within 2 minutes after the exertion had ceased. This slowing of the rate was often followed by a subsequent increase. A number of studies were made with the sphygmomanometer, and it was found in the cases of typhoid fever that frequently after exertion a **dicrotic pulse** appeared. In the cases of pneumonia there was distinct evidence, even during rest, of diminished arterial tension, and occasionally dicrotic pulse was observed. [J.S.]

7.—Schiff reports a case of **typhoid fever** occurring in a boy of 19, who was admitted to the hospital suffering from a moderate attack which proceeded normally until the patient suddenly developed incontinence of feces. Then there was complete **paralysis of both lower extremities**, and nearly complete paralysis of both upper extremities. There was also complete anesthesia for all forms of sensation bounded sharply by a horizontal line anteriorly at the level of the third rib and posteriorly at the level of the second dorsal spinous process. Above this point the patient had normal sensation and the muscles of the face were not involved. There was evidently extreme

dyspnea. At each respiration the abdomen was strongly protruded and the lower borders of the thorax contracted indicating purely diaphragmatic breathing without a fixation of the thoracic wall. Death occurred 18 hours after the onset of the symptoms. A diagnosis was made of **transverse myelitis** whose upper border reached the level of the junction of the fourth and fifth cervical segments. At the autopsy the spinal cord on the level of the fourth, fifth and sixth cervical segments was swollen, reddened, and soft. Microscopically, minute hemorrhages were found in the substance of the cord throughout all the cervical region, and at the level of the fourth cervical segment there were some alterations in the ganglion-cells of the anterior cornua. The axis-cylinders of the fibers in the posterior columns were greatly swollen and there was apparently some degeneration. Below this point the bloodvessels were enormously dilated and hemorrhages were found everywhere throughout the tissues, and it was impossible to recognize structure of the spinal cord. In the first dorsal segment the spinal cord appeared to be perfectly normal, but there was another area of disseminated hemorrhages in the fifth cervical segment. Cultures and stained preparations failed to reveal the presence of any form of microorganisms. Schiff considers the condition in the cervical cord as a sort of hemorrhagic infarct. He believes as a result of the absence of microorganisms that the exciting cause was the toxin of the typhoid fever, and he therefore considers the case an evidence of the occurrence of the toxic form of myelitis in the course of infectious disease. [J.S.]

8.—Neumayer has undertaken to determine the **accuracy of Trommer's test when creatinin is present in the urine**. He found that meat-extract substances changed the copper solution into a bright yellow opaque fluid. This bright yellow color also occurred in a solution of creatinin and dextrose. Neumayer discovered that by the addition of an alkali to the solution, this light yellow color-precipitate was prevented, and in its place the characteristic reddish copper oxydul precipitate occurred. [J.S.]

Sundry French Journals.

1. Vaccinia and Variola in the Course of Pregnancy. CH. VINAY. (*Gaz. Heb. de Méd. et de Chirur.*, May 3, 1900. 47me Année, No. 35.)
2. Gigantism and Diabetes. CH. ACHARD and W. LOEPER. (*Gaz. Heb. de Méd. et de Chirur.*, May 10, 1900. 47me Année, No. 37.)

1.—Vinay advises **vaccination of a pregnant woman** whenever there is danger of her becoming exposed to small-pox infection. The operation should be done under strict aseptic precautions. A pregnant woman should not be vaccinated on the leg on account of the liability to inflamed lymph-nodes or a lymphangitis near the uterus as a sequel. Vaccination of pregnant women often results in protection of the fetus both from vaccinia and variola. Pregnant women, furthermore, are prone to contract severe forms of infectious diseases, hence another reason for vaccinating this class of patients. The author considers the aggravation of the infectious diseases during gestation to be due to the autointoxication of pregnancy. [J.M.S.]

2.—The authors report the case of a man, aged 34 years, who was a giant. The **gigantism** was hereditary in the paternal line. There were symptoms of **akromegaly**; the chin was a little prominent and pointed; the cheeks were prominent and gave the face a size disproportionate to that of the forehead; the occipital protuberance was markedly prominent; the sternal angle and the insertion of the first rib were very pronounced; and the hand was relatively more developed than the other segments of the upper extremity. These defects of proportion coexisted with other features that were not akromegalic in character, such as increased length of the thigh in relation to the leg. The ordinary signs of akromegaly were wanting, such as ocular troubles and cephalalgia. There were no signs of enlargement of the pituitary body, which enlargement may also be present in gigantism. Glycosuria, which was present in this case, was subject to sharp oscillations. It has also been observed in cases of akromegaly. [J.M.S.]

Practical Therapeutics.

Under the charge of

A. A. STEVENS, A.M., M.D.

Treatment of Syphilis.—According to *Treatment*, June, 1900, Mr. Jonathan Hutchinson gave his latest views on this subject in a recent lecture at the Polyclinic. He considered the disease to be milder than it was formerly. As regards mercury, although this was now the universal antidote, it was not absolutely essential, since syphilis might run its course and die out without treatment. Excision of the chancre might be effectual if done within a week or a fortnight after contagion, by rendering further symptoms milder, if not preventing them. The lecturer advised mercury to be given as soon as possible and before secondary symptoms had appeared. He was of the opinion that if mercury was begun from the fourth to fifth week after contagion, and continued long enough, no further symptoms occurred. He advised the continuous method of administration as opposed to the intermittent or the symptomatic methods. He did not think it mattered much in what way mercury was introduced into the system, but objected to both inunction and injection, on the grounds that the dose of mercury given in these ways was uncontrollable. His method was by internal administration of 1 grain of gray powder in pills three times a day for a week, then four times a day, and after a fortnight five times a day. The mercury was combined with $\frac{1}{4}$ grain of opium. This treatment should be continued for a year. He often gave, in addition, iron and quinin in a mixture. Iodids should be given separately, and not combined with mercury.

Cooper has recently given his views on the subject (*West London Medical Journal*, April, 1900). He differs from Hutchinson in placing no reliance either in excising the indurated sore or attempting to destroy it by the cautery, holding the view that the induration is a local manifestation of constitutional infection. He advises black-wash, or equal parts of mercurial ointment and vaseline, as local applications to primary sores. He insists on the avoidance of mercury in phagedenic sores, and on the treatment of this condition by the hot bath. He does not agree with Gowers that syphilis is incurable, but says that it is often difficult to tell when a patient is cured. Cooper prefers internal administration of mercury, and recommends the tannate of mercury. This preparation is not acted on by the gastric juice, but passes unchanged into the duodenum, where it is acted upon by the alkaline secretions. Its advantages are: 1. It does not derange the stomach so much as other preparations, and in most cases does not irritate the intestines. 2. It is quickly absorbed and eliminated. 3. It does not produce stomatitis so much as other mercurial preparations, and, since it has no cumulative properties, it can be left off directly the gums show signs of soreness. It can be given in doses of 1 or 2 grains in a pill thrice daily. Cooper also recommends inunction, and also intramuscular injections of sozoiodol of mercury, $\frac{1}{8}$ grain once a week. He advises a 2-years course of mercury.

Therapeutics of the Nitrites.—Parker (*Physician and Surgeon*, May, 1900) states that the usual custom of administering amyl nitrite by the inhalation of the vapor of 2 or 3 minims of the drug, is in every way satisfactory. With the ordinary methods of administering nitroglycerin, however, fault can be found. Practically everybody says begin with $\frac{1}{100}$ of a grain of this drug and increase this gradually as may be necessary to get the desired effect. Now, in the experience of the writer one-half this dose has over and over again relieved the cardiac asthma, or other condition for which it was prescribed, and with almost complete avoidance of the headache and other disagreeable symptoms. Physicians have reported satisfactory results from the use of nitroglycerin in doses of $\frac{1}{1000}$ of a grain. Besides securing satisfactory results without disagreeable symptoms, there is another reason why the beginning dose of nitroglycerin should be small. Tolerance of the drug comes on quite rapidly, and so when it has to be given for a long time, as in arteriosclerosis, the smaller the beginning dose the greater the chance to increase it, and still to keep within reasonable limits. Another feature in the administration of the nitrites with which the writer feels he can find fault, is the common custom of combining in a pill or tablet nitroglycerin with

digitalis, and other heart-tonics. This seems to be wholly unscientific and illogical. The effect of the nitrite comes on at once, and may have to be repeated in 2, 3, or 4 hours. The effect of the digitalis cannot be looked for until hours have passed by, and it cannot be repeated at frequent intervals. Again, the nitrite may be alone sufficient to correct the trouble. If it will do so, the physician has escaped the danger of having the digitalis do damage to the cerebral vessels, a danger always present when the arteries are in an atheromatous condition. If the physician can get along without the digitalis he can also get along with smaller doses of the nitrite, for the reason that digitalis always exerts considerable influence in contracting the arteries.

Notes on Chloretone.—Rudolph (*Canadian Practitioner and Review*, June, 1900) publishes the results of an experimental investigation of the physiologic properties of this drug. While he has not specially investigated the local anesthetic effect of chloretone, several casual observations lead him to infer that it is far inferior to cocaine in this respect. In guineapigs in which intraperitoneal injections of the saturated warm aqueous solution had been made, the small parietal abdominal wound remained sensitive during the hours that the experiments lasted, although it had been freely bathed with the solution. The antiseptic power of the drug was not tested. It is difficult to test the hypnotic effect on animals, but undoubtedly a certain amount of drowsiness is produced with moderate doses, increasing as the dose is increased, to deep torpor. About .275 gram per kilo of body-weight produces in dogs a perfect anesthesia for experimental purposes. The pulse, respiration and blood-pressure remain good for hours, and the animal is completely insensible to pain, but it does not recover. After many hours, during which the body-temperature has been steadily falling, the pulse and respiration become very slow, the blood-pressure falls and the animal dies of heart-failure. If a dose, even insufficient to produce anesthesia, is given to a dog, the animal exhibits a considerable fall in body-temperature. He is drowsy, and when roused, staggers and falls, and this incoordination lasts for 2 or even 3 days. This last effect would be an objectionable one if the drug were used in medical practice for its general effect. The lowering of the body-temperature was a constant result of the drug's action. The author concludes that chloretone has little or no effect upon the pulse, respiration and blood-pressure for hours, but eventually, if the dose be large enough, these become depressed and the animal dies, the heart stopping before respiration. Chloretone has a profoundly depressing effect upon the body-temperature, lowering this more than any other drug, with the possible exception of alcohol. This depressing effect is evident before the animal is even drowsy, and is in ratio to the dose given. It may be partially prevented by keeping the animal very warm. Any drug which can exert such an effect upon the total heat of the body is one which requires to be used with great caution in medical practice. This is doubly important as the drug is very slowly got rid of, and we know of no antidote, with the exception, perhaps, of external warmth.

Cacodylic Acid.—Grassi (*Gazz. degli. osped.*, March 18, 1900) has studied the action of cacodylic acid in chlorosis and in tuberculous affections. The treatment was continued for long periods, and the drug was administered hypodermically. The strength of the solution was gradually increased, and the injections were given at first every other day and subsequently every day. The injections gave rise to no pain, and were never followed by the phenomena of intoxication. The treatment in chlorosis was always followed by an increase of weight, and by an increase in the elimination of urea, and a diminution in the quantity of urine. It is evident that arsenic decreases the oxidation of hydrocarbons and fats, and increases the decomposition of albuminoids. The drug does not affect the temperature of the body. In tuberculosis the action of the drug on the general condition is more marked than its local effect. Cacodylic acid increases the hemoglobin, but merely to the extent that it increases the number of red cells. Iron, on the other hand, has more effect on the hemoglobin than on the number of cells. The action of arsenic is therefore more cytoplasmic than hemoglobinoplastic. According to the author cacodylic acid, when introduced by the skin, is eliminated in the urine and not in the feces. It is recovered from the urine as cacodylic acid.

Original Articles.

A NEW METHOD FOR THE CLINICAL DETERMINATION OF THE POSITION OF THE CARDIA.*

By G. W. McCASKEY, A.M., M.D.,
of Fort Wayne, Ind.,

Professor of Clinical Medicine and Nervous Diseases in the Fort Wayne College of Medicine.

THE position of the cardia has received scant attention at the hands of investigators. The methods heretofore in vogue have, for the most part, assumed a more or less fixed and constant position for the upper border of the stomach, and have had for their object simply the delimitation of the lower border. This is especially true of Penzoldt's¹ method by the introduction of water and percussion, which, as Riegel remarks, has only to do with the lower border. The method of Punjesz² of introducing a manometer at the end of the tube, the sudden relaxation of pressure upon which indicated the moment of its entrance into the stomach, was exceptional in this regard. The method of Schreiber and that of Rosenbach dealt with inflated rubber bags in which respect they were similar to my own.

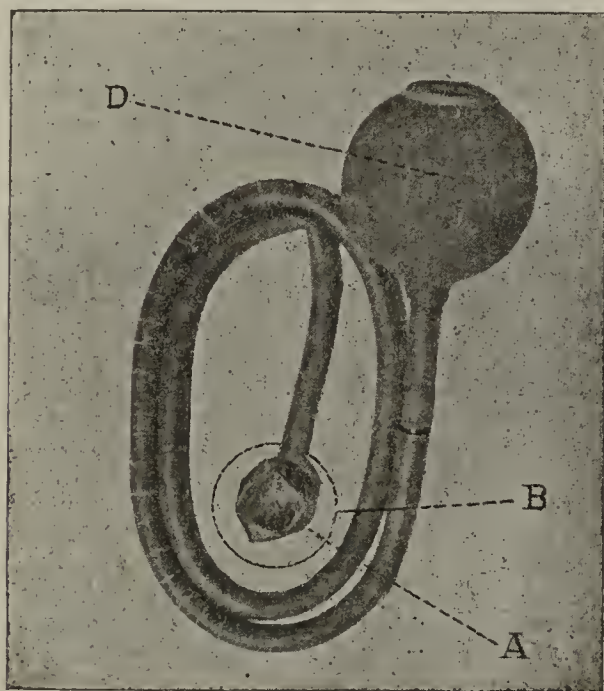


FIG. 1.—Cardiameter: for measuring the distance from incisors to cardia and also for defining absolutely the position of the latter with the aid of x-rays. A. Collapsed bag of thin rubber. B. Expanded bag after introduction into stomach. D. Closed bulb for inflating bag.

I have nothing to offer with reference to the determination of the lower border of the stomach, and will therefore limit myself not only to the upper border, but to the single point in it, known as the cardia.

With reference to its precise location, the statements made in current literature are decidedly and surprisingly conflicting. Morris³ says that it is opposite the ninth thoracic spine. Schäfer and Symington⁴ are responsible for the statement that it is at the level of the body of the tenth or eleventh dorsal vertebra; Hemmeter⁵ says that it is opposite the twelfth dorsal vertebra. Viewing it topographically from the ventral aspect, Einhorn⁶ says that it is in the left parasternal line, somewhat above the ensiform process; Van Valzah and Nisbet⁷ say that it is behind the cartilage of the seventh left rib. With reference to its relations to the

diaphragm Boas⁸ says that it lies two to three centimeters below the diaphragm; one author says an inch below the diaphragm, and another that the esophagus, after piercing the diaphragm, expands immediately into the stomach. Gegenbaur⁹ says that the position of the cardia varies with the growth and distention of the stomach and with the length of the esophagus; although in his illustrations he follows Luschka, and figures the cardia behind the seventh left costal cartilage.

It will be seen that the location of the cardia is fixed by different writers from the eighth to the twelfth dorsal vertebra. The explanation is perfectly obvious and is based upon anatomic variations in health and disease. The vertical position of the cardia must vary, as stated by Gegenbaur, with the length of the esophagus, which depends in health upon the embryologic development of the thoracic viscera, and chest-wall; and in addition to this in disease upon the traction of prolapsed viscera.

The question with which I was especially concerned at first was a purely clinical one, viz., the distance of the cardia from the incisors *per vias naturales*. In other words, to know when the stomach-tube or other intragastric instrument had reached or passed this orifice. Turning again to the literature, about the only statement that I could find was that of Van Valzah and Nisbet, that the distance from the incisors to the cardia was about 40 cm. We are even informed by them that the distance from the incisors to the cardia can be ascertained by measuring from the ninth dorsal vertebra along the spine and side of the neck to the front of the teeth. It is needless to comment upon the fallacy of such a method, in view of the data already given. In most cases, perhaps, the entrance of the tube could be approximately determined by the routine methods in vogue which were always inexact and unscientific, and sometimes, in my opinion, very objectionable and even dangerous. I refer especially to cases of severe gastric lesions, more particularly latent ulcer, in which it appears highly important to know how much rubber hose is contained within the stomach, and exactly when the end of the tube passes the cardiac orifice.

To furnish this information after trying various expedients I have adopted the following method, which gives results that I believe are entirely reliable:

In the distal end of a soft Goodrich colon tube I have placed a tightly fitting piece of metal tubing, over which was adjusted a small bag of very thin rubber, the end of which projects about an inch beyond the tube.

The proximal end was attached to a closed rubber bulb. Compression of the rubber bulb would expand the bag which would collapse when the bulb was relaxed. A centimeter scale was placed upon the tube measuring from the distal end, beginning at 30 cm. and extending to 60 cm. The tube with the rubber bag collapsed is introduced into the stomach and expanded by compression of the bulb. It is then withdrawn until the impact of the rubber balloon is felt against the cardiac orifice. The distance is then read off on the scale in centimeters with quiet breathing. This will show with absolute precision the distance of the cardia from the incisors with the respiratory muscles in the comparatively passive state of quiet breathing. The measurements which I have made have been limited for obvious reasons to patients, many of whom had gastroparesis. The results obtained in 12 cases, taken

* Read before the American Gastroenterological Association, Washington, D. C., May 1, 1900.

consecutively, are presented herewith in tabular form, in centimeters:

	Height of patient.	Distance from incisors to cardia.	Approx. comparative distance, incisors to cardia on basis of 175 cm. as height of each patient.
1.....	161	52	55.5
2.....	167	38	30
3.....	173	41	40.5
4.....	178	45	43.5
5.....	163	41	43.5
6.....	160	41	44.
7.....	168	42.5	43.25
8.....	168	51	52.
9.....	174	45	47.
10.....	169	41	41.5
11.....	175	46.5	45.75
12.....	176	45	44.

phragm are overbalanced by the stronger contraction of the abdominal muscles.

The information obtained in this way has been of great value to me in many cases. For instance, a patient was referred to me by a colleague (Dr. W. K. Mitchell, of Ligonier, Ind.), with a history of chronic indigestion, and recently severe pain after eating, and occasional tarry stools. There had been no vomiting. Upon examination, the characteristic tender points of gastric ulcer, both ventral and dorsal, were found to be present. The diagnosis of gastric ulcer was at once predicated upon these symptoms. I was extremely desirous, however, of securing the gastric juice for chemical analysis, and the washings from the fasting stomach for microscopic study.

The patient was of average height—175 cm., and the

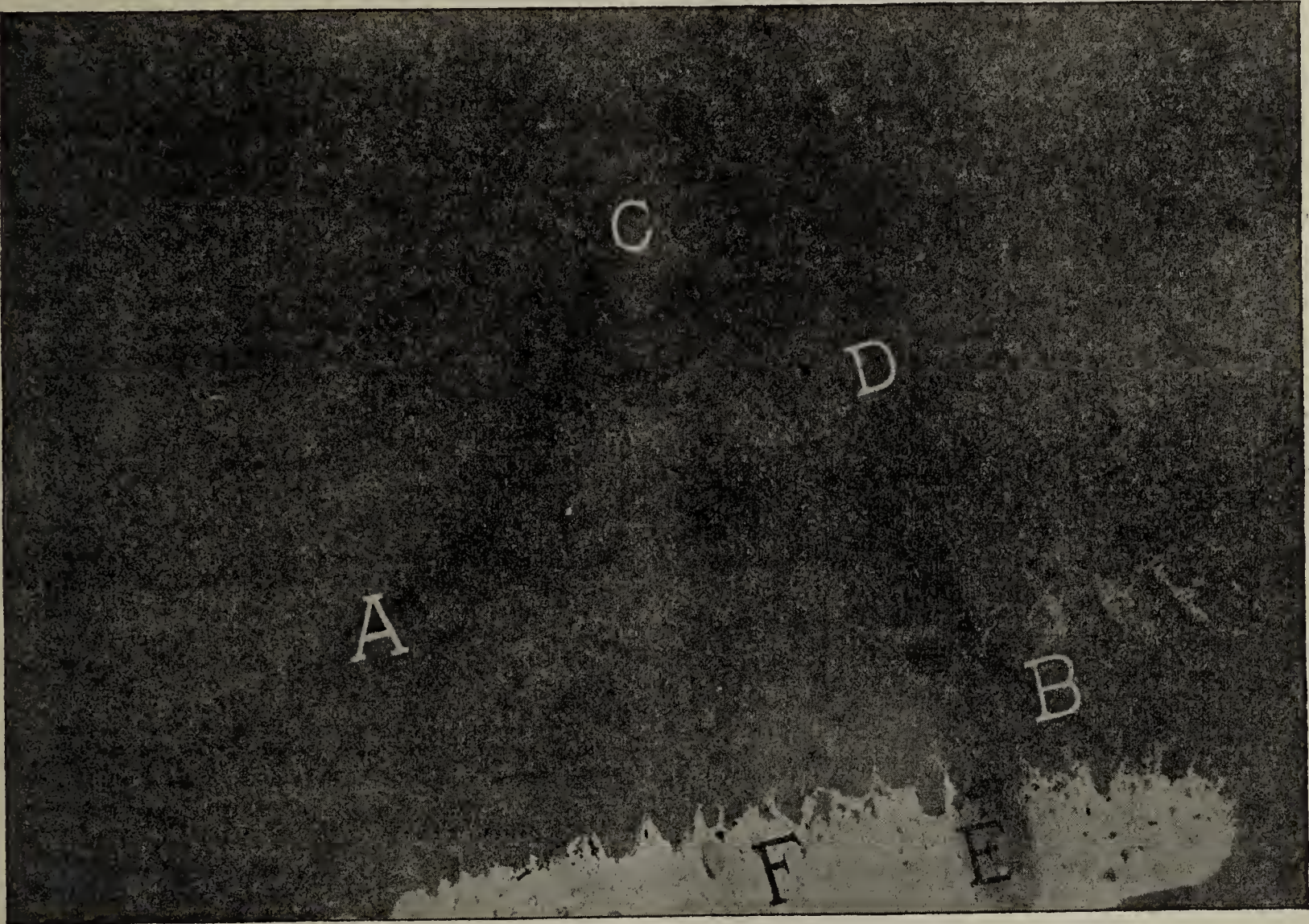


FIG. 2.—Radiograph of case of extreme gastropotosis showing cardia several inches below the sternum. A and B. Lead wire placed on costal margin. C. Lower end of gladiolus. D. Stomach-tube. E. Metal olive tip, placed at cardia by previous measurement with cardiometer. F. Accidental blur on plate.

With reference to the measurements given in this table, it should be stated that in every case there was chronic gastric disease severe enough to lead the family physicians to refer the patients for special examination and treatment.

In addition to measuring the distance of the cardia from the incisors in a passive state, the respiratory movements of the former can be very easily demonstrated. Upon deep inspiration, the cardia is found to sink, on an average, about 2 cm. below, while on complete expiration it rises about 1 cm. above the position, which it occupies during quiet breathing. In the act of vomiting, furthermore, it is shown that the cardia rises, evidently because the contractions of the dia-

cardiometer was passed about 38 cm., and the bulb compressed. The resistance showed unmistakably that it was in the esophagus. It was then advanced 1 cm. at a time until the free expansion of the collapsed rubber-bag, as indicated by the disappearance of resistance in the bulb, demonstrated that the tube had entered the stomach. The distance of the cardia was then found in the manner already described to be 46.5 cm. A very soft graduated tube was then introduced, and by exercising great caution, withdrawing it when retching occurred, so that only 1 cm. or 2 cm. of tube projected into the stomach, irrigation was completed with no more important incident than the appearance of numerous bloody flakes of mucus obviously from the margin of

an ulcer. The complete diagnosis, which I cannot give here, furnished strong indications for local treatment, which was at once instituted with due precautions.

The patient was placed on full diet instead of emaciating and exhausting him by a starvation regime, and in three weeks had gained six pounds with corresponding improvement in general strength and symptoms.

In another case of profuse gastric hemorrhage, sent to me by my colleague, Dr. H. A. Deumling, I was encouraged by the precision with which I could use the tube to carry the case on to practical recovery as indicated by a gain of twenty pounds in weight and disappearance of hemorrhage.

With precise information concerning the distance of the incisors from the cardia it is possible in the course of simple lavage to make important and fairly reliable deductions with reference to the vertical measurements of the stomach. For instance, if the measurement shows that the cardia is just 45 cm. from the incisors and the tube has to be introduced 55 or 60 cm. before getting a continuous flow by siphonage, the conclusions are obvious. It is only in cases perhaps where there is marked atony of the stomach-wall that such data may be obtained. Where the stomach contracts actively upon the introduction of fluid the level of the latter would of course be raised far above the lower margin of the stomach in a passive condition. It has frequently happened, however, in my experience in cases of marked atony that the distance from the cardia to the upper level of the fluid as indicated by the continuous siphonage was so great as to positively indicate an exaggerated vertical measurement. With large quantities of fluid the possibility of error by reason of undue traction dragging down the cardia, must be kept in mind.

It is possible by means of this instrument to get some information regarding the caliber of the upper portion of the stomach in certain anomalous cases. For instance, in a recent case the measurements showed the cardia 43 cm. from the incisors. At a distance, however, of about 47 cm. from the incisors the inflated rubber balloon, which can be freely introduced into the deeper portion of the stomach, encountered a slight but marked resistance which was easily overcome until the solid impact against the cardia was distinctly felt, beyond which point it would not pass. This was repeated several times with uniform result. The possibility of diagnosing hourglass stomach in this way has occurred to me. In the case just referred to, the distance of the second resistance from the cardia was rather too small to be considered the contraction of an hourglass stomach besides which the passage of the rubber balloon between the two points gave the impression of a continuously narrow passage.

So far my investigations along these lines had been with exclusive reference to the precise distance of the cardia from the incisors with a special reference to the use of intragastric appliances. At this point it occurred to me that by fixing a piece of metal at the cardia and taking a radiograph with suitable surface landmarks made by the shadows of metal, the precise position of the cardia with reference to the surface of the body could be determined. This proved to be entirely feasible and I present herewith a radiogram demonstrating the result in a case of extreme ptosis. By this means at least one point in the upper border of the stomach can be mapped out on the surface with absolute precision.

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CAUSE OF THE DECUSSATION OF THE NERVE-FIBERS
IN THE MEDULLA AND SPINAL CORD.

By D. T. SMITH, M.D.,
of Louisville Ky.

THE forces that have operated to produce the decussation of the axones in the medulla, or the ends that have been subserved thereby, have never been indicated in so far as I am aware, by any anatomist, either in the interest of teleology or evolution. The theory that is here proposed, or rather suggested by me, is not by any means conclusive to my mind, but it meets the logic of the condition to an extent sufficient to justify its setting forth as promisingly helpful to some more ingenious investigator who may have his mind directed to it.

If one attempts to scull a skiff on the water, he finds that the bow of the skiff turns in the same direction in which he moves the paddle of his oar. Again, if we watch fishes swimming in the water, the same character of movement will be observed to take place with them. The head of the fish turns in the same direction in which it moves its tail. If the tail is thrown to the right, the head turns to the right. If the tail is thrown to the left its head turns to the left. In the case of the skiff, the bow turns to the left when the paddle is moved to the left, because the reaction produced thereby pushes the stern to the right, forcing the body of the skiff to rotate on a pivotal point situated somewhere in advance of the stern. The principle involved in the turning of the fish is identical. When the fish's tail is moved, say to the left, some postpivotal point of the body must be moved in the opposite direction from that of the tail, or to the right, in order that the head shall move in the same direction as the tail. This pivotal point appears to be in the tail of the fish just posterior to the body, and embraces the thickest and heaviest part of the tail. The tail fin, with a small portion of the extremity of the tail, is moved in a given direction, and this throws the heaviest part of the tail, and possibly the posterior part of the body, in the opposite direction, and this, in turn, rotates the head in the same direction as the movement of the tail.

Pursuing this complex move a little further than is necessary to the purpose of our argument, we may observe that when the fish has bent its tail slightly, the web of the tail fin begins to slide off of an incline plane, formed of the water against which it presses, and this within certain limits, gives an increased intensity to the rotating movements, since it tends to push the thick part of the tail the more forcibly in the opposite direction.

But if the fish desires to make a rapid run, as it almost invariably does when it makes one of these sharp turns, it simply straightens out the tail, at the same time slightly relaxing the extremity and with it the tail fin. This enables it to go almost straight forward from this stroke; whereas, if the tail were straightened without relaxing the extremity of the tail, and

thus allowing the tail fin to bend, the fish would simply turn itself in the opposite direction instead of being driven nearly straight forward. This involves in an almost perfect way the principle of the turbine which is employed to propel the ocean steamer. Now in order to allow of the character of movement of the pivotal point in the fish just indicated, the muscles on the side or the sections to be thus made convex, must be relaxed, while at the same time those muscles which are to produce a concavity on the opposite side must be contracted. If now it so happened that all the muscles on each side of the fish's body had to be supplied with innervation by neurons on the same side, this would necessitate a situation more or less distant from each other for the respective motor centers controlling, for the time, the two antagonizing sets of muscles.

Therefore, since it is indispensable that the neurons controlling the muscles of the two sides of the body shall work in concert, a more or less extended route of communication would have to be traversed in order to admit of those on one side notifying those on the other of the motion they were about to inspire, and which required the inspiration of a coetaneous counter motion. It must have been then, of manifest advantage to the fish to have axones proceeding from each half of the brain to the muscles of both sides of its body. In this way neighboring neurons could act in quick concert in contracting the muscles on one side of the body, or in special regions of one side, and simultaneously relaxing those on the opposite side.

There is a necessity then, or at all events a distinct and obvious advantage secured to the fish or other such animal, in an arrangement by which part of the motor axones from the cortex pass out on the same side and a part pass onto the other side for distribution to the muscles of locomotion.

And this is what actually occurs. For, while the greater number of the motor fibers pass across at the decussation of the pyramids and make their way into the lateral columns of the opposite side of the cord, forming thus the lateral pyramidal tract, a small bundle of the outermost fibers of each pyramid runs downward in the anterior column of the same side and is known as the anterior pyramidal tract.

However, while there is a plain necessity for a division of the axones proceeding from each side of the brain, neither in the lower animals nor in the higher is it so apparent why the majority of the motor fibers should pass to the opposite side. If, however, for reasons that do not clearly appear, it so happened that in each case the fibers that passed down on the same side were to act as inhibitory fibers and those on the opposite side as contracting fibers, we can see a reason why the former should be gradually diminished, while the latter active contracting fibers increased in numbers in the progress of evolution. This would be the natural result of the requirements of innervation on the two sides. But let us suppose that the energy required to inspire contraction is greater than that required for inhibition of contraction or relaxation, and it will be readily apparent that it would be in the interest of economy for the greater force to take the longer route. If both sides of the body, as we have found, require to be innervated from practically the same center on each side, the one requiring a strong impulse and the other a weaker one, it would be to the advantage of the individual to have the weaker impulse traverse the shorter route, for in this way it could keep time with the

stronger impulse and they could both act in concert. This, then, would account for the fact that the larger proportion of axones pass over to the opposite side, provided these axones are tonic and not inhibitory.

It is highly reasonable to believe that there is a constant current of force, either electrical or capable of inducing electricity, moving along circuits formed by the axones of sensory and motor nerves, and possibly some other intervening tissue, and that this current is indispensable to the preservation of the vitality of the neurones and axones.

If this is true, it necessitates the crossing over of the axones of the sensory nerves in order that their extremities may meet those of the motor nerves, and thus complete the life-conserving circuits, or at least that the proportional distribution of motor and sensory axones shall be conserved whatever the nature of the requirements of that proportionment may be.

However, such a distribution would also meet the requirements of reflex action, since with such an arrangement stimuli acting on the terminal sensory axones could be reflected along the motor axones supplying the same parts.

When the higher order of animals was reached in the progress of evolution the advantage of this plan of nerve-distribution survived. In man it is especially appropriate. Thus, in walking, while the muscles on one side are on the whole being relaxed, those on the other side are on the whole being put to increased tension. It is true that the flexor muscles of the leg that is lifted in walking are made taut in doing so, but the strain on them is probably less, in so acting, than is that even of the corresponding muscles on the side of that leg which for the time supports the body. In the case of the quadrupeds intermediate between fishes and man, this double play of tension and relaxation is also favored by such divided innervation as is found in man and the fishes; probably even more so than in man, for the tendency to swing the arms as we walk may be but a vestige of the corresponding movement of the fore limbs in the lower animal. As a logical inference from the foregoing premises, we might look forward to the discovery of a subsidiary arrangement by reason of which the flexor and extensor muscles of each limb are controlled from common centers, as the same character of advantage would thereby accrue to the individual or the race.

How far down the scale of life the distribution of axones here considered obtains, I am without means of knowing. But if the cause here suggested is the true one, it ought to be found in the lowest animals that are possessed of a cerebrospinal nervous system, if not in all that accomplish locomotion by coordinate movements.

It is indeed a question whether the advantages of bilateral and reciprocal innervation in the effective accomplishment of locomotion, has not been the efficient cause or the determining guide that has resulted in the formation of two hemispheres for the brains of animals.

The exceptional magnitude of the brain in man is, however, most likely due to the fact that man has a larger extent of tactile body-surface than any other animal, notwithstanding the fact that paleontology reveals a progressive increase in the brain mass relative to that of the body in all known specimens of mammalia. In sight, hearing, smell and probably taste, man is surpassed by many animals, but none approaches him in the range of touch, which is the master

sense. And it is doubtless this sense possessed as it is in so exalted a degree, that by its reaction on the brain has caused its enormous development, and placed man so conspicuously at the head of the animal kingdom.

MÜTTER LECTURES OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

The Surgical Treatment of Congenital and Pathologic Disfigurements of the Face.

By JOHN B. ROBERTS, M.D.

Professor of Surgery in the Philadelphia Polyclinic.

LECTURE VIII.—*The Construction of New Noses.*

(Abstract.)

RHINOPLASTIC operations, for the construction of an entire nose or a portion of that organ, are required to repair the damages of syphilis and lupus and of intentional and accidental mutilations. American and Continental surgeons have very little experience with these operations, except in cases due to syphilis and lupus. English surgeons in India have very many patients with the cartilaginous portion of the nose cut off by sharp instruments. This mutilation is frequently adopted in India as a means of revenge. Keegan states that the number of such mutilations effected in a single year in India is unknown. That it must be large is evident from his statement that in the year 1897 there were 152 rhinoplastic operations performed in that country. In a single evening he saw, while riding through one of the native cities, as many as three or four women with mutilated noses, sitting near their huts. As a consequence of this distribution of rhinoplastic work, American and European surgeons have had much less experience than Indian surgeons. The cases seen outside of India are usually much more difficult to bring to a satisfactory conclusion by operation, because the tissues which remain have been distorted and altered by the syphilitic or tubercular ulceration which has destroyed the nose. In many of these nasal deficiencies, due to disease, the internal bony and cartilaginous structures have been entirely destroyed. In some instances even the nasal bones which support the nose at its bridge are also absent, as the result of the syphilitic necrosis.

Until recent years the technic of total rhinoplasty was somewhat imperfect; and, as a consequence, surgeons undertook the construction of a nose with considerable hesitation. More recent studies and the advantages of aseptic surgery have improved conditions to such an extent that these operations are now undertaken with much more certainty of obtaining an improvement in the patient's appearance. A very great deal can be done when only the soft parts of the external nose have been cut off. Quite a satisfactory gain is possible, even in cases greatly deformed by cicatricial contraction, subsequent to syphilitic ulceration of the hard and soft parts. In the latter cases the main difficulty is to get support to the flaps of skin which are used to make the new nose. Metallic supports and bridges of various sorts have been employed to hold up and give the requisite projection forwards of the flaps of skin which represent the new nose. In some cases these have been worn for a number of years and apparently with satisfaction. In others they have set up irritation, which has finally led to their removal.

Portions of bone have been chiseled, from the nasal bones and from the superior maxillary bones, and displaced in such a way as to hold the integument forward. These osteoplastic operations have been to a



FIG. 1.—Langenbeck and Ollier split the nose vertically, laid the soft parts to each side, and then sawed bony flaps from the edges of the nasal aperture above and below on each side. They then bent these bony flaps forward to give support to the frontal flap or the replaced soft structures.

certain extent satisfactory. Ollier, Koenig and Israel have made interesting suggestions in this connection. Sabine, of New York, constructed a new nose from a finger, which he attached to the sides of the chasm left by the loss of the nose. The finger-nail was removed and the palmar surface of the finger split so as to form lateral flaps. The hand was then applied to the face and the finger stitched to the edges of the nasal cavity. After circulatory connection was established, the finger was amputated from the hand through the first phalanx; and the end of the portion of finger, left attached to the face, was bent at the joint between the first and second phalanx, so as to make the end of the nose and its columella. A number of minor operations were subsequently done to improve the shape of the new nose.

The usual methods of rhinoplasty are the Italian, in which the tissues of the arm are attached to the stump of the nose; the French—sometimes called the German—method, in which the new organ is constructed from flaps taken from the cheeks; and the Indian method, in which the skin of the forehead is utilized in the nasal reconstruction.



FIG. 2.—Diagrams of Serre's method of rhinoplasty.

The Italian method was brought to the notice of surgeons in 1597 by the Latin treatise of Tagliacozzi. Before that time, however, rhinoplastic operations were performed by Sicilian operators. A brief reference is found, it is said, in a publication of Benedictus, dated 1497. Tagliacozzi's method was subsequently modified in various minor particulars, and is sometimes used at the present day. In fact, flaps are taken from the arm at times for reconstructing other portions of the face, such as the lips. Tagliacozzi himself speaks of this application of his method, and gives illustrations of it.

The brachial method, as it may be called, of Taglia-

cozzi, is tedious to the patient and requires a more or less complicated apparatus for holding the arm to the face during the time necessary for adhesion to take place. Hence, either the frontal method used in India from a very early time, or that in which flaps are taken from the cheeks, is more usually adopted.



FIG. 3.—Diagram showing Keegan's outline for the frontal flap in rhinoplasty. When the flap is rotated downward the point *A* is stitched at *A'* and *B* at *B'*.

Keegan has, as the result of his great experience in India, modified the usually described method of frontal rhinoplasty. He cuts a flap from the forehead, with its pedicle near the supraorbital notch of one eye, extending obliquely upward across the forehead. The upper border of the flap has a projection, from which he constructs the columella of the nose. He first makes a pattern of the flap by using a piece of banana leaf,

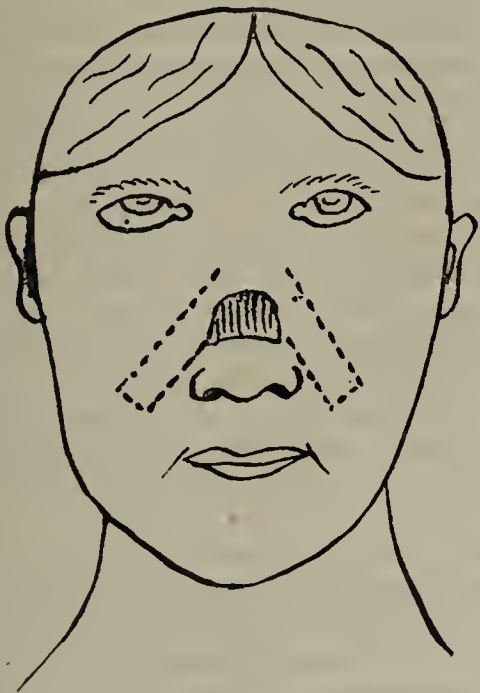


FIG. 4.—Diagram of Roberts's method of reconstructing a sunken-in nose. The dotted lines indicate the flaps taken from the cheeks to cover the opening into the nasal chambers left by the detachment and drawing downward of the cartilaginous nose.

which is flexible and supple. Having made this pattern, he cuts from stout brown paper an exact duplicate in shape. This is fixed to the forehead by an adhesive material, so as to render it easy to make a flap,

exactly satisfactory both as to size and shape. The soft tissues over the nasal bones are then converted into two flaps, which are turned downward upon a hinge, as it were, near the inferior border of the nasal bones. This maneuver puts the skin-surface of these flaps inwards towards the nasal cavity. The frontal flap is then cut and, by twisting its pedicle, it is carried downward so as to cover the denuded nasal bones and the raw surface of the turned-down tissues, which previously covered those bones. The columnar portion of the frontal flap is then properly sutured into a groove or bed at the upper part of the superior lip. Sutures are applied to close the frontal wound and fix the edges of the flaps in proper relation. Drainage-tubes are inserted in the newly-formed nostrils. The pedicle at the root of the frontal flap is divided at the end of about ten days.

The object in using the tissue covering the nasal bones to form the internal surface of the nostrils is to prevent contraction of the nostrils. These underlying flaps also give support and strength to the new nose, so that it is less likely to become flattened.



FIG. 5.—The cheek flaps sutured to close the opening.

Portions of noses may be constructed by various rhinoplastic procedures, but they need not be further discussed here. Some of them have been already mentioned in the previous lecture. The tissues of the lips and cheeks may be utilized for the formation of the necessary flaps, which are then displaced, so as to fill the gaps which are the cause of the nasal deformity.

The construction of a portion of the nose in cases of sinking-in, due to syphilitic destruction of the internal cartilaginous and bony supports, is often a difficult problem. In these cases the middle portion of the nose is greatly depressed and the tip of the nose turned upwards so that the nostrils look forward instead of downward. In some cases the nasal bones are destroyed, but they often remain uninvolved by the syphilitic necrosis. I have recently reconstructed such a nose in a very satisfactory manner by a combination of plastic procedures which is, so far as I know, new. The first step was to make a transverse incision in the hollow above the tip and alae of the nose, where the depression due to cicatricial contraction and want of support was the greatest. This enabled me to pull down the lower end of the nose and bring it forward so that the nostrils looked downward and the tip of the nose had its

normal projection forwards. This left a large opening between the cartilaginous nose and the lower end of the nasal bones. This space was covered by lateral flaps cut from the cheeks and turned inward towards the middle line with the skin surfaces towards the nasal chambers. These flaps should be cut in the line of the nasolabial furrow in order that the linear scar may correspond with this line more or less accurately and therefore be comparatively inconspicuous.

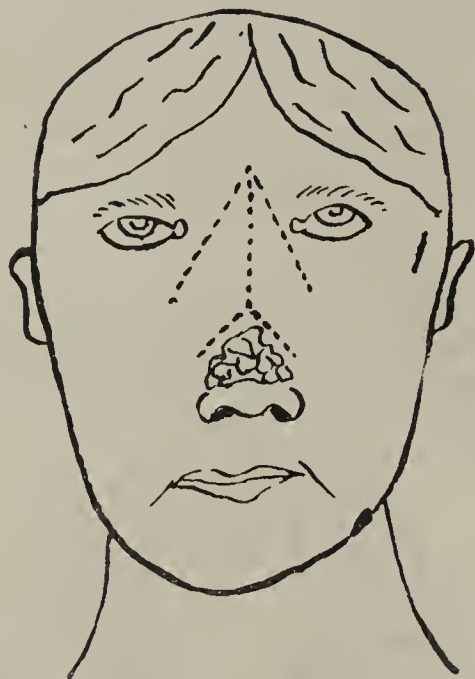


FIG. 6.—The dotted lines show the outlines of the two frontonasal flaps.

After these flaps had become united in this position, the irregularity due to the twisting of their pedicles was removed by a small plastic operation on each side. The next major step was to make two diverging incisions from the middle of the forehead, downwards and outwards, in the manner shown in the diagram. Two other incisions were made just above the granulating surface, situated at the point where the cheek-flaps had been united in the middle line. A median vertical

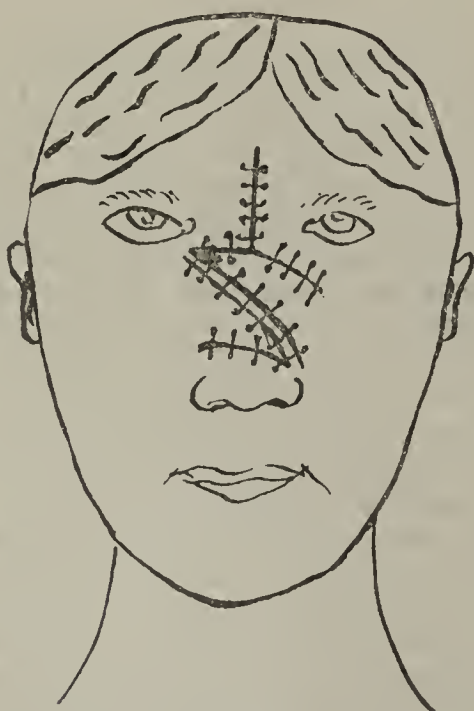


FIG. 7.—The frontonasal flaps sutured on top of the cheek flaps.

incision was made to connect the apices of the inverted V's made by these four incisions. The two flaps thus made over the nasal and frontal bones were then dissected from the underlying tissues and turned down-

ward so that the upper point of the right flap could be attached to the base of the left ala, and the uppermost point of the left flap turned over to the right side of the patient, so as to fit, against the other flap, below the inner canthus of the right eye. The wound left in the forehead was then closed vertically and numerous sutures applied to hold the displaced flaps in their new positions.

This maneuver covered the granulating surface of the cheek flaps that closed the opening in the nose; and gave thickness and solidity in the region where firmness is so essential, in order to maintain the outline of the organ. A number of minor operations were subsequently necessary to get rid of the irregularities produced by the coaptation of so many flaps, but a very satisfactory outcome has resulted. The new nose has a fair degree of prominence and the nostrils and alae are in proper position and of normal shape. The dorsum of the nose, while not beautiful, is free from the marked and disfiguring depression which formerly existed.

In order to make the prominence of the nose and upper lip relatively greater, a portion of the lower lip was removed by a V-shaped incision.

THE EARLY RECOGNITION OF ECTOPIC PREGNANCY.

BY DEWITT G. WILCOX, M.D.,
of Buffalo, N. Y.

LIKE other of our recently recognized and better understood pathologic processes, ectopic pregnancy seems of more frequent occurrence than formerly. Whether due to a more accurate recognition, and hence only an apparent increase, or whether the increased frequency of salpingitis is responsible, we are as yet unable to determine.

Of this, however, we are certain: it is a condition which, from its inception to its close, is highly dangerous to both health and life. This danger is greatly increased because the condition gives so little warning of its presence, and the symptoms resulting are so out of proportion to the ever-present danger. Were the patient obliged to take to her bed from the first, because of pain or other symptoms, the danger would be greatly lessened, but the mere fact that she is on her feet and feeling fairly well, keeps the sword of Damocles over her head. A sudden exertion, lifting a piece of furniture, running up-stairs with a child in her arms, or straining at stool, may cause a rupture of the delicate membrane and the patient is dead before help can reach her, or if not so terrible an issue as that, she has started on a long road of invalidism from which she may never recover, save through the aid of the surgeon's knife.

With the details of a number of such cases before me, I am convinced that it is possible to recognize tubal pregnancy in its early stages, even as early as the fourth or fifth week, and before rupture of the tube. Indeed, if it is not recognized before rupture, the danger has been averted only in part.

It seems now settled beyond dispute that impregnation takes place in the tube near the uterine extremity. Bearing this in mind, also, that the ovum both impregnated and unimpregnated, is urged toward the uterus by the cilia lining the tube, and a mild contractive effort on the part of circular fibers, we readily see that

any factor acting as a bar to the ready progress of the ovum facilitates to that extent the possibility of tubal pregnancy. This bar may be an inflammation which has destroyed the cilia or created a partial stricture in the caliber of the tube, not sufficient to prevent the ready passage of the male element of fecundation, but sufficient to prevent the return passage of the fecundated ovum; or again, it may be that the caliber of the tube has been lessened by encroachments upon it from without, by tumors, adhesive bands formed by peritonitis, or torsion of the tubes. Every hour that this ovum is delayed lessens the possibility of its escape into the uterus, because it is steadily increasing in size.

Just what time is required for the passage of the fecundated ovum through the tube is not definitely known, but, according to the best authorities, this passage probably occupies not less than 8 days, and as the ovum has enlarged to about three times its original size, it must of necessity find its way into the uterus very soon thereafter or forever remain without.

It is a well known physiological fact that the uterus undergoes a certain preparation each month for the reception of the ovum. A few days prior to the arrival of the expected guest that organ "cleans house," and adds new interior furnishings; old shreds of membrane are cast off and a new heavy lining of a velvety character, richly supplied with blood-connections, is formed in the upper part of the uterine cavity; this is the decidua. If the ovum arrives as "guest-in-ordinary" (that is unimpregnated) then the new furnishings are torn down and cast off, and form part of the menstrual flow. If, however, the ovum comes as a royal guest (impregnated and developed up to six or eight days) then is the reception made befitting the guest. The doors and windows of the decidua are closed to prevent the untimely escape of the guest or intrusions from without. Richer blood-supply is added and the velvety hangings are materially increased in thickness. One corner of the reception hall is set aside for the guest, where it is permanently stationed and nourishment sumptuously provided. This guest, the ovum, sends out rootlets or villous growths, which ramify into the decidua, and the circulation between uterus and ovum is established.

It is a most entertaining sight to the scientist to watch the conduct of affairs when the host has been assured that a royal guest will soon arrive and the latter fails to keep the appointment. The ovum impregnated in the tube in the usual way, sends couriers announcing its early arrival in the uterus where the usual preparations take place. The eight days expire, but the guest does not appear; ten days and two weeks pass, yet he fails to come; the furnishings and hangings are wrought more elaborately as though that would hasten him. The uterine decidua has attained two or three times the size it would attain were it waiting an unimpregnated ovum; but at the end of four or perhaps five weeks, no guest has appeared and in disgust at such uncivil treatment, the host ruthlessly tears out all evidence of the elaborate preparations and casts them forth. The decidua has been expelled, and in this act we have one of the most positive signs of tubal pregnancy. This decidua may be the size of a placenta in a three months' uterine pregnancy, and the physician, if he is not alert, will be induced to think he is dealing with an ordinary abortion and may search long and carefully for a fetus which comes not.

We now go back to the ovum and see what sort of

treatment it has received at the hands of the tube which has aspired to the dignity of entertaining the royal guest, who had intended making there only a short sojourn on the road. This tube, recognizing that it must prepare a fitting chamber for one of honor, has also, upon short notice, added new furnishings which heretofore were foreign to so humble a house. A tubal decidua has formed about the ovum, which has increased in size as the ovum grew, until at the end of two or three weeks it is able to provide its guest with all the nourishment and necessities that the royal palace of the uterus could provide, only in cramped quarters. But the ambition of the tube has not reckoned with its capacity or powers of endurance, for the royal guest has so increased in size that the walls of the house are full to bursting and impending disaster threatens.

Thus, by fact, and somewhat by analogy, have we considered the pathology of tubal pregnancy. With that in mind, the recognition of the symptoms is comparatively easy. A sign seldom failing is an impression which the patient has, that she is pregnant. Particularly is this present if she has borne children. She will state that she is conscious of the lower pelvis, a peculiar indescribable sensation, which knowledge may be unusual to her; the abdomen is slightly sensitive, there is a pain in ovary or tube upon bowel-movements, there is some increased frequency of urination. She may or may not feel nauseated, but is likely to feel so after four or five weeks have elapsed.

The time comes for her menses, but no flow appears. If her habit be that of prompt regularity, this is almost a positive sign of pregnancy, but not necessarily of tubal pregnancy. In two or three days her anxiety is relieved by discovering a little flow, but this ceases perhaps after 6, 12, or 24 hours. This flow is caused by the uterus in its attempts to get rid of the unnecessary decidua, for be it remembered that the ovum now impregnated in the tube may have been lodged there four weeks previous, at the last menstrual period, and at the present moment, although she has missed but one period by a few days, she may have an ovum of four weeks' development in the tube; hence quite a decidua has formed in the uterus which it is endeavoring to cast off. She may mention that her breasts feel sore and her morning-sickness is increased. This periodic irregular flow of blood is an important sign.

Most of the above symptoms give to the physician a suggestion that the patient is pregnant normally, but this show of blood a week or so after the period is due, should arouse his suspicions that all is not right. He need not wait long for a confirmation of these suspicions: it will come if he is watchful. Next, he is told that there is more flow, which, like the other, lasts a few hours and then ceases, or may appear only when the patient is on her feet. She complains of an unpleasant sensation in the right or left ovary, it has become more sensitive, she avoids sudden movements or jars. About this time the patient may have sudden severe sharp pains in the sensitive side; these may be of a character to make her scream out in agony or fall in a faint upon the floor. These pains may be repeated in a few hours or days or may only come when she makes an exertion, but with each pain she is quite likely to have a little uterine flow. Now, it is not to be understood that this pain means a rupture of the tube, because a single tube cannot rupture every two or three hours or days, but it does mean that the tube has be-

come as full as it will hold with the constantly increasing ovum as a guest, and, because it cannot further stand such internal pressure, its peritoneal covering has begun to tear in places and the pain results. These tears may extend, not only through the peritoneum but through the entire tubal wall, and if they should happen to occur immediately over that portion of the surrounding decidua where the blood-supply is thickest, a very brisk hemorrhage will occur. Each of these tears seems to stimulate the uterus to contract, and hence we have an external show of blood. If a physician sat at the bedside of a patient whom he had never before seen, and she related to him such symptoms as above mentioned, he could not be excused for failing to recognize the true condition; but if he were in doubt he has the means at hand for satisfying himself beyond all question—the discovery, by a bimanual examination, of an enlargement to the right or left of the uterus. This may be as large as a walnut, a lemon, or an orange, or it may be bologna-shaped. It is extremely sensitive and must be handled carefully. It will also be seen by this examination, that the uterus is enlarged almost to the extent of the duration of the suspected pregnancy. The cervix will be soft and may be purple in color like a normal pregnancy. A few days later the physician may be told by the patient that her troubles are over with, as everything has come away and she shows him what appears to be an after-birth. It is so nearly like it he may not detect a difference, but his precaution will induce him to make an examination, whereat he finds that while the uterus is smaller than before, there is still the same lump in the side, just as sensitive, and the patient still has her symptoms of pregnancy. It was the decidua which has come away and not a placenta. Moreover, she will continue to have her agonizing pains, after each one of which she feels faint. She shows clearly now the loss of blood; her lips are pale, her eyes hollow, and she is constantly thirsty.

We will now suppose a period of from six weeks to two months has elapsed since the suspected pregnancy began. An urgent call reaches the physician to come to his patient immediately, she is dying. He finds her pulseless, blanched, breathing softly, cold and clammy. A friend says, "She screamed out with agony, put both hands over her lower abdomen, tried to get up and fell back fainting." We have finally come face to face with an issue which nature has been predicting forcibly, could we but understand her language.

The tube has ruptured from end to end, or such portion of it as contained the fetus. The thousands of little rootlets, which carried blood from the lining of the tube to the tubal decidua, have been torn open and are pouring quantities of blood into the abdominal cavity, or the ovarian artery may have been ruptured also, and thus is the hemorrhage increased. Even yet the patient is alive, hence there is hope of saving her, and it is far better to recognize the true condition and apply the remedy, even at so late an hour, than allow it to go unrecognized and cause death. I need not say that the one remedy is a rapid abdominal section, securing bloodvessels, turning out clots, filling the abdomen with hot saline solution and getting the patient back to bed as quickly as possible, with all means at hand for combating shock. But how infinitely better to have determined the question earlier and to have applied a similar remedy with one hundred chances in favor of success.

All orthodox rules have exceptions, so these rules of

symptoms have theirs, and these we must note most carefully. Our patient may never have been pregnant, hence she will not be able to tell us that she has such symptoms, but she can tell if she has any peculiar sensations low in the pelvis, whether faint or nauseated, with frequent urination, or if her breasts are sore. Again, she may have had an old salpingitis which has caused her much suffering and hence is never free from ovarian pain. But that will not prevent the delayed menstruation, the irregular gushes of blood, the well-defined tumor in the pelvis. We may fail in rare cases to have the delayed menses, but I have never failed to find such menstruation peculiar in some form; either it was exceedingly slight, which fact impressed the patient sufficiently to remember it, or it was so profuse as to be alarming, or it was intermittent. Next, we may not have the severe, sharp pains, due to peritoneal tears of the tubes, because the tube may not tear at all, but in their place we will find a steady, severe ache, never ceasing, and becoming more severe each day, owing to the steadily distending tube.

While the conditions enumerated may vary or fail to appear, there are three cardinal signs which will determine the diagnosis almost positively: First, some slight suggestion of pregnancy, with or without irregular gushes of blood from the uterus. Second, tubal or ovarian pain, either sharp, agonizing and periodic, or severe and continued with daily increase. Third, a lump on the right or left side of the uterus, sensitive, tense, and frequently pulsating. If you consider a moment you will recall that just this set of symptoms seldom accompanies any other one condition. A normal pregnancy seldom causes ovarian pain of a marked character, neither does it cause enlarged tubes that are sensitive and tense.

(To be concluded.)

A METHOD FOR THE GRAPHIC STUDY OF GASTRIC PERISTALSIS.

By CLARENCE QUINAN, M.D.,

Physician to Out-Patient Clinic, Medical Department University of California.

THE importance of ascertaining in any given disease of the stomach the energy of its muscle is generally recognized; it is the purpose of this paper to set forth briefly a method which is believed to throw an interesting sidelight on the problem. A description of the apparatus employed will be found in the *Occidental Medical Times*, San Francisco, November, 1899.

The gastric volumeter consists essentially of three parts: A rubber vesicle capable of being distended within the stomach and accurately filling the cavity, a graduated cylinder of 4,000 cubic centimeters' capacity for measuring the cubic contents of the vesicle after inflation, and lastly a water manometer for recording changes in tension. The apparatus is simple in construction and operation and of clinical application.

The stomach having been fully distended with air and communication established with a manometer, it will be seen that two forces operate to increase the tension of the imprisoned air, (a) descent of the diaphragm and (b) contraction of the stomach-muscle proper. Other more remote causes may effect some degree of increase of tension, as for example rectal spasm; but they may be disregarded: It should be borne in mind that occasionally they introduce a slight error.

The compression of the distended stomach, brought

about by diaphragmatic excursions, varies, as might be predicted, with the position of the trunk. It is most pronounced in the sitting position, the body bent forward. Here the stomach is evenly supported by the intestines, which block the lower portion of the abdominal cylinder; additional support being afforded by the

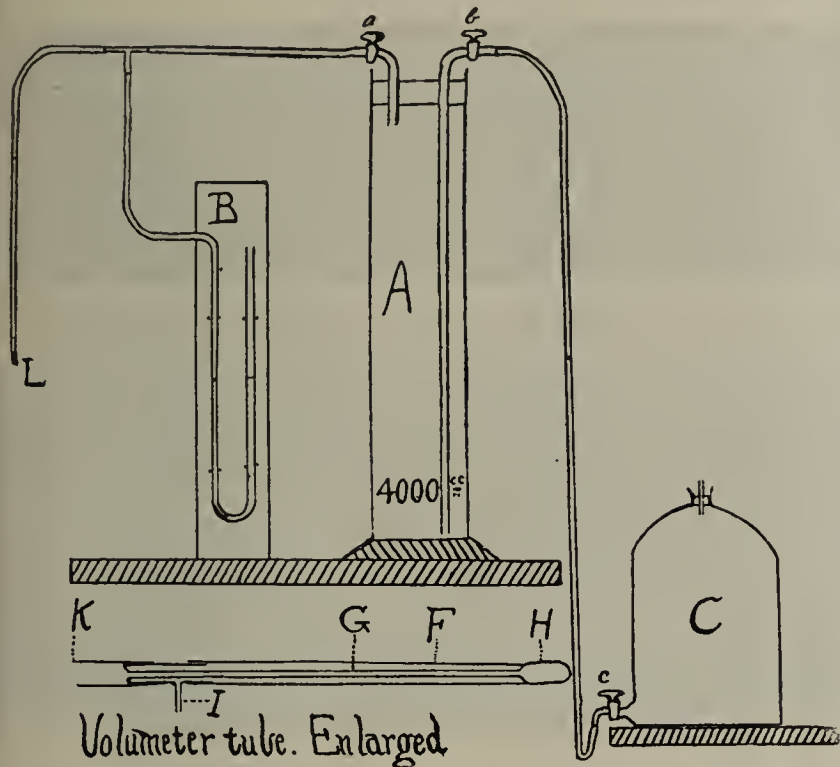


FIG. 1.—A new apparatus for determining the volume of the stomach and the contractile energy of its muscular walls. A. Recording cylinder graduated from zero to 4,000 cc. B. Wooden support with water or mercury manometer attached. C. Pressure bottle. F. Stomach-tube, soft rubber. G. Pressure-tube carrying vesicle. H. At extremity. I. Tube communicating with annular space between tubes and leading to an aspirator. K. Communicating at L with recording apparatus.

infolding of the anterior abdominal wall. It is somewhat less pronounced in the upright sitting, and is often nearly absent in the recumbent position.

The peristaltic wave will also be found to be affected by position, and it is probable that an uncomplicated wave is only obtainable when the subject is horizontal.

At the outset, it was assumed, that the stomach is rarely quite air-tight; it was therefore considered a wise precaution to take all measurements directly from the interior vesicle. One of the earliest and most surprising observations made, was that when inflated through an ordinary soft rubber stomach-tube, the stomach is quite air-tight and maintains for a long time constant tension.

The tracings here shown were made directly from the stomach without the intervention of a secondary membrane.

Method: One hour after a test-meal evacuate contents by aspiration without adding water; the fluid obtained is first measured, then brought into the filter; funnel at once for chemical examination.

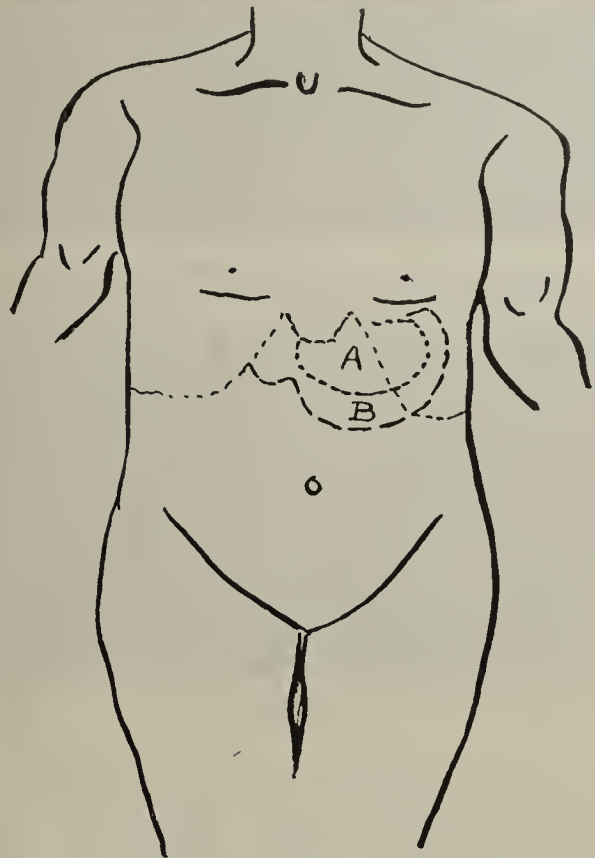


FIG. 3.

Wash out with warm water, never using over 500 cc. at one time, repeat several times, always remove completely the water previously introduced before repeating operation. Now detach the stomach-tube from aspirating bulb and attach to the manometer; this connection should be made through the medium of a long rubber tube carrying a glass T-tube at its extremity, the remaining open arm of the T serving for the attachment of a Davidson syringe.

The area of gastric resonance should be percussed out and mapped, before proceeding with inflation.

Inflation: Pinch off with the fingers of one hand the connection with the manometer and force air into the stomach till patient complains of pain or discomfort.

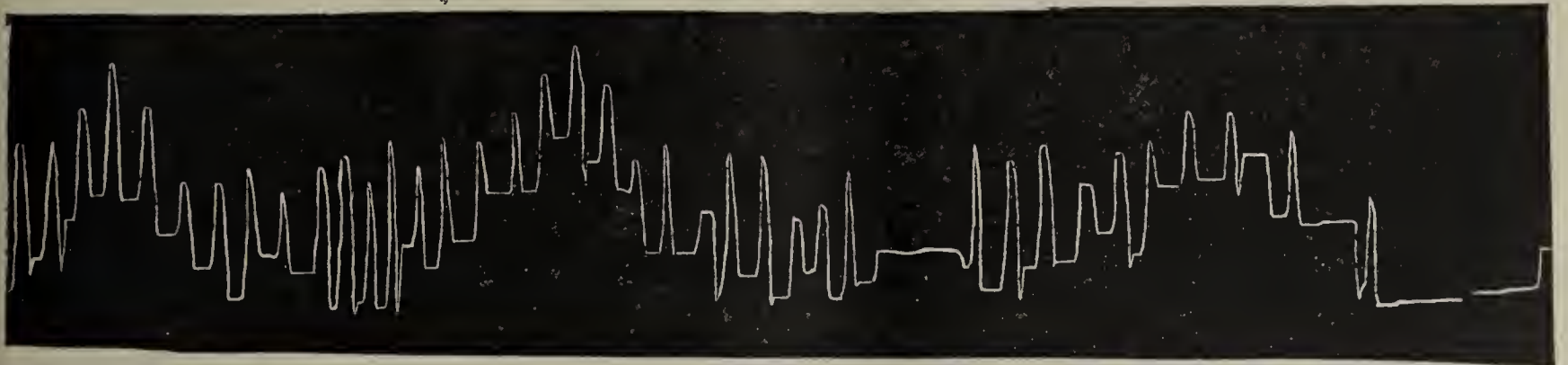


FIG. 2.—Normal stomach tracing. Patient sitting and inclined forward.

Not infrequently, however, cases present themselves which can only receive satisfactory investigation through the employment of the vesicle, otherwise air passes rapidly out of the stomach through the pylorus with a peculiar sizzling sound, and constant tension is only attained when the entire abdomen is quite tense.

This will very rarely occur before the manometer records a pressure of two inches or more. The fact that a pressure of two inches is easily borne has led to the adoption of this as the regular working-tension.

A very buoyant glass float, carrying a simple tracing-

device serves to record on the drum of the kymograph the excursions of the water-column.

CASE 1.—*Chronic Mucous Gastritis with Motor Insufficiency*, occurring in a man aged 41 years, a teamster, native of Sweden. His family history is negative; there is no transmitted neurotic taint, and his habits are temperate. His health

by movement. The attack lasted three weeks. Previous to the attack his bowel-habit had always been regular, but were variable ever since, constipation being the rule.

The present trouble began with pain in the epigastrium several hours after eating, loss of weight during the last year from 190 pounds to 150 pounds. He has occasional headache, excessive appetite, and constipation, but says he

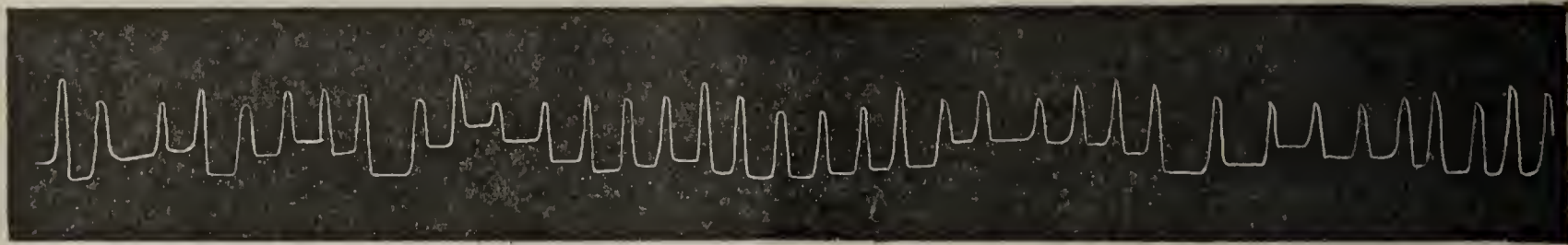


FIG. 4.



FIG. 5.

was good in early life and manhood, but he had gonorrhea 5 years ago, and twice since. He denies lues. He has had constipation since the fall of 1892. He has always been an immoderate eater.

At present he complains of a feeling of weight and uneasiness in the epigastrium some hours after eating, exaggerated by dietary excesses, but rarely painful in degree. He has a bad taste in the mouth, headache, lassitude, insomnia, chronic constipation, occasional nausea, but rarely vomiting.

Examination.—The patient is of the neurasthenic type, thin, but with good color, the pupils are equal and react to light; there is symmetric development; the abdomen is depressed, and the umbilicus everted.

The heart is negative to examination, the arteries soft, the pulse regular, with moderate tension. The blood-counts two hours after eating showed erythrocytes, 3,620,000; leukocytes, 7,400; hemoglobin, 80%.

The liver and spleen were normal; the abdomen was tender to pressure under the xiphoid cartilage, but negative elsewhere. The urine is pale, clear, with a specific gravity of 1.020; there is no albumin and no sugar, but a heavy phosphate cloud on heating; one or two hyalin casts were found. The superficial reflexes were intact, and the knee-jerks lively. A few enlarged glands were seen in the inguinal group. The stomach-contents were withdrawn one hour after a test-meal to the extent of 150 cc. There was some odor and much mucus, and free hydrochloric acid present; the filtered juice-digests coagulated white of egg freely and reduced Fehling's copper solution instantly. The position of the stomach before and after inflation is shown at A and B, Fig. 3. A tracing in the sitting position, inclined forward, is shown in Fig. 4, and a tracing in the horizontal position in Fig. 5.

The experiment was conducted quietly, the patient being under no mental or physical excitement.

CASE 2.—*Dilation with Loss of Motility, Arteriosclerosis, Contracted Kidney.*—The patient was a man, aged 42 years, boiler-maker, and a native of Ireland. His family history was negative and he was of temperate habits. He had been healthy as a child, but had gonorrhea at 18 years, and once since; he had syphilis in 1893 and had taken three months' treatment. In February, 1899, while in perfect health, he was seized with severe pain in region of umbilicus. The onset was sudden, and he had frequent bowel movements accompanied with pain and tenesmus; there was much blood in stools, and pain at the umbilicus always relieved

sleeps well and never vomits. Pain is always relieved by raising the contents of the abdomen upward and backward by pressure from below. The patient is fairly nourished, muscular, and has a good color; the pupils are equal and react to light; the tongue is fairly clean, there is symmetric development of thorax and abdomen, but distended



FIG. 6.

venules on the free costal border on both sides. The hands are cold, purple, and there is a fine tremor in the right. The abdomen is prominent. On examination of the heart no visible impulse was disclosed; the apex-beat was in the mid-mammillary line, one inch below the nipple, the dullness increased slightly to the left. There is an accentuation and reduplication of the second pulmonic sound, and marked

accentuation of the second aortic. The radial and brachial arteries are hard and tortuous, the pulse shows somewhat high tension, but is regular and synchronous. Blood-count two hours after eating shows erythrocytes, 5,160,000; leukocytes, 8,600; hemoglobin, 80%. The liver is enlarged, the lower border smooth, and palpable one inch below the costal margin. The spleen is normal. The glands are enlarged in

sterility was the cause. At the present day, however, no such statistics can be given because wilful prevention of conception has, among a portion of the community, almost become the fashion. Dr. Woods Hutchinson, in "The Gospel According to Darwin,"¹ a small book which I urge you most strongly to read,



FIG. 7.

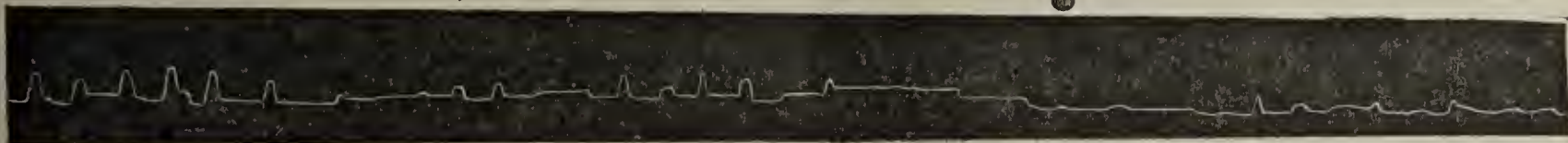


FIG. 8.

the inguinal region, on both sides and in both posterior cervical triangles. The superficial reflexes are intact, the cremasteric slight, and the kneejerks are lively. The urine is clear, dark in color, with a specific gravity of 1.032, a faint trace of albumin, no sugar; hyaline and finely granular casts exist in large numbers. The stomach-contents were 300 ccm. in amount, faintly acid in reaction, but with no free hydrochloric acid; it reduces Fehling's copper-solution at once. The filtered gastric juice digests coagulated egg-albumen after an addition of dilute hydrochloric acid.

The position of the stomach before and after inflation is shown by A and B in Fig. 6.

A tracing in the recumbent position is given in Fig. 7, and a tracing in the sitting position, inclined forward, in Fig. 8.

Inspection of the tracing from the normal stomach shows it to be double, an abrupt, frequent diaphragmatic wave being superimposed on one much slower and of longer duration. This last is considered to be of peristaltic origin, the ratio between the waves in the normal tracing is nearly as 18 to 1. In the tracing of Fig. 3 the ratio is evidently altered, while in Fig. 6 it is quite atypic, some diaphragmatic influence being evident.

The average time-interval for each tracing was 2 minutes and 30 seconds.

It is suggested that the height of the peristaltic wave measured from base line to apex gives in terms of a water-column a direct measure of motility. Data now available show this to vary between $\frac{3}{4}$ and $1\frac{1}{2}$ inches in health.

ARE CONSANGUINEOUS MARRIAGES INJURIOUS TO THE RACE? *

By LAWRENCE IRWELL, M.A., B.C.L.,
of Buffalo, N. Y.

(Concluded from page 132.)

SANSON says the influence of consanguineous marriages is to raise heredity to its highest power, and according to Lacassagne, it is not, in a word, the consanguinity in itself which is healthy or morbid, but the ground upon which it is exercised. I refrain from wasting your time in attempting to discuss this point any further. The 3 authorities I have quoted, probably gave accurate statistics of childless marriages in which

says, "The latest and most extraordinary development from the theory of the sinfulness of sex, is that which is, in these latter days, brayed into our ears from every 'suffragist' platform—that child-bearing, instead of being a factor in woman's development, is absolutely a hindrance to her higher education, a clog upon her freedom, and a mortal enemy of 'culture.' In fact, as a 'club woman' tersely expressed it to a friend of mine a few months ago, 'Only fools bear children.' There is only one thing which need be said in regard to this delusion, and that is, that it has its uses. It prevents the continuation of the breed. Neither the 'emancipated' woman at one end of the scale nor the prostitute at the other, propagate their kind, and society has reason to be thankful in both cases."

The percentage of unfruitful marriages, whether you take consanguineous unions or not, is dependent upon the country under investigation, upon the particular period selected for inquiry, and upon the class of the community to which the statistician devotes his attention.

Bearing in mind the lamentable fact that barrenness is no longer the only cause of the absence of children, I feel that the most any cautious investigator can assert is that sterility as a consequence of the marriage of blood-relatives has not been proved.

Breeders of stock frequently breed "in-and-in" for some years, not only with impunity, but with marked benefit. But this fact, while going to prove that it is not the mere blood relationship of the parents which induces the degenerate conditions so often found among the children of consanguineous unions, can very seldom be advanced as an argument in support of the marriage of near kin. The farmer only permits the more perfect members of his flocks and herds to continue their kind, and for this reason the "in-and-in" breeding is innocuous, unless continued so long that dwarfing followed by sterility occurs, which appears to be the case with some animals. Under like conditions a limited amount of in-breeding among ourselves would be harmless. But where are we to look for the perfect human family? At the present day such families are very rare indeed. The laws of evolution have been so strained and perverted by our so-called "civilization" that almost every family has a defect of some kind, and as all such imperfections are transmitted and increased by intermarriage such unions should be discountenanced.

* My original intention was to read this paper before the Sociological Section of the American Association for the Advancement of Science. Its length, however, made that course impolitic, if not impossible.

The neo-Lamarckian school of biology, which believes that "acquired characteristics" are usually passed on from one generation to another, admits that noncongenital characters of a pathologic nature are liable to disappear when the individual bearing such characters chooses a partner free from similar defects. This admission is of the nature of a concession to neo-Darwinism. The natural tendency, say the followers of Mr. Spencer and the late Professor Eimer, is for the offspring to revert to the normal type, so that, unless the defect is very deeply impressed upon one parental organism, it may not reappear in the offspring. It is necessary to remember, however, that certain disorders, such as gout and hemophilia, generally descend in the male line, allowing the females as a rule to escape. The former disorder is said by Sir William Roberts² to be an example of an acquired pathologic characteristic which is hereditary, a claim which has not yet been made for an abnormal tendency to bleed. Leaving controversial questions on one side, it may safely be asserted that when both parents are possessed of a physiologic or pathologic congenital characteristic, that characteristic is almost certain to be repeated in an aggravated form in the offspring.

If there be any congenital taint in a family, each member will have inherited more or less of it from the common ancestor. Take the case of cousins, the descendants of a common grandparent who was insane, and of an insane stock. Here the cousins are certain to have inherited more or less of the insane diathesis. Even if the taint had been largely diluted in their case by the wise, or more likely fortunate, marriages of their blood-related parents, yet they will have inherited a certain tendency to nervous disorders, and if they marry near relatives they must not be surprised if that taint appear in the form of serious disease in their descendants. Some of the children of such parents are usually idiotic or epileptic, and the relatives wonder where the imperfection came from. It may have happened, in some instances, that neither the parents nor the grandparents of the children have shown any outward signs of the tendency to the disorder which they have inherited and have handed down, and not looking further back, the bold assertion is made that insanity and epilepsy are unknown in their family. The truth is that very few of us are in possession of any accurate information concerning our ancestors further back than our grandparents, and a family history of less than four generations has only a limited value.

The popular impression of the heredity of disease is that a specific malady is passed on from one generation to another. The following quotations from recognized authorities will show that this idea is erroneous: Moreau, of Tours, in his "Psychologie Morbide," says, "It shows an incorrect conception of the law of heredity to look for a return of identical phenomena in each new generation." Morel, the author of "Traité des Dégénérescences," writes, "We do not mean exclusively by heredity the very complaint of the parents transmitted to the children, with the identical symptoms, both physical and moral, observed in the progenitors. By the term heredity we understand the transmission of organic dispositions from parents to children."

While anxious to avoid any argument which might partake of an *a particulari ad universale* character, I venture to mention three families in which intermarriage has been quite common. The present ruler of Great Britain, Queen Victoria, is the daughter of

cousins; she married a cousin and has a large family of sons and daughters, most of whom, as well as her grandchildren, are unquestionably normal. There have, of course, been marriages outside of the family. As the blood of the Guelphs has never been absolutely of the best, considering the amount of intermarriage that has taken place, it is surprising that the signs of degeneracy are not markedly conspicuous.

The family of the English Earl of Derby has intermarried very frequently since its foundation about five hundred and fifty years ago. The fourteenth earl, the son of first cousins, was prime minister. Of his three children, the eldest was a statesman of quite the first rank. The present holder of the title, his brother, has been secretary for war and governor-general of Canada. The third is Lady Emma Talbot.

The Rothschilds, the world-renowned bankers, have usually married cousins, and marriages outside the family have been the exception. In spite of this the decay of these hereditary financiers appears to be very far distant. If one is of an orthodox turn of mind, the escape of the Rothschilds from idiocy, insanity, and deaf-mutism may be attributed to the fact that they belong to "the chosen race."

In consanguineous marriages the real danger is in the strong probability that both parents bear some distinct taint of degeneration, which is liable to be increased in their children, but which might possibly disappear if each married a person not bearing the same or some closely allied character. The blood-relationship in itself is not to blame; it is the double tendency to disease which brings the injury to the children. The marriage of two individuals of the phthisical type, whose families were strangers to each other, would be as productive of evil as the marriage of first cousins who were phthisically inclined.

It will not be out of place here to refer to the similarity of temperament produced by a common environment, which is a potent factor in the production of pathologic phenomena. Persons living under similar and unhygienic conditions, working at the same unhealthy occupations, or indulging in the same dissipations, appear to acquire like disorders. Hence it happens that individuals who are not related by blood are of identical temperament. What I propose to call "identity of environment" has been a cause of decay in the aristocracies of Europe, although acquired disorders are not, in my opinion, "hereditary" in the true sense of the term. I have frequently pointed out, however, that any mode of life which debilitates the soma (to use Weismann's terminology), must react upon the germ-plasm, just as the starvation of a host will injure a parasite living upon it. This condition may be called "pseudo-heredity" for want of a better name, and it explains to some extent the manner in which "identity of environment" acts injuriously upon the race. The important part which it plays, both positively and negatively, is well illustrated in the case of the portion of the community to which I have the honor by birth to belong—the Jews. The intermarriage of blood-relations has taken place from the earliest times, without, as far as I can judge, any harmful results. Indeed, for centuries the Jews have maintained a physical and intellectual standard well up to the average, if not above it, in spite of frequent oppression. It must be admitted, however, that until a few decades ago "identity of environment" was absent. The Jew was for centuries a wanderer upon the face of the

earth; a veritable rolling stone, though differing from the proverbial rolling stone in its one great characteristic. For many years he was without a country, consequently without patriotism, and was comparatively seldom a soldier. But, except upon the battlefield, there was no spot on the earth's surface where riches and honor were obtainable that the Jew was not to be found. In the past he has had few ties and has loved one country little better than another, two facts which account for his roaming all over the world in search of wealth. This incessant wandering produced such diverse temperaments that anything approaching the identity of character, to which I have referred, was impossible. Within the past sixty years, however, the Jewish mode of life has materially changed. Having abandoned our nomadic habits, we have become Englishmen, Americans, Germans, or Frenchmen, and we have already acquired some of the vices and some of the diseases, as well as a few of the virtues, of the various nations to which we have attached ourselves. For example, *tuberculosis pulmonalis*—sometimes called "the great white plague"—which is responsible for from one-fourth to one-seventh of all the deaths in the civilized world during any year, appears to attack us more frequently than it formerly did, although phthisical Jews are still far from numerous. To put the facts in another way—the roaming of the Semites of old, aided by frugality, appears to have prevented the acquisition of the tuberculous diathesis, a predisposition which every sufferer from pulmonary tuberculosis inherits or acquires prior to the attack of the Koch bacillus. Again, Jewish drunkards have been very uncommon in the past, the late Dr. Norman Kerr, in his book upon "Narcomania," relating that he has been consulted for inebriety by only one Jew, although his advice for this curious disease has been sought by a great many persons. Unfortunately, conditions have changed, and excessive indulgence in alcoholic drinks, often in quantity conversationally called moderate, is no longer as great a rarity among well-to-do Jews as it used to be, a result, in my opinion, of the environment with which we have now surrounded ourselves. If we Jews have a sincere desire to live in posterity, in addition to shunning the various environments, which have been a productive source of disease and decay among so many of the civilized peoples of the world, we must marry no later than our thirtieth birthdays, otherwise the large families, so frequent among the Jews of early times, are not likely to be continued. Without asserting that any advantage will accrue from the preservation of pure Semitic families, I would urge that their blood is more often free from taint than is that of any other people; and that, when such is the case, and where the temperaments of the contracting parties are unlike, close relationship need not be regarded as a bar to marriage. While the Jewish character, as indicated by the type of face, may appear to the casual observer to be permanently fixed, there can be no reasonable doubt that, after a few generations of intermarriage with persons not of Jewish blood, the distinctive characters, both physical and mental, would disappear.

The English Jews marry their first cousins to the extent of 7.5% of all marriages,³ against a proportion of between 2% and 3%⁴ for England generally. If, therefore, unions of cousins tend towards sterility, that tendency ought to be apparent among the Hebrews of the United Kingdom. Statistics upon this point are quite unnecessary, since large families among the Eng-

lish Jews are recognized as the rule, not the exception. It is a remarkable fact that marriages between Jews and non-Jews are somewhat infertile. In Prussia these marriages have been separately registered since 1895, and between that year and 1881 there was an average birth of 1.65 to a marriage, whereas, during the same period pure Jewish marriages resulted in an average of 4.41, or very nearly three times as many. In Bavaria, between 1876 and 1880, the numbers were only 1.1 per marriage against 4.7 to purely Jewish marriages. Whether this conspicuous infertility implies greater sterility I cannot say. But Mr. Joseph Jacobs⁵ investigated 71 marriages between Jewish cousins and found that 5.4% of them were childless, while in 56 cases of mixed marriages 9, that is, 18%, were nonproductive. There is, it is true, a possibility that the comparative infertility of unions between Jews and non-Jews may be due to the higher age at which such marriages generally take place. There is a feeling against them among all strict Jews, which is only likely to be overcome after independence of thought has been reached. I cannot convince myself, however, that this attempted explanation is of much value. We must not assume, of course, that the crossing of any two races has the same results as the crossing of Jewish and non-Jewish Europeans may seem to have.

In spite of what I have said in reference to the Jews, consanguineous marriages must, as a rule, be dangerous in civilized communities like those of this country and Great Britain. Where the process of Natural Selection has been so markedly modified, they should not be entered upon. But we must admit that just as we can cultivate by "in-and-in breeding" pathologic or degenerate characters, such as the insane, tubercular or uric-acid diatheses, so it is possible, by means of the intermarriage of those belonging to a family noted for some physical or intellectual excellence, to fix that good character in the family. Thus the marriage of cousins in whom mechanical or artistic talent is prominent will, in all probability, produce children in whom the particular talent of the parents will be still more strongly marked. A good example of this may be found in the numerous family of Bachs, the musicians, who freely intermarried, and elevated their talent, possessed to all, to the level of genius in some of their members.

In this manner many characteristics which have been congenital with both parents may be transmitted, possibly deepened with each transmission, and perhaps fixed as a constant character in the family. Moreover, as congenital variations—what may be called "accidental characters"—are undoubtedly transmitted in many instances, especially the father's peculiarities to his sons and the mother's to her daughters, these may be, to some extent, fixed in a family. This is constantly done by breeders of our domestic animals. But I am unable to find any satisfactory evidence that man can pass on to the next or some future generation any quality that he acquires during his lifetime, although I have very carefully studied the cases cited by the late Professor Eimer and Mr. Herbert Spencer.⁶ We know, of course, that if a parent injures his constitution by "riotous living" his children will suffer. But this is not true heredity, and is merely an instance of pseudo-heredity.

Supernumerary fingers and toes have been a common deformity in the human species since the days of David, when "Jonathan, the son of Shimei, the brother of David," killed in battle the Philistine of great stature,

who "had on every hand six fingers, and upon every foot six toes, four-and-twenty in number." Concerning this variation, Lawrence, in his lectures on "The Natural History of Man," says: "If the six-fingered and six-toed could be matched together, and the breed could be preserved pure by excluding all who had not these additional members, there is no doubt that a permanent race might be formed, constantly possessing this number of fingers and toes." This assertion is by no means extravagant, for congenital peculiarities in one animal are often taken advantage of by cattle-breeders in order to reproduce and fix them as constant characters that are desired. The best example that I can recall is the Ancon or Otter sheep. The peculiarity of this variety of the sheep family, which became very popular, but which has now been allowed to become extinct, first appeared in a somewhat deformed lamb, born of ordinary parents, in Massachusetts, in 1791. The animal was of curious structure, and his offspring in many instances had the same characteristics as he had, which were shortness of the limbs, and great length of the body in proportion to the legs. The joints were exceptionally long and the forelegs crooked. The principal reason for the propagation of this variety of sheep was the inability of the animal to jump over fences.

Although consanguineous marriages might be used to develop desirable characters in some families, such attempted cultivation of genius is seldom to be advocated for the following reason: Few families are perfect; most of them possess, at least, some pathologic tendency, and while the desired character was being deepened and fixed by successive consanguineous unions, in the majority of instances some very undesirable character would be simultaneously built up. The latter would increase as surely as the former, and on reaching the necessarily fatal degree sterility would make its appearance. For this reason, if there were no other, family consanguinity should generally be avoided in marriage, although there may be exceptions to the rule.

From time immemorial it has been known that "the introduction of new blood" has a beneficial influence upon the family or the race, and proof of the truth of this old-time doctrine is to be had on every hand, both in the human family and among the lower animals. I have been informed that the ladies of the German capital, Berlin, who are most noted for their beauty and their intellectuality, are the descendants of French ancestors who married into Prussian families. In Ireland, however, there is positive evidence of the beneficial effect of "crossing." In the counties of Tipperary and Limerick, where great numbers of Cromwell's English soldiers settled, the people are noted for their splendid physical development and their courage, though not for their wisdom or discretion. In Ulster, where the lowland Scots placed there by James I of England have blended with the Celt, the present inhabitants are physically superior to the people of any other part of the United Kingdom, while in energy and mental capacity they have few superiors. I think I may safely assert that the superiority of mixed races is almost always evident to the traveler in Ireland, if he is a careful observer of the human species. Pritchard, in his "Researches into the Physical History of Mankind," says, "In some parts of Ireland, where the Celtic population of that island is nearly unmixed, they are, in general, a people of short stature, small limbs and features; where they are mixed with English settlers, or with lowlanders

of Scotland, the people are remarkable for fine figures, tall stature and great physical energy."

Now as to the lesson which I venture to draw from such evidence as I have presented. We learn in the first place that consanguineous unions are, in the great majority of cases, undesirable, not because they originate diseases *de novo*, but because they intensify existing disorders or diatheses, from which very few families are exempt. With our incessant efforts to counteract the process of natural selection, such marriages are becoming more and more dangerous every year, and, as a general rule, they should be discountenanced, even in the most healthy families, for there is always a possibility that such unions may wake up some dyscrasia which has been latent for several generations.

Secondly, consanguineous marriages should not even be thought of in any family in which idiocy, insanity, epilepsy, congenital deaf-mutism, hare-lip, cleft-palate, the phthisical or lithemic diatheses have occurred, for all of these diseases or tendencies towards disease may be handed down from one generation to another. Permit me to urge, however, that neither identical disorders nor identical symptoms need be expected, for the transmutation of pathologic conditions is an everyday occurrence.

As it is not improbable that cancer is a microorganic malady, which only attacks those persons who have a proclivity towards it, families in which cancer has appeared, no matter how far back, should avoid consanguineous unions.

Finally, I would urge that frequent marriages of persons whose environment has been very similar is injurious to the race, and that extreme exclusiveness in marriage is not commendable. If the supreme desire of the aristocrats of this republic is to perpetuate their name, they must oxidize their "blue" blood to arterial red by marrying into families which have not been exposed for three generations to the enervating influences of city life.

And if the diseased and the degenerate insist upon marrying—as they certainly do—it is their duty to consider the next generation. I implore them in the name of science and in the interest of humanity to mitigate their innate unfitness by the selection of suitable consorts. Let the feeble marry the robust, let the neurotic espouse the level-headed, and brave the anger of the blind god Cupid.

In this paper I have used the term "deaf-mutism" in the manner in which it is usually used by the medical profession. I must add, however, that it appears to me—I am not a physician—to be in every instance a symptom and not a disease.

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- ² Allbutt's System of Medicine, vol. iii, p. 181.
- ³ Joseph Jacobs, in *Journal of Anthropol. Inst.*, vol. xv, p. 26.
- ⁴ George Darwin's Statistics.
- ⁵ "On the Racial Characteristics of Modern Jews." *Journal Anthropol. Inst.*, vol. xv, pp. 26-28.
- ⁶ Professors Haeckel and Virchow have not told us upon what evidence their faith in neo-Lamarckism is founded.

Bone-Abscess Due to the Typhoid Bacillus.—Paul Bush and J. O. Symes (*Practitioner*, April, 1900) conclude that scattered foci of suppuration arise as follows: the typhoid bacillus passes from the bowel into the portal system, is carried to the liver and enters the bile-channels and finally the gallbladder, when suppurative cholecystitis will form. Or a general blood-infection may take place and local foci of suppuration are excited either by the lodgment of the bacteria in tissues of low vitality, or by masses blocking minute vessels. [M.B.T.]

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GEORGE M. GOULD, M.D., *Editor*

Collaborators

JOSEPH SAILER, M.D.
D. L. EDSALL, M.D.
D. RIESMAN, M.D.
J. M. SWAN, M.D.

M. B. TINKER, M.D.
GEO. B. WOOD, M.D.
WILMER KRUSEN, M.D.
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The Medical Service in South Africa.—The British public is having the same kind of disagreeable sensation that the American people had after the Spanish War. Some one has come home from South Africa and has pitched right and left into the medical service of the war. The critic is Mr. Burdett-Coutts, who has the advantage of having a seat in Parliament from which he can make himself heard. In a recent speech (June 27) he distinctly stated that grave abuses have existed, especially with reference to the distribution of medical stores, and as to the prevention of enteric fever. As we understand, Mr. Burdett-Coutts does not attack the *personnel* of the Army Medical Corps, but on the contrary, speaks highly of the devotion to duty of both surgeons and nurses. It is the organization and administration of the service that are especially criticised by him, and we take it, his criticism indirectly applies to the staff and line officers for not taking more council with the medical authorities. This is possibly only another phase of the nasty personal feeling that exists between the general and the medical staff in the British Army. This feeling has grown largely out of the fact that the English Army has been made the exclusive preserve of the privileged and wealthy classes, who affect a caste superiority over noncombatant officers (as they call their surgeons). As many of the disasters of the British Army in the South African War are attributed to the incapacity of these social favorites, it is to be hoped that, if these men are also, even indirectly, responsible for mismanagement and abuses in the medical service, Mr. Burdett-Coutts will succeed in holding them up to the public gaze. If a supercilious disregard for medical and sanitary science is to be added to their other shortcomings, they will, indeed, appear in a most unfavorable light. Unfortunately this attack by Mr. Burdett-Coutts is open to the suspicion of being actuated by partisan spirit—just as such attacks are too apt to be in the United States. We trust, however, that if there is anything in his critical grist, it will be threshed out; and for this purpose the whole subject has been referred by the British Government to a commission of eminent citizens.

Medical Colleges Should Live Up to Their Announced Requirements.—An earnest young physician of high scientific attainments, having been recently appointed to a teaching position in a certain medical

college in an inland city, made this remark to a professional friend: "I am ashamed for my college and myself when I come to examine the papers that my students present. The lack of a proper education in English is so apparent that I feel certain half of our students could not pass a rigid examination for entrance into a good high school." Yet the college with which he is connected professes to live up to the requirements of the Association of Medical Colleges. A great deal of the professional education given therein is quite up to modern standards,—but some of it does not come up to what it professes to be. Faculties and professors need not imagine that the students themselves are blind to the inefficiency of methods that characterizes some of the colleges. The young men realize their own shortcomings and the shortcomings of their instructors only too vividly. But some of them become impressed with the fact (?) that it is all right to mislead each other and also the public, and from this class the quacks of the future will be recruited. Charlatan professors make charlatan graduates. Ignorance begets ignorance. That "professor" who feels that he must, in the spirit of loyalty to his college, supply at least three students each year, even if he recruits all his barber, drug-clerk, or coachmen acquaintances, is doing a woful injustice to the whole profession. Let the schools cast out such men from the ranks of the faculties. And if the casting-out process is so extensive as to result in the final disintegration of a few faculties or the disappearance of a few schools which find it practical to "amalgamate" so that one college will eventually do the work now performed by three, the mourning will be neither very deep nor very long continued.

Mendicancy and Vagrancy.—Men and women are not beggars and tramps by choice, and careful, systematic inquiry would often disclose some *fundamental* reason for deviations from the normal in this respect. At a recent meeting of the Association of German Alienists Bonhoeffer (*Wiener medicinische Wochenschrift*, 1900, No. 27, p. 1333) reported the results of a study of 400 mendicants that came under his observation as prison-physician in Breslau. The large proportion that were ineligible for military service (70%) and the barrenness of the marriages (half of the marriages were sterile, 120 children being born as a result of 100 marriages) were especially marked features. Half of those

examined presented hereditary defects (9% actual psychoses, 12% epilepsy, 29% alcoholism), taking into consideration only recent ancestors. The intellectual level was extremely low. Not less than 22% could be considered imbeciles. The first penal offence was generally theft; after this in frequency followed offences attributable to alcoholism (crimes against person, etc.). Acquired psychoses were present in 6%. Eighty-seven per cent. were habitual drunkards, the alcoholism being of degenerative origin in the majority and acquiring independent significance in not more than one-fifth. The first offence was committed principally between the fifteenth and the twentieth year (beginning of the period of self-support), next between the twenty-fifth and the thirtieth year (period of greatest competition) and then between the thirty-fifth and the fortieth year (alcoholic ruin). In accordance with the period at which criminality begins two groups of cases can be distinguished. In the one, socially the more dangerous, imbeciles and epileptics play the most important part; in the other alcoholism and acquired psychoses. The fertility of the latter is twice as great as that of the former.

The Title Doctor.—Mr. Jasper, Borough Superintendent of Schools in New York, deserves the thanks of the medical doctors, and as he is getting anything but thanks from the philosophic variety we should not be slow with our gratitude. He became tired of the degree-possessing doctors, who savagely claimed their titles, and of those whose meekness in accepting them was equalled by their undesert, and he cut the difficulty by commanding that without exception all should be plain Misters. It is so easy now to get any sort of a degree from our modern colleges that our professional title was in grave peril of being taken from us. In view of the invasion of pothouse politicians, stock-brokers, and the rest, among the LL.D.'s, of the tremendous growth of Doctors of Philosophy, Divinity, Osteopathy, Christian Science, etc., etc., it was fast becoming impossible for one to know whether a person addressed as Doctor was learned in medicine, in anything, in everything, or in nothing; whether he had inherited or bought a degree, or had carelessly assumed it; whether he practised, or only preached. Some are born erudite, some achieve erudition, and some, we suppose, do have it thrust upon them. Plainly, the only thing left for the poor medical man, if he would be differentiated at all, was to accept the Western colloquial degree of Doc. Certainly none more aristocratic than ourselves would consent to be called Doc. And yet we have in English a strange and pressing need for a general term wherewith to address strangers. In all other nations one can address a man or a woman by a general term appropriate and polite. The taciturn Englishman, when his language was making, felt no such a need. The friendly and democratic American does

feel the need and most acutely,—“Mister” and “Lady” have been devised by the waiter. The ingenious aristocratic American, it would seem, has determined upon a partial solution of the great problem. He first tried Colonel, but peace is against that; Senator would have done nicely, but the number admissible to the Senate is limited and not everybody can be a rich politician. Everybody, however, can be learned or can so easily be certified as learned, and hence we may safely address any self-important man hereafter as Doctor.

The Cost of Publishing a Medical Journal.—We sometimes receive letters implying that the publishers and editors of medical journals must be “making a mint” of money; asking why we do not discontinue advertisements; and criticising the financial management in general, very general, terms. We wish such critics would weigh the public statement of the trustees of the American Medical Association read at the last meeting and since published in the *Journal* of the Association. Including the figures for the two preceding years we find the

	1897.	1898.	1899.
Expenditure of Journal office . . .	\$45,637.67	\$58,202.21	\$77,641.01
Subscriptions, and membership fees, and sales } . . . {	not differentiated.	42,931.41	55,513.25
Balance		\$15,268.10	\$22,127.76
Advertisements		23,629.91	33,760.82
Profits		\$8,361.81	\$11,633.06

These figures illustrate how close is the margin of profit in a journal with a printing plant worth \$21,000, whose subscription price is \$5 a year, and which has the tremendous advantage of the Association behind it,—each member being a subscriber.

When we come to examine in detail the reason for this we find it to consist principally in the nonpayment of subscriptions, and the need of a large number of free copies. Thus, according to the trustees' report, we find that the membership and registration fees and dues were in 1899 as follows:

Registration fees at Columbus Meeting	\$ 6,125.00
Membership fees one year	32,840.00
Subscription fees one year	9,483.00
Total	\$48,453.00
Divided by 5	9,690,

as the actual number of paying subscribers or members for 1899.

According to the report the weekly average of copies printed was:	13,672
From which deduct	9,690
Leaves copies unpaid for each week average	3,982

To learn what portion of these 4,000 unpaid-for copies are unpaid subscriptions and what portion are used as sample copies we quote again from the report, the “Count of Mailing List:”

	1899.	1900.
Copies to members and subscribers on Jan. 1 . . .	10,450	13,078
Per issue, an average for the year of		11,754
Weekly average of copies printed		13,672
Weekly average for free distribution		1,908

In round numbers, therefore, 2,000 subscribers do not pay cash for their subscription, and 2,000 copies are used as sample copies to get new subscribers.

In another way the financial profits of the whole history of the Association viewed as a business investment may be summarized as follows :

Cash on hand, January 1, 1900	\$ 4,131.36
Invested in loan and U.S. bonds	13,812.50
Recapitulation of inventory	\$21,031.30
Less unpaid on same	5,935.00
	15,096.30
Total, half century profits	\$33,040.16

It is plain that as an investment a capitalist would not look upon this showing as very alluring. Of course we are most keenly aware that the Association was never meant to be viewed in that way, as it is actuated by other ideals than financial ones. We reproduce the figures merely to remind physicians to pay their subscription accounts and to endeavor to set right a few physicians who have false ideas of medical journalism and its methods. Success in it can only be attained by a large income from advertisements. Without that \$33,760.82, derived from its advertisers last year, it is painfully evident that the *Journal* of the Association would have been ruined in a year.

If this is so as regards our most esteemed contemporary, with a subscription price of \$5 and with a paying list of annual subscribers presented without commission or seeking, how true it must be with a journal like our own published at \$3 a year, without a printing-office plant, and compelled to hunt up its subscribers! We infer from the trustees' figures that each copy of the *Journal* sent to the 9,690 paying subscribers last year cost to make and mail over eight cents each, or over \$4 annually. As the PHILADELPHIA MEDICAL JOURNAL is published by a solvent company each copy is produced at less than six cents, and by the year at less than \$3. We are glad there is such a professional journal as that of our honored colleague freed from the commercial slaveries that bind the rest of us. Were it not against command we should envy him this and many other blessings. Not the least would be the \$90 above the salaries allotted him each week by the generous trustees for editorials. If we were only competent, if we could hope to reach the standard,—we would speedily apply for a humble place on the editorial staff!

Recrudescence of Epidemics of Infectious Diseases.

—It is now well recognized that diphtheria may persist in latent form for many months, and that persons may carry virulent diphtheria-bacilli in their throats or elsewhere for a long time, and be a constant menace to those with whom they come in contact so long as the bacilli persist. It is also well known that typhoid bacilli may persist in some of the tissues for more than a decade, and that consequently persons who have had typhoid fever may be capable for a long series of years of infecting their surroundings. Such observations have thrown a new and strong light upon the mode of infection in many cases which previously seemed in this regard to be absolutely inexplicable.

The fact that diphtheria and typhoid bacilli, as well as certain other organisms which are readily recognizable, may persist in virulent form in a person who has had these diseases has been demonstrated with relative ease, because the organisms causing the diseases are well known. Some important observations bearing upon the question of the spread of infectious diseases of more obscure etiology are described by Lippmann (*Deutsche med. Woch.*, June 7, 1900) and they are of much importance in leading to an understanding of the frequent recrudescence of epidemics of infectious diseases, particularly in institutions. The most striking case was that of a boy who had a typical attack of scarlet fever in which the tonsils and glands of the neck were much enlarged. The glands remained large after the attack had passed, but he apparently recovered entirely after normal desquamation. Some weeks afterward hot applications were made over the glands in the attempt to reduce the swelling. The glands did decrease in size, but there was at once another outbreak of scarlet fever with typical symptoms, course, and desquamation. One could scarcely escape the impression that the glands had contained the organisms which cause the disease, and that with their rapid reduction in size these organisms reached the circulation again and caused a new attack. Lippmann describes a number of other cases in which there was apparently a persistence for years of latent scarlet fever associated with enlargement of the glands; attacks more or less closely resembling scarlet fever appearing repeatedly after a typical attack of this disease and persistently recurring for years until the glands were removed, or until the swelling of the glands had disappeared. He also mentions analogous occurrences in other diseases, particularly directing attention to similar recurrences of erysipelas, and states very properly that we must always suspect that recurrences of infectious diseases may be seen or that the disease may be transmitted to others so long as there are evident remnants of the disease in the form of glandular enlargements or other macroscopic changes. Probably there is often the same danger even when macroscopic changes are not apparent. While the observations do not contain an essentially new idea they do furnish new evidence that the danger of transference of infection is by no means past when the ordinary evidences of the disease have disappeared, and that we must strive to discover more satisfactory methods of getting rid of the remnants of infections and of learning when danger is past.

Medical Sermonets, No. 21. A Plea for the Humanities in Nursing.—The nursing profession has yet to find its historian, and when he (or she?) shall commence his work he can hardly do so with a later reference than to the story of Adam and Eve, in Genesis. Nursing must have begun with the first labor, or at least with the first baby. To nurse is to nourish, and the etymology of the word shows that the professional use sprang from the most primal of

needs and the most sacred of affections. In the earliest historic times, and in those prehistoric days echoed by folklore, sacred writings, legends, and poetry, we find that suffering and illness rarely failed to call forth that tender helpfulness from which has come the modern nursing profession itself. In the Arthurian legends this function of women was so well-recognized and fulfilled that we find it constantly alluded to in all the writings. How instructive and spontaneous it has been, and how clearly it sprang from religion and love in our Puritan ancestors is manifested by the following quotation:

"But that which was most sadd & lamentable was, that in 2. or 3 moneths time halfe of their company dyed, espetially in Jan: & February, being y^e depth of winter, and wanting houses & other comforts; being infected with y^e scurvie & other diseases, which this long voyage and their inacomodate condition had brought upon them; so as ther dyed some times 2 or 3. of a day, in y^e foresaid time; that of 100. & odd persons, scarce 50. remained. And of these in y^e time of most distress, ther was but 6 or 7. sound persons, who, to their great commendations be it spoken, spared no pains, night nor day, but with abundance of toyle and hazard of their owne health, fetched them woode, made them fires, drest them meat, made their beads, washed their lothsome cloaths, cloathed and uncloathed them; in a word did all y^e homly and necessarie offices for them wth dainty & quessie stomacks cannot endure to hear named; and all this willingly and cherfully, without any grudging in y^e least, shewing herein their true love unto their friends & bretheren. A rare example & worthy to be remembered. Tow of these 7. were Mr William Brewster, ther reverend Elder, & Miles Standish, ther Captein & military comander, unto whom my selfe, & many others, were much beholden in our lowe & sicke condition. And yet the Lord so upheld these persons, as in this general calamity they were not at all infected either with sicknes, or lamnes. And what I have said of these, I may say of many others who dyed in this generall vissitation, & others yet living, that whilst they had health, yea, or any strength continuing, they were not wanting to any that had need of them. And I doute not but their recompence is with y^e Lord."—*The Bradford History of the Plymouth Plantation.*

In our reminiscent moments, when we dwell upon the great advances medicine and surgery have made in the last few decades, we often lay too much stress upon our "science" and upon the remarkable labors of our colleagues, and too little upon some less obtrusive colaborers who are never heard in public urging their claims for personal recognition and priority, and yet without whose efficient collaboration the wheels of progress would have been sadly retarded if not stopped altogether.

Chief of these helpers are the nurses. They save the lives of many doctors every day by assuming responsibilities unknown to their predecessors, and so robbing the work of its harassing wear and tear. And who can calculate how many patients' lives are saved by the alert trained mind ready to recognize danger in its uttermost outposts and so able to summon timely aid. And yet for this very reason because we are so dependent upon these noble helpers in our work we should utter a warning and enter a plea for still higher and nobler ideals in their work.

The trouble with the rank and file of our nurses is that they are spoiled in their training, for the one great dominant impulse of the true nurse, old-fashioned as well as new and trained, should be the tender love of the sick and suffering, a sense of having a mission in the world only rightly fulfilled when with warm heart and skilled hands lifting some little bit of the world's weight of woe.

We have often thought that each training school should have a chair on the humanities, continually emphasizing to

the nurse the emotional, humane, and religious side of her calling. So true is this that we verily believe that without this dominant impulse no woman has a right to enter the sickroom, any more than an unconverted man has a right to enter the pulpit, or a blind man to be a painter. All the scientific superstructure which can be piled on cannot make up for this awful deficiency in their foundation.

And yet a chair, a formal lectureship, would never make up the lack of it, for one cannot have a professor to inspire affection any more than one can buy affection in the market. It rests after all in the head of the school; she is the woman by force of daily example, by precept and practice, to see that this tenderness is in the women she selects for the course, and to see that no lines of training are followed which will tend to repress this essential element.

It is the testimony of a great surgeon that we see too much science (so-called) and too little regard for the divine calling in almost all our training-schools. "When I come to seek for nurses in my private practice, I find the woman with a true calling is rare indeed." Our training schools, some of them, are arctic in their temperature and their influence, and the influence of chief nurses seems too frequently to look to the murder of a girl's natural affection and tenderness. But the fault not seldom lies at our own profession's door. All praise, then, is due to the model hospital in Waltham, Mass., where humanity is made the chief issue, where the woman first gains her training among the poor in private practice and has every inducement to develop the affection in a sympathetic personal relationship thus established before entering the hospital mill.

Let us have science and let us have humanity, but let us not have science without humanity—i. e., the love and devotion which filled Florence Nightingale's heart and without which there can be no true and successful nurse.

Aneurysm—Ligation and the Tufnell Treatment.—E. R. Edson (*University Medical Magazine*, April, 1900) reports a case of aneurysm of the left carotid in a negro man 32 years of age. The carotid was ligated about the aneurysm, about 2 months after the first symptoms appeared. The symptoms were ameliorated, but pulsation continued, the aneurysm evidently extending toward the aorta. About 3 months after the ligation, the patient was put upon the Tufnell treatment. This was continued for 75 days, the tumor gradually growing smaller, and finally disappeared altogether. Almost a year later there was still no visible trace of aneurysm, but a nonpulsatile, thoracic bulging had developed. This was 2½ inches in diameter, and on a level with the second rib. It had pressed upon the left phrenic nerve, paralyzing the left vocal cord. Vertigo and dizziness followed the ligation, and still persist. [M.B.T.]

Amputation of the Leg by Cocainizing the Spinal Cord.—William E. Lower (*Cleveland Journal of Medicine*, March, 1900) reports the amputation of a leg without general anesthesia, but by cocainizing the spinal cord. The patient was a man, 64 years of age, and suffering from diabetic gangrene. With a long needle attached to an aspirating syringe 2 drams of a one-fifth of 1% solution of cocain were injected into the spinal canal in the space between the last dorsal and first lumbar vertebra. In 3 minutes there was complete anesthesia of both feet and legs. The amputation was performed immediately and the patient felt no pain. In 20 minutes sensation was restored. At no time was motor power completely lost. There was no shock, as all afferent impulses were abolished. The pulse varied from 68 to 72 during the time of anesthesia. The patient suffered from headache and a tendency to fever and delirium the next day after the operation. After that the patient made an uninterrupted recovery. [M.B.T.]

Reviews.

Twenty-third Annual Report of the Board of Health of the State of New Jersey and Report of the Bureau of Vital Statistics. 1899. Trenton, N. J.: MacCrellish & Quigley, 1900.

This volume contains much that is of local and not a little that is of general interest. It would be impossible to discuss all of the subjects with which it deals, although many are of no slight importance. The report shows that the New Jersey State Board of Health has not relaxed its vigilance in all that pertains to the prevention and the eradication of disease.

Home Nursing: Modern Scientific Methods for the Care of the Sick. By EVELEEN HARRISON. 8vo, pp. xi, 235. New York: The Macmillan Co., 1900. Price, \$1.00.

The subject-matter of this serviceable little volume is considered in 10 chapters, to which is added an appendix dealing with diet in disease and in convalescence, and recipes for invalid cooking. The book has been prepared especially for domestic use, although even trained nurses will find in it much desirable information, set down in an interesting manner. Binding and printing are neat and attractive.

Transactions of the American Pediatric Society, Eleventh Session, Held at Deer Park, June 27, 28, and 29, 1899. Edited by FLOYD M. CRANDALL, M.D. Vol. XI, pp. 252. Reprinted from the *Archives of Pediatrics*, 1899.

It would be difficult to make a selection from among the 28 papers contained in this volume for brief review. Quite all of them contain something of interest and instruction, and all have previously been published. The President's address on "Methods of Instruction in Pediatrics" illustrates the somewhat stepmotherly treatment that pediatrics has received in the medical schools, a branch of knowledge in which the recent graduate should be especially qualified.

The Annual of Eclectic Medicine and Surgery. Edited by JOHN V. STEVENS, M.D. Vol. 8, Embracing the Papers and Proceedings of the Various State Eclectic Medical Societies for the Years 1897 and 1898. 8vo, 538 pages. Cincinnati, O.: The Scudder Brothers Company, 1900. Cloth, Price, \$2.00.

This volume contains a selection of "the good and valuable papers" presented before the meetings of the various Eclectic State Societies during the period that it covers. As may be understood, the essays vary widely in all inherent qualities and it would be invidious to select any one or several for consideration. Even superficial scrutiny, however, discloses a willingness, if not a desire, to eliminate sectarian distinctions that bodes well for the future. Sectarianism is incompatible with science, and the true medical man will avail himself of any therapeutic measure that is capable of subserving his purposes of prevention, cure, or alleviation as related to disease.

Transactions of the Chicago Pathological Society, From May, 1897, to June, 1899. Vol. 3, pp. 553. Chicago: American Medical Association Press, 1900.

This volume is an indication of the really good work that a serious minded medical society can do. There is, further, such a charm in the demonstrative character of the proceedings of a society devoted to pathology that interest never lacks, and although the practitioner may miss from the communications presented formulas and directions for treatment he can easily appreciate that he is the better clinician for being familiar with the conditions responsible for aberrations in function that he is called upon to relieve and whose progress toward recovery it is his duty to aid.

The papers in this volume are arranged in accordance with their relations to anatomic and physiologic systems, and the volume makes a satisfactory and valuable publication. It is, however, a fair question whether a better purpose were not subserved by more frequent and more prompt publication in small fasciculi as is the custom with at least two important medical societies.

The Ophthalmic Patient. A Manual of Therapeutics and Nursing in Eye-Diseases. By PERCY FRIEDENBERG, M.D., of New York. New York: The Macmillan Co., 1900. Price, \$1.50.

In these 312 pages the author treats in a very interesting way of the various procedures and appliances of ophthalmic nursing, the technic of operative assistance, and the nature and use of remedies used in the treatment of eye-diseases. The style is somewhat heavy for nurses who have little or no occasion to know what meioties (spelling entirely new) and cyclotonics are. Also, the scientific spelling is not in line with modern ideas, but these are minor points. The volume is full of excellent hints to internes and beginners in ophthalmology, and this will probably be the field in which it will find its greatest usefulness. It must in all justice be said that no skilled ophthalmologist could fail to profit by careful reading of the book, but, as we have said, its greatest service will be to the ophthalmic student and perhaps to nurses who contemplate giving themselves up to nursing "the ophthalmic patient."

International Clinics. A Quarterly of Clinical Lectures and Especially Prepared Articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose and Throat, and other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession throughout the World. Edited by HENRY W. CATTELL, A.M., M.D., Philadelphia, U. S. A., with the Collaboration of JOHN ASHHURST, JR., M.D., LL.D., and CHARLES H. REED, M.D., and JAMES T. WHITTAKER, M.D. Volume I. Tenth series, 1900. Philadelphia: J. B. Lippincott Company, 1900.

This volume contains 4 papers on disease in the Philippines and camp-sanitation, 4 on therapeutics, 4 on medicine, 1 on neurology, 3 on surgery, 1 on pathology, 1 each on diseases of the eye and ear, together with a review of progress in the various departments of medicine during the year 1899. It will be seen there is something of interest for all medical men. Some of the articles are most timely and of especial value, and to this end the illustrations contribute in no small degree.

A Practical Treatise on Materia Medica and Therapeutics. By ROBERTS BARTHOLOW, M.A., M.D., LL.D., Professor Emeritus of Materia Medica, General Therapeutics and Hygiene, in the Jefferson Medical College of Philadelphia, etc. Tenth edition, revised and enlarged. 8vo, pp. xxxii, 866. New York: D. Appleton & Co., 1899.

Bartholow's Therapeutics has so long been a standard publication that an extended review of it is unnecessary. Instead of being pushed aside by newer works upon the subject, it has maintained its place in the confidence and regard of the medical profession. The present edition, the tenth, differs chiefly from the eighth and ninth by the incorporation of new matter which the progress in pharmacology has made necessary. Most of the newer remedies are synthetic products which manufacturing chemists have introduced, often with extravagant claims. The author selects for description those he considers the more important and useful. His discussion of their therapeutics is in the main satisfactory, though the volume has been increased in size by only 45 pages. Those who examine this last edition will find in it the best of that which is old and, for the most part, also the best of the newer remedies, the value of which is not so well established.

Forty Years in the Medical Profession: 1858-1898. By JOHN JANVIER BLACK, M.D., Fellow of the College of Physicians of Philadelphia; Member of the Delaware State Medical Society, etc. 8vo, pp. 498. Philadelphia: J. B. Lippincott Company, 1900.

The 40 years included in the period covered by the narrative in this autobiographic sketch have witnessed many changes in the science and art of medicine and to the more important of these some brief reference at least is made. No life is wholly free from noteworthy events, but that of any medical man will contain enough to furnish, in suitable hands, material for stories really more strange than fiction. Dr. Black has woven together an interesting account of many things that have transpired in the course of his professional career, and his hope that it will help to while away pleasantly a leisure hour will easily be realized.

Injuries to the Eye in Their Medicolegal Aspect.

By S. BAUDRY, M.D., University of Lille, France. English Edition Revised and Edited by CHARLES A. OLIVER, A.M., M.D. 161 pages. Philadelphia: The F. A. Davis Company, 1900.

This monograph on the medicolegal aspect of ocular injuries shows that there are many fields for medicoliterary venture as yet unexplored. There is nothing just like the above work so far as we know. And it is timely, for, with the tremendous multiplication of corporations, there has sprung up in the mind of the average citizen the idea that injury in any of the public corporate or municipal services means the recovery of damages often out of all proportion to the injury. The volume before us cannot but help as an authority to lend weight to the medical expert's testimony and thus conduce to an equitable adjustment of such cases. The subject is exhaustively treated and covers almost all possible eye-accidents and their consequences. The work of the translator has been well done, while the adaptation of the "Chapter on Medicolegal Testimony" to the Courts of the United States will greatly add to the value of the volume. This chapter alone is well worth the price of the book and might, with profit, be practically committed to memory by any specialist about to be called as a medical expert.

Diseases of Children. By ASHBY and WRIGHT. Fourth Edition. Edited for American Students by W. P. NORTHROP, M.D. Publishers: Longmans, Green & Co., London, England.

This excellent treatise on the diseases of childhood has been before the medical public since 1889 and in its various editions has enjoyed an increasing and well-deserved popularity. The book is unique in being written by a medical man and a surgeon. The subjects treated of are chiefly medical, but whenever there is an opportunity of viewing them from a surgical standpoint, this has been done and well done. There is also, especially in this fourth edition, a somewhat complete consideration of certain surgical subjects, some of which, to judge from the illustrations, are those of adults, and scarcely pertinent, but the whole constitutes a most suggestive and useful book for practical consultation. There is displayed throughout the work a large measure of research, and in a larger degree eminently practical clinical observations. The illustrations are numerous and very good, and many new ones have been recently added, chiefly skiagrams. Among the abundant excellencies of the book it is difficult to find anything to criticise, especially since the additions by the American editor furnish some important data on laboratory milk mixtures, and many references to the work of American observers, and quite an extensive appendix containing suggestions as to food and medicines, quite important for the American reader, who is accustomed to a much better presentation of therapeutic measures than is ordinarily to be had in foreign books, especially English. The chapter on diseases of the kidneys leaves something to be desired, and is by no means as complete and modern as other portions of the work. This is especially obvious in the description of urinalysis. The

book is eminently symmetrical and valuable, and to be highly recommended as a working manual. Certain subjects could well receive some larger elaboration, and it would be possible to spare the mention of certain others, especially of a surgical nature, which might better be in a separate volume and treated of more at length.

Diseases of the Intestines. By MAX EINHORN, M.D. New York: William Wood Co., 1900.

Several valuable contributions upon diseases of the intestines have been made to Systems and Encyclopedias of Medicine, but Einhorn's book is the only monograph on the subject published in America that has come to our hands. This work consists of 12 chapters; the first of which treats of the Anatomy and Physiology of the Intestines in a complete manner and numerous good illustrations embellish this portion of the book. In the second chapter a pleasing prominence is given to "Examination of the Feces," a matter that receives too little attention at the hands of the majority of practitioners.

In speaking of methods of treatment artificial alimentation is said to be carried out in two different ways, rectal and subcutaneous; for use beneath the skin olive oil and saline solution are the only substances recommended as of practical value.

The consideration of chronic intestinal catarrh is very practical and it is with regret that we notice the omission of some important matters under the etiology of the affection, for instance, the oft-repeated functional failure that results from an overwrought nervous system and in time may lead to structural defect; also the overtaxation of the intestine caused by the condition of the stomach described by Einhorn as Achylia Gastrica. It would emphasize these points to include them under this heading. The fourth chapter is devoted to Dysentery, and its amebic origin is particularly dwelt upon. The disease is considered as an entity, with amebae the cause in all cases of whatever variety; thus a departure is taken from the common method of separating amebic from other forms of dysentery. This is simply a question as to the point of view regarding what should, or should not, be considered dysentery.

In the consideration of duodenal ulcer the etiology of the affection is given quite fully, but does not include the neurotrophic phase that, after all, is the probable initial cause of so-called peptic ulcer of the stomach and duodenum. The other varieties of intestinal ulcer are fully dwelt upon. A very practical chapter upon hemorrhoids contains some new prescriptions and the surgical treatment is discussed at considerable length.

The chapter upon appendicitis is most commendable, being thorough, scientific, and up-to-date. The diagnosis of appendicitis that has spread to the tissues surrounding the appendix and has there given rise to a purulent peritonitis, is aided greatly by finding a leukocytosis, but Dr. Einhorn makes no mention of that point. A review is not the place to enter upon a discussion of appendicitis, but we certainly have been guided toward prompt operation, in cases exhibiting only mild symptoms, by the discovery of a decided leukocytosis, and the results of the operation proved that they were timely. Exact directions for medical treatment of appendicitis are given, and opium is recommended as the remedy *par excellence*. The surgical treatment of the disease is debated in an interesting manner and makes clear the fact that the author is not in favor of too early or hasty operative interference at the first suggestion of appendicular trouble.

Intestinal obstruction is exhaustively treated and an interesting account of the "Nervous Affections of the Intestines" follows, in which they are classified into (1) motor, (2) sensory, and (3) secretory neuroses. Constipation is here classed and is considered in an admirable manner; much stress being laid upon mechanical measures in its treatment.

The much discussed disease, Membranous Enteritis, is considered in an excellent manner and the work ends with a chapter upon intestinal parasites.

It is a book deserving of high praise and will be of great value to all internists.

The publishers have done very good work, and the volume is convenient in size.

Special Article.

THE SURGEON IN THE NINETEENTH CENTURY.¹

Address in Surgery at the Annual Meeting of the British Medical Association at Ipswich, August, 1900.

By FREDERICK TREVES, F.R.C.S.

Surgeon-Extraordinary to H.M. the Queen; Surgeon-in-Ordinary to H.R.H. the Duke of York; Consulting Surgeon to the London Hospital.

THIS century has been without a parallel in the history of human culture, and so far as the art of surgery is concerned has embodied an advance in principle and in practice which has been no other than revolutionary. I do not propose to attempt a review of the progress of surgery during the last hundred years. That work has been already done by abler hands. I would venture rather to deal with the progress of the surgeon himself during this period, and with the advancement of the individual as an exponent of a grave profession.

There is little difficulty in fashioning a picture of England as it was 100 years ago. A sympathetic literature has left us with ample records of the men and women of the time and of the scenes they moved among. These records are rich with the littleness of personal affairs and are made living by the very gossip and petty commentaries of those who constituted society when the century was young. The life in England then was largely life spent in the country, in sleepy villages, and in sober, self esteeming county towns. The conditions were yet immature which led men to herd together in ever-extending cities and to swarm around oases of blackened chimneys and restless furnaces.

Education among the masses of the people was a matter of little account, and was to a great extent actually nonexistent. The average man of the middle class was quite content with a degree of learning which would do little more than satisfy the demands of a modern School Board.

As to the surgeon in those days, he was but a sorry element in social life. In the great towns and cities there were esteemed practitioners of surgery who were eminent by reason of their scientific work and their successful practice, but their numbers were few. At the commencement of the period under notice London was the center of surgical activity, and the prominent exponents of the art at that time were John Abernethy, Henry Cline, Sir William Blizard, Sir Everard Home, Sir Astley Cooper, William Lawrence, and Charles Aston Key. The great John Hunter had died in 1793, having accomplished a work which marks an epoch in British surgery. In the provinces the most conspicuous surgeons were Edward Alanson, of Liverpool, and William Hey, of Leeds, while in Edinburgh the position of the leading operator was held for many years by John Bell. A little later in the century we find among the names of prominent men in England those of Sir Charles Bell, Sir Benjamin Brodie, and the ingenious and learned Benjamin Travers.

At the beginning of the century, surgery on the Continent was represented by such men as Sabatier, Deschamps, Boyer, and Larrey in France, Scarpa in Italy, Langenbeck, Chelius, and Diefenbach in Germany, and Warren and Physick in America.

The surgeon or common practitioner in the village and town in these early days has been depicted by many writers. Possibly the most precise of these was Smollet, who was himself in turn an apprentice, an assistant, a surgeon's mate, a practitioner, and a graduate in medicine. Smollet died in 1771. The account he has furnished of the leech of his time is tolerably discouraging. We find him an ignorant, illiterate, sordid creature, not above the allurements of money-grabbing, and not without suspicion of dishonest practices and of a leaning towards the bottle. He was to a large extent a mere retailer of physic, and in the public eye he ranked with the quacks and nostrum-sellers with whom he competed. There was probably some excuse for a writer who, in a discourse in the *New Monthly Magazine* for 1828, speaks of the general body of surgeons as a "cringing pulse-feeling race." Smollet's description could not have been true of all his brethren, and there is no doubt he wrote with the bitterness of an unfortunate experience. Still, there can be little question that

Launcelot Crab represented a type not yet extinct when the century began, and he must be taken as the forerunner of the cultured and esteemed general practitioner of the present day.

1.—THE SURGEON AS AN ADVISER.

In noting the advances made by the surgeon during the century, the first matter which may be dealt with concerns his position as an adviser to his patient. In reviewing this subject, one cannot fail to be immediately impressed by the paramount influence which exact knowledge—or *a fortiori* the want of exact knowledge—has had upon the attitude of the medical profession.

It is obvious that the progress of any science is to be measured by the amount of absolute truths which may have been accumulated at a given time. The lack of knowledge, the mass of things unknown, represent only a void to be filled. In the development of the science of medicine the element of the unknown has not remained so negative a factor, but has, on the contrary, proved to be a stimulus for a very luxuriant invention, the products of which have been tabulated as facts.

There is no science outside our own in which there has been, during the stages of development, such an extreme disproportion between the amount of knowledge professed and the amount proved ultimately to be exact and sound. As an example of this may be cited the "humoral" system of pathology which, in spite of its ancient origin and its more or less obvious foolishness, held a position in Medicine for centuries, and struggled on, as a distorted and dying creed, even into modern times. This system, in its barest features, asserted that four cardinal humors occupied the human body, and that practically all diseases, and certainly all tumors, were due to disorders of certain of these fluids. The pathology of this system was precise, dogmatic, elaborately classified, and full of detail. Upon it all treatment was founded, and yet the whole of this precious system was a daring fiction, an ingenious fancy, the product of an impudent and unscrupulous imagery.

The reason of all this lies more with the sick man than with the man of medicine. The sick man requires absolute and exact knowledge from his doctor. He will accept neither possibilities nor doubts nor confessions of ignorance. He will accept such from his lawyer and from his man of business, but not from the man who attends him in illness.

It is no matter of wonder that in the past the physician has made good by fiction what he lacked in fact. The demands of the patient have been hopelessly beyond any powers of supply, and the deficiency has been furnished by the products of invention. It would seem that the less the man of medicine knew the more he invented, and the more diligently he hid his little light under the bushel of a ceremonious and mystery-making treatment. The judicial wig, the academic ruffle, the gold-headed cane, the reflective snuff box, and the Socratic air all made an effective covering for the few poor bones which formed the skeleton of his knowledge.

It thus happens that a good deal of the pretense and humbug with which medical practice has been associated in the past has been forced upon the practitioner by the demands of unreasoning people. With such people the surgeon, in the early part of the century, had more largely to deal than he has to do at the present day, and yet his stock of knowledge could seldom meet the demands even of the reasonable. Hereby it came to pass that the puzzled man of medicine had to repudiate his ignorance, had to concoct such explanations and to construct such pathologies as could meet the sick man's inquisitiveness, and at the same time give a semblance of reason to an empirical and tawdry system of therapeutics. His utterances were tangled and confused by conceits of his own invention. A false attitude towards his patient was unconsciously forced upon him, and the folly of his pretense to an unattainable learning was apparent to all but the simplest. As an adviser, therefore, he spoke not as one having authority, and his position intellectually is well illustrated by the endless lampoons and caricatures to which he was publicly subjected.

The surgeon of the present day, as an adviser, is in a position which is so greatly improved that it could hardly have been imagined by his forebears of 100 years ago. He has in the first place to deal with a more enlightened public, with patients whose education to a large extent enables them to

¹ Published from advance sheets by courtesy of the *British Medical Journal*.

appreciate the nature of scientific problems, and with whom it is possible to discuss difficulties, and to own to lapses of information.

In the second place, the additions made to surgical lore have been so substantial that in many departments surgery has reached to the status of an exact science. There is indeed no longer need to call upon invention to supply such gaps as still indicate the unknown. An intelligent patient is satisfied with the assurance that practically nothing at present is known of the nature and causes of cancer. Such assurance is at least as valuable as the information provided at the beginning of the century, when the inquirer would have been told that cancer was "a diseased hardness,"²² or a "scirrhus degeneration."²³

We have perhaps not quite shaken off the poor vestments of mummery with which ignorance was clad, nor rid ourselves of forms of speech which still pass current for sense, but which are little more than sounding brass and tinkling cymbal. We speak assuredly of the "constitution" and of "states of the system" and of the "supporting of the system." We sanction such terms as "poverty of blood," "diminished vitality," and "sympathetic inflammation." We propose to believe in "tonics," in medicines the swallowing of which will give strength, in "galactagogs," in "alteratives," in "astringents," and in "cooling physic." We profess, moreover, to "strengthen the lungs" and give "tone to the stomach."

The modern surgeon can well afford to dispense with all this empty verbiage, since he can base his opinion upon demonstrated facts and can express it in plain words, free from any of the embellishments of a literary masquerade. For many reasons this is well.

2.—THE SURGEON AS A MAN OF LEARNING.

The surgeon at the commencement of the century appears to have lacked most of what we now consider to be the essentials of the art, and we can only view with amazement the scantiness of his learning and the poverty of his equipment. He knew little more of inflammation than that it was represented by swelling, heat, redness, and pain. His knowledge of the causes of inflammation and of those dangers which follow upon open wounds was scarcely in advance of that professed in the days of Hippocrates. He had no glimmer of the possibilities of asepsis. He had no anesthetic, no hypodermic syringe, no clinical thermometer, and no practical means of investigation in clinical chemistry. The very name bacteriology did not exist, and the treatment of diseases by prepared serums would have appeared to him as wild as the wildest therapeutic dream of ancient days. Although vaccination had been introduced in the last year of the eighteenth century, the magnitude and nature of the principle it involved had not been appreciated.

The microscope as an aid to diagnosis played no part in the equipment of the surgeon. He had neither laryngoscope nor ophthalmoscope, and his acquaintance with otology, skin affections, and the diseases of women, was at the best rudimentary and indistinct. He had only rude medieval orthopedic appliances, and he knew nothing of the lithotrite nor of the array of instruments which are now in daily use in connection with ophthalmic, laryngeal, cranial, and abdominal surgery. It would seem, indeed, that there was little for him to do but to open abscesses and sow the seeds of chronic septicemia, to excise tumors of the structure of which he talked much and knew little, to amputate limbs for diseases he could not mend, and to draw blood whenever doubt existed as to what was best to be done.

Conservative surgery was not understood, and was certainly not practised, and plastic methods of operation had no place in treatment.

Lord Thurlow, in speaking against the Surgeons' Bill in the House of Lords in 1797, declared, with some basis of truth, that "surgeons in this country are not respectable men, their pretensions are unjust and illegal, because they are not a scientific body."

In 1800 a man could practise as a doctor without passing an examination of any kind. Indeed, one itinerant practitioner is reported to have assumed the title of assistant surgeon on the ground that he had served an apprenticeship to the crutch-maker of a hospital. The examination for the diploma of the Royal College of Surgeons was by *viva voce* only. There was no examination of patients, and no dissection of the subject.

Candidates were required to produce evidences of apprenticeship, of attendance upon anatomical and surgical lectures, of having performed dissections, and of having attended the practice of a recognized hospital for a period of six months.

In 1813 the period of compulsory attendance at a hospital was raised to one year. The standard of knowledge, however, does not appear to have risen in corresponding proportion, for in 1822 the then president, Sir William Blizard, felt called upon to address the Court of Examiners on certain "tokens of remissness in teachers, and of inattention in students," which had been forced upon his notice. He regrets that candidates are commonly ignorant of the situation of nerves and bloodvessels, of the disposition of the muscular fibers of the heart, gullet and stomach, and of the diameters of the intestine. He further adds that "the deficiency of candidates in physiological information is far more remarkable," and enters into such detail as the following: "Often do we find them," says the president, "ignorant of the reasons why the ribs in inspiration are, from their figure and muscular connection, moved upwards and outwards, of the systole and diastole of the heart, of the process and intention of respiration, of the nature and distinction of the pulse, of the distinct offices of divers muscles, of the figure of the lens and uses of the humors of the eye in vision."

He concludes by deploring that there is a "correspondent darkness of mind relating to the symptoms, seat, causes, and rational treatment of diseases and injuries," and furnishes a catalog of items with which candidates do not appear to have been commonly conversant, although the list presents such matters as the signs of fractures and dislocations, the symptoms of compression and of inflammation of the brain, the consequences of fractured rib, and the *rationale* of the symptoms of hernia.

At the commencement of the century there was, indeed, no systematized medical education. The training of the surgeon was paltry, casual, and inefficient. His preliminary education was miserably meager. It was necessary that he should be able to read and write and pretend to some smattering of Latin. He became an apprentice, and, in that menial capacity, gleaned what he might from his master and from attendance upon sundry lectures. So far as hospital practice was concerned, his attitude as a learner was well expressed by the phrase, "He walked the hospital." The institutions which he thus attended for a period of six months were in a state of rude squalor as regards administration, sanitary arrangements, and nursing, and well deserved the abuse which was lavished upon them.

3.—THE SURGEON AS AN OPERATOR.

During the nineteenth century the surgeon, as an operator, passed through a rapid metamorphosis, and has now reached at least the level of the unexpected. It may have been supposed that there is little to be learned in the way of using a knife which had not been learned during a period of over eighteen hundred years, for there were surgeons before the Christian era. Yet time has shown that even in 1800 there was a technic in operating which was as little like the technic of to-day as are the slashes of a cutlass when compared with the studied movements of a foil. It may have been surmised that twenty centuries would have exhausted the methods by which a limb could be cut off. Yet in 1800 modes of amputation were in vogue which are now regarded as uncouth. It cannot even be said that the commencement of the century saw in use a ready and efficient means of checking bleeding, although that measure represents the most elementary of the surgeon's duties.

The operator of olden times certainly possessed many qualities which are now falling into abeyance, and which cannot pass away quite unregretted. The success of his craft depended largely upon his daring, upon the alertness of his eye, the steadiness of his nerve, and the rapidity of his movements. He stepped into the arena of the operating theater as a matador strides into the ring. Around him was a gaping audience and before him a conscious victim, quivering, terror-stricken, and palsied with expectation. His knife was thrust through living flesh and acutely-feeling tissues, and the sole kindness of his mission was to be quick. In spite of moans for mercy from gagged lips the knife had to move on its way steadily, and, undeterred by struggles and bursts of hemorrhage, the blade must needs pass without faltering or sign of hesitancy.

There is less need for such qualities now. The dramatic element in surgery has gone with the men who unconsciously fostered it. The operating theater of the present day has lost its horrors, and has changed from a shambles to a chamber of sleep. The surgeon's hand can move with leisurely precision, and theatrical passes of the knife are favored only by those who have not yet learned that mere brilliancy is no measure of success.

It may be that the present-day surgeon is a loser in that he has less need for those dashing qualities which were essential to the operator before the days of anesthetics; but, on the other hand, he has gained much in the direction of the sympathetic handling of his patient and in the culture of gentleness.

It is little wonder if the older surgeon became rough and stern, if his sense of feeling became dulled, and if the sympathetic side of his nature suffered some suppression. Indeed, contemporary accounts are apt to represent the operator of preanesthetic times as rough almost to brutality, and as coarse both in his conduct and in his utterances. His language, it would appear, savored of the cockpit, and the hasty flourishing of his knife led occasionally to unintended mutilations.

Within the compass of some thirty years the whole state of affairs has changed. Consideration for the patient and for the patient's sensibilities have become a matter of the first moment, and the operator has learned that his work is best done if done with gentleness and tact, and that haste and bluster, coarseness and coarse handling are out of place around the operating table. A striving after effect at any cost has ceased to be an element in the surgeon's work. Success is no longer to be measured by the number of minutes occupied in the amputation of a limb, but by the state of the patient many days after the measure has been completed. The triumph of the older surgeon was immediate and scarcely reached beyond the arena of the theater. The triumph of the modern surgeon is deferred, and is found in the operation ward and in the convalescent home.

Still, the fact remains that it is easier to be a surgeon of some degree at the end of the century than it was at the commencement, since in the earlier days the qualities needed for success in operating were rare and of a kind not readily to be acquired.

On passing more into detail, one notices that beyond these general changes in the attitude of the operator there have been others which owe their existence to special advances in the surgeon's art. Prominent among these may be named: (1) An improved knowledge of anatomy; (2) a readier method of arresting hemorrhage; (3) the employment of anesthetics; and (4) the introduction of antiseptic measures.

1. *An Improved Knowledge of Anatomy.*—Among the surgeons of the early part of the century there were many competent anatomists, and not a few who could lay claim to be deeply versed in that science. Among the latter were such men as Astley Cooper and William Lawrence. Still, in the education of the average surgeon the study of anatomy did not play a prominent part. Anatomy was largely taught by means of public demonstrations. The teacher dissected and the student looked on, much as he did in the days when Rembrandt's great picture of Nicolaus Tulp and his pupils was painted. The knowledge required was scant and superficial and had little practical basis, and no methods of teaching existed which can in any way compare with those in vogue at the present day. The science of anatomy was well advanced at the commencement of the century, but it was not taught to the common student. *Quain's Anatomy*, first published in 1828, contained a very sound account of the human body, although the whole work was then represented by a single small volume of 700 pages which was without illustrations.

The facilities for acquiring a practical knowledge of anatomy were not only few, but were hampered by many sordid difficulties. Anatomical schools were regarded with disfavor and were actively discouraged. They were viewed with unconcealed suspicion by the public, and were surrounded by a ghoulish romance in which rifled graves and unseemly dealings with the hangman played a pungent part. Indeed, the teacher in an anatomical school found himself involved in a squalid and disreputable traffic, very ungenial to any earnest man of science.

Among the many qualifications needed for success in

operating, a practical knowledge of anatomy as acquired by repeated dissection, is conspicuous. Such knowledge as the surgeon needs is to be learned not from books but from the patient use of the scalpel and forceps. The dissecting room is the surgeon's nursery. The tissues of the body are the material with which he works, and he must needs know them as the sculptor knows the marble he chisels and the potter the clay he moulds.

It is no matter of surprise that the older surgeon often lacked confidence in operating, that he failed in initiative, and clung only to formulated methods, and that a departure from accepted lines was attended with fear and hesitancy. Ignorance encouraged in the rash heroic passages of the knife and in the timid and overcautious and dangerous fumbling. And as to this it is probable that in preantiseptic days as much ill attended the nervous fingers which were creeping clumsily into the unknown as followed the reckless operator who essayed to draw his bow at a venture.

2. *A Readier Method of Arresting Hemorrhage.*—At the commencement of the century the means employed for the control of bleeding were numerous, and were represented by such familiar measures as the ligature, the suture, styptics of many kinds, and the actual cautery. In applying the ligature the vessel was picked up by forceps and tied as at the present day. The instruments used were those of Dieffenbach, Assilini, and Liston. The older types of instruments were not readily applied, or at least required time in their adjustment. The bleeding from the vessel was not necessarily controlled by the forceps when in position. The general rule in amputation was to apply a tourniquet and to ligature the individual arteries after the limb had been removed. In the excision of tumors the practice was recommended of securing each vessel as it was divided.

When it is remembered that operations were carried out without anesthetics, it will be understood that the older surgeon had an absolute terror of bleeding, and was driven to undesirable shifts to avoid the need of facing it. He was indeed a coward where hemorrhage was concerned, and there was reason for alarm when a conscious patient was struggling and showing signs of exhaustion, and when the means for staying the stream of blood were slow of application.

We find, then, that hemorrhage was expected, and that a liberal loss of blood was considered to be a necessary adjunct to every major operation. Tourniquets were employed freely and with considerable harshness. Raw surfaces were bathed with styptic solutions which were often destructive in their action or at least opposed to primary healing. The actual cautery with which to sear the bleeding area was in some request, and every well equipped operating theater kept its stove and its cautery irons in constant readiness.

The least pleasant evidence of the surgeon's dread of hemorrhage and of his inability to deal with it was afforded by the treatment of certain nevi in infants and children. These growths were strangled by ligatures which slowly cut their way through the skin and the neoplasm, assisted by a benevolent process of suppuration. A painful ingenuity was expended upon amplifications of this measure, the cruelty of which was but little mitigated by the introduction of chloroform.

Allied to this procedure was the *écraseur* of later date. Its invention was due to Chassaignac, and it was freely used in England until quite recent times. It was employed for the removal of growths of various kinds, but its most baneful employment was as a means of excising the tongue. It is scarcely to be believed that within the period of the introduction of anesthetics the tongue has been torn out of the mouth by means of a loop of hemp or wire which strangled it at its root.

The *écraseur* will remain in the archives of surgery as the insignium of the incompleteness and the timorous, and will stand out as a blot in an otherwise bright period of progress and enlightenment. The shadow of this medieval instrument has been slow to fade, and as the ovarian clamp and the *sérrenæud*, it clung about the confines of reasonable surgery and hindered the development of the operations of ovariectomy and excision of the uterus.

At the present day the surgeon has little dread of hemorrhage, and the confidence he possesses is based upon good grounds.

In the first place, he makes larger use of the precautionary ligature of vessels. It has become a commoner practice to

apply a temporary or permanent ligature to a main artery before a part supplied by that vessel is excised. This is carried out frequently in dealing with large and vascular tumors. In removal of the tongue, moreover, an excellent method is that in which a preliminary ligature of both linguals in the neck is carried out. In removing the uterus through an abdominal incision the question of hemorrhage is disposed of by an early ligature of the ovarian and uterine vessels. A further example of this mode of anticipating bleeding is afforded by that method of hip amputation which is known as the anterior racket. Here the main vessels and even the main branches are secured before the flaps are cut, whereas by the older plan the vessels were severed with the flaps and were tied after the limb had been removed.

In the second place, the latter-day surgeon is operating upon an anesthetized patient and can proceed with slowness and deliberation. The importance of this fact in connection with the present subject cannot be overstated. In the instances which have been just cited an excision of the tongue in a conscious patient would be greatly extended by the twofold operation in the neck, and whereas the amputation of the hip by transfixation occupied in able hands but a minute or so, the operation by the anterior racket is tedious and involves relatively much expenditure of time.

Thirdly, the treatment of hemorrhage has been to a remarkable extent simplified, if not indeed rendered complete, by the introduction of the pressure forceps of Sir Spencer Wells. These little instruments represent the most valuable addition which has ever been made to the surgeon's appliances. It is not uncommon in operations of a certain type to have 10 or more pairs of pressure forceps applied to the surface of the wound at one time. This represents a degree of possible bleeding which in the old days when every vessel had to be separately tied, would have been replaced by actual bleeding of a fatal type. No instrument has brought with it so great an assurance of security or has done more to extend the area of safe operation.

3. *The Employment of Anesthetics.*—The value of the anesthetic and the radical and beneficent transformation it has effected in surgical practice call for no comment in this place. The changes that the discovery has wrought in the personality of the surgeon, in his bearing, in his methods, and in his capabilities are as wondrous as the discovery itself. The operator is undisturbed by the harass of alarms and the misery of giving pain. He can afford to be leisured without fear of being regarded as timorous. To the older surgeon every tick of the clock upon the wall was a mandate for haste, every groan of the patient a call for hurried action, and he alone did best who had the quickest fingers and the hardest heart. Time now counts for little, and success is no longer to be measured by the beatings of a watch. The mask of the anesthetist has blotted out the anguished face of the patient, and the horror of a vivisection on a fellow-man has passed away. Thus it happens that the surgeon has gained dignity, calmness, confidence, and, not least of all, the gentle hand.

Anesthetics have, moreover, greatly extended the domain of surgery by rendering possible operations which before could have been only dreamt about, and by allowing elaborate measures to be carried out step by step.

The introduction of anesthetics has not only developed surgery, but it has engendered surgeons. It has opened up the craft to the many, for in the preanesthetic days the qualities required for success in operating were qualities to be expected only in the few.

In the technic of established operations chloroform and its allies have led to advantageous changes. This is well seen in the case of amputations. In the olden days that method of removing a limb was best which was the most speedy. A prominent position was, on this account, given to the cutting of flaps by transfixion, a long narrow blade being used for the purpose. This rapier-like instrument required great skill in handling, and in the grasp of the feeble it was a fearsome weapon. Muscles were sliced through in such a way that the widest possible section of their substance was often made. Vessels and nerves were, in like manner, cut almost in the direction of their long axes, and the resulting incision gave the maximum area of wounding. At the present day transfixion is abandoned, and the murderous amputating knife has found its way into the museums of the curious. Muscles can now be severed at right angles to their length, or in such

a way as to secure the smallest possible surface of section. Vessels and nerves are cleanly divided in the same manner, and the resulting area of the wound is reduced to a minimum. This difference in methods is vividly illustrated by amputation at the hip-joint.

4. *The Introduction of Antiseptic Measures.*—Of the great work of Lister, and of the introducing of the antiseptic treatment, there is no call to speak at this time. When the century was young the touch of the operator was the touch of a tainted hand; the brain he poured into the wound was poisoned, and he himself undid the good his science strained to effect. It is sad to think that behind the earnest man with the ready knife there stood a shadow which rendered hopeless his kindest effort, and which only too often proved to be the veritable shadow of death.

The change has been great, and its greatness lies in its littleness, for it is bound up with no more than this: that the surgeon has learned to be clean.

The operator of days gone by would have turned with some petulance from the grand simplicity of the counsel to be clean. He ever sought some means of mighty bearing to rid him of the incubus of failure, and, like Naaman of old, he would have hesitated to dip in the Jordan of antisepticism to be free of his leprosy.

The surgeon has not only learned to be clean, but he has become aware of the potency of little things. The demands of the antiseptic treatment have made him minutely careful, distrustful of any aid that he cannot control, and suspicious of any semblance of error.

It is possible that the abandonment of the old easy order of things has been followed by a too slavish devotion to mere ceremonial. The remarkable and extravagant preparations with which some surgeons now approach an operation, the cleansings and the washings which precede the laying on of hands, smack a little of fetish worship, and foster the cult of the surgical Pharisee. On the other hand these performances, this "making clean of the outside of the cup and platter," seem to give assurance, and to render the devotee thankful that he is not as other men.

THE SURGEON IN THE FUTURE.

Circumstances in the tendencies of today foreshadow to some extent what may lie buried in the future. The changes which have swept over the world of surgery have extended the possibilities of the art, and have, at the same time, added a host to the ranks of those who practise it. Some thirty years ago the roll of such as could claim to be accomplished operators was very small. The greater deeds of surgery were limited to cities and the larger towns. The general practitioner seldom took up the scalpel except in minor necessities. Even in London the list of consulting surgeons was meagre. In the hospitals of the metropolis the number of operations performed in the year would be less than is now the quorum for a month.

But here at the close of the century the disposition of affairs is wholly altered. Where there was one surgeon there are now ten, and throughout the breadth of the land and to its utmost limits the work of the operator has extended. The more ambitious performances of surgery are no longer restricted to the great centers, but are carried out in the little town, in the cottage hospital, and even in the cottage itself. The general practitioner is laying claim to operate upon his own patients, and is carrying out his intention in no hesitating manner. The days of the great operator, of the one man to whom all came who could, are rapidly passing away. Indeed, the practice of pure surgery, which was at one time limited to the prominent few, is now becoming common to the many. The man who excels conspicuously as an operator will always attain such eminence as his ability deserves, but the exclusiveness of the practice of operative surgery is quietly vanishing with the century. This change is well. It is a change that is inevitable. The democratic movement is the active power of the day, and that an oligarchy in the community of surgeons should be replaced by an earnest democracy is precisely in accord with the spirit of the times.

In every great change there must—at first, at least—be some undesirable developments, and it is impossible to deny that the wider distribution of the practice of operative surgery may lead to the occasional performance of major operations by men who are not justified, either by experience or by training, in undertaking them. Furthermore, there is,

among the signs of the times, some evidence that the reaction in the matter of operative surgery is to some degree extreme, and that we are in danger of passing from the policy of doing too little to the policy of doing too much. Operations we know were too few in the past, but there is some foundation for the impression that they are occasionally too frequent in the present.

One other matter which looms out of the future will suffice to bring this subject to a close. So many have been the artificial aids to clinical investigation which recent science has introduced that it comes to be a question whether the natural acumen of the surgeon will not deteriorate in proportion as he fails to encourage that particular learning which clings to the finger-tips of all great diagnosticians. That there will be such a decadence is beyond doubt. The loss is to be deplored, for if there be one point of excellence which stands before all in the qualifications of the perfect surgeon, it is bound up in that refined sensibility, that critical perception, that inestimable cunning which lies in the surgeon's touch.

Examples of the direction in which this loss will be felt come readily to mind. A considerable amount of skill, for example, is demanded in the examination of complex fracture, of lesions of deep-seated bones, and of injuries about joints. What was to be learned of these troubles had to be acquired by a tedious manipulation demanding considerable refinement. The surgeon who has now to deal with such conditions can afford to dispense with a prolix examination, and can submit the inquiry to a demonstrator of the Röntgen-rays. The skiagraph, although its value is much exaggerated, embodies substantial gain, but it is to be discounted by the loss of the great element in education which it is slowly replacing.

An obscure tumor—to take another instance—presents itself, and no longer is the surgeon compelled to trust to the acuteness of his inquiry and his patient review of all the physical details of the mass. For what his ready fingers may have learnt can be substituted the findings of the exploratory incision, the trocar, and the aspirator. Here once more an advantage is minimized by a loss.

Or, again, an abdominal swelling is brought under notice. Its features are obscure, but much of the uncertainty of outline can be dissipated by a cultured hand which, with infinite patience and repetition, has learned to construct a reality out of a shadow. It may be said that it is needless to persist in bringing this much-elaborated means of inquiry to further perfection since the problem is at once to be solved by an exploratory laparotomy. By such little operation a great advantage is gained, but an opportunity to add to one of the most refined forms of learning is lost. The value of the exploratory incision is beyond question, but among the signs of the times it is impossible not to notice a tendency to resort too readily to this means of solution. The Gordian knot, according to the legend, was ultimately cut, and it is a question whether the sum of human ingenuity would not have been substantially increased if attempts to untie the noose had been more diligently persisted in.

In another example, let it be supposed that a suspicious ulcer presents itself for diagnosis. In such case it is well to devote time to a precise and tedious inspection of its edges and to a careful tactile examination of its base, and to check what is discovered by results laboriously gained from like inquiries? Is it not simpler to take a scraping of the affected surface and to submit it to a microscopist, and to thus be spared a method of examination which, although it may not give final results, yet represents an opportunity of furthering a priceless accomplishment?

Finally, there are cases which present symptoms hard to interpret at any superficial inquiry. Is it worth while in such to undertake an exhaustive critical research and to submit the whole to a trained judgment? The quest would no doubt develop habits of observation and powers of weighing evidence; but the process is slow, and an inquiry carried out in a bacteriological laboratory will clear up all doubts, and at the same time dispense with the efforts of a cultured sense.

Those, therefore, who are concerned with the education of the surgeon of the future would do well to still cherish this ancient power, and to foster a memory of the fact that surgery is, in its very essence, a handicraft, and that in all that he does the surgeon's great endeavor should be to make his own hands self-sufficing.

It is sad to think that this hardly-acquired faculty dies with the possessor of it, and never was this more vividly presented than it has been by the loss which surgery has sustained in the death of Sir James Paget. One can picture the great surgeon composed in his last sleep, and can see the once busy fingers lying lifeless on the white sheet, and then comes the wonder at the wealth of learning, at the exquisite cunning, at the refined sense which lay dead in the dead hand. No written book can hold a tithe of the dainty knowledge which had been mastered by those subtle fingers, and no record, however labored or however loving, can tell of the power which once rested in that magic touch.

An individual loss does not, however, hinder the general tide of progress. Advance in such a work as ours depends upon the uneventful work of the whole body and is only accentuated by the achievements of the prominent few. The movement is the movement of a multitude in which individuality is, at a distance of time, little to be distinguished and in which personal eminence contributes a smaller factor than the present is ready to acknowledge. Those who stand forth as the leaders of the advance are merely the elect of the common body and the representatives of a wide intellectual franchise. Even he who startles the world as a discoverer has often done little more than give expression to what was already nascent in the multitude. So as one great surgeon after another drops out of the ranks his place is rapidly and imperceptibly filled, and the advancing line moves on with still the same solid and unbroken front.

The continuity of progress is undisturbed by the uncertainties of human life, and, as one writer has well expressed it:

"No work begun shall ever pause for death."

REFERENCES.

- ² Samuel Cooper's *First Lines*, London, 1807.
³ South's *Chelius*, 1826-46.

The Plague.—George Adami (*Montreal Medical Journal*, April, 1900) contributes an interesting article upon the plague, entitling it "A Prospect and a Retrospect." He reviews the history of the disease through modern times, laying particular stress upon the remarkable diversity of symptoms. The one feature of bubonic enlargements has existed, however, in all epidemics. He enjoins particular investigation and care in all cases of nonvenereal bubo, especially if accompanied by slight fever and white-coated tongue, red at the tip and edges. It is a curious fact that the known danger of handling rats dead of the disease extends at most 24 hours; thus it is indicated that the infection is by means of parasites on the rat's body, deserting these bodies after death. The primary seat of infection is, in the majority of cases, unrecognizable; the glands of the groin and of the axilla are by far the commonest seats of primary bubo. [M.B.T.]

Transscapular Amputations.—N. Senn (*Denver Medical Times*, May, 1900) believes that a distinct line should be drawn in performing serious operations between cases in which it is absolutely necessary to remove the entire scapula and a part of the clavicle and those in which a radical operation may be performed by resorting to transscapular amputation. He details 2 cases, one of periosteal sarcoma involving the upper portion of the humerus, for which exarticulation was performed 12 years before. In this case he made a V-shaped flap, sawed the neck of the scapula through, reflecting the tissue outside the incision to the axillary space; the axillary artery was then secured, the nerve severed and tumor removed. Thorough drainage was established at the most dependent portion of the amputation wound, which healed very kindly by primary intention. The second case was one of periosteal sarcoma originating at the site of a fracture of the upper portion of the humerus, forming in place of the normal bony callus. This was operated upon in the same way as the first case, but slightly modified. The first incision was anterior through the pectoral muscle and the vessels were ligated through this incision; the second incision, posteriorly, circumscribed the tumor, and the scapula was divided through the neck through this incision. The patient suffered very little shock and the wound healed by primary intention. [M.B.T.]

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Anthrax has again made its appearance at Falls Creek, a suburb of Dubois, Pa. The origin of the disease has been traced to a tannery.

State Board Examination.—The results of the June examination were made known July 30. Of the 360 applicants for licenses to practise medicine only 44 were rejected.

W. W. Keen, F. R. C. S.—The Royal College of Surgeons, England, at the recent centennial exercises, made Professor W. W. Keen, of Jefferson Medical College, Philadelphia, a Fellow. The honor could scarcely have been bestowed more worthily.

Lived Three Weeks with Broken Neck.—Lewis T. Vogel, who had been in the Samaritan Hospital for 3 weeks with a broken neck, died July 25. He was conscious until within an hour of his death. He fell from a tree and fractured the fourth cervical vertebra. He retained consciousness, but sensation below the fracture was lost. He gained slight control over his left arm, and was capable of feeling in the upper part of his chest.

Western Pennsylvania Medical College.—The following changes have been made in the teaching force of the Western Pennsylvania Medical College, to take effect at the coming session. Dr. T. M. T. McKennan changed from the chair of anatomy to that of nervous and mental diseases; Dr. T. L. Hazzard from physiology to that of diseases of the rectum; Dr. E. S. Montgomery has been made professor of practical anatomy, Dr. James Witherspoon professor of descriptive anatomy, Dr. S. C. Milligan professor of physiology, Julius A. Koch professor of pharmacy in the Pittsburgh College of Pharmacy, professor of chemistry, and A. F. Judd demonstrator of pharmacy.

Vital Statistics of Philadelphia for the week ended July 28, 1900:

Disease.	Cases.	Deaths.
Total mortality		514
Inflammation of appendix 6, bladder 2, brain 15, bronchi 3, kidneys 15, heart 1, liver 1, lungs 24, pericardium 1, peritoneum 10, pleura 2, stomach and bowels 27, uterus 1		109
Cholera infantum		75
Inanition 13, marasmus 31, debility 3		47
Lungs—tuberculosis of 42, abscess of 2, congestion of 1		45
Heart—disease of 26, neuralgia of 2		28
Sunstroke		26
Sarcoma of hip 1, carcinoma of pylorus 1, bowels 1, breast 1, colon 1, liver 4, stomach 9, uterus 1		19
Convulsions 17, puerperal 1		18
Apoplexy 13, paralysis 4		17
Old age		17
Bright's disease 9, uremia 3, diabetes 1		13
Brain—disease of 1, dropsy of 2, tumor of 1, congestion of 2, softening of 4, concussion of 2		12
Typhoid fever	49	12
Measles		9
Diphtheria	46	8
Cirrhosis of liver		5
Casualties		5
Drowned		4
Suicide—carbolic acid 2, drowned 2		4
Erysipelas		3
Diarrhea		3
Dropsy		2
Scarlet fever	17	1
Abscess of jaw 1, alcoholism 2, asthma 2, burns and scalds 2, cerebrospinal meningitis 1, carbuncle 1, childbirth 1, membranous croup 1, abdominal dropsy 1, epilepsy 1, gangrene of foot 2, whooping-cough 1, traumatism 1, tetanus 1, tabes mesenterica 1, syphilis 1, septicemia 2, surgical shock 2, carbolic acid poisoning 1, obstruction of bowels 2, locomotor ataxia 1, indigestion 1, hernia 2, hemorrhage of uterus 1		32

New Dental College for Philadelphia.—By the settlement of the will of the late Dr. Thomas W. Evans, who was Paris' American millionaire dentist, \$3,000,000 will go to found a dental institute in Philadelphia. Work will begin shortly on the new college.

Centenarian Recovers from Operation.—Harold Beyer, of Philadelphia, in his one-hundredth year, was recently operated upon for strangulated hernia at the Presbyterian Hospital by Dr. DeForrest Willard. Despite his great age his recovery was rapid.

Sources of Pollution of Schuylkill.—The sources of pollution of the waters of the Schuylkill have occupied the attention of members of the State Board of Health for some time past. In June these officials made a trip along the Upper Schuylkill and inspected the large industrial establishments in and near Reading, the surface drainage of which runs into the river, and they have succeeded in having a number of nuisances of this character abated. Recently the same officials visited Norristown, where they made an inspection of the sewerage system of that place, and, if necessary, suits will be instituted to compel the abatement of many nuisances of this character which are known to exist there.

Decisions Rendered in Oleo Cases.—The Superior Court recently rendered 2 important decisions in oleomargarine cases. In the first, that of M. M. Diefenbaker, who was convicted in the Quarter Sessions Court of Erie County of selling oleomargarine contrary to law, the court decided that a civil suit to recover the penalty for the violation of the oleo law does not bar a criminal prosecution. In the case of Owen McCann against the Commonwealth an appeal from Common Pleas Court No. 3, of Allegheny County, in which the constitutionality of the act of May 5, 1899, was attacked, the court sustained the act by affirming the decision of the lower court, in which McCann was convicted and judgment entered against him by an alderman in a suit for a penalty for selling oleomargarine in imitation of yellow butter.

NEW YORK.

The New York School of Clinical Medicine has not been discontinued, as reported some time ago, although some members of the teaching staff have retired.

The American Society for the Prevention of Premature Burial, with principal offices in New York City, has filed articles of incorporation with the Secretary of State.

Troy City Hospital.—It is announced that arrangements are being made for the celebration of the fiftieth anniversary of the founding of the Troy City Hospital, August 15.

Physician Nominated for Governor.—At the Prohibition State Convention held at Utica, N. Y., Dr. William T. Wardwell was nominated for Governor. He is president of the Red Cross Hospital in New York.

Dr. Pilcher Honored.—The Board of Regents of the University of Michigan conferred the honorary degree of LL.D. at the commencement exercises held June 21 upon Lewis S. F. Pilcher, Brooklyn, N. Y., professor of surgery in Long Island College Hospital and editor of the *Annals of Surgery*.

Forests for Consumptives.—The State Forestry Commission, of New York, will purchase 40,000 acres of land at the head waters of each of the 3 principal rivers of the State, in order to rear forests. This is looking forward to the future State care of tuberculous individuals and also for out-door recreation for other invalids.

State Hospital for Tuberculous Patients.—The trustees of the New York State Hospital for the treatment of tuberculosis met at Raquette Lake July 26 and elected the following officers: President—Howard Townsend, of New York; secretary—John R. Pryor, M.D., of Buffalo; treasurer—Frank E. Kendall, of Saranac Lake. It is understood that a site will be shortly selected, and that the erection of the hospital will begin soon.

Typhoid Epidemic in Watertown.—In Watertown, N. Y., 50 cases of typhoid are said to be in charge of the physicians. At least 6 deaths have resulted in the last fortnight. The cause is ascribed by physicians to impure wells and the decayed fruits and vegetables sold in the market. Many wells have been closed up by the authorities.

The City and the Homeopathic Hospital Debt.—The Board of Estimate and Apportionment of New York at a meeting, July 26, completed arrangements for the transfer of the Brooklyn Homeopathic Hospital property to the city. When the details came up for settlement there were \$70,000 debts on the hospital, which the city was called upon to assume.

Jersey City Pupils' Poor Eyes.—At the request of the Jersey City School Board, the eyes of 351 school-children were examined by Dr. Walter Pyle. Of these only 69 had perfect eyesight and 71 not only had imperfect vision but were in danger of becoming permanently affected. There were many children who would be benefited by wearing glasses, but who do not wear them.

Physicians Refuse Certificate.—Andrew Jaffrey died in New York, July 24, from diphtheria. Dr. John E. Harrity, who last attended the boy, refused a death-certificate because he had not been in attendance for 24 hours before the death, and Dr. Annie S. Daniels, of the New York Infirmary Dispensary, refused a certificate because she had not attended the boy at the time of death. The Board of Health was notified by Dr. Harrity. The body was sent to the Morgue and an investigation will be made.

Albany Medical College.—Some changes have been made in the faculty for the session of 1900-01. Dr. A. Macfarlane, formerly clinical professor of physical diagnosis and lecturer on medical jurisprudence, has been promoted to the adjunct professorship in this department. Dr. A. G. Root, formerly lecturer on diseases of the throat and nose, has been made clinical professor. Dr. J. M. Mosher has been made lecturer on insanity, neurology, and electrotherapeutics. Dr. H. Judson Lipes was promoted to lecturer on obstetrics.

Decrease in Blindness.—A great reduction in the number of inmates of the Institution for the Blind in New York is attributed to the better care of the eyes of children in the homes of the poor and in the charitable institutions of the metropolitan district. This explanation is given by the Committee on the Blind of the State Board of Charities, who found only 127 pupils in this Institution—about half the number reported a year ago. The State School at Batavia, on the other hand, is overcrowded, and must reject many applications for admission.

NEW ENGLAND.

Smallpox at Lowell.—An epidemic of smallpox, which began last May, has been revived in Lowell, Mass. There were 13 patients at the contagious disease hospital on July 27, and one death is reported.

Faith Curist's Mail Stopped.—The Post Office Department has issued a fraud order against Francis Truth and the Francis Truth Institute of Divine Healing, Boston, Mass. Truth was recently convicted of fraudulent use of the mails. The Post Office in Boston has held up a large amount of mail, and it will be returned to the senders under the rules obtaining in such cases.

Boston Board of Health and Sanitary Product Company.—The Boston Board of Health, July 27, brought a bill in equity in the Supreme Court against the New England Sanitary Product Company to restrain the defendant from occupying or using the garbage plant at Cow Pasture, Dorchester district, and from carrying on the trade of treating garbage there; and also to have ordered to remove any garbage that may be in or about the scows and buildings. The grounds of the bill are that the defendant has never asked for, nor has it been granted, an assignment by the Board of Health of a location to carry on its trade or business of rendering garbage; that its plant and buildings, by reason of offensive and hurtful smells and exhalations issuing from them when in operation, are a nuisance, and that the business

itself, as conducted by the defendant, is an offensive trade and occupation, and is being illegally carried on without the written consent of the Mayor and aldermen having first been obtained.

CHICAGO AND WESTERN STATES.

The Protestant Episcopal Hospital of Cincinnati received \$3,000 by the will of the late T. H. C. Allen.

Scarlet fever again prevails at Plainfield, Wis. In the spring the epidemic was severe and all danger was supposed to have passed.

Smallpox in California.—An epidemic of smallpox has visited Rio Vista, on the Sacramento River. There are 8 cases reported. Later reports state that the epidemic is past the danger line. No new cases have occurred recently, and a pest house has been established away from the town.

Saloon Keepers and W. C. T. U.—The Chicago saloon keepers have joined hands with the Woman's Christian Temperance Union in an effort to suppress the importation into this country of absinthe. This queer anomaly is explained by the saloon men to be due to the fact that there is no profit in selling this drink.

Smallpox Among the Cherokees.—A coach occupied by a company of Italians was left on the siding near Adair, I. T., July 23, as soon as a case of smallpox was discovered on board. Guards have been placed around the car and it will be converted into a pest-house to prevent spread among the Cherokee Indians living near.

Milk Dumped Into Sewers.—Health-Officer Chalmers, of San Francisco, had 6 inspectors out early July 22 to hold up the milkmen, and the result was that 309 gallons of impure milk was dumped into the sewers. Dr. Chalmers asserts that over 1,000 gallons would have gone the same way if he had been permitted to employ enough men to cover the territory. In nearly every instance the milk was found to be far below the standard.

Confession of Dowie.—The Zion boss has made a frank confession in his "Leaves of Healing" recently of his money-making intentions in his alleged faith healing schemes, but says the plans are of divine origin, and that the cause cannot be carried on without money. He holds nearly \$2,000,000 in his own name, contributed by his deluded followers. Dowie is contemplating moving his purposed Zion city a few miles farther north of Benton, Ill., to Winthrop Harbor.

Treated by Christian Science.—Mrs. Thomas E. Scantlin, of Lafayette, Ind., who has been treated by her husband according to Christian Science methods since the 8th of last June, had an operation performed in the St. Elizabeth Hospital, July 27, for strangulated hernia. Most of the five physicians present thought her case had gone so far that nothing could be done to save her life, but the operation was performed and the patient rallied so that there are slight hopes for her recovery.

New Hospital in St. Louis.—A resolution was recently offered at a meeting of the City Council of St. Louis, requesting the Board of Public Improvements to prepare and submit to the Council the draft of an ordinance authorizing immediate action to provide a city hospital for the indigent sick and insane. The text of the resolution implies that the present hospital fund of \$258,340.76 be utilized as a beginning, and the annual income of about \$50,000, or 1% of the entire municipal revenue set apart to the hospital fund, be utilized from year to year. The resolution was adopted.

Chicago Pure Food Law Offenders.—The law which went into effect July 1, specifies that butterine and oleomargarine must be labeled clearly. The butter men have complained that while the law has been in effect nearly a month and that just as much oleomargarine is now sold for pure butter as before, there have been no prosecutions by the pure food commissioner. Commissioner Jones reports that inspectors have been at work since the law became effective, and have found a number of places where oleomargarine was being sold as butter. The chemical analyses of the samples will be completed and warrants issued soon.

Chicago's Death Rate.—The latest bulletin of Chicago's health department shows that the death-rate from 1880 to 1897 greatly decreased. From 1880 to 1884 it was 21.9 to 1,000 population, from 1885 to 1889 it was 19.2. From 1890 to 1894 the rate was 17.9 and from 1895 to 1899 it was 14.9. "This shows," as the bulletin remarks, "a reduction in the last period from the death-rate of the first period of more than 35%—an improvement unequalled in any other large city of the world." The year of lowest mortality was 1897 when the rate was 13.46, since then the rate has increased. This increase is said to be due to the recent sanitary neglect of the city, although this may be in some measure offset by the neglect of sewers, street cleaning, and garbage collection.

Lane Medical Lectures.—The fifth course of the Lane Medical Lectures, inaugurated in Cooper Medical College in 1896, will be given in 1900 by Sir Michael Foster, professor of physiology, University of Cambridge, England.

These lectures will be given on the days and hours as follows:

August 20, 11 A.M., Vesalius, his Forerunners and Followers; the Beginning of Modern Physiology.

August 20, 8 P.M., Harvey and the Circulation of the Blood, The Lacteals and Lymphatics.

August 21, 11 A.M., Borelli and the Influence of the New Physics.

August 21, 8 P.M., Malpighi and the Physiology of Glands and Tissues.

August 22, 11 A.M., van Helmont and the Rise of Chemical Physiology.

August 22, 8 P.M., The Physiology of Sylvius and his Pupils, Digestion in the Seventeenth Century.

August 23, 11 A.M., The English School. The Physiology of Respiration in the Seventeenth Century.

August 23, 8 P.M., Priestly and Lavoisier. The Modern Doctrines of Respiration.

August 24, 11 A.M., Réaumur and Spallanzani. The Physiology of Digestion in the Eighteenth Century.

August 24, 8 P.M., Haller and the Physiology of the Nervous System.

SOUTHERN STATES.

Smallpox in Jackson.—A death from smallpox occurred at Jackson, Miss., July 18, and 5 cases have recently developed; these were contracted before quarantine was adopted.

Health Officer for District of Columbia.—At a meeting of the Board of District Commissioners, July 26, Dr. William C. Woodward was reappointed health officer for the district for a term of 3 years from August 1, 1900.

Cattle Disease Attacks Stockmen.—Charbon has spread to an alarming extent among the cattle of Edwards County, Tex. Thousands of the animals have died and the disease has attacked the families of stockmen, causing a number of deaths. A rigid quarantine is being enforced against the infected county, and all possible precautions are being taken to prevent a further spread of the disease.

The American Association of Obstetricians and Gynecologists will hold its thirteenth annual meeting at the Galt House, Louisville, Ky., September 18, 19, and 20, 1900. The following papers among others have been offered: Diagnosis of ectopic pregnancy before rupture, based on 10 cases, J. F. Baldwin, Columbus; The private hospital, Joseph Price, Philadelphia; Extirpation of the rectum and sigmoid per vaginam, John B. Murphy, Chicago; A satisfactory method for suspension of the uterus, Robert T. Morris, New York.

Baltimore Hospitals Refuse County Patients.—The Baltimore County Commissioners communicated with the Maryland University Hospital in Baltimore regarding its refusal to take accident patients from Baltimore county. County Chief of Police appeared before the Commissioners and reported that he experienced great difficulty in arranging for the care and treatment of persons injured by accidents upon the railroads and otherwise in the county. Some of the hospital authorities of Baltimore object to receiving persons who sustain injuries outside of the city limits, and recently it was reported that the Maryland University Hos-

pital positively would receive no more such cases from the county.

Quarantine Conflict.—The first quarantine conflict of the season is reported between Louisiana and Alabama. Both States have quarantine inspectors at the several Central and South American ports, who report whenever cases of yellow fever occur there. The Louisiana inspector reported one case of yellow fever and several suspicious cases at Puerto Cortez, Costa Rica, and the Louisiana Board of Health proclaimed quarantine against that country. The quarantine inspector of the Alabama Board of Health did not agree with Dr. Wood in the diagnosis of the disease in Puerto Cortez, and refused to report it as yellow fever. Alabama, therefore, refused to quarantine against Costa Rica. The action of the Louisiana Board of Health has had the effect of turning the fruit trade temporarily from New Orleans to Mobile.

MISCELLANY.

A Peculiar Disease in Alaska.—It is reported that a disease resembling la grippe, and said to be very fatal, prevails on the seal islands in Behring Sea.

Yellow Fever Among Soldiers in Cuba.—At Pinar del Rio 11 deaths are reported while 8 cases and 11 suspects are under observation. The disease obtained headway before positive diagnosis. Cases are also reported among the troops at Matanzas.

More Medical Officers Needed.—General Sternberg says that 100 additional medical officers are wanted for duty in the Philippines and China. He says that only graduates of reputable medical colleges, with some experience, and under 40 years of age, will be accepted.

Food for Starving India.—The State Department has received word from the United States consul at Bombay, India, reporting the arrival at that port on June 25 of the steamship *Quito*, with 5,000 tons of corn, contributed by the people of America for the relief of the famine sufferers in India.

Hobson to Consult an Oculist.—The *Coptic*, which has just arrived at San Francisco, had Lieut. Hobson as a passenger from Hong Kong for San Francisco, but he was obliged to leave the vessel at Yokohama for medical treatment. He is afflicted with retinitis and will go from Yokohama to Tokio to consult a Japanese specialist.

For Ninth Regiment Wounded.—The Hospital Ship *Maine* Committee has received a donation of \$5,000 from Mrs. Alfred Corning Clark, of New York, with a request that it be devoted to the aid of the Ninth United States Infantry wounded. Another subscription of \$1,000 from an anonymous source brings the total since July 12 to about \$7,000.

The "Arethusa" to Carry Surgical Supplies to China.—Surgeon-General Van Reypen, of the Navy, has arranged to send direct to our ships at Taku a quantity of surgical supplies and dressings on the *Arethusa*, which sails shortly by way of Suez. To meet any possible necessities 6 additional assistant surgeons were sent out to the Asiatic station some time ago. From the standpoint of the Navy the situation, so far as the medical corps is concerned, is considered to be well in hand.

Medical Supplies for Troops.—Surgeon-General Sternberg has made every arrangement for the care of the sick and wounded soldiers on Chinese soil. Provision has been made by the Quartermaster's Department for the immediate transportation of an abundance of medical stores and supplies. The nature of the situation precludes the establishment of a general hospital. It has been decided to confine present efforts to the establishment of a suitable field hospital in the immediate vicinity of military operations.

Hebrew Charities.—The report of the United Hebrew Charities for the month of June shows that the total number of applications received and dealt with during the month reached 3,417, representing about 11,390 individuals. Regular monthly allowances were given in 385 cases not included in the number of applications here given. Transportation to

different parts of the country and Europe was supplied to 85 persons. To homeless men and women 40 nights lodgings and 141 meals were furnished. The nurses of the institution made 900 visits to 57 cases, and 57 persons were supplied with nourishing food.

Expert in Mental Diseases to be Sent to the Philippines.—Surgeon-General Sternberg has decided to station an expert in mental disease at Manila, to have charge of insane patients prior to their embarkation for this country. For this purpose he has given a contract as acting assistant surgeon to Dr. Charles H. Latimer, who has been a member of the staff of the Government insane asylum at Washington for the past 12 years. He takes with him as assistants 2 attendants from the Government asylum for the insane, who have each had more than 10 years' experience in handling such cases.

Obituary.—J. LEONARD, of Chicago, July 21, aged 46 — GEORGE W. LEWIS, of Buffalo, July 24.—THOMAS J. BOYLE, of Houston, Texas, July 22, aged 50.—JOHN D. CARPENTER, of Rolla, Mo., July 23, aged 50.—D. L. SHEA, of New York, July 24, aged 35.—HENRY T. HEROLD, of Newark, July 25, aged 38.—EMMANUEL A. GRIVEAUD, of St. Louis, July 26.—SAMUEL A. H. MCKIM, of Washington, D. C., July 26, aged 74.—RICHMOND J. SOUTHWORTH, of Georgetown Heights, July 27, aged 59. J. B. WELCH, in Wilmington, Del., July 27, aged 72.—WILLIAM J. WOODRUFF, of Providence, R. I., July 28 —T. LOUIS BROWN, of Cincinnati, July 23, aged 65. —GEORGE L. LIDDELL, of Toronto, July 5, aged 32.

Separation of Xiphopagous Twins.—On May 30 of this year, Dr. Chapot Prevost, of Brazil, separated the twins which have been the subject of much medical discussion during the past year. They were not united by a single band as were the Siamese twins, but their abdominal cavities were connected by a large opening, practically forming one cavity, and the thoracic cavities were also implicated, while the livers were united in nearly their whole extent. They had been under observation at the hospital at Rio de Janeiro since last October. One had an attack of grip with corresponding temperature and pulse, while the other remained well. This led to the belief that no psychological conditions forbid their separation. On the seventh day after the operation one of the twins died, the other continues to improve without any drawback. An autopsy revealed a state of inflammation of the pleura and pericardium with exudation, while the liver was completely healed.

Smallpox at Nome.—Captain Tuttle, of the revenue cutter *Bear*, in a report says: "The situation along the whole coast I regard as very serious. It is estimated that at present there are within a radius (taking the United States Post Office as a center) of 10 miles 25,000 people. Most of them are living in tents either on the beach or tundra. The sanitary condition of the portion of the city where houses have been erected is simply frightful. Typhoid fever is raging and smallpox steadily gaining. All possible efforts are being made to stamp out the smallpox, but with so many thousands of tents, scattered over miles of territory, it is impossible for the health authorities to keep track of all cases. As nearly as can be traced, the disease was introduced from the steamer *Oregon*. Afterward the steamers *Ohio* and *Santa Anna* were found to be infected, and were placed in quarantine. The *Oregon* had left before her cases were discovered."

Possible Peril for Army Nurses.—China is not a party to the Geneva Red Cross Convention, by which the signatory powers bound themselves in time of war to respect the Red Cross and to treat surgeons and nurses belonging to the armies of the enemy as noncombatants. China is, in fact, the only one of the great powers of the world which has not joined in this convention which assures the safety of those on errands of mercy on the battlefield. It is reported that this fact may deter the War Department from permitting any of the women nurses who are being sent to the Far East from landing in China for duty there. There are 19 female nurses on the transport *Grant* with General Chaffee. They were destined for the Philippines, but might be landed in China if conditions were such that they could be useful and not put into unnecessary peril. There are also 5 nurses on the *Sumner*. There are now 145 army nurses, practically all

of whom are either in the Philippines stationed at the hospitals of the various garrisons throughout the archipelago, or on their way there.

Honorary Fellowships.—The centenary meeting of the Royal College of Surgeons this afternoon was the occasion for the presentation of diplomas of honorary fellowship to a large number of distinguished personages from all parts of the world, including Lord Salisbury, Lord Rosebery, Dr. W. S. Halsted, of Baltimore; Dr. W. W. Keen, of Philadelphia; Dr. R. E. Weir, of New York; Dr. J. C. Warren, of Harvard; Dr. I. H. Cameron, of Toronto; Sir W. H. Hings-ton, and T. G. Roddick, of Montreal; Edward Albert, of Vienna; Charles Bent Ball, of Dublin; Eduardo Bassini, of Padua; Edward Hallaran Bennett, of Dublin; John Wilhelm Berg, of Stockholm; Oscar Thorwald Block, of Copenhagen; Enrico Bottini, of Pavia; Dr. Salvador Fernandez Cardenal of Barcelona; Antonito D'Antona, of Naples; S. Exc. Prof. Dr. Ernst von Bergmann, of Berlin; Francesco Dorante, of Rome; S. Exc. Prof. Dr. Friedrich von Esmarch, of Kiel; Surgeon-General James Jamieson, of the Army Medical Service; Theodor Kocher, of Bern; Franz König, of Berlin; Ernst Georg Ferdinand Küster, of Marburg; Elie Lambotte, of Brussels; Odilon Marc Lannelongue, of Paris; Karl Gustaf Lennander, of Upsala; William MacEwen, of Glasgow; Col. Kenneth MacLeod, of Netley; Julius Nicolaysen, of Christiania; Sir Henry Frederick, of the Royal Navy; Léopold Ollier, of Lyons; Victor Pachoutine, of St. Petersburg; Samuel Pizzi, of Paris; Col. Daniel Charles O'Connell Raye, of the Indian Medical Service; Frederico Rubioy Gali, of Madrid; Nicolas Wassilievitch Sklifossovsky, of St. Petersburg; Paul Tillaux, of Paris; Nicolas Weliaminoff, of St. Petersburg.

Text of German Meat Laws.—A copy of the German meat inspection law, which has been vigorously denounced by the antiagrarian members of the German Reichstag and has been the subject of diplomatic interchanges of opinion between the American and German Governments, has been received. Proprietors of packing houses in the United States believe that the bill will end a great portion of our growing export of meat to Germany. One of the provisions practically puts an end to the importation of sausage or other chopped meat into Germany, and another, due evidently in part to the agitation about the use of preservatives on meat sent to the army in Cuba in 1898, prohibits the importation into the Zollverein of meat on which preservatives harmful to human health have been used. The fact that any preservatives used are harmless must be instantly ascertainable. Fresh meats must be imported in whole carcasses or in halves and with most of the organs attached to the carcass, that the healthfulness of the meat may be better judged. Meat that has had preservatives applied to it, but from which their traces can readily be dissipated, may be imported under the terms accorded fresh meat. All of these regulations are to be in effect until January 1, 1904. Horse meat may be imported as such and may be sold in licensed establishments which advertise the fact that horse flesh is for sale. Cattle on the hoof may be imported into Germany and slaughtered there under local regulations that provide strictly against the unhealthy meats getting into the market. Severe penalties are provided for infraction of the law and the use of any unhealthful ingredient in the packing of meat is strictly prohibited.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended July 26, 1900:

SMALLPOX—UNITED STATES.				CASES.	DEATHS.
ALASKA:	Cape Nome . .	June 20-July 10		5	on vessels
DISTRICT OF	COLUMBIA:	Washington . .	July 14-21 . . .	1	
INDIANA:	Michigan City . .	July 14-21 . . .		1	
KANSAS:	Wichita	July 14-21 . . .			1
KENTUCKY:	Covington . . .	July 9-15		3	
LOUISIANA:	New Orleans . .	July 14-21 . . .		8	2
MASSACHUSETTS:	Fall River . . .	July 14-21 . . .		2	
"	Lowell	July 14-21 . . .		2	
MINNESOTA:	Minneapolis . .	June 30-July 14		23	
NEW HAMPSHIRE:	Manchester . . .	July 14-21 . . .		3	
OHIO:	Cincinnati . . .	July 6-20		7	
"	Cleveland . . .	July 14-21 . . .		20	
UTAH:	Salt Lake City .	July 14-21 . . .		4	

SMALLPOX—FOREIGN.

			CASES.	DEATHS.
AUSTRIA:	Prague	June 23-30	10	
BRAZIL:	Rio de Janeiro . . .	May 19-June 22 . . .		18
CHINA:	Hongkong	June 3-23	1	
EGYPT:	Cairo	June 3-10		5
ENGLAND:	Liverpool	June 30-July 7 . . .	3	2
"	London	June 30-July 7 . . .	7	
FRANCE:	Lyons	June 23-30		1
"	Paris	June 30-July 7 . . .		4
GIBRALTAR:		July 1-8		1
GREECE:	Athens	June 30-July 7 . . .	2	2
INDIA:	Bombay	June 12-26		12
"	Karachi	June 10-24	8	8
MEXICO:	Vera Cruz	July 7-14		4
RUSSIA:	Moscow	June 12-23	17	5
"	Odessa	June 23-30	8	
"	St. Petersburg . . .	June 23-30	3	8
"	Warsaw	June 23-30		7
" SIBERIA	Vladivostok	May 1-31	9	
SCOTLAND:	Glasgow	July 6-13	68	2
STRAITS				
SETTLEMENTS:	Singapore	May 26-June 16 . . .		1

YELLOW FEVER.

BRAZIL:	Rio de Janeiro . . .	May 18-June 2 . . .		34
COLOMBIA:	Cartagena	June 30-July 7 . . .	9	7
"	Panama	July 9-16	3	1
COSTA RICA:	Port Limon	July 16	1	suspicious case.
CUBA:	Cienfuegos	July 21	1	among soldiers.
"	Havana	July 4-11	21	5
"	Sagua	July 5	2	
MEXICO:	Vera Cruz	July 7-14	4	

CHOLERA.

INDIA:	Bombay	June 12-26		179
"	Madras	June 2-22		2
JAPAN:	Osaka	June 23-30	1	

PLAGUE.—FOREIGN AND INSULAR.

ARABIA:	Aden	June 23-30	1	1
CHINA:	Hongkong	June 2-23	207	105
INDIA:	Bombay	June 12-26		185
"	Karachi	June 10-17	17	16
JAPAN:	Osaka	June 19-30	3	
"	Sekai	June 19-30	1	
"	Shidzuoka Kan . . .	June 19-30	1	
"	Tamsui	June 1-14	76	65
KOREA:	Seoul	June 2-16	Epidemic.	
PHILIPPINES:	Manila	May 16-June 7 . . .	4	

Changes in the Medical Corps of the U. S. Army
for the week ended July 28, 1900:

PLUMMER, GEORGE R., acting assistant surgeon, is relieved from the duty at Columbia Barracks, Cuba, and will join his former station, Battery No. 3, artillery defences of Havana, Cuba.

COOKE, ROBERT P., acting assistant surgeon, is assigned to duty at Pinar del Rio Barracks, Cuba.

DUCKER, Major ORLANDO, surgeon, is relieved, and Major Rafael Echeverria, surgeon, is announced as military sanitary officer of the municipality of Marianao in his stead.

KEAN, Major J. R., surgeon, is granted leave for 1 month, with permission to go beyond the limits of the division of Cuba.

HAYWARD, EDWARD P., acting assistant surgeon, is assigned to duty at the U. S. General Hospital, Presidio.

RICHARDSON, GEORGE H., acting assistant surgeon, is relieved from duty at the U. S. General Hospital, Presidio, and assigned to temporary duty on the U. S. transport "Sumner," to relieve Acting Assistant Surgeon George E. Maurer.

MAURER, GEORGE E., acting assistant surgeon, will proceed to New York City and report by letter to the Surgeon-General of the Army for annulment of contract at his own request, his contract having expired.

USHER, First Lieutenant F. M. C., assistant surgeon, is relieved from further duty with the garrison of Matanzas, Cuba, and will report to the commanding officer of the first battalion of the Tenth Infantry, for duty with the battalion while en route to Santiago de Cuba. Upon arrival at Santiago de Cuba Lieutenant Usher will report to the commanding officer of the Fifth Infantry, for duty with that regiment while en route to New York, and on arrival at the latter place will report by telegraph to the Adjutant-General of the Army for further instructions.

SHELBY, W. D., acting assistant surgeon, is relieved from further duty with the garrison of Matanzas, Cuba, and will report to the commanding officer, Tenth Infantry, for duty with the command while en route to Cienfuegos, Cuba, and upon arrival at the latter place will report to the commanding officer, Second Infantry, for duty with, and to accompany the regiment to the United States.

LAWRENCE, W. P., acting assistant surgeon, is relieved from further duty at Sancti Spiritus, Cuba, and will proceed to Cienfuegos, Cuba, reporting to the commanding officer, Second Infantry,

for duty with, and to accompany that regiment to the United States.

HUGHES, L. S., acting assistant surgeon, is relieved from further duty at Caibarien, Cuba, and will proceed to Cienfuegos, Cuba, reporting to the commanding officer, Second Infantry, for duty with, and to accompany that regiment to the United States.

CORBUSIER, HAROLD D., acting assistant surgeon, will report for duty to the commanding officer, Fifteenth Infantry.

AMADOR, RAOUL A., acting assistant surgeon, will report to the chief sanitary officer of the city of Havana, for duty at the Las Animas Hospital.

POLHEMUS, Captain ADRIAN S., assistant surgeon, will proceed from Fort Leavenworth to Fort Robinson, for the purpose of accompanying troops A and C, First Cavalry, from the latter post to Seattle, Wash. After arrival of the troops at Seattle, Captain Polhemus will return to his proper station, Fort Leavenworth.

WILCOX, Captain CHARLES, assistant surgeon, will proceed to San Francisco, Cal., and report to the commanding general, department of California, for duty with the Ninth Cavalry, en route to Manila, P. I.

DE LOFFRE, SAMUEL M., acting assistant surgeon, will proceed from Washington, D. C., to Omaha, Neb., and report to the commanding general, department of the Missouri, for duty to accompany the First Cavalry from that department to the Philippine Islands, and upon arrival at Manila will report to the commanding general, division of the Philippines, for assignment to duty.

CHAPMAN, W. EARLE, acting assistant surgeon, will proceed from Sheboygan, Mich., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

MANY, HARRY C., acting assistant surgeon, will proceed from Honesdale, Pa., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

NEWTON, RALPH W., acting assistant surgeon, will proceed from Barre, Vt., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

RENO, WM. W., acting assistant surgeon, will proceed from Detroit, Mich., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

ROWE, MICHAEL J., acting assistant surgeon, will proceed from Bridgeport, Conn., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

SPAETH, LOUIS A., acting assistant surgeon, will proceed from Jersey City, N. J., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

STREET, LIONEL A. B., acting assistant surgeon, will proceed from Brookline, Mass., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

UNGER, ISIDOR M., acting assistant surgeon, will proceed from New York City, to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

LAMKIN, EDWARD E., acting assistant surgeon, will proceed from St. Louis, Mo., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

LEMEN, HARRY R., acting assistant surgeon, will proceed from Upper Alton, Ill., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

WETHERILL, First Lieutenant HENRY E., assistant surgeon, will report to the commanding general, department of California, for assignment to duty with the First Cavalry en route to Manila, P. I.

BYRNE, Major CHARLES B., surgeon, is relieved from further duty at Plattsburg Barracks, and will proceed to San Juan, Puerto Rico, and report to the commanding general, department of Puerto Rico, for assignment to duty as chief surgeon of that department.

HOFF, Major JOHN VAN R., surgeon, is relieved from further duty as chief surgeon, department of Puerto Rico, and will proceed to Washington, D. C., and report to the Surgeon-General of the Army, for instructions.

IVES, Major FRANK J., surgeon, is relieved from further duty as chief surgeon, department of Matanzas and Santa Clara, and will proceed to New York City and report by telegraph to the Surgeon-General of the Army, for instructions.

MUNSON, Captain EDWARD L., assistant surgeon, in addition to his present duties, is assigned to the command of the U. S. General Hospital, Washington Barracks, during the absence of Captain William C. Borden.

BECKMAN, PETER W., acting assistant surgeon, will proceed from Alton, Ill., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

LAMB, DRYDEN H., acting assistant surgeon, will proceed from Owosso, Mich., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

CHASE, ALPHA M., acting assistant surgeon, will proceed from Denver, Colo., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

GIBBONEY, STUART G., hospital steward, office of the chief surgeon, department of Western Cuba, will be sent from Matanzas, Cuba, via New Orleans, La., to San Francisco, Cal., for transportation to China.

Changes in the U. S. Marine-Hospital Service, for the week ended July 26 1900:

MAGRUDER, G. M., surgeon, is granted leave of absence for 14 days.
WERTENBAKER, C. P., passed assistant surgeon, to rejoin station at Wilmington, N. C., and upon being relieved by Surgeon T. B. Perry, proceed to New Orleans, La., and assume command of the service, relieving Assistant Surgeon J. W. Schereschewsky.
SCHERESCHEWSKY, J. W., assistant surgeon, is relieved from temporary charge of the service at New Orleans, La., and upon arrival of Passed Assistant Surgeon C. P. Wertenbaker directed to report to him for duty.
BAILEY, C. W., acting assistant surgeon, is granted leave of absence for 3 days.
FISCHER, A. W., acting assistant surgeon, is granted leave of absence for 15 days during the month of July.
STEARNS, W. L., hospital steward, is granted leave of absence for 23 days from August 6.
HOLSENDORF, B. E., hospital steward, is granted leave of absence for 30 days.
HOLSENDORF, B. E., junior hospital steward, promoted and appointed junior hospital steward.

Changes in the Medical Corps of the U. S. Navy, for the week ended July 28, 1900:

RUSSELL, A. C. H., surgeon, detached from the "Newark," and ordered to the Naval Hospital, Yokohama, Japan, for treatment.
KENNEDY, R. M., passed assistant surgeon, detached from the "Yorktown," and ordered to the "Newark."
GRUNWELL, A. G., assistant surgeon, detached from the "Brooklyn," and ordered to the "Monocacy."
GATES, M. F., surgeon, commissioned surgeon from July 7, 1900.
ROTHGANGER, G., surgeon, commissioned surgeon from July 7, 1900.
SPEAR, R., passed assistant surgeon, commissioned passed assistant surgeon from June 22, 1900.
ELMER, M. K., assistant surgeon, commissioned assistant surgeon from July 18, 1900.

Foreign News and Notes.

GREAT BRITAIN.

London Hospital for Sick Children.—John H. Morgan, on resigning the position of senior surgeon, has been unanimously elected consulting surgeon.

The Order and Insignia of the Medjidjeh of the Second Class has been received by Dr. M. Armand Ruffer, president of the Sanitary, Maritime, and Quarantine Board of Egypt, from the Sultan of Turkey.

The Prince of Wales is now a Fellow of the Royal College of Surgeons. The president of the college, Sir William MacCormac, headed a deputation that presented him with the diploma, at Marlborough House, July 24.

Edinburgh Obstetrical Society.—On the recommendation of the Council of the Edinburgh Obstetrical Society, Professor Säuger, of Prague, and Professor Fehling, of Halle, were, after a ballot of the Fellows, unanimously elected Honorary Fellows.

Hertford British Hospital.—An address will be presented to Alan Herbert, physician to the Hertford British Hospital, by the former and present officers of the hospital, numbering 20, at the forthcoming International Medical Congress. The date of presentation is not fixed.

The Heath Scholarship, value £200, which is awarded every 2 years by the University of Durham, has this year been awarded to Dr. Nathan Raw, of Liverpool, and Major J. R. Dodd, R.A.M.C. The subject of the essay was, "The Urinary Tract, its Injuries and Surgical Diseases, their Pathology and Treatment."

The South African Hospitals Inquiry.—On July 17, Mr. Balfour was able to announce the names of the two additional members of the committee. Lord Roberts's two men of sound common sense have been found in Sir David Richmond, ex Lord Provost of Glasgow, and Mr. Harrison, General Manager of the London and Northwestern Railway. The names of Lord Justice Romer, Dr. Church, and Professor Cunningham were previously announced.

French Hospital Appointment.—Dr. George Ogilvie has been appointed full physician to the French Hospital in the room of Dr. Keser, who has resigned owing to ill-health. Dr. Ogilvie has done the work of Dr. Keser at the hospital for more than a year. It may be mentioned that a necessary condition for tenure of the post is a colloquial mastery of the French language.

Purification of Sewage of Leicester.—Hitherto the sewage of nearly the whole of the city of Leicester has been treated, after passing through a settling tank of about 126,000 cubic feet capacity, by broad irrigation on about 1,355 acres of stiff clay land. Owing to the increase of population and other causes this land has become greatly overtaxed, and it has become imperative either to purchase a much larger quantity of land for the sewage farm, or to adopt some method of purification of the sewage before applying it to the land.

London's Spectacle Mission.—In London there is an odd philanthropic enterprise called the Spectacle Mission. It was founded by Dr. E. J. Warner over 10 years ago, and provides spectacles for poor working people suffering from defective sight. Last year over a thousand spectacles were given away by the mission. A subscriber of five shillings receives 4 spectacle cards for distribution; a ten-shilling subscriber 10 cards, and so on. The eyes of each applicant are carefully tested, and the spectacles are new, of good glass, with steel frames. Many a poor working man and woman has been enabled by this mission to retain employment.

Water Carriage.—At a recent meeting of the Manchester City Council an alderman proposed the following motion: "That in considering the plans of new buildings the Improvement and Buildings Committee be instructed not to insist upon the provision of water-closet accommodation, unless special circumstances render it desirable." His idea was that water should be carefully used until the laying of the second pipe from Thirlmere is completed, which will take 3 years. It was stated, however, that the effect of the present water closet system on the water-supply was not appreciable. The motion was rejected.

The Undermanning of the Army Medical Service.—The following is the distribution of the active list of the Army Medical Service and Royal Army Medical Corps, according to the monthly Army list for July, 1900. The total strength increased during the month from 882 to 889. The home strength has decreased by 10 or including the 7 lieutenants gazetted by 17, which represents the increase of the South African establishment from 411 to 428. The numbers at other foreign stations show a decrease of 4, namely from 369 to 365. There are 120 retired officers employed, of whom 5 are in South Africa.

Retired Army Medical Officers.—There are 93 medical officers liable to recall; of these 18 are holding permanent appointments for officers on retired pay. The services of 25 others who volunteered to return to the service have been accepted, and they have been employed at home and abroad; none have been recalled by compulsion. Four officers are employed in South Africa on hospital ships. The 18 who are holding permanent appointments are officers of high rank, and it is thought better to employ in South Africa young civilian doctors who have more recent experience of hospital work.

Antityphoid Inoculation.—The Under Secretary of State for War has been asked whether his attention had been called to a report from Dr. Conan Doyle on the Lungman Hospital, South African Field force, Bloemfontein, in which he stated that there had been no death from enteric fever up to June 5 from among the inoculated; whether the War Office had yet any official statistics on the results of inoculation; and whether any further efforts were being made to increase the number inoculated in the men now going out to South Africa and China. Mr. Wyndham replied that the statistics at present available were not sufficient to enable him to give a reply to the first and second paragraphs of the question. Inoculation is offered to all men embarking from home for a country such as South Africa or China where enteric fever is prevalent, but such inoculation is purely voluntary.

Women Surgeons.—An interesting speech was made, says the *London News*, at the annual meeting of the new Hospital for Women, London—of which all the physicians, surgeons, and students, are women—by the eminent surgeon Sir Henry Smith. He stated that he had lately been present at a number of most serious operations performed by women surgeons, and had come to the conclusion that the small hands and delicate touch of women are particularly suitable for surgical work. The same tactile skill that makes a good needlewoman, he intimated, is of the highest use in modern "conservative" surgery; and he added that the results gained in that hospital would compare favorably with those recorded anywhere else.

Society for Relief of Widows and Orphans of Medical Men.—At a meeting of the Society in London, July 11, 1 new member was elected, the deaths of 3 members reported, and 3 persons had ceased to be members since April. The death of a widow who had received £35 a year since 1886 was announced. An application for grants for herself and 7 children was read from a widow, and grants at the rate of £100 a year were made. The husband, who met with a fatal accident in Australia, had only been elected a member in 1891, and had paid 18 guineas in subscriptions. A sum of £1,197 was voted for distribution among 48 widows, 14 orphans, and 6 recipients from the Copeland Fund. The expenses of the quarter were £44.12s.

The New Medical Bill.—A new bill to amend the Medical Acts 1858 to 1886, was introduced into the House of Commons by Sir Richard Jebb recently and was read a first time. The general objects of the bill are as follows: To enable the General Medical Council to suspend a medical man, guilty of misconduct, from practice for a limited period only; whereas, at present, he must be suspended, if at all, permanently. To strengthen the powers possessed by authorities granting diplomas to withdraw such diplomas from persons who have been already removed from the Register of Medical Practitioners. If a medical man, charged with violating the Medical Acts or one of them, is brought before a metropolitan police magistrate, and is fined, the fine goes to the Receiver of Police. The bill proposes that in such a case the fine shall be paid to the general medical council, and applied to the cost of enforcing the medical acts.

Housing and Improvement Association.—According to the *Lancet*, a conference was held recently in Hulme, "to consider the housing question as affected by the past clearance of low-rented houses and the threatened closing by the Sanitary Committee of the Manchester Corporation of many more, because of their alleged unfitness for human habitation." It was attended by many representative people. Resolutions were passed appreciating the action of the City Council in declining to sanction the further closing of houses in Hulme till provision has been made for those displaced, and yet assuring the Sanitary Committee of its support if they will only build as they pull down. The landlord of some of the condemned property brought forward a very familiar argument that there had been no infectious disease in that property for 20 years, and said that "there was too much of this pulling houses down." Such statements are always made where the death-rate is highest. The conference was constituted a permanent Housing and Improvement Association, and may, it is hoped, do useful work.

The Water-supply of Belfast has been the subject of much discussion. Many believe that the contamination of the catchment area is the cause of the present outbreak of typhoid fever. The present catchment areas—Woodburn and Stoneyford, which have cost £700,000—give 11,500,000 gallons daily all the year round, and just now 13,000,000 gallons are the daily consumption. The present wet summer saved matters this year, but another summer cannot be faced without an additional supply, and if the city of Belfast increases as it has done since 1894 in 7 years hence 17,000,000 gallons daily will be needed. It is hoped that between April and July from 2,000,000 to 3,000,000 gallons daily may be obtained from the rivers at Killybeg, and during the other 8 months 10,000,000 gallons daily. Whether the water will be quite clear of sediment or peat remains to be seen. The Public Health Committee who was appointed to consider the question of the health of the city and how it could be im-

proved, with special reference to typhoid fever, recommends that the sewers and drains be more efficiently cleansed, ventilated, and flushed; that old courts, alleys, and drains be flushed out; that sewer atmosphere generated in the main drains be prevented from rising to the main levels of the city; that the milk-supply of the city be more effectively controlled; that the sale of shellfish from Belfast Lough be prohibited within the city; that a sufficient number of officers be provided for drain-testing; that the domestic scavenging of Belfast be improved; and that pollution of streams in the city be prevented. These precautions, it is thought, will keep down the normal rate of typhoid fever.

CONTINENTAL EUROPE.

Hydrotherapy.—An official chair of hydrotherapy is about to be established at Berlin. A hydrotherapeutic department in the Charité Hospital will be opened in the autumn under the direction of Professor Brieger.

Foreign University Intelligence.—Friedrich Schultz has been promoted to an extraordinary professorship of physiological chemistry at Jena. Dr. Axenfeld, of Rostock has been offered the chair of ophthalmology at Marburg. Dr. Bosc has been appointed to the chair of physiological anatomy at Montpellier. Gustav Braun von Fernwald, of Vienna, is about to retire.

Pollution of the Seine.—The river Seine is not only teeming with filth of all kinds, but fish are dying by millions because the Paris Municipal Council has broken faith with the public and once again turned the city sewage into the river. So fearful has the stench been recently that nearly all the summer residents have been obliged to leave their villas. This applies to every place from the capital to Mantes. The sewage farm at Achères is entirely too small and the surplus matter must be got rid of in some other way.

The Medical Profession in Italy.—The statistics of the medical profession in Italy present something of the same state of overcrowding as elsewhere in the world. In 1876-7 there were 2,035 students of medicine, in 1893-7 there were 6,922. But it is puzzling to note that while the number of practising physicians in 1878 was 18,044, their number was only 20,000 in 1899. About 900 men leave the universities yearly, but only about 500 physicians are reported as dying in the same limit. In Italy there are some 9,000 *medici-condotti* or town-physicians (or health-officers), of these about 5,000 have a yearly salary, which in only 500 cases exceeds 3,000 *lire* a year. Some of the others, however, receive small stipends from the richer families of their districts.

MISCELLANY.

Famine Expenditures.—The Indian Government has spent in the last two years £13,000,000 on account of the famine and is prepared to spend £3,000,000 more in famine relief.

Plague.—The total number of cases of plague at Sydney to May 12 is 216 of whom 73 have died; 1,242 contacts have been isolated, of whom 153 still remain in quarantine. Among contacts 7 cases have occurred.

Obituary.—JAMES STEVENSON FORRESTER, on board the *Dunera*, June 18, aged 48.—DR. MOUGEOT, Member of the French Chamber of Deputies.—DR. T. BECO, President of the Belgian Medical Commission.—NICHOLAS SMITH GLAZEBROCK, of Liverpool, July 14, aged 87.—FRANCIS RAWORTH HEYCOCK, of Hounslow, July 9, aged 58.—W. WELLINGTON LAKE, at Bloemfontein, July 13, aged 46.

The Antimalarial Expedition.—Dr. L. Sambon and Dr. Low, the two medical men intrusted by the British Government with the task of testing the possibility of guarding against malarial infection in the Roman Campagna, have found a favorable place for their purpose. They are about two miles from Ostia on the edge of a swamp. Their hut stands close to a canal containing a luxuriant growth of algae and other aquatic plants. The few dwellings near are infested by mosquitos of the anopheles variety and are inhabited by peasants who constantly suffer from malaria.

This spot offers ideal conditions for experiment. King Humbert manifested much interest in their trial, and had assisted them in many ways.

Japanese Medical Graduates.—A Japanese paper laments the fact that medical students in Europe graduate at 22 or 23 years of age while in Japan the age is over 26. The paper points out that Japanese mature and age earlier than Europeans, and that as the period of usefulness in life in Japan is over at 50 the period of active practice is short. In Europe a man is usually at his best at 50 and even at 60 or 70.

A Bountiful Benefactor.—M. Crevat-Durant, of Fontainebleau, who recently died, has bequeathed \$30,000 to the Pasteur Institute of Paris, \$30,000 to the Œuvre des Enfants Tuberculeux of Ormesson, \$80,000 to the Society for the Protection of Children, and \$30,000 to the town of Fontainebleau for the enlargement of its hospital accommodation, besides large sums for many other charitable purposes connected with Fontainebleau.

The Prevalence of Venereal Diseases in Prussia.—With the object of obtaining accurate information as to the prevalence of venereal diseases in Prussia the Cultus-Minister, with the cooperation of the Medical Councils, has sent a circular to all medical practitioners asking them to state the number of patients coming to them for treatment between April 1 and 30 for gonorrhea and its sequels, for soft sores, and for syphilis, primary, secondary, or tertiary.

Inspection of Parisian Schools.—According to the *Lancet* the Minister of Public Instruction has just appointed a commission for the consideration of questions of health and sanitation in schools (*lycées*). This commission will advise on all matters relating to the care of the pupils, especially in boarding-schools, as well as to the sanitary condition of the school premises. The commission will inspect the *lycées* of the Department of the Seine at least once a year, and will hold special inspections whenever circumstances require them. The members of the commission may also be sent to inspect other schools. After each inspection, at which the medical attendant of the school has to be present, the commissioners will submit their observations to the Minister in a written report and will specify the improvements which they consider necessary.

China's Bad Water.—One of the greatest dangers to be encountered in campaigning in China is lack of water. The country has been so thickly populated for so many centuries that it is one vast graveyard. Then, too, there is no system of sewerage or drainage, except into cesspools, which often stand almost alongside the wells that supply the various communities. The water, therefore, is always reeking with the germs of typhus, typhoid, and that fearful oriental dysentery that makes living skeletons out of the strongest men in a few weeks. The Chinese manage to escape these epidemics by boiling all their water and drinking it hot. Quarantine is unknown in China, and it is common to see men all broken out with smallpox lying along the streets. The Chinese regard smallpox much as we do chickenpox—as something that everybody must have; in fact, among them measles is much more feared. The method of fertilizing the fields and gardens is such that all green things are poisoned with the same germs that taint the waters. As a rule vegetables and fruits are safe to eat in China only after they have been thoroughly cooked.

Rapid Diagnosis of Rabies in the Dog.—According to the *Lancet*, at the meeting of the Academy of Medicine, held on April 10, Professor Cornil read for M. Babès, of Bucharest, a short paper showing the possibility of making a rapid diagnosis of rabies by an examination of the medulla oblongata and spinal cord of a dog which had inflicted a bite. The process was as follows: 1. A small piece of the brain of the dog was inserted into the brain of a rabbit. 2. A slice of the medulla oblongata of the same dog was hardened in alcohol containing formol. At the end of 24 hours sections were cut from it and stained with carbolized fuchsin, methylene-blue, or polychrome. The sections were then dried, mounted, and examined with a low power. If *nodules embryonnaires* were found in the grey substance, together with a perivascular or general *état embryonnaire* and chromatolysis

of the nerve elements, this amounted to evidence that the dog was rabid. In all cases in which these bulbar lesions were observed it was found that the animals inoculated with brain-substance from the dog developed symptoms of rabies, while, on the contrary, such symptoms never appeared in rabbits inoculated with brain-substance from dogs the medulla oblongata of which did not present any of the above-mentioned alterations.

Oxygen in the Treatment of Seasickness.—According to the *Lancet*, on April 17 M. Dutremblay read a paper before the Academy of Medicine upon the treatment of seasickness by inhalations of pure oxygen under pressure. The first trials of this method were carried out with success by Dr. Dubois, professor at the Faculty of Sciences of Lyons, who considered that the principal cause of seasickness lay in the incomplete respiratory exchange which occurs in the lungs. The amount of residual air is thus increased. M. Dutremblay, assisted by Dr. Perdriolat, a medical officer in the service of the Compagnie Générale Transatlantique, made a trial of the remedy upon a number of seasick passengers. In his view the disturbances in position of the viscera and the contraction of the diaphragm bring about the secondary manifestations of seasickness, such as migraine, vomiting, chilliness, and the like. Under such conditions the use of oxygen is quite justified. The result of a great many trials was that rapid relief was obtained, the nausea and sickness disappeared, the patient felt quite comfortable, and to this there succeeded an interval of quiet and refreshing sleep. The shallow and rapid respiration became more regular, the pulse improved, and the headache disappeared. The patient must take deep and regular inspirations; from 30 to 40 liters are enough to begin with, but this dose may be repeated if necessary. The gas should be inspired through the mouth, the nostrils being kept firmly closed.

Cystin in Water-supplies.—At a recent meeting of the French Academy of Sciences, according to the *Lancet*, M. Armand Gautier presented a memoir by M. Causse, of Lyons, pointing out the significance of the occurrence of cystin in drinking-water as an indication of the presence of germs of typhoid fever, and describing a method of determining its presence by a reagent which produces with it an orange-yellow color proportionate in its intensity to the amount of cystin contained in the water. By means of this reaction M. Causse has succeeded in estimating cystin quantitatively and is following out the varying proportions in which it exists in water. All the samples of water collected in houses where undoubted cases of typhoid fever had occurred, at La Guillotière, at Les Brotteaux, or in the central part of Lyons, acquired an orange tint throughout the whole mass of liquid. The depth of color, which was in a direct ratio to the proportion of cystin, seemed also to have a relation to the severity of the disease. The coloration of the water from the well of a house in the Avenue des Ponts, where 3 fatal cases of typhoid fever had occurred, was the deepest which M. Causse had obtained; the proportion of cystin was the highest which he had met with, the average being 3 centigrams per liter during the warm weather. The proportion of cystin varied very distinctly with the season of the year. Frequently repeated experiments showed that the intensity of the coloration, and therefore the amount of cystin contained in the contaminated water, was greatest in September and October; from October onward it diminished gradually, falling to the lowest point in February and March; it then increased, returning to its maximum at the end of the hot weather. The same remarks were applicable to the water of the Rhone as distributed by the water company. Compared with the wells at La Guillotière and Les Brotteaux, the amount of cystin in the water of the Rhone was estimated at about one-tenth part, but when the river overflowed its banks the proportion of cystin increased and in time of flood it became equal to, or sometimes even greater than, that contained in the worst well at La Guillotière; these fluctuations correspond with the fluctuations exhibited by typhoid fever, as is shown by statistics. Cystin in water was not only variable in amount, but it might almost completely disappear from certain waters, leaving only ammonia, sulphureted hydrogen and organic compounds to show that it had been there.

The Latest Literature.

British Medical Journal,

July 14, 1900. [No. 2063.]

1. Importance of Post Graduate Study. WILLIAM OSLER.
2. A Case of Acute and Chronic Torsion of the Ovarian Pedicle in the same subject. ALBAN DORAN.
3. Two Cases of Concealed Accidental Hemorrhage. A. E. LARKIN.
4. Case of Extrauterine Gestation Ruptured at Mid-Term Treated by Abdominal Section. J. B. HELLIER.
5. The Nature and Treatment of Puerperal Infection. THOMAS E. MITCHELL.
6. A Large Multilocular Ovarian Tumor. F. A. BALDWIN.
7. A Combined Recto-Vaginal Opening in the Human Subject. J. G. MODLIN.
8. A Note on a Series of Cases of Epidemic Cerebrospinal Meningitis. HENRY HANFORD.
9. The Degeneration of the Neuron. FREDERICK W. MOTT.
10. Schools and Diphtheria Infectivity. FRANK M. BURNETT.
11. Conjunctival Diphtheria: Risk of Infection. HARRY E. SMITH.
12. Weil's Disease. J. H. MARSH.
13. Opium in Pneumonia. H. BOWEN WILLIAMS.
14. Procidencia Uteri in a Girl Aged 17; Ventrofixation. THOMAS OLIVER.

1.—Osler said if the license to practise meant the completion of his education how sad it would be for the doctor, how distressing to his patient! More clearly than any other, the physician should illustrate the truth of Plato's saying, that education is a life-long process. In the United States many special schools have been organized, and, perhaps, more systematic attention has been paid to **post-graduate study** than anywhere else, except in Germany. He had just finished a 6 weeks' course of clinical instruction to a class of about 30 general practitioners, and to meet these good, earnest students from all parts of the country, some of whom have been in practice 15 or 20 years, stimulates one's optimism as to the outlook in the profession. Mr. Jonathan Hutchinson bears a strong likeness to the immortal Hunter. No individual contributor in this country has made so many careful observations among so many diseases. There are two great types of practitioners—the routinist and the rationalist. No men among us need refreshment and renovation more frequently than those occupying positions in our schools of learning. The most hopeful feature is a restless discontent which, he hopes, may not be allayed until the revolution is complete in all respects. Meanwhile, to students who wish to have the best that the world offers, he suggests that the lines of intellectual progress are veering strongly to the West. He predicted that in the twentieth century the young English physician will find his keenest inspiration in the land of the setting sun. [A.B.C.]

2.—Doran found in the same subject acute and chronic **torsion of the ovarian pedicle**. On making the incision of the abdomen a cluster of cysts came into view. He passed his hand behind them and turned out the whole tumor; the pedicle was firmly twisted two turns, very edematous, and enlarged with blood. There were no adhesions, nor was there any free fluid in the abdomen. He untwisted the pedicle, ligated and divided it; the tumor, developed from the right ovary, came away. The second tumor, also made up of a cluster of smaller cysts, was then raised from behind the uterus and lifted out of the wound. Its pedicle, somewhat short, was twisted two turns, and atrophied in consequence. A low narrow piece of omentum was involved in the twist, running on to the pedicle from the left, posteriorly. The pedicle was ligated and divided; the tumor originated in the left ovary. No flushing or drainage was required, the abdominal wound was closed. In this case there were 2 pedicles, but so great was the relief from the pain caused by the torsion that the patient felt perfectly comfortable. Tumors irregular in form, are very liable to become twisted, and short pedicles are particularly subject to torsion. It has long been known that dermoids are spe-

cially liable to this complication. When there are two tumors the one may cause the other to rotate on its pedicle. Dermoids especially tend to rotate on their pedicles, partly because they are often irregular in form, and partly because they are often overweighted at one point by masses of bone or other solid, heavy structures. Acute torsion due to the contraction of the abdominal walls during defecation has been reported. In one instance the complication was caused by the patients' struggles under nitrous oxid at a dentist's. [W.K.]

3.—Larkin has had 2 cases of **concealed accidental hemorrhage**. The first was in a strong, healthy woman, 7½ months pregnant; the second in an anemic, weak patient at term. Both cases became faint and suffered symptoms of severe collapse without any apparent cause. In both cases the uterus seemed to increase in size after the attack began. The liquor amnii was very scanty, pain severe, and a dead child delivered by forceps in each instance. The first patient made a slow recovery, complaining for some time of severe temporal headache. The second patient died 10 hours after the onset of the symptoms, in convulsions. [W.K.]

4.—A case of **extrauterine gestation** at about mid-term was operated upon by Hellier; abdominal section revealed a dead fetus, 8 inches long, free in the abdominal cavity. The umbilical cord could be traced to the floor of the pelvis, where the placenta was lying. It was not adherent but could be easily lifted up, and the placenta was then found to be attached to the right side of the uterus, and that this attachment constituted a fairly narrow pedicle. When this was ligated and divided, and the blood-clot removed from the pelvis, it was found that hemorrhage was well controlled, and that the pelvis could be sponged dry. The abdomen was not irrigated, but a Bantock's tube was inserted, and the operation was terminated as rapidly as possible by the closure of the wound by continuous suture of the peritoneal edge by catgut, and interrupted silkwormgut sutures through the remaining layers. The patient made satisfactory progress. [W.K.]

5.—Mitchell takes exception to the general belief that all cases of **septic infection in the puerperium** are due to failure to preserve antiseptic precautions in labor. He has found in a large practice extending over many years, that many of the worst cases of puerperal fever occur after perfectly natural labors in which no digital examinations or manipulations have occurred. The majority of cases which he has seen seem to him to be due to the impossibility of inducing many working people to observe the ordinary rules of postpartum cleanliness. The bugbear of catching cold leads them to neglect change of clothing and ordinary bathing. He believes that treatment with quinin will more often meet with success if the physician will push it boldly and combine its use with attention to other details. In a well-marked case of septicemia his routine is to give a preliminary dose of quinin sulfate (gr. xij). This is followed by douching of the vagina, and digital exploration of the uterus for any retained secundines. The uterus is then washed out with a weak solution of corrosive sublimate, and an Ehrendorfer's pencil of iodoform (larger than the size usually sold) is then introduced into the uterus. This is followed by a mixture containing in 8 ozs. 40 grains of quinin sulfate and 10 minims of carbolic acid, with bismuth, bicarbonate of soda, and carminatives. In cases of prolonged diarrhea tincture of opium is added. The introduction of iodoform pencils is repeated if necessary, and in suitable cases repeated vaginal douching is employed. Ice caps and cold sponging should be used when there is much hyperpyrexia. In case of sickness iced champagne and brandy can generally be retained. [W.K.]

6.—Baldwin reports a case of an enormous **multilocular ovarian tumor**, occurring in a woman of 47 at the time symptoms were first noted, and 2 years subsequent to the menopause. She was first seen by Baldwin 12 years later when the tumor had attained an extraordinary size. The patient died 2 months later and he was permitted to make an examination of her abdomen. From an incision in the abdomen he drew off 114 pints of fluid. A second large cyst occupied the upper abdomen; from it 28½ pints of fluid were drawn in the same manner. At the root of these cysts were 2 smaller ones, each about the size of a cocoanut. The total amount of fluid obtained from the cysts was 18 gallons and he estimated the weight at 185 pounds. All four cysts sprang

from a thick fibrous base, mushroom-shaped and about 3 inches in diameter. From the under surface of this base ran a twisted pedicle about 3 inches and about the thickness of a thin umbilical cord. [W.K.]

7.—Modlin describes an operation that he performed for a curious deformity of the perineal region. The urethra, vagina and rectum all **opened into a common vulva**, although they were distinct except at their orifices. An incision was made through the fibrous tissue filling up the space between the rectum and coccyx. He next separated the posterior wall of the rectum for about 2 inches. The next step was to dissect up the rectovaginal septum, thus separating the 2 passages. The rectum was then detached from the surrounding tissue, so that its lower end was freely movable. It was then brought backward through the opening to its normal situation and sutured with fine silk sutures posteriorly and laterally to the skin of the perineal incision. The two flaps caused by the first incision were brought to the middle line to form the new perineum. The posterior border of this new perineum was sutured to the anterior wall of the rectum, thus completing the new anus; and the anterior border of the new perineum was sutured to the raw surface of the posterior vaginal wall, thus completing the vagina. The patient did well, and has perfect control over the bowels, the muscular fibers of the rectum having undertaken the function of the sphincter. [W.K.]

8.—Handford reports a series of 5 cases of **epidemic cerebrospinal meningitis**, and his results in 5 others. The most prominent symptoms, common to all, were: (1) Rapid, if not actually sudden, onset, without injury or previous failure of health; (2) the temperature rose at once to 102° to 104°, and very slowly subsided, sometimes showing distinct and regular intermissions; in 3 cases (1 fatal), the temperature remained normal for weeks, without any other sign of improvement; (3) the intensity of the pain in the head and neck, aggravated by the slightest movement; (4) marked retraction of the head; (5) muscular hypertonicity, twitching, or rigidity; (6) extreme and rapid emaciation; and (7) tendency to relapse and to intermissions. Morphin was the chief treatment that seemed to do good beyond the mere relief of pain. [A.B.C.]

10.—Burnett presents a case, illustrative of the fact that diphtheria patients may convey the disease long after they are supposed to be well. He would suggest that: (1) In the case of every boy returning to a boarding school, 2 or 3 days before the beginning of the term, both throat and nose should be bacterially tested for **diphtheria**; (2) in the case of any boy or person, who has recently suffered from the disease, not less than 6 months should be allowed to elapse before his return to school, and then only after a negative test has been obtained on 2 or 3 separate occasions at intervals of 1 week. [A.B.C.]

11.—Smith reports a case of conjunctival diphtheria, the chief points of interest being: (1) the cause of illness might easily have passed unnoticed; (2) infection might readily have been spread; (3) the origin of such spread would probably not have been recognized. [A.B.C.]

13.—Williams writes of his experience in treating pneumonia with morphin and Dover's powder, and other forms of opium. He believes they reduce the frequency of the pulse and quiet the nervous phenomena. [A.B.C.]

14.—Oliver reports 2 cases of **procidencia uteri**, the remarkable feature about them being that the patients were very young, the one being 17 and the other 16. In the first case the uterus protruded some three inches from the vulva; both were in nulliparas. [A.B.C.]

Lancet.

July 14, 1900. [No. 4011.]

1. The Importance of Post-graduate Study. WILLIAM OSLER.
2. The Commoner Neuroses of Childhood, their Pathology and Treatment. O. J. KAUFFMANN.
3. The Degeneration of the Neuron. FREDERICK W. MOTT.
4. On the Confusion of Two Different Diseases under the name of Rubella (Rose Rash). CLEMENT DUKES.
5. A Note on the Results obtained by the Antityphoid Inoculations of the Beleaguered Garrison in Ladysmith. A. E. WRIGHT.

6. Illustrations of Vasectomy or Obliteration of the Seminal Ducts relative to Hypertrophy of the Prostate and Bladder Atony. REGINALD HARRISON.
7. On Immunity Against Proteids. WALTER MYERS
8. Chronic Empyema of the Frontal Sinus with Notes on the Treatment of Fourteen Cases. HERBERT TILLEY.
9. Case of Pancreatic Diabetes due to Calculi. E. WILLMER PHILLIPS.
10. Impaction of a Bean within the Air Passages; Tracheotomy; Expulsion Through the Wound; Recovery. BRUCE HAMILTON.
11. Case of Addison's Disease; Treatment with Suprarenal Extract; Death. EDGAR G. TREVITHICK.
12. Three Cases of Phthisis treated with "Tuberculin R." W. MURRELL.
13. A Case of Fracture of the Left Side of the Skull with Complete Right Hemiplegia; Operation; Recovery. E. F. L. DE JERSEY.

1.—See abstracts of *British Medical Journal* for July 14.

4.—Dukes, after a careful study of the subject and much experience in dealing with the diseases, has decided, contrary to his former opinion, that what is commonly termed **rubella** really consists of two diseases. He is of opinion that they are two entirely distinct processes; the one being true rubella or rose-rash, which resembles ordinary measles; the other, which he speaks of as the "**fourth disease**" on account of its resemblance to measles, scarlet fever, and rubella, resembles scarlet fever very closely, even to the desquamation. He cites an epidemic in a school which was thought to be scarlet fever, but which he found to be the "fourth disease." Another similar epidemic proved to consist of both scarlet fever and "fourth disease." Of the eruption he says that the first symptom to attract the attention of the sufferer was the rash which in nearly every case was very full and quite characteristic of scarlet fever. In fact, if 10 experts had inspected the skin and made no other investigation all would have diagnosed the eruption as that of scarlet fever. He further says: (1) That although its resemblance is so close to scarlet fever in many features it cannot possess any affinity with that disease inasmuch as both diseases occurred concurrently in the same epidemic; (2) some of the sufferers had both diseases in the same epidemic; (3) one patient had scarlet fever followed by the "fourth disease"; (4) several had the "fourth disease" followed by scarlet fever; (5) although the "fourth disease" has been confused with rose-rash and regarded as a mere variety of rubella, this conclusion is fallacious, since nearly one-half the cases in an epidemic had already had rose rash within a year or two, which, according to Cullen's established law, is incredible; (6) he has purposely refrained from attaching a name to the disease in order to avoid the anomalous description of the same disease under an indefinite number of terms. [A.B.C.]

5.—Wright, in reporting the results obtained by **anti-typhoid inoculation** of the garrison of Ladysmith, gives a table setting forth the number of men inoculated, number not inoculated, number of attacks, deaths, etc. Out of a total of 10,529 men not inoculated, 13.2% were attacked by typhoid fever; while of 1,705 men inoculated only about 2% were attacked. The inoculation appeared to make no appreciable change in the death-rate of those attacked—it being about 22% to 23% in both the inoculated and uninoculated. He concludes that it is at present impossible to determine precisely to what extent the inoculated were protected. But the results set forth would appear to be distinctly encouraging, inasmuch as they show that the proportion attacked by typhoid fever was but $\frac{1}{4}$ as great in the inoculated as in the uninoculated. [A.B.C.]

6.—Harrison details a number of cases illustrative of obliteration of the seminal ducts by torsion, in its application to the treatment of **prostatic hypertrophy**. In cases of prostatic obstruction, without other structural complication, shrinkage of the hypertrophied prostate, however induced, speedily leads to the restoration of the function of micturition. He gives a series of 5 cases of prostatic hypertrophy treated by operation, in which the preservation of the normal function of micturition as opposed to catheter life is successfully demonstrated. In these cases, whenever the patient has had to decide between preservation of the urinary or the sexual function, he has invariably decided in

favor of the first. When structural changes in the bladder have supervened upon prostatic obstruction, and when catheter life or the necessity for it has been more or less developed, **vasectomy** does not always appear satisfactory, for the reason that although the prostate may thus be rendered incapable of obstruction, the bladder may not always regain the power of expulsion of the urine; yet, even in these cases, the lessening of prostatic obstruction has proved a great boon. When results seem to have been inadequate or negative, results still beneficial have been obtained; in these cases the patients sometimes measure the success of the vasectomy relatively to dispensing with the catheter, without sufficient regard to the other contingencies of catheter life. Harrison thinks that vasectomy is an important aid in preventing the recurrence of stone after operation, when complicated with enlarged prostate. This is probably effected by providing a free and more dependent exit from the bladder, as well as by diminishing the large amount of tenacious mucus which the enlarging prostate provokes and helps to supply. [M.B.T.]

7.—Myers mentions that there are 2 theories to account for immunity,—viz., Ehrlich's "seitenkette" or side-chain theory, and Metchnikoff's phagocytic theory—that immunity is merely a special case of assimilation. To determine, if possible, which of these is correct, the author made experiments relative to **immunity against proteids**. He took crystallized egg-albumen, serum-globulin from the sheep, serum-globulin from the bullock, and Witte's peptone, and experimented with them separately and collectively. In order to avoid the action of digestive fluids on the proteids, he introduced it directly into the peritoneal cavity of a rabbit. After repeating the intraperitoneal injections for 2 months, it was found that the serum of the rabbit's blood would form a dense precipitate when brought into contact with that kind of proteid which had been injected, while it formed a very little or no precipitate with the other proteids. The serum from the blood of a normal rabbit would form no precipitate with any of the proteid substances. The experiments are too lengthy to abstract in detail, but the author is strongly of opinion that immunity is due to a process of assimilation. [A.B.C.]

8.—Tilley contends that whatever treatment is finally adopted in **chronic empyema of the frontal sinus**, it is of paramount importance to insure free drainage from the sinus by removal of all chronic inflammatory growths from the lower end of the frontonasal canal. He advocates the removal by means of curet, snare, or forceps of the anterior half or more of the middle turbinal, of all polypi, granulations and diseased ethmoidal cells. He says that many of the failures in radical operation are attributable to the fact that external operation has been undertaken before free drainage and immunity from reinfection from the sinus have been secured by this preliminary treatment. He is not in favor of intranasal irrigation of the sinus following the preliminary intranasal treatment, claiming that it rarely succeeds, and when it does such improvement is probably due to improved drainage provided by the preliminary treatment. He strongly condemns boring into the sinus from the nose, more particularly because of the danger of ensuing meningitis; the sole method worthy of consideration, to his mind, is that of external radical operation involving removal of more or less of the anterior bony wall of the sinus of its diseased condition and the provision of free drainage into the nose. He admits that some 7 or 8 fatal cases of septic osteomyelitis have been recorded after the operation and apparently due to its performance, but claims that this must be ascribed to the fact that free drainage into the nose has not been insured at time of operation, the external wound has been tightly sewed up and, with recurring suppuration, the septic matter has been forced into the recently opened diploë of the frontal bone with ultimately fatal results. He illustrates his paper by the tabular analysis of 14 cases. [M.B.T.]

9.—Phillips reports a case of **pancreatic diabetes** due to **calculi**. The patient was a man of 50, who complained of passing blood during defecation, of a discharge in the interval which gave a greasy stain to his shirt, and of great weakness and wasting. Except for the absence of anemia he looked like one suffering from malignant disease. He had no thirst and no polyuria. The bowel movements were greasy-looking and peculiarly offensive. The urine con-

tained sugar, but no albumin. There was no jaundice. There was a history of repeated attacks of colic 20 years before. The patient gradually failed for 6 months after coming under Paillips' care, and died. Necropsy showed that the main duct and various collateral ducts of the pancreas were occluded by calculi. No communication between the pancreatic and common bile-duct or the duodenum could be found. [A.B.C.]

10.—See PHILADELPHIA MEDICAL JOURNAL, Vol. VI, p. 445.

11.—Trevithick reports a case of **Addison's disease** occurring in a man of 40. There was a strong family history of tuberculosis. The illness lasted for 2 months, the patient dying. The onset was marked by distinct pigmentation of the skin, the penis and scrotum becoming black. There was vomiting, great weakness and chilliness, the temperature being subnormal most of the time. Suprarenal extract was given twice daily without effect, though it was not used till late in the course of the disease. Necropsy showed encapsulated tuberculous deposits in the spinal column, lungs and bronchial glands. There were no signs of active or recent tuberculous processes in any organ. The substance of both suprarenal bodies was replaced almost entirely by fibrous tissue; the right was adherent to the under surface of the liver, and the left to the tail of the pancreas. [A.B.C.]

12.—Murrell reports 3 cases of **tuberculosis** treated with **tuberculin**. The first was a man of 41, who had been ill for 3 years. He had cough and mucopurulent expectorations containing abundance of bacilli. He was kept in bed and treated for 12 weeks, being given during that time 20 injections, varying from $\frac{1}{500}$ of a milligram to 5 milligrams. The second case was a man of 35, who had symptoms of tuberculosis for some 3 years. He was treated much as the first case, from September 12 to October 2, and was discharged. The third was a man of 45. He had had a constant cough and much expectoration for about 4 years. He had been losing flesh for over a year, but had no night-sweats. He was treated for 10 days, being given 6 injections. In none of these cases was there any improvement. The author states that his experience with tuberculin has been too limited for him to come to a definite conclusion, but so far he has had better success with the formic aldehyd treatment. [A.B.C.]

13.—De Jersey relates the case of a man of 45 admitted for **fracture of the left side of the skull** with complete unconsciousness, right-sided hemiplegia and retention of urine and feces; there was no external wound or discoloration over the seat of injury, only a slight pitting on pressure. On firm pressure over the seat of fracture, spasm of the whole right side of face and body was produced. On operation an extensive stellate, depressed, fissured, and comminuted fracture was found with a large hematoma beneath it and a cavity right into the substance of the brain large enough to admit the little finger readily and corresponding to the upper end of the left Rolandic fissure. Degenerative changes had already set in. Part of the whole thickness of the parietal bone was replaced and a gauze plug was inserted into the cavity in the brain and brought out under the flap made in operation, which was sutured and a dry dressing put on. The plug was removed on the tenth day after operation and the wound healed without suppuration. Six weeks after operation he walked quite well and carried on conversation with little difficulty, 7 weeks after operation he was dismissed from the hospital. Interesting points in the case are rapid recovery after pressure was relieved, signs of relief of pressure appearing before those of shock passed off, the comparatively late return of consciousness, and the fact that a piece of bone, including both the external and internal table, completely deprived of its periosteum, was replaced and became firmly adherent to the adjacent bone. [M.B.T.]

New York Medical Journal.

July 28, 1900. [Vol. lxxii, No. 4.]

1. The Pituitary Gland as a Factor in Akromegaly and Giantism. WOODS HUTCHINSON.
2. Some Observations upon Syphilitic Manifestations in the Uveal Tract—the Iris, Ciliary Body, and Chorioid. PAUL TURNER VAUGHAN.
3. Empyemas of the Nasal Accessory Cavities, with a Report

of Cases where the Antrum of Highmore was Involved. RUFFIN A. WRIGHT.

4. The Spectacle and the Eyeglass Habit. NORBURNE B. JENKINS.

5. Neurasthenia and Syphilis. JAMES G. KIERNAN.

6. Typhoid Fever in an Infant 18 Months Old; Recovery. A. SAMUELS.

1.—Hutchinson, in concluding his valuable article on the **pituitary body**, submits the following conclusions: (1) That the pituitary body is still functional; (2) that disturbances of its metabolism are the principal factors in both akromegaly and gigantism, the difference between the results being simply due to the stage of individual development at which the disturbance of the function begins; (3) that the nature of the overgrowth in both these diseases is primarily on the order of a pure functional hypertrophy; later, however, losing some of the definiteness of its impulse, and either producing immature tissue of a mixed type, or resulting in simple hemorrhagic exudation, with either cyst-formation or complete breaking down of the tissue mass; (4) that it seems probable, although upon this head the evidence is still uncertain, that some part is played by this body in "dwarfism," rickets, and the dwarf-forms of cretinism; (5) that a reflex disturbance of its function may possibly underly the dystrophy accompanying pharyngeal adenoids; (6) that it would appear to be a sort of "growth-center," or proportion-regulator of the entire appendicular skeleton. [A.B.C.]

2.—Vaughan says during the past year he has treated 70 cases of **syphilitic eye-affections** in private practice, and 41.4% of the cases were syphilitic manifestations of the **uveal tract** (iris, ciliary body, and chorioid). Syphilitic iritis may be plastic, serous, popular, or gummatous. The author says his experience accords entirely with that of Schmidt-Rimpler, that in iritis with the formation of nodules, as a rule, true gummas are not present, but that these may appear during the later stages of syphilis, and that the tendency, with the nodules existing in the iris during the early stages of syphilis, is not destructive in character; also, that these nodules are analogous to the syphilitic condylomas and skin-papules seen during the secondary stage of syphilis. His observations have been that the symptoms of plastic and serous iritis, when due to syphilis, vary little from the symptoms of these varieties of iritis when due to other causes. Pain is one of the most prominent symptoms, and it extends sometimes over the entire half of the head, corresponding to the branches of the supraorbital nerve. The pain is usually worse at night, and is always increased by bright illumination. In several of his cases the cornea remained perfectly clear and transparent. If the ciliary body be involved in the inflammatory process to any appreciable extent, then we always have a deposit upon the posterior surface of the cornea. [A.B.C.]

3.—Wright says that **empyemas of the nasal accessory cavities** are of far more frequent occurrence than has heretofore been supposed. In a majority of all cases of acute coryza with excessive rhinal flow their presence is more than probable. They are frequent unrecognized complications of all the acute exanthems and infectious diseases where the nasal mucous membrane is involved. This is especially true of influenza, measles, and erysipelas. It seems probable that empyemas are a constant accompaniment of the first-mentioned disorder. They occur also during acute iodism, and are sometimes, though rarely, due to traumatism. Empyemas of Highmore's antrum are frequently caused by abscess at the roots of the teeth. When due to coryza, this acute implication of the accessory sinuses usually subsides with the regression of the acute catarrh, and results in perfect restoration with its subsidence. The two chief symptoms which empyemas produce are a greater rhinal flow than exists in a simple acute catarrh, usually unilateral; and more intense neuralgias than occur in a case of coryza where the sinuses are not implicated. Should the affected cavity become closed, producing a "closed empyema," the symptoms are more marked and the results may be serious. The author speaks especially of empyema in the antrum of Highmore, and its treatment. [A.B.C.]

5.—Kiernan says, **syphilophobia** is an exceedingly unpleasant symptom when it occurs alone, and doubly so when it occurs in a **neurasthenic**. Many syphilographers are of opinion that this state is easily induced in patients who have or believe they have syphilis. From a psychical point

of view this position of the syphilographers is well based. It is, however, but a negative method of psychotherapy. There is an introspective tendency engendered, whether the patient has been previously neurasthenic or not. This tendency is exaggerated if the patient has previously been neurasthenic. The problem involves the question how to apply medicinal agents without unduly giving the patient a therapeutic basis for his introspective syphilophobia. The ordinary alteratives will not answer, since one is required which will produce an emotional exaltation sufficient to offset the depression produced by the syphilophobia. For this purpose he recommends a combination of arsenic, bromids and gold (arsenauro). It should be given in 5-minim doses thrice daily, in water, and gradually increased till slight diarrhea is produced. [A.B.C.]

6.—Samuels reports a case of **typhoid fever** occurring in a female **infant** 18 months old. The temperature ranged from 103° to 105°, and the fever lasted for 20 days. There was entire absence of the common symptoms of typhoid fever. There was extreme anemia, and aphasia which lasted some 10 weeks after recovery. Widal's reaction was present. [A.B.C.]

Medical Record.

July 28, 1900. [Vol. 58, No. 4]

1. Chorioepithelioma Malignum. B. S. TALMEY.
2. Hypospadias Operated on by Beck's Method. FERD. C. VALENTINE.
3. The Peritoneum—Anatomy, Physiology, and Pathology. BYRON ROBINSON.
4. Amenorrhea. I. H. DUNNING.

1.—In July, 1899, a woman died at Zurich with the clinical diagnosis of anemia. She was delivered in April and had had following her confinement, a light bloody discharge. The rough, papulous, lacerated appearance of the surface of the uterine mucosa of the posterior wall gave the impression of the placental site preserved three months and led to a close examination of the specimen, disclosing a typical **malignant chorioepithelioma**. By far the greater part of the tumor appeared to be the pure product of a coagulation as described by Marchand, and which he considers the first stage in the formation of the tumor. Talmey disagrees, however, thinking it the last stage. Hyalin degeneration is generally a sign of degeneration and not of proliferation. In the case under study Talmey was of opinion that the large ectodermal cells stand mainly in close relation to the formation of the fibrin. He failed to recognize true chorionic villi anywhere, yet the glandular epithelium changed into syncytium, in opposition to the views of Marchand, Selenka, and Kossman. This atypical formation shows the malignancy of the tumor—the glands continue to furnish syncytium as an investment for villi that are no more in existence. [M.B.T.]

2.—Valentine describes a case of **penile hypospadias**, the urethra opening a half inch below the glans, in which he operated successfully by the method originated by Carl Beck of New York. He rehearses the proofs of Dr. Beck's priority and deprecates the prevailing tendency among notoriety seekers of "originating" methods, operations and instruments already fully described. [M.B.T.]

3.—Robinson decides from his experiments and the result of the work of others, that the primary path of **absorption from the peritoneum is by the lymphatics**, the stream passing toward the diaphragm and the diaphragm acting as a suction pump. He considers the diaphragm the primary locality of absorption of solid matters from the peritoneum. Because absorption is so much more active near the diaphragm, peritonitis is more dangerous to life as it approaches the diaphragm. The leukocytes seem to be active in carrying formed particles into the subperitoneal diaphragmatic lymphatics. The injection of potassium ferrocyanid into the peritoneal cavity is much more readily followed by its appearance in the urine if the thoracic duct is not ligated than if it is ligated; hence open lymphatics aid its appearance in the urine. He considers that the leukocytes act as the chief guard of the peritoneum. He mentions the results of the injection of water containing Berlin blue into the peritoneum of a turtle. The animal died within 4 or 5 weeks of peritonitis. Autopsy showed edematous and vascular peri-

toneum, with desquamation of the endothelial cells, exudation of leukocytes and of red blood-cells. He speaks emphatically of the importance of the psoas muscle and of the diaphragm in causing trauma of the peritoneum covering the bowel and the spleen, thus producing peritonitis. There is a description of the various forms of peritonitis and of the surgical treatment of these. [D.L.E.]

4.—Dunning mentions tuberculosis and Bright's disease as among the common **causes of amenorrhea**, and says that the prevalent idea that amenorrhea causes tuberculosis is most fallacious. He discusses the general and local causes, since he believes that any efficient treatment of amenorrhea must be based upon the correct knowledge of the lesion producing the disease. He emphasizes the fact that active efforts by the administration of powerful emmenagoges are harmful, especially in cases of Bright's disease and tuberculosis; for such a course is liable to result in congestion of the pelvic organs and the development of new and distressing symptoms; and all efforts to restore the function will be unavailing unless one can arrest and overcome the ravages of these diseases. Amenorrhea following acute and debilitating diseases need not as a rule occasion the serious apprehension of physician and patient. Here the chief end should be to restore the health of the patient after the intensity of the attack has passed. In anemic, overgrown girls, or in chlorotic cases, food rich in blood-making properties should be directed and a high state of activity of the digestive and assimilative functions maintained; and the bowels, skin, and kidneys should be kept in an active and normal condition. With the disappearance of anemia and the oncoming of good health, the menstrual function is, as a rule, established. If it is not, mild emmenagoges are often beneficial. Potassium permanganate in one and two-grain doses is quite efficient. [W.K.]

Medical News.

July 28, 1900. [Vol. lxxvii, No. 4.]

1. Aspiration in the Treatment of Acute Traumatic Empyema; with an Illustrative Case. JOSEPH D. BRYANT.
2. Headache from Eye-Strain; Its Diagnosis and Treatment. CASEY A. WOOD.
3. A Contribution to the Management of Face-Presentations. MALCOLM McLEAN.
4. Acute Trional Intoxication. WARREN COLEMAN.

1.—Bryant recites the treatment in a case of **acute traumatic empyema**. The patient was a man of 24 who, by accident, had a blunt instrument thrust through the thoracic wall at a point just below the right nipple. The pleural cavity was opened, but the lung was not injured. The wound was treated surgically, enlarged, and the pleural cavity flushed out with normal salt-solution. From the nature of the wound and the penetrating object, infection was inevitable. A rubber tube was inserted for drainage and allowed to remain, but it was found when the syringe was applied to this and the pus withdrawn that the change in atmospheric pressure set up violent coughing. Consequently the tube was packed about at the wound so that air could not enter there, and provided with a stopcock so air could not enter through the tube. Now the syringe could be used, followed by applying a collapsed rubber bag to the end of the tube. This, with the cock properly arranged, would not only prevent the entrance of air, but would gradually drain out the pus and other accumulated fluids. It was found, however, that not too much of the fluid could be withdrawn at one time, for the pressure from within caused some hemorrhage from the lung, as shown by a staining of the removed fluid. The patient was soon able to manage the apparatus, and made a good recovery. Illustrations accompany the article, and a review of the literature bearing on the subject is carried to some length. [A.B.C.]

2.—Wood defines **ocular headache** as those aches and pains in and about the head that directly or indirectly result from organic disease in, or from impaired function of, any part of the visual apparatus. He is of opinion that with a little care and patience the general practitioner may differentiate between the headache due to eye-strain and that due to other causes. The author thinks that 40% of all headaches are caused wholly or partially by eye-strain; and further, that 80% of frontal headaches are produced in this way. He

subdivides these pains into supraorbital, deep orbital, fronto-occipital, and temporal. A severe headache after a shopping excursion, or a ride in a train or street-car with its ever-changing views, is an almost sure sign of eye-strain. Astigmatism is probably the most frequent cause of headache from eye-strain. The visual test-card, the astigmatic chart and Pray's astigmatic letters, the author thinks, are the most effective tests for astigmatism which the nonspecialist can employ. Insomnia and dyspepsia may cause disease of the eye. [A.B.C.]

3.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, No. 18, page 996.

4.—Coleman considers **trional** one of the safest and most useful hypnotics we possess. He has seen but one instance of trional poisoning. In this case the woman took through error 9 drams of trional in 72 hours; it caused somnolence, with disturbance of respiration and of circulation, some feeling of dizziness, and an ataxic gait. Judging from this case he considers trional devoid of any decidedly depressive action on the circulatory or respiratory functions, and experimentation supports this. These statements have no relation to the effect of trional when used over a long period. [D.L.E.]

Boston Medical and Surgical Journal.

July 26, 1900. [Vol. cxliii, No. 4.]

1. The Shattuck Lecture. Morbid Conditions Caused by Bacillus Aerogenes Capsulatus. WILLIAM H. WELCH.
2. The True Function of the State Medical Examining Board. ALLARD MEMMINGER.

1.—See PHILADELPHIA MEDICAL JOURNAL, August 4, 1900, page 202.

Journal American Medical Association.

July 28, 1900. [Vol. xxxv, No. 4.]

1. Laryngology and Otology. Address of Chairman. CHRISTIAN R. HOLMES.
2. Neurology and Medical Jurisprudence. Address of Chairman. HUGH T. PATRICK.
3. Post-Febrile Insanity and its Treatment. FRANK PARSONS NORBURY.
4. Practical Physiology of the Digestive Organs. A. L. BENEDICT.
5. Infant Feeding. ALEXANDER McALISTER.
6. Exact Infant Feeding: Accidents and Incidents. W. P. NORTHRUP.
7. The Credulity of the People as it Pertains to Medicine and Religion. T. B. GREENLEY.
8. The Mammary and the Parotid Glands. JOHN B. SHOBER.
9. The Prophylaxis and Management of Interstitial Nephritis. CHARLES W. PURDY.
10. Hospital and Ward Clinical Laboratories. C. N. B. CAMAC.
11. Blood Examination. Its Value to the General Practitioner. M. H. FUSSELL.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1295.

2.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1286.

3.—Norbury thinks a chief etiologic factor in **post-febrile insanity** is abnormal metabolism. Heredity bears a tentative relation, in providing a neurotic weakness and physical instability easily influenced by febrile diseases. Residence is a factor only as regards location being favorable to the production of febrile disease. Compared with cases of insanity following auto-intoxication from other sources, there is a wider range of alienation following fevers. The severity of the attack has apparently no relation to the severity of the febrile attack. It may also vary in its time of appearance. The diagnosis is not difficult, especially when following typhoid fever or erysipelas. Blood-count, microscopic study, and urinary analysis are of great aid. Prognosis should be guarded, although recovery is usual in the average case. In treatment, among other means, are recommended rest, massage, elimination by brisk use of aperients, diuretics and cathartics, and the plentiful use of water internally and externally. When sedatives are absolutely necessary opium and hyoscyamus are best. Tonic

treatment by iron, arsenic and strychnin is valuable.

[M.B.T.]

4.—Benedict reviews the **physiology of the digestive organs**, considering in detail certain points seldom elaborated in textbooks, as for instance the amounts of free or combined HCl, and of total acidity to be expected under normal conditions. He speaks of the fallacy of the lactic acid test for the existence of carcinoma, and discusses various means for determining the rate of gastric peristalsis, etc.

[M.B.T.]

5.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V., p. 1282.

6.—“ “ “ “ Vol. V., p. 1282.

7.—“ “ “ “ Vol. IV., p. 19.

8.—Shober uses **mammary gland** in tablet form made of the desiccated gland of sheep. Each tablet represents 20 gr. of fresh gland. The dose is from 3 to 6 tablets daily. While it has no unpleasant systemic effects, it seems to act on the uterus, causing contraction, diminishing the blood-supply, and controlling bleeding. Its action is similar to ergot and in his experience more reliable and can be used over much longer periods of time without causing unpleasant symptoms. In uterine fibroids with menorrhagia bleeding can be brought under control in a few weeks, and, if the treatment is persisted in, the menstrual periods become regular and normal and unaccompanied by clots and pain. The health improves commensurately and the tumors diminish in size up to a certain point. Shober believes it possible that constant use of the mammary gland by these patients will indefinitely postpone the necessity for operation in many instances. He has also used the gland with success in many cases of subinvolution. These are the only classes of cases in which he advises the use of mammary gland and yet some men use it in cancer, dysmenorrhea of ovarian or tubal origin or due to malpositions of the uterus, and even in dysmenorrhea due to stenosis and in cases of amenorrhea, though there seems to be no indication for its use. Parotid gland he has used in a much smaller class of cases. It is prepared in the same way, from the sheep, and should be employed in about the same doses as the mammary gland. Its principal action is power to control ovarian pain and Shober has employed it with satisfaction in ovarian neuralgia. These agents should not be used if gross structural changes are present. [M.B.T.]

9.—Purdy has investigated a series of cases to determine if it is possible to predict in what cases **interstitial nephritis** is likely to develop. Of several hundred acquired cases which he has recorded, the dominant features of the vast majority were heavy appetites, sedentary lives, and excessive use of proteid foods, or overingestion and over-elimination of nitrogen. Hence in cases in which we have reason to fear the establishment of interstitial nephritis, the limitation of proteid foods should constitute our first and most essential principle in the establishment of prophylaxis. Meat should be limited to one meal a day and the quantity should not exceed a quarter of a pound. The leguminous vegetables, such as beans, peas, lentils, etc., should, for the most part, be avoided. Sugar should be sparingly permitted. The appetite should be restrained within normal limits, and systematic daily exercise should be advised in order that the proper ratio of waste products of the economy may be oxidized with the least strain upon the eliminative functions. In people who have led sedentary lives active exercise should be prescribed with discretion and it is best to begin with passive exercise and massage. After the disease is once established the diet should be still more strictly limited and special care should be given to the condition of the heart.

If there is tendency to hypertrophy, non-nitrogenous diet and saline laxatives will cause it to subside rapidly. If the urine falls in volume and the pulse grows weaker the indications are to improve the tone and nutrition of the heart, and to relieve it of as much labor as possible. The small vessels should be dilated by means of the iodids and nitrites. Moderate doses of digitalis tend to improve cardiac nutrition and tone, especially when assisted by the use of strychnin. Absolute quiet should be enjoined for from 4 to 6 weeks, until the heart has regained its tone, or is in a measure equal to its work. Then a course of cardiac gymnastics, after Schott's method, with, or followed by, the Nauheim baths, is often of the greatest benefit. [M.B.T.]

10.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V., p. 1262.

11.—“ “ “ “ Vol. V., p. 1262.

Berliner klinische Wochenschrift.

April 16, 1900. [37. Jahrg., No. 16]

1. Cell Division. WALTER FLEMING.
2. Experiences in the Preliminary Examination of Patients with Lung Diseases at Grabowsee. KURT BRANDENBURG.
3. A Method of Examining the Retina with a New Electric Ophthalmoscope. HUGO WOLFF.
4. The Diagnosis and Treatment of Pulmonary Tuberculosis. H. SENATOR.
5. An Unusual Case of Acute Anterior Poliomyelitis in the Adult Resulting from Infection. KARL GUMPERTZ.

1.—A review of the development of the theory of **mitotic cell division** with which the author's name is prominently connected. Although the discoveries in this field have been important and remarkable, the ultimate cause of cell division has remained as much a mystery as it ever has been. [D.R.]

2.—The **method of examining candidates** for the sanitarium at Grabowsee is as follows: The patient having stripped to the shoulder girdle, the chest is inspected and percussed, finger percussion being employed. For percussion of the lung apices, the patient sits in a chair, stooping slightly forward and holding his hands in his lap. The examining physician stands behind the patient. In auscultation particular attention is bestowed upon the supra- and infraclavicular and suprascapular fossæ. In order to detect fine differences of resonance, percussion is practised with the chest not only in the median position, but also in extreme inspiration and extreme expiration. [D.R.]

4.—Small **pulmonary hemorrhages** usually stop with a rest in bed. When the hemoptysis is marked the diet must be nonirritant and reduced. An ice-bag on the chest may be employed; its value is doubtful. Ergot is, according to Senator, of no value, and may possibly do harm by raising the pressure in the vessels of the lung, although such action is doubtful. He prefers extract of hydrastis, hamamelis, or stypticin. Acetate of lead may also do good. The use of gelatin injections, if they cause pain, may do harm; gelatin may be given by the mouth, and is, moreover, a good food. Morphin is a valuable remedy. When the heart's action is excited and is not subdued by the ice-bag, Senator gives digitalis as well as morphin. There are three other agencies which are briefly referred to:—the bandaging of the limbs, the inhalation of astringent remedies, and milk of alum. None of them is very efficacious, probably. For the phthisical fever and night-sweats it may often be sufficient to have the patient take a spare meal at night, avoiding wine, tea, and coffee. When the fever lasts the whole day pyramidon has given good results. Ablutions, especially with camphor and menthol-water, do good. The best results are obtained, however, with the external application of guaiacol, beginning with 0.5 gram. For the night-sweats, in addition to sponging with water, vinegars, or aromatic solutions, Senator recommends inunctions of fat or bacon; or the skin may be painted with a formalin solution. Internally atropin, agaricin, camphoric acid, and sodium tellurate (.02 to .05 grams) have been employed. Picrotoxin, sulfonal, and cotoin have at times an influence. [D.R.]

5.—The patient, aged 23, always healthy, was seized after an attack of gastric fever with a unilateral, flaccid palsy of the muscles supplied by the upper part of the brachial plexus, as well as paresis of the leg on the same side, with loss of knee jerk. The paralysis was atrophic, but gradually improved with the exception of that in the deltoid muscle. The author considers the case one of **acute anterior poliomyelitis** of infectious origin, probably due to the typhoid poison. [D.R.]

Poisoning by Stramonium.—Duncan G. Newton (*Quarterly Medical Journal*, for Yorkshire and adjoining counties, June, 1900) reports 2 cases due to infusion of the leaves taken under lay-advice to relieve asthma; in both cases there was delirium, dilated pupils, flushed face, small and rapid pulse, followed by deep narcotization. In the first case strangury existed. It was difficult to produce emesis, ordinary means failing and it required the administration of one-fifth of a grain of apomorphin to produce vomiting. [M.B.T.]

Original Articles.

MORBID CONDITIONS CAUSED BY THE BACILLUS
AEROGENES CAPSULATUS.

The Shattuck Lecture.*

By WILLIAM H. WELCH, M.D.,

Professor of Pathology, Johns Hopkins University.

ALTHOUGH the subject which I have chosen for this lecture relates for the most part to infrequent affections, the scientific and practical interest attaching to them is considerable and varied. Many instances of the presence of free gas in parts of the body where it does not normally occur and in association with various diseases were recorded by writers of past centuries and were even then the subject of much speculation. The discussion turned generally around the question whether the gas was atmospheric air or the result of putrefaction—a question which in most cases could be solved only by bacteriologic examinations. The most numerous and important of such examinations have been made during the last decade, and, although these have left problems still unsolved, they have corrected many current errors and have shed a flood of light upon conditions which were formerly among the most mysterious in pathology.

While it has been demonstrated that various bacteria may be concerned in producing gaseous affections, it is now evident that the bacillus which I discovered in 1891 and to which I gave the name *Bacillus aerogenes capsulatus* is the one whose causative agency is best established and most frequently in action. What I shall say will relate mainly to this microorganism and its pathogenic effects.

Historic ul.—As a certain amount of confusion concerning the dates of the first publications¹ on this bacillus exists in foreign literature on this subject, it may be well to state that I reported my observations in November, 1891, to the Johns Hopkins Hospital Medical Society and that the full report of these observations and of the characters of the bacillus was published in July–August, 1892, by Dr. Nuttall and myself.² E. Fraenkel's first publication³ was a short preliminary one which appeared in January, 1893, and was followed in the same year by his valuable monograph on gaseous phlegmons.⁴ In August, 1893, one year after the publication of the paper by Nuttall and myself, appeared simultaneously the interesting articles of P. Ernst⁵ and of Graham, Steward and Baldwin.⁶ Early in 1894 Mann published from my laboratory an observation of emphysematous gangrene caused by *Bacillus aerogenes capsulatus*,⁷ and in January, 1896, Dr. Flexner and I published an extensive paper reporting 23 human cases, including not only 6 personal observations of emphysematous gangrene, but also examples of submucous gas cysts, pneumo-serositis, and various other pathogenic manifestations of this bacillus.⁸ In July, 1895, appeared Goebel's preliminary communication,⁹ and in the following year his full paper on the bacillus of foamy organs.¹⁰ Of the subsequent records the most numerous and valuable have appeared in this country, although they appear to be little known to most European writers.¹¹ I shall have occasion to refer later to many of these publications.

Nomenclature.—Dr. Fraenkel has kindly favored me

with cultures of the bacillus which he cultivated from gaseous phlegmons, and to which he gave the name "*Bacillus phlegmones emphysematosae*." There can be no question whatever as to the identity of his bacillus with our *Bacillus aerogenes capsulatus*, a point upon which we are both agreed, and which is also made certain by Goebel's studies under Fraenkel's supervision. According to the generally accepted principles of the nomenclature of zoological and botanical species the latter name, as being the first one applied, should be preferred to the former. It is, moreover, as pointed out by Muscatello, not open to the objection of implying exclusive relationship to a single disease, as is the case with Fraenkel's designation of the bacillus. As a matter of fact the capacity to produce gaseous phlegmons is only one of many pathogenic manifestations of *Bacillus aerogenes capsulatus*. Unfortunately I think that we both erred against the canons of botanical nomenclature in using a trinomial rather than a binomial name for a species.¹²

Characters of Bacillus.—Since our first publication only one material addition has been made to the extended description given by Nuttall and myself of the morphological and cultural characters of *Bacillus aerogenes capsulatus* or the gas-bacillus, as I shall briefly call it.¹³ Fraenkel noted the presence of spores in a few of the bacilli growing in one lot of agar containing sodium formate, and in 1897 Dunham¹⁴ observed spores in blood-serum cultures, but not in other media.

Our further studies of the gas bacillus obtained from different sources have shown a moderate range of variation in some of its properties. This is true especially of spore-formation, rapidity of liquefaction of gelatin, presence of capsules, retention of Gram's stain, and virulence. While some specimens of the bacillus seem never to form spores on any culture-medium, others, and these appear to be the more common, do so occasionally, especially upon blood serum, in mannite bouillon, and on plain agar. In animals inoculated with pure cultures we have not observed spore-bearing bacilli.

As a rule the bacillus liquefies gelatin slowly, but some specimens do so scarcely at all, and others with fair rapidity.¹⁵

As stated in our original article capsules are not constantly present, but I have generally found no difficulty in demonstrating them in the situations and by the method described by us, and, with the exception of Hitschman and Lindenthal, most other investigators have been able to demonstrate capsules, when these are searched for by suitable methods.

While the bacillus is to be ranked among those which stain by Gram, it is sometimes rather noticeable in cover-slips from cultures that among well-stained bacilli, others are partly or wholly decolorized, and this may be observed in members of a single chain. In the tissues the bacilli stain well by Gram. Differences in the viability of cultures were pointed out in our first paper.

It sometimes happens that original cultures from human beings show only a feeble growth, with relatively weak power of gas-production, while subsequent cultures, especially those obtained after passage through the animal body, present the usual vigorous growth and other typical characters. Pratt and Fulton¹⁶ from a typical case of foamy organs with gas throughout the body were unable to cultivate the bacillus at all, although twelve anaërobic culture-tubes containing various media

* Delivered before the Massachusetts Medical Society, June 12, 1900.

were inoculated from different parts of the body. This negative result they attribute to the fact that the body had lain in a cold storage vault for sixteen hours after death, an explanation which has some support in an observation previously reported by Welch and Flexner, but still seems hardly satisfactory, as under similar conditions the bacillus has been often cultivated.

Lactose, glucose, and saccharose are all fermented by the gas-bacillus, the first with the largest production of gas and the last with the smallest. There is apparently no fermentation of mannite, at least the gas is not appreciably more than in sugar-free media. The amount of hydrogen greatly preponderates over that of carbon dioxide.

E. Fraenkel, in 1893, was the first to demonstrate the etiologic relation of the gas-bacillus to gaseous phlegmons, our previous investigations being concerned mainly with the so-called foamy organs (Schaumorgane) and the presence of gas in the blood, our results being confirmed a year later by P. Ernst. Soon after Fraenkel's publication we were able to confirm his discovery of the causation of gaseous phlegmons by *Bacillus aerogenes capsulatus*, and to repeat with similar results his animal experiments.

Material or cultures fresh from the infected body are usually highly virulent for guineapigs, pigeons, and sparrows (E. Fraenkel), which succumb to a rapidly spreading local necrosis of the tissues with abundant development of gas, the bacilli invading the blood during life only in a small number or not at all. There is more or less bloody edema, but otherwise little inflammatory reaction, leukocytes being present usually only in small numbers in the exudate. Rabbits and mice, while not wholly immune, are far less susceptible than guineapigs and pigeons. Dr. Lanier in my laboratory in 1896 succeeded in producing typical gaseous phlegmons around the fractured bones of rabbits inoculated intravenously with pure cultures, and Muscatello has obtained the same results. Welch and Nuttall reported an instance of death of a pregnant rabbit after intravenous injection, the infection with the gas-bacillus originating in a dead fetus. There are considerable differences in the degree of virulence of the bacillus even in fresh cultures, and old ones may be of very slight virulence.

One of the most interesting and valuable tests of the gas-bacillus is its power of producing gas abundantly in the blood, organs, and tissues of rabbits killed a few minutes after intravenous injection, a power not possessed by colon-bacilli. The differential value of this test is as great as that of cultures in fermentation-tubes. The blood and tissues of the dead rabbit make the culture medium, the body of the animal takes the place of the test-tube, the inoculation is an aseptic one, the bacteria are spread by the blood-current and the conditions are anaërobic. This procedure, which was introduced by Nuttall and myself and has been fully described by us, we have found useful in isolating the bacillus, in separating it from other bacteria which may resemble it, and in the demonstration of one of its most fundamental characteristics, namely, the power to produce gas from proteid material.

Among the points distinguishing the bacillus of malignant edema from *Bacillus aerogenes capsulatus* may be mentioned the following: The malignant edema bacillus is somewhat thinner, has greater tendency to grow into filaments, is less readily stained by Gram, produces spores regularly in culture-media, is motile,

liquefies gelatin more rapidly, produces a foul odor, produces less gas in lactose bouillon, peptonizes clotted casein, generates little or no gas in rabbits inoculated intravenously and then killed, and by subcutaneous inoculation in susceptible animals causes spreading bloody edema with little or no development of gas-bubbles, and appears after death in filaments on serous surfaces.

The bacillus to which Lindenthal¹⁷ has quite unnecessarily given the name *Bacillus emphysematis vaginæ* is doubtless identical with *Bacillus aerogenes capsulatus*. The same is true of Veillon and Zuber's¹⁸ *Bacillus perfringens* found by them in appendicitis, by Guillemot¹⁹ in gaseous gangrene and by Sonpault and Guillemot²⁰ in gaseous abscesses, and of Buday's²¹ *Bacillus cadaveris butyricus*, found in foamy organs. I am strongly inclined to the opinion that the anaërobic bacillus isolated by Achalme and others from several cases of acute articular rheumatism and found by Savtchenko and Mielkich in the soil is likewise identical with our gas-bacillus.²²

Distribution.—The surmise expressed by Welch and Nuttall that the gas-bacillus is widely distributed in nature has since been confirmed. The natural habitat of the organism is the intestinal canal and the soil, the home of so many other anaërobic bacteria. Welch and Flexner, in 1896, brought evidence of the presence of the bacillus in both of the situations mentioned. Clifton of the Johns Hopkins Hospital has found the bacillus twice in the appendix vermiformis. Howard²³ has recently reported the presence of morphologically identical bacilli in the intestines of 25 consecutive human cases examined *post mortem*, and in 10 of these he demonstrated the bacillus by cultures and inoculation of animals. The same conclusion has been reached by Hirschmann and Lindenthal. The gas-bacillus has been repeatedly cultivated from the intestine in my laboratory, but we have made no systematic study of the frequency of its presence. I have found the bacillus also in the intestines of rabbits, dogs, and swine, and here it is interesting to note the frequency with which submucous gaseous blebs are found in the pig's intestine at autopsy.

In 1896, Dr. Walker, at the Johns Hopkins Hospital, succeeded in finding the gas-bacillus in dust collected by sweeping floors, proving its presence both by cultures and animal experiments. My assistant, Dr. Harris, has cultivated the bacillus from the contents of an old cesspool. I had previously reported in 1896, the isolation of the bacillus from a bullet removed from the head of the tibia in a case of gaseous phlegmon, and E. Fraenkel²⁴ has cultivated the gas-bacillus from a splinter of wood extracted from a wound in a case of tetanus. These observations confirm the natural inference to be drawn from the study of cases of traumatic emphysematous gangrene, in most of which the source of infection is manifestly foreign material, especially dirt, in wounds. In the light of these demonstrations of the wide distribution of the gas-bacillus in the outer world and in feces, the conclusion is warranted that it must occasionally be present upon the human skin.

We are not informed whether there are differences in the regional distribution of the gas-bacillus. The fact that during the last decade a larger number of cases of emphysematous gangrene have been reported from Baltimore than from any other single locality is due, probably, to our interest in the subject and consequent search for cases. The bacillus has been found not only

in America and Europe, but Dr. Flexner has brought back reports of 3 infections with the gas-bacillus in Manila observed during a stay of 3 months.

GAS-BUBBLES IN THE BLOOD AND ORGANS.

We turn now to the consideration of the various conditions in which the gas-bacillus has been found in human beings. We need not pause to consider the presence of this bacillus in ordinary cadaveric decomposition, a circumstance sufficiently explicable by the occurrence of this organism in the healthy intestinal canal.

Of an entirely different nature are the cases in which gas-bubbles are found in the blood and organs within a few hours after death and without any trace of ordinary putrefaction. Such a condition has been recognized at autopsies as soon as 1, 2, 3, 5, 8 hours after death. It may occur not only after death from gaseous phlegmon, when, however, it is by no means constant, but also after death from the most varied causes. It has been observed repeatedly in autopsies on pregnant and puerperal women, especially after death from abortion, operation for placenta praevia, and acute sepsis. There is every gradation from cases with a few bubbles of gas in the blood or tissues to those with extensive emphysema of the organs and tissues. The term "foamy organs" (*Schaumorgane* of the Germans) may be applied to the latter condition. The liver is the organ most frequently the seat of early and abundant development of gas, but there is no definite rule as to the distribution and amount of gas in different cases. As will be explained later, the invasion in the majority of cases is from the intestine. That the gas-bubbles may be dislocated from their original position in liquid and soft material in the body is self-evident, but I have not found them unassociated with gas-bacilli.

Formerly this early presence of free gas in the heart and vessels, without evident postmortem decomposition, was very generally explained by the assumption of entrance of air into the circulation, even when no portal of entry could be found.²⁵ The most extensive application of this explanation was made in the pregnant and puerperal cases. It is remarkable that the first case of this nature to be examined bacteriologically was that reported by me in 1891. In this and in all subsequent similar cases with satisfactory bacteriologic examination *Bacillus aerogenes capsulatus* was found.

The main questions which arise concerning the interpretation of these cases are whether the invasion of the bacilli and whether the development of the gas are antemortem or postmortem phenomena.

Rabbits survive the introduction of large numbers of gas-bacilli directly into the circulation, unless there exists somewhere in the body necrotic or damaged tissue offering little or no vital resistance. If the animal be killed within a few minutes after the intravenous injection of the bacilli and kept in a warm place, there are abundant multiplication of the bacilli and large development of gas throughout the dead body within the space of six or eight hours; whereas if the bacilli be introduced at one point, as for example the right heart, of a rabbit just killed, it takes a much longer time, often twenty-four to forty-eight hours, for gas and bacilli to make their appearance at points far distant from the seat of inoculation. It seems justifiable to draw from these three groups of experiments, which have been fully reported by Welch and Nuttall, the conclusion that when bacilli and gas are found within

a few hours after death widely distributed in the body, the gas-bacilli have entered the circulation during life, but probably in most cases only shortly before death.

There is one factor, however, to be considered, which is absent in the experimental cases and may be present in human beings, to wit, the quick disappearance of the bactericidal power of the blood. This factor is an important determinant of the rapidity of onset of post-mortem decomposition. After death from certain diseases, and particularly from snake venom, bacteria may make their appearance in the blood and organs very soon after death. An explanation of these cases is furnished by the experiments of Ewing and myself,²⁶ which demonstrated that the blood of rabbits killed by rattlesnake-venom is practically devoid of bactericidal power, so that immediately after or even shortly before death bacteria can start growing in the body as they would in a tube of beef-broth. But after all due allowance has been made for the possible reduction or loss of bactericidal power of the blood, I still consider that it is not possible to explain some of the cases in which bacilli and gas have been found in the heart, bloodvessels, and organs very soon after death, especially when the corpse has been kept in a cold place, otherwise than upon the assumption of the distribution of the bacilli by the circulating blood.

It is another question whether gas as well as bacilli may be present in the circulating blood and internal organs during life in the class of cases now under consideration, and I regret to be unable to furnish a positive answer to this question. I do not see how an affirmative answer can be obtained otherwise than by the actual demonstration of gas in these situations either during life or immediately after death. Gas-bubbles and bacilli have been found in the heart and vessels within an hour after death, but that is time enough for bacilli which have already been introduced to multiply and begin to form gas. I at first thought that absence of nuclear staining around the gas-bubbles and masses of bacilli might serve as an indication of their presence during life, and this view is advocated by P. Ernst, but I have since learned from experiments on rabbits that this is not a decisive criterion, although often both in rabbits and human beings there is no defect in nuclear staining around bacilli and gas-bubbles.

I know of no other pathogenic microorganism which offers such difficulties in determining whether its effects in the interior of the body have been produced before or after death. The difficulty arises from the circumstance that these effects in most cases and most situations consist almost entirely in local necrosis and formation of gas, whether the invasion and growth of the bacilli be before or after death, and that unlike most pathogenic bacteria the gas-bacillus grows better in the dead than the living body. Possibly some importance in the solution of the problem may attach to the demonstration of emboli of liver-cells and of bone-marrow cells which were in enormous numbers in the pulmonary vessels in a case of gaseous phlegmon of the submammary tissues following infusion of salt-solution. At the autopsy made by Dr. Carroll the liver and other organs were emphysematous. Further observations with reference to these emboli in this class of cases are needed.

I do not consider that there is any inherent improbability in the supposition that gas-bubbles may be in

the circulating blood during life without causing speedy death from gaseous embolism. It is only when a large volume of air is introduced quickly into the blood-current that sudden death results from air embolism. Very exaggerated ideas have prevailed among physicians as to the dangers from the entrance into the circulation of small quantities of air. Laborde and Muron²⁷ injected into the external jugular vein of a dog 1120 cc. of air in the space of one hour and a half without causing death, and Jürgensen²⁸ into the left femoral artery of a narcotized dog weighing 43½ kilo 3650 cc. in the space of two hours and twenty-five minutes with only slight disturbance of the respiration and of the action of the heart. Hare²⁹ likewise on the basis of experiments controverts current beliefs in the dangers from entrance of air into the veins.

I have come across, in the older literature from the days when venesection was a common practice, reports of cases in which blood containing bubbles of gas escaped during venesection from veins of the arm.³⁰ In none of these was there evidence that air had gained entrance to the circulation. Maisonneuve³¹ in incising two gaseous phlegmons of the thigh following compound fracture observed the escape of blood containing gas-bubbles from the cut veins and was able to trace the gas within the veins for a long distance.

It seems to me very improbable that an anaërobic bacillus, such as the gas-bacillus, can multiply in the circulating blood; still this bacillus is less sensitive to the presence of oxygen than many anaërobes, and we do not know whether the loose combination in which oxygen is present in the blood would necessarily prevent its growth under all circumstances.

I see no reason why this bacillus might not multiply in the liver, spleen, and most other internal organs, as we know it can do in parts open to inspection during life. We have positive evidence in the cases reported by Graham, Steward and Baldwin, and by Dunham that gas-bacilli may be conveyed by the circulation from an infected portal of entry, in the one case the puerperal uterus and in the other a urethral wound, to distant parts of the body and there produce subcutaneous emphysema and necrosis. There is no part of the body which offers such favorable conditions for the postmortem growth of the bacillus as the liver, probably on account of its content of carbohydrate, and if the liver, like the integuments, were open to inspection during life, I believe that we should find evidence that in certain cases the emphysema of this organ, which is such a conspicuous postmortem phenomenon in instances of invasion by the gas-bacillus, had begun during the life of the patient. Emphysema, due to gas-bacilli, of mucous membranes, open to inspection, we know can exist during life. This subject will be considered subsequently.

In the great majority of the instances, however, in which gas-bubbles are found in the blood and internal organs at autopsy, the evidence is in support of the view that the development of the gas is a purely post-mortem phenomenon. Certainly the greatest caution should be exercised in the interpretation of any such cases as vital processes, even in early autopsies without ordinary putrefaction.

One thing which our investigations have established is that the finding of gas-bubbles in the bloodvessels and heart within so short a time as one hour after death furnishes in itself no proof of the entrance of air into the circulation. I shall refer later to the question of

gaseous embolism in cases of emphysematous gangrene and of physometra.

EMPHYSEMATOUS GANGRENE.

In a few instances we have found in wounds, usually compound fractures or gunshot injuries, in which dirt had gotten in, *Bacillus aerogenes capsulatus* without the presence of gas or other evidence that the bacillus was producing any characteristic effects.³² Such cases have always been watched by the surgeons with anxiety, and it is probable that at least in some the early recognition of the bacillus, followed by free incisions and thorough cleansing and disinfection, has warded off a subsequent grave infection. In view of the wide distribution of the gas-bacillus in the outer world, and in the intestinal contents, it is probable that it must not so very infrequently gain access to wounds without securing a foothold. While this innocent behavior, with which we are also familiar in the case of the tetanus bacillus, may sometimes be due to attenuated virulence of the bacillus, it is probably oftener attributable to accessory circumstances, such as the resistance of the patient, the condition of the wound and surrounding tissues, and lack of association with other micro-organisms and foreign substances.

It is as a cause of that most dreaded of wound complications, emphysematous gangrene, that *Bacillus aerogenes capsulatus* especially claims the interest of surgeons. The classical clinical descriptions of this disease we owe to Maisonneuve³³ and to Pirogoff,³⁴ the former giving to it the name "gangrène foudroyante," and the latter designating it "primary mephitic gangrene" or "acute gangrenous edema." Among other more or less common designations are "emphysematous or gaseous gangrene," "gaseous phlegmon," "septic emphysema," "érysipèle bronzé" (Velpeau), "progressive gangrenous edema," "gangrenous septicemia," and "emphysematous cellulitis."

This wound-complication was more common in pre-antiseptic times, especially in military surgery, than it is today, but at least 70 cases have been reported during the last quarter of a century. In prebacterial days the affection was attributed by some writers to the penetration of air into the tissues, but by most to the decomposition of the tissues, particularly of adipose tissue and bone-marrow, brought by an injury into contact with the atmosphere.

Bottini³⁵ in 1871 was the first to demonstrate the infective nature and transmissibility of emphysematous gangrene. Later, Gussenbauer also recognized the disease as a definite infection, and attributed it to the bacteria of putrefaction. After Pasteur's discovery in 1877 of his "vibron septique," more commonly, since Koch and Gaffky's investigations, designated *Bacillus oedematis maligni*, and especially after Chauveau and Arloing's³⁶ paper in 1884, cases of emphysematous gangrene have been usually reported, especially in France, as instances of Pasteur's gangrenous septicemia or Koch's malignant edema. W. Koch's³⁷ attempt to identify the disease with symptomatic anthrax (Rauschbrand) was based on faulty bacteriologic studies and has met with no confirmation. In 1884, F. J. Rosenbach³⁸ reported finding in cover-slip specimens from two cases of traumatic emphysematous gangrene, coarse bacilli, some of which had terminal spores. These emphysema bacilli, as he calls them, he was unable to cultivate, only aërobic methods being employed. It is probable that

Rosenbach saw *Bacillus aerogenes capsulatus* in these cases, but without distinguishing it from associated spore-bearing bacilli.

A critical examination of the records of alleged malignant edema in human beings shows that in very few was the organism concerned satisfactorily identified as the genuine malignant edema bacillus. Very often it has been simply assumed without more than a microscopical examination that bacilli found in spreading edematous conditions with or without gas have been those of malignant edema, and even where cultures and animal experiments have been employed the descriptions are frequently so meager as to leave the identity of the organism wholly in doubt. In France it is usually assumed without any discussion and even without any bacteriological examination that gangrène foudroyante is malignant edema (Pasteur's septicemia),³⁹ and the same ignorance of the present status of this subject is still sometimes encountered in England, Germany, and elsewhere. Nevertheless the investigations of the last seven years, beginning with those of E. Fraenkel and soon followed by observations of myself and collaborators, have demonstrated that by far the most common and important specific cause of gaseous phlegmons or emphysematous gangrene is *Bacillus aerogenes capsulatus*.

Whether the bacillus of malignant edema can produce an identical or similar anatomical and clinical affection in human beings I regard as an unsettled question. It is certainly remarkable in view of current doctrines in textbooks that neither E. Fraenkel nor I with our relatively large experience, nor indeed, so far as I am aware, anyone who has made himself thoroughly acquainted with *Bacillus aerogenes capsulatus*, has encountered an instance of emphysematous gangrene in man caused by the bacillus of malignant edema. The whole subject of human malignant edema is one which needs thorough revision and investigation by more exact bacteriological methods than have yet been applied to it.⁴⁰ I have already mentioned the chief points of difference between the bacillus of malignant edema and *Bacillus aerogenes capsulatus*.

There is a relatively small group of cases of gaseous phlegmon attributed by those reporting them,⁴¹ either to the colon-bacillus or the proteus bacillus. In most of these cases anaërobic culture-methods were not employed. No one has succeeded in producing experimentally gaseous phlegmon with either of these bacilli, and I think there is good reason to be skeptical concerning their capacity to produce this disease, unless perhaps *Bacillus coli* may do so in diabetics.

It is possible that some of those reporting the colon-bacillus as the cause of emphysematous gangrene may have confounded with it a facultative anaërobic bacillus which we have isolated from two cases of this disease, and which has been studied in my laboratory by Dr. Lanier. It resembles in anaërobic cultures very closely *Bacillus aerogenes capsulatus*, but it is capable of aerobic growth also, and then the rods are thinner and more like colon-bacilli. It has the power of producing gas abundantly in the blood and tissues of rabbits killed a few minutes after intravenous injection, a power not possessed by genuine colon-bacilli. I have already spoken of the importance of this test, which has been employed by none of the writers who have claimed to find colon-bacilli as the cause of gaseous phlegmons. This bacillus, when virulent, is capable of causing the same spreading and fatal emphysematous necrosis in

guineapigs and pigeons as is *Bacillus aerogenes capsulatus*.

I have been accustomed to speak of this bacillus, to which I have called attention in previous publications, as the aerobic variety of our gas-bacillus. I believe, however, that it is identical with Sanfelice's *Bacillus pseudo-œdematis maligni*⁴² with which he is inclined to identify Klein's "new bacillus of malignant edema."⁴³ Chavigny⁴⁴ has isolated apparently the same bacillus, which he likewise identifies with Sanfelice's *Bacillus pseudo-œdematis maligni* (not to be confounded with the pseudo-edema bacillus of Liborius), from a case of gaseous gangrene, and he also calls attention to the probability that others may have mistaken it for the colon-bacillus. While, therefore, unwilling upon existing evidence to accept the colon-bacillus as a demonstrated cause of gaseous gangrene (except perhaps in diabetics), I am of the opinion that an aerobic bacillus, probably identical with Sanfelice's *Bacillus pseudo-œdematis maligni*, is capable of producing this affection, but it is much less frequently concerned than *Bacillus aerogenes capsulatus*.

I have collected 46 cases of emphysematous gangrene, in all of which *Bacillus aerogenes capsulatus* was demonstrated, and, therefore, all reported or observed during the last seven years.⁴⁵ This is a far larger number of cases than has ever been brought together before.

Thirty-two are reported by American observers, and only 14 by foreign investigators. Of the former group of cases 16 were observed in Baltimore, most of the cultures having been studied in my laboratory; of the foreign group of cases all are reported from Germany, Austria, Italy, and France, 4 by E. Fraenkel, 1 (not absolutely certain) by Passow, 5 by Hitschmann and Lindenthal, and 3 by Muscatello, assisted by Gangitano, and 1 by Guillemot.⁴⁶

Cases of gaseous phlegmon in which *Bacillus aerogenes capsulatus* was not demonstrated are not included, although many of these presented the same clinical characters and doubtless in some cases at least the gas-bacillus was the active agent. This is true especially of the cases of gangrène foudroyante, usually without satisfactory bacteriological examination attributed by French writers to Pasteur's *vibrion septique*. Gertler's⁴⁷ 8 cases of gaseous phlegmon cannot be utilized for our purposes at all, as they are without any satisfactory bacteriological reports.

A complete analysis of these 46 cases would afford material more than sufficient to occupy this entire address, so that I shall be able to present here only some of the more important points.

Thirty-five of the patients were males, 10 females, and of 1 the sex is not stated. The preponderance of males is to be explained by the fact that most of the cases were due to severe injuries. Robust workmen in the prime of life furnished the largest contingent of cases.

In 80% of the cases one of the extremities was the seat of the emphysematous gangrene, the lower being affected a little over twice as often as the upper extremities. In several instances the emphysema extended from the thigh to the abdominal wall, or from the arm to the subcutaneous tissues of the shoulder and chest. There were three examples of primary emphysematous phlegmon of the abdominal wall: of these one following removal of the appendix (Bloodgood), one from an unrecognized strangulated Littré hernia (Martin), and one

affecting the deep tissues of a nephrectomy wound (Muscatello). In all of these the infection is believed to have started from the intestine. In one of Dunham's cases there was emphysematous gangrene (originating in a prostatic abscess opening in the buttock) of the scrotum, penis, and anterior abdominal and thoracic subcutaneous tissues. In 3 instances (Carroll 2; Dobbin 1, reported by Bloodgood) the breast and submammary tissues were the primary seat of the disease, all of these resulting from the infusion of salt-solution. In one case (Dunham) the gaseous phlegmon appeared at the angle of the lower jaw after incision of a foul submaxillary abscess. In one instance (Welch and Flexner) it started within the pelvis from traumatic rupture of the rectum and extended through the sciatic notch down the thigh.

Of especial interest are three examples of multiple or metastatic emphysematous gangrene; one of the forearm and opposite shoulder, another of the thigh and both shoulders, and still another of one shoulder and the buttocks. In the older literature are similar cases; thus Nélaton observed emphysema not only in the injured leg, but also in the opposite, uninjured extremity. In 1897, Leech⁴⁸ reported, without adequate bacteriologic examination, a case of emphysematous gangrene of the right leg following about three weeks after injury of the right thumb, which became inflamed, there being no evident local cause of the affection of the leg. These cases are to be explained by transportation of the bacilli through the lymphatic or blood-current from the primary focus of entrance.

In all but 5 of the 46 cases the emphysematous gangrene followed traumatism or a surgical operation. The injuries were as follows: Compound fractures, 18; bullet and gunshot wounds, 7; infusion of salt-solution, 3; hypodermic injections, 2; ligation of the femoral artery for aneurysm, 3; external urethrotomy, 2; traumatic rupture of the rectum, removal of the appendix, prostatic abscess following self-catheterization, operation for strangulated Littre hernia, incision of a foul submaxillary abscess, and nephrectomy, each one. Of the 5 nontraumatic cases the gaseous gangrene followed erysipelas in 1, was consecutive to apparently spontaneous gangrene in 2, whether diabetic or not is not stated, and was without apparent explanation in 2 (Fraenkel's Case 2 and Passow.)

Compound fractures and next bullet and gunshot wounds occupy by far the most prominent place in this list, each of the other various causes being represented only by scattered cases. Those injuries in which there are much laceration and crushing of tissue, comminution of bone and grinding of dirt, bits of clothing or other foreign bodies into the wound, are the ones most likely to be followed by emphysematous gangrene. That, however, severe traumatism is not an essential factor is shown by the five cases (10.9% of the entire number) following hypodermic injections and infusion of normal salt-solution. These latter, however, were all of patients whose vital forces were greatly depressed, namely, by Asiatic cholera, typhoid fever, surgical shock, or postpartum hemorrhage. There is good reason to believe that the intact tissues of human beings in health possess marked resistance to the gas-bacillus.

In the great majority of cases it was evident that the gas-bacillus was introduced through the wounded skin from without. In three instances (removal of appendix, strangulated hernia, and traumatic rupture of the rectum) the infection undoubtedly came from the

intestine. This was also the probable source of infection in one of Muscatello's cases (gaseous phlegmon in the site of an extirpated kidney). With our present knowledge of the frequent, if not regular, presence of *Bacillus aerogenes capsulatus* in the intestine, there is nothing surprising in this mode of infection. In three of Dunham's cases the infection followed injury of the urethra, and here also the bacilli may have come primarily from the intestine. In one of his cases (gaseous phlegmon at angle of the jaw) it was suggested that the bacilli gained entrance through decayed teeth.

Bloodgood thinks it probable that in one of his cases the gas-bacilli were brought by the circulation to the seat of infection. In this case the femoral artery was ligated for traumatic arteriovenous aneurysm in the popliteal space. There was no primary infection of the wound, but gangrene of the foot and leg ensued and on incision gas-bubbles were found in the blood of the aneurysmal sac and the tissues. With what we know about the entrance of intestinal bacteria into the circulation, there is nothing improbable in Bloodgood's opinion. The clot in an aneurysm and tissues robbed of their nutrient supply would offer little or no resistance to the growth of bacilli which might reach them or their immediate neighborhood through the circulation, and the conditions would be anaërobic. It was indeed a case of aneurysm in which I first found the gas-bacillus, and here the clot was swarming with bacilli. It is interesting to note that three of the cases of emphysematous gangrene in my list followed ligation of the femoral or popliteal artery for aneurysm.

Pirogoff⁴⁹ distinguished clinically two groups of cases of traumatic emphysematous gangrene. He described under the name "primary mephitic gangrene" cases in which the emphysema appears within two days after the injury, the "local stupor" passing without inflammatory reaction into crepitating gangrene. Here the emphysematous necrosis spreads rapidly, the patient sinks into collapse, with an icteroid hue of the skin, small, thready pulse and cold sweats, and death occurs usually within a few days after the onset. This type of the disease corresponds to Maisonneuve's *gangrène foudroyante*. In the second group, designated by Pirogoff also as "acute gangrenous edema," there is reaction from the primary "local stupor" of the tissues, the emphysema is preceded and accompanied by local, edematous or purulent inflammation, is associated with febrile reaction, often appears later after the injury and spreads less rapidly, and presents in general a more varied anatomical and clinical picture than the first class of cases.

Hitschmann and Lindenthal consider that Pirogoff's first group corresponds especially to cases of pure or predominant infection with the gas-bacillus, and his second group to mixed infections. Erdmann is also of the opinion that in the unmixed infections the emphysematous necrosis spreads more rapidly and is more likely to terminate fatally. On the other hand, Muscatello and Gangitano, who also divide the cases into two groups—pure infections and mixed infections—hold that the mixed infections are characterized by the rapidly progressive form of emphysematous gangrene, while the pure infections, at least in their early stage, show little tendency to spread beyond the injured tissues. According to the last-named authors, the gas-bacillus is incapable of exerting any pathogenic action upon healthy tissues, but attacks only tissues already altered in their vitality by injury,

other pathogenic microorganisms, toxins, or other depressing factors.

The study of our cases has not enabled me to adopt either of the two conflicting opinions just stated. Of the collected 46 cases, 30 were mixed infections, 14 were pure, and in 2 there is no clear statement on this point. The most common associated bacteria were the pyogenic streptococci and staphylococci. Other forms found occasionally were *Bacillus coli*, proteus, pyocyaneus, tetanus, Sanfelice's *Bacillus pseudo-œdematis maligni*, and uncultivable, often spore-bearing, bacilli. It seems probable that the bacillus of malignant edema, being a common inhabitant of the soil, must occasionally, like the tetanus-bacillus, be present, but it was not isolated from any of these cases. My experience is, that if reliance be not placed exclusively upon cultures, but careful microscopical examinations be also made, instances of unmixed infection with the gas-bacillus are rare. It is by no means always easy to determine whether associated bacteria are exerting pathogenic action or not. Pyogenic cocci may be present without producing pus or marked inflammatory reaction.

We have found rapidly progressive forms of emphysematous gangrene both with pure infections with the gas-bacillus and with mixed infections, and on the other hand we have observed with both types of infection cases in which the tendency to spread is much less marked. In all of the cases with much purulent inflammation mixed infection was present, but aside from this feature the division of the cases into pure and mixed infections does not, according to our experience, correspond to different, sharply marked, clinical features. Pirogoff's classification is doubtless of clinical value, but there is every gradation between the two groups.

I cannot agree with Muscatello and Gangitano, whose investigations of emphysematous gangrene are of great value, that the gas-bacillus is incapable of attacking healthy tissues. Virulent cultures, even in small doses, can produce rapidly spreading gaseous phlegmons when inoculated into the subcutaneous tissues of susceptible animals, such as guineapigs and pigeons. In human beings the emphysema may extend very rapidly into the healthy tissues, frequently outstripping in its advance the inflammatory edema. This may occur in pure as well as in mixed infections with the gas-bacillus. It is true, as urged by Muscatello and Gangitano, that toxins derived from the bacilli may prepare the tissues for the invasion and action of the advancing bacilli, but the same explanation has been put forward for the spread of other pathogenic bacteria in healthy tissues. In asserting that the gas-bacillus may attack healthy tissues, I would not be understood as minimizing the great importance of the various accessory causes of emphysematous gangrene which act by lowering the vitality of the tissues or the general resistance of the patient or as failing to recognize the marked resistance to infection by the gas-bacillus offered by the healthy tissues, a resistance to which I have previously called attention and which I shall have occasion further to emphasize.

'Gas may appear in the tissues as early as eight hours after the injury. In a case of gaseous phlegmon following a bullet wound of the knee-joint, reported by Welch and Flexner, Dr. Bloodgood recognized gas in the joint⁵⁰ and surrounding tissues just twenty hours after the injury. In a case of Dr. Tiffany's, which we have reported, death from emphysematous gangrene,

due to pure infection with the gas-bacillus, occurred forty-eight hours after a fall causing a compound, comminuted fracture of the patella with grinding of the underclothing into the wound. There was no other injury of the body. Any one who has seen one of these rapidly fatal cases of spreading, traumatic, emphysematous gangrene will receive an impression which he will never forget.

The anatomical and clinical study of uncomplicated emphysematous gangrene demonstrates that the disease is not, as many formerly supposed, simply an intense variety of ordinary phlegmonous inflammation or cellulitis, but is a disease sui generis. It may be combined with phlegmonous inflammation, but then some other microorganism, usually the streptococcus, is associated with the gas-bacillus.

In typical uncomplicated cases the lesions consist in necrosis of all the tissues, the presence of gas in the interstices, infiltration with blood, evidences of the mechanical action of the gas, and exudation of a variable amount of bloody serum. The amount of gas varies much in different cases. There may be only a few bubbles or the tissues may everywhere be blown up with gas. The nuclei disappear by karyolysis. The notable thing in most cases is a nearly complete absence of leukocytes and of cellular reaction, although in a few instances, even of pure infection, I have found leukocytes in considerable number, and even purulent foci, but generally at a distance from the primary necrosis. As will be shown later, *Bacillus aerogenes capsulatus* in certain situations is capable of setting up purulent inflammation. In one of our cases, reported by Bloodgood, Dr. Cushing found gas-bacilli without gas in a small subcutaneous abscess of a stump two months after amputation of the thigh for emphysematous gangrene of the leg, the amputation having been followed by uninterrupted convalescence.

After death there may be rapid extension of the subcutaneous emphysema, and at autopsies made a few hours after death gas-bubbles may be found in the heart, vessels, liver, and other organs, but as to this occurrence there is no rule. As I have already explained, widespread distribution of gas in the blood and organs in early autopsies indicates entrance of the bacilli into the circulation during life.

As is to be expected from the etiology of many of the cases of emphysematous gangrene, emboli of fat and of bone-marrow cells are common in the pulmonary capillaries, but I do not know that in any case they contributed to the fatal result.

The prognosis of emphysematous gangrene is more favorable today than before the antiseptic period. The disease terminated fatally in 59% of the cases in my list. In the cases observed and treated at the Johns Hopkins Hospital—10 in number—the fatality was 50%, but of these one was a gaseous phlegmon of the pelvis extending to the thigh, resulting from traumatic rupture of the rectum; a second was a gaseous phlegmon of the abdominal wall following removal of the appendix and complicated with diffuse gangrenous peritonitis, and a third case terminated 25 days after disappearance of a gaseous phlegmon of the thigh (treated by incisions) from a late streptococcus infection, gas and the gas-bacillus having disappeared. Of the two remaining fatal cases in one—emphysematous gangrene following compound fracture of the thigh—amputation was refused by the patient until the fourth day when he was in a state of collapse and died 15

hours later, and in the other—compound fracture of the skull and both lower extremities—the patient died 30 hours after the accident, having never regained consciousness. When the disease is accessible to surgical treatment, is not complicated by other grave conditions, and is promptly recognized and treated, the prognosis, according to the experience of my surgical colleagues, Professor Halsted and Dr. Bloodgood, is not very unfavorable.

The clinical evidence seems to me to favor the view that, at least in most uncomplicated fatal cases, death is due to toxemia. Norris was unable to demonstrate the presence of strong toxins in artificial cultures of *Bacillus aerogenes capsulatus*, but, as is well known, the same difficulty is encountered with many other pathogenic bacteria which are believed to produce poisons in the human body. Muscatello is also of the opinion that the constitutional symptoms are attributable to toxemia.

The suggestion that death may be due to gaseous embolism is not new. Pirogoff and others of the older observers knew that gas-bubbles may be found within the heart and vessels very soon after the death of patients from emphysematous gangrene. In the discussion on Langenbeck's paper on traumatic infiltration before the Society of German Military Surgeons in 1870, Senator⁵¹ advocated the idea that death is caused by gas-embolism. While the possibility of this occurrence as the cause of death may be admitted, there is at present no proof of this opinion. Gas-bubbles are by no means always found in the blood and organs after death from emphysematous gangrene, and the clinical histories of those in whom they are found *post mortem* do not appear to differ from those where they are absent. In experimental gaseous phlegmons in guineapigs there is no evidence of the presence of gas-bubbles in the circulation during life.

In one of our cases (Mann) death resulted from tetanus, and Verneuil⁵² has reported three cases, which without bacteriological examination he calls malignant edema, where also tetanus intervened. There is nothing surprising in this association when one considers that the home of the tetanus-bacillus, like that of the gas-bacillus, is the soil. The period of incubation for tetanus is longer than for infection with the gas-bacillus, the former appearing rarely before the seventh day, and the latter usually within two or three days after the injury.

Prophylactic measures against emphysematous gangrene are sufficiently obvious from the etiological factors which have already been considered. It is important in wounds of the character most frequently followed by this complication to search microscopically and by culture for the gas-bacillus. The examination of cover-slips will usually suffice for a probable diagnosis. I have already cited instances in which this bacillus has been detected before the onset of emphysema and in which there is good reason to think prompt surgical treatment warded off severe infection. The possibility of infection from the intestinal canal, as well as from external sources, is to be borne in mind.

The cases were treated either by free incisions or by amputation or both. The results were better after amputation than after simple incisions. Of the cases of emphysematous gangrene affecting primarily the extremities, the recoveries numbered 68% after amputation, and 33½% after incision without amputation. Careful study of individual cases shows that amputation is by no means always necessary. Everything

depends upon early recognition of the nature of the infection. Dr. Bloodgood⁵³ from a relatively large experience says: "If the infection is recognized early, and the destruction of the soft parts and bone is not extensive, free incisions with immediate continuous bath-treatment should be tried. If the general symptoms of infection are not immediately relieved, amputation should be done. If, however, the infection is recognized late one should take no risk, but amputate at once. . . . An early diagnosis will probably save life, and from many observations an amputation may not always be necessary."

A similar position as to prognosis and treatment is taken by Muscatello and Gangitano in their valuable paper on gaseous gangrene, in which they also emphasize the value of abundant irrigations with disinfectant and oxidizing solutions. In the service of Dr. Halsted at the Johns Hopkins Hospital the continuous bath-treatment has been found useful. Hitschmann and Lindenthal are certainly mistaken in their assertion that incisions are usually without favorable effect and that early amputations offer the only chance of recovery. As pointed out by Thorndike and others, recovery may follow amputation even when it is impossible to remove the whole of the diseased tissues.

UTERINE INFECTIONS.

Knowledge of *Bacillus aerogenes capsulatus* is of not less interest and importance to the obstetrician than to the surgeon. Infection of the puerperal uterus by this microorganism leads to a variety of morbid conditions, some comparatively mild, others of the utmost gravity.

The wide distribution of the gas-bacillus in the intestinal canal and the outer world renders as explicable the occasional presence of this bacillus in the female genital tract as that of the colon-bacillus in the same situation. Lindenthal⁵⁴ found the gas-bacillus in the vagina without the presence of gas or other pathogenic effects twice out of six puerperal cases examined. According to the observations of others, Lindenthal's experience would seem to be exceptional. As with so many other pathogenic bacteria, the mere presence of the organism upon exposed surfaces does not necessarily signify infection.

I shall consider the uterine infections by the gas-bacillus under the headings of emphysema of the fetus, puerperal endometritis, physometra, emphysema of the uterine wall, and puerperal gas-sepsis, although these conditions may be associated with each other.

Emphysema of the Fetus.—The occurrence of emphysema in the dead fetus in utero has been known for centuries,⁵⁵ but it was not until 1897, when Dobbin published his paper on "Puerperal Sepsis due to Infection with the *Bacillus Aërogenes Capsulatus*,"⁵⁶ that the cause of this condition was determined to be invasion by the gas-bacillus. In this case gas and the gas-bacillus were both recognized during the life of the patient in the fetus, the placenta, and the cavity of the uterus, and after death there was general gas-formation throughout the body.

Dr. Dobbin has kindly given me the notes of a second unpublished case observed by him. He was called to see a woman in difficult labor, upon whom repeated attempts at delivery of a dead fetus had been made. Upon examination, he recognized crepitation of the caput succedaneum while the fetus was still in utero. Upon delivery, the fetus was emphysematous, with foamy organs. The gas-bacillus was found in pure

culture in the fetus and mixed with other bacteria in the amniotic fluid. No gas was recognized in the uterus after delivery. The patient made a good recovery, without evidence of sepsis.

Menge and Krönig⁵⁷ have observed three instances of fetal invasion by the gas-bacillus, and have brought strong evidence that usually the invasion is through the mouth of the fetus, the bacilli being taken into the lungs or stomach by inspiring or swallowing amniotic fluid. In their cases the bacilli were not found in the part of the umbilical cord attached to the placenta; but in Dobbin's first case, this, as well as the placenta itself, was infected with the gas-bacillus. The amniotic fluid within the intact membranes, as is well known, is usually sterile, and only exceptionally becomes infected before rupture of the membranes, so that the infection of the fetus from this source is generally after this rupture. As shown by Menge and Krönig, all grades of invasion of the fetus by the gas-bacillus occur, so that there may be only a small amount of gas, and this limited to the lungs or the alimentary canal or both. The medico-legal importance of not mistaking for air this gas in the fetal lungs, produced by gas-bacilli, should be emphasized.

As is well known, fetal emphysema is usually unattended with danger to the mother. In two of the five cases due to *Bacillus aerogenes capsulatus* in my list the puerperium was even without rise of temperature, in two there was mild fever, but in Dobbin's first case there was rapidly fatal gas-sepsis.

Puerperal Endometritis.—Under the heading "gas-sepsis" will be considered cases of acute uterine infection with the gas-bacillus followed by invasion of the blood and organs by this organism. Here it may be mentioned that *Bacillus aerogenes capsulatus* may be present in the uterus, usually in association with other bacteria, in both mild and severe cases of puerperal endometritis without the recognition of gas in the fetus, or the uterine cavity, or wall. An example of such a case is an unpublished one in the service of Dr. J. Whitridge Williams, of which the notes have been furnished me by Dr. Dobbin. A woman with a rachitic pelvis, upon whom delivery by forceps had been attempted before admission to the Johns Hopkins Hospital, was there delivered by craniotomy. There was no gas in the fetus. Forty-eight hours later *Bacillus aerogenes capsulatus*, together with streptococci, was found in the uterine lochia. No gas was detected. The patient developed fever, but recovered.

In two cases, one reported by Dobbin⁵⁸ and the other by Blumer,⁵⁹ the gas-bacillus, although not identified with absolute certainty, was probably present in the puerperal uterus in association with the typhoid bacillus.

Physometra.—Distention of the uterine cavity with gas (physometra or tympany of the uterus) was present in Dobbin's first case, already cited, and is often associated with emphysema of the dead fetus, but may occur without the latter and even in the non-pregnant uterus. This curious condition was formerly ascribed to entrance of air or to ordinary putrefaction,⁶⁰ but it is now known to be the result of the activity of gas-producing bacilli.

Since the observations of Lindenthal,⁶¹ reported in 1898, it cannot be doubted that *Bacillus aerogenes capsulatus* is the chief cause of physometra. He found this bacillus in five cases during life and reproduced the condition experimentally in guineapigs. He is justly skeptical of the correctness of the previous reports

of Gebhard⁶² concerning the agency of the colon-bacillus in generating gas within the uterus. We know from Theobald Smith's investigations that the colon-bacillus can produce gas only from carbohydrates, whereas it is the most distinctive biological attribute of our gas-bacillus that it can produce gas from proteids. Until it has been shown that the amniotic fluid and uterine contents may under any conditions contain enough carbohydrate to explain the development of gas by the colon-bacillus, there is every reason to question the claims of this bacillus as a cause of tympany of the uterus.⁶³

My list of cases contains ten instances of physometra in which *Bacillus aerogenes capsulatus* was demonstrated. Although, as some of our cases show, this condition may be associated with invasion of the bacilli into the wall of the uterus and by acute gas-sepsis, these occurrences are exceptional and the prognosis is in general a favorable one. Most of the cases furnish a good illustration of the resistance of living human tissues to the action of the gas-bacillus. Doubtless in these cases the bacilli grow simply in the amniotic fluid after rupture of the membranes, and in the dead fetus, these offering no vital resistance, whereas we must suppose that the intact uterine wall offers ordinarily an effective resistance to the invasion and multiplication of the gas-bacillus. That occasionally the bacilli may find other dead material in the uterus, as in sloughing myomata and cancers, is evident from the histories of some cases of physometra.

Emphysema of the Uterine Wall.—Far graver in significance is septic emphysema of the uterine wall, of which Halban⁶⁴ has recently reported an interesting case, due to *Bacillus aerogenes capsulatus*. Graham, Steward and Baldwin and P. Ernst were the first to demonstrate this bacillus in this condition, their papers, to which reference has already been made, appearing simultaneously in August, 1893. Eleven instances of emphysema of the wall of the uterus, all puerperal, have been reported, of which 5 were recognized during life. In all but Halban's case there was also physometra, and this would seem to be a necessary accompaniment, unless the cervical canal is open, so as to permit the escape of the gas from the uterine cavity. All of the cases were fatal, and in most gas was found at autopsy in the blood and internal organs.

Subperitoneal emphysema has been observed after rupture of the uterus, Dischler⁶⁵ having collected reports of 14 cases. In most instances this has been attributed to entrance of air, but I think that it is safe to predict that the gas-bacillus will be found in similar cases in the future, if proper methods for its detection are employed. I know, however, of no instance of this condition in which it has been looked for.

Puerperal Gas-Sepsis.—I have adopted from Halban the term "gas-sepsis" as a convenient one—although, perhaps, open to criticism—to designate the important group of fatal puerperal cases in which gas-bubbles are found at early autopsies in the heart and vessels, and often also in the organs and tissues, under conditions where we must suppose that gas-bacilli, and possibly gas, have passed from the uterus into the circulation during life.⁶⁶ Here, in my opinion, belong most of the cases which have been reported as deaths due to the entrance of air into the uterine veins. This opinion, which I expressed in my first communications on the gas-bacillus, in 1891 and 1892, received prompt confirmation in the papers of Graham, Steward and Baldwin,

and of P. Ernst, in August, 1893, and has since been strengthened by other similar observations. Cases described by Wendeler⁶⁷ as sepsis acutissima belong also in the same category.

My list includes 12 puerperal cases in which gas-bubbles and the gas-bacillus were found at autopsy in the blood and organs; but in only 6 of these does it seem to me conclusive or extremely probable that the infection occurred during life.⁶⁸

The most remarkable of these cases is that reported by Graham, Steward and Baldwin of a woman, upon whom abortion had been recently produced, who during the four hours immediately preceding death became emphysematous over nearly the whole body. At the autopsy gas and gas-bacilli were found everywhere throughout the body. In Dalton and Bremer's⁶⁹ case, also one of criminal abortion, an emphysematous swelling of the arm and pectoral region was likewise recognized during life. These cases are of importance as demonstrating the invasion of the body by the gas-bacillus from the uterus while the blood is still circulating. In Halban's and Dobbin's cases gas was recognized also during life within the wall or cavity of the uterus.

In the majority of cases of puerperal gas-sepsis there has been some operative interference preceding infection, such as criminal abortion, forced delivery for placenta prævia or other causes, or the manipulations of an unskilled midwife. The fulminating character of the infection, death being sometimes very sudden, is a noteworthy feature of many of the cases.

In a case of attempted criminal abortion reported by Perkins⁷⁰ the patient, according to the statement of the practitioner in whose office death occurred, died suddenly, and at the autopsy 12 hours later in cold weather, gas was found in the vena cava, heart, and other vessels, with evidences of injury to the pregnant uterus. The case was reported by Perkins as one of death from air-embolism, and certainly with as much and even more plausibility than most cases thus reported. After the publication, Dr. Perkins, upon the request of Dr. Dobbin, was so good as to send the uterus, well preserved in alcohol, to my laboratory where Dr. Dobbin demonstrated in the uterine vessels and tissue bacilli morphologically and in staining reaction identical with *Bacillus aerogenes capsulatus*.⁷¹

I would not be understood to deny the possibility of the occurrence of fatal air-embolism from the uterus. A very few of the reported cases are difficult to interpret upon any other supposition, but I do claim that the foundations of this doctrine have been seriously shaken by our discovery and investigations of the gas-bacillus, and that no case, however plausible, can be considered as positively proved without a satisfactory bacteriological examination. The limitation of gas to the right heart and adjacent vessels may occur from invasion by the gas-bacillus and is not, as often represented, peculiar to air-embolism. Did we not know how long it takes new knowledge, especially that originating in this country, to penetrate throughout the medical world, it would be amazing that cases should still continue to be reported, as they are,⁷² of deaths ascribed to air embolism without any bacteriological examination or even any reference to the possibility of any other explanation. I am not aware that in any instance of alleged air-embolism, a bacteriological examination has been made, which would exclude the presence of gas-forming bacteria.

Whether, as suggested by Staude, in any of the cases with gas within the uterine cavity, death is attributable to gaseous embolism, is, I think, an open question. It is possible, although I know of no proof of it, that in some of the cases of sudden death during or immediately after some manipulation or operation on the pregnant uterus and attributed to air-embolism, gas, generated by bacteria, may have existed under pressure within the uterine cavity and have entered wounded veins in sufficient amount and so suddenly as to have caused death.

To what extent the free gas found in the blood-vessels, heart, and internal organs, even very soon after death from what has been described as puerperal gas-sepsis, is there during life, is a question difficult to answer. I have already considered this subject, and in this connection shall again emphasize the importance of caution in interpreting the presence of gas in these situations as a vital phenomenon, although there is evidence that it may be such.

INFECTIONS OF THE URINARY TRACT.

There is evidence that the urinary tract may not only be a portal of entrance for the gas-bacillus into the circulation or adjacent tissues, but also be itself the seat of infection by this organism. Unfortunately for the decisive interpretation of many of these cases, *Bacillus aerogenes capsulatus* has, so far as I am aware, hitherto been found in the urinary tract only after death, although in some instances so soon thereafter and under such conditions that its presence during life cannot be doubted.

I have already called attention to instances of emphysematous gangrene following external urethrotomy and other operations on the urinary passages.

Among the cases of general invasion of the blood and organs (foamy organs) by the gas-bacillus observed by myself and others are several in which the portal of entry was the urethra, bladder, or other part of the urinary tract.⁷³ In a case of urethral stricture with cystitis, for which perineal section had been done, reported by Welch and Flexner, gas-bacilli were found *three-quarters of an hour after death* in large numbers in the bladder, ureters, and renal pelvis, and a few gas-bubbles and gas-bacillus were already present in the blood of the right ventricle. In Howard's case of meningitis caused by the gas-bacillus, to be cited subsequently, he considers that the portal of entry was the urinary tract.

Gas generated by *Bacillus aerogenes capsulatus* has been found in the urinary passages in six cases which have come to my notice.⁷⁴ The gas may be either free in the cavity of the bladder, ureters, or renal pelvis, or contained within submucous blebs, or in both situations.

Welch and Flexner⁷⁵ have reported an instance of pneumaturia in a diabetic man in whom, six hours after death, without trace of cadaveric decomposition, the urinary bladder was found filled with frothy urine containing *Bacillus aerogenes capsulatus* in pure culture. This case indicates that the colon-bacillus and *Bacillus lactis aerogenes* are not the sole causes of pneumaturia in diabetics. Dr. Flexner has given me the notes of a second case of pneumaturia upon which he made the autopsy at the University Hospital, Philadelphia. This was of a patient with chronic cardiac disease who had been catheterized 28 hours before admission and who died 30 hours after admis-

sion. At the autopsy, made one hour and a half after death, about 60 cc. of frothy urine were found in the bladder from which *Bacillus aerogenes capsulatus*, together with *Staphylococcus aureus* and *Streptococcus pyogenes* (no colon-bacilli), was cultivated. Neither gas nor gas-bacilli were found elsewhere in the body. The mucous membrane of the bladder was edematous. There can be little doubt that in this case the gas-bacillus was introduced by the catheter into the bladder.

In one of Welch and Flexner's cases (Case 18) of hypertrophied prostate with pyoureter and pyonephrosis the renal pelves and ureters were found at autopsy distended with gas and containing pus mixed with bubbles of gas. Small gas-cysts were present in the mucous membrane of the renal pelves. Neither gas nor gas-bacilli were present outside of the urinary organs. In this case cocci and colon-bacilli were associated with the gas-bacillus.

In a case of Dr. Kelly's, of which the full records have been given me by Dr. Miller,⁷⁶ there was pneumaturia demonstrated by cystoscopic examination and ureteral catheterization to come exclusively from the inflamed left renal pelvis and ureter. Among cocci and other bacteria were found on cover-slips bacilli morphologically resembling *Bacillus aerogenes capsulatus*, but unfortunately no anaërobic cultures were made. None of the bacteria which grew aërobically produced gas in lactose agar. This case is interesting as demonstrating that the gas may come exclusively from one renal pelvis and ureter, but the microorganism producing the gas was not satisfactorily demonstrated. It seems certain that it was an anaërobic organism, and from the microscopical appearances may have been the gas-bacillus.

The subject of submucous gas-cysts will be considered subsequently, but here it may be mentioned that besides the gas-cysts in the renal pelves noted by Welch and Flexner in the case already cited, Goebel found gas-blebs, containing in pure culture *Bacillus aerogenes capsulatus*, beneath the mucous membrane of the urinary bladder, without gas elsewhere in the body, and Dunham has reported a similar condition of the bladder in a case of emphysematous gangrene with general invasion of the blood and organs by the gas-bacillus.

Bacteria have been found in emphysema of the bladder (cystitis emphysematosa) also by Eisenlohr,⁷⁷ Camargo,⁷⁸ and Kedrowsky,⁷⁹ but it is impossible from the authors' descriptions to identify their bacteria. Kedrowsky considers the bacillus isolated by him as allied to *Bacillus aerogenes capsulatus*, but less sensitive to oxygen. Perhaps it was Sanfelice's *Bacillus pseudo-œdematis maligni*, to which I have already referred, but Kedrowsky's description of his cultures hardly inspires confidence in their purity.

Welch and Flexner, and Howard have reported finding the gas-bacillus, in association with other bacteria, in inflammatory lesions of the bladder, renal pelvis and kidneys, without the detection of gas. Howard considers that in one of his cases the bacillus was concerned in the etiology of suppurative lesions of the kidneys, but in this case the colon-bacillus and *Streptococcus pyogenes* were also present.

INFECTIONS DERIVED FROM THE GASTRO-INTESTINAL CANAL.

Mention has already been made of the frequent, if not constant, presence of *Bacillus aerogenes capsulatus* in the intestinal canal, of gaseous phlegmons originat-

ing from this source, and of the readiness with which intestinal bacteria may gain access to the genitourinary tract.

The intestine is by far the most common source of the gas-bacilli found together with gas-bubbles in the blood and organs at autopsies. This invasion may occur either with or without definite intestinal lesions, and is probably in the majority of cases an agonal or postmortem event. The mode of distribution and spread of the bacilli in these cases has been well described by Howard,⁸⁰ whose experience has been exceptionally large with this class of affections. Especially demonstrative of invasion of gas-bacilli from the intestine, usually postmortem, is the occurrence of gas-bubbles limited to the neighborhood of the intestine, as in the intestinal wall, within the portal or mesenteric veins, or lymphatics, in the subperitoneal tissues, mesentery and omenta, around the pancreas, in the mesenteric glands, and especially in the loose tissue near the gallbladder and in the porta of the liver, without gas in more remote situations. I have seen examples of each of these occurrences in very early autopsies without ordinary cadaveric decomposition.

Local Gastrointestinal Lesions.—Interstitial emphysema of the gastro-intestinal wall will be considered subsequently.

Howard has described several cases with larger or smaller areas of superficial necrosis of the mucous membrane of the stomach and intestine, in which gas-bacilli were present in large numbers. These areas, which may occur either with or without gas-cysts, are found most frequently beneath the folds of the valvulae conniventes and are characterized by absence of nuclear staining and disintegration of the cells and tissue, usually without marked inflammatory reaction.

Bacillus aerogenes capsulatus may undoubtedly be a cause of meteorism. Instances of this are reported by Welch and Flexner and by Howard.

Pneumo-peritonitis with and without Perforation.—My records include 13 cases of diffuse peritonitis in the exudate of which *Bacillus aerogenes capsulatus* was found. Eleven of these were in autopsies made either by Dr. Flexner or myself, 7 having already been published by us in 1896. The remaining 2 cases (both being perforations of gastric ulcers) have been reported by Page,⁸¹ and by Pratt and Fulton.⁸² It was the observation of these cases which first called my attention to the frequent presence of the gas-bacillus in the intestine.

Ten of the cases were perforative and 3 were non-perforative. Of the former, 4 were the result of perforation of typhoid ulcers,⁸³ 4 of gastric ulcers, 1 of strangulated gangrenous intestine, and 1 of a cancerous ulcer of the duodenum. In the last case (autopsy 14 hours after death) the exudate was sero-fibrinous and the gas-bacillus was found in pure culture⁸⁴ and abundantly in the peritoneal cavity and was absent from other organs and the blood. In the other perforative cases the gas-bacillus was mixed with other bacteria, although in some instances it predominated. In all of the cases the abdomen was greatly distended with gas and usually there was great tympanites.

I attach especial importance to the case fully reported by Welch and Flexner,⁸⁵ in which we brought conclusive evidence of the occurrence of pneumo-peritonitis without perforation, the first of the kind on record in which similar proof was obtained. Since our publication a similar case has been observed by Dr. Flexner in Manila, who has kindly furnished me the notes. At the

autopsy, 12 hours after death, there was found hemorrhagic infarction of the lower part of the ileum and adjacent part of the large intestine, caused by the passage of this part of the intestine through a hole in the mesentery. The peritoneal cavity was greatly distended with gas which burnt with a pale, blue flame. There was a large amount of frothy, bloody serum in the peritoneal cavity together with a fibrinous exudate. The most careful examination showed no perforation. *Bacillus aerogenes capsulatus* was obtained in pure culture and abundantly from the peritoneal fluid. Gas was absent from the blood and other organs.

We have found the gas-bacillus, mixed with other bacteria, twice in circumscribed, gas-containing, intra-peritoneal abscesses resulting from perforation of the appendix vermiformis.

Hepatic and Biliary Infections.—The development of gas in the liver is so striking a phenomenon in most autopsies where the gas-bacillus and free gas are found in the blood and organs that P. Ernst used the term "Schaumleber" for the title of his article on the gas-bacillus, published a year after the paper by Welch and Nuttall in which we first directed attention to the subject of foamy organs and the gas-bacillus.⁸⁶ I have already considered the general subject of gas-bubbles in the blood and organs, and wish here to call attention especially to infections of the gallbladder and biliary passages by *Bacillus aerogenes capsulatus*.

In cases of foamy liver gas may be found in the bile-ducts and gallbladder, but my experience is that, when the gas-bacilli reach the liver through the bloodvessels, the appearance of gas in these situations is a rather late occurrence and met chiefly in advanced cases. In contrast to these cases are the observations of gas in the biliary passages, associated sometimes with definite lesions of the bile-ducts and liver, where the evidence is that the gas-bacilli entered from the intestine directly into the passages. Two such cases have been reported by Howard⁸⁷ and I have observed two cases.

Pratt and Fulton⁸⁸ report a remarkable case of cancer of the common bile-duct and pancreas in which cholecystotomy was performed, the opening in the gallbladder being stitched to the abdominal walls. At the autopsy the liver was found studded with minute abscesses with greenish translucent walls. In cover-slips, sections and cultures *Bacillus aerogenes capsulatus* was found in pure culture in these small biliary abscesses, but there was no gas in the abscesses, the liver, blood, or other organs. A somewhat similar case, in which cholecystenterostomy for gallstones had been performed, was previously reported by Nicholls⁸⁹ from Adami's laboratory. Here also multiple miliary abscesses containing the gas-bacillus were found in the liver, but in this case gas was present in the liver, as well as in the blood and other organs, the autopsy being six hours after death. Larkin⁹⁰ has likewise reported a case of hemorrhagic pancreatitis with fat necroses and small, multiple hepatic abscesses with gas-holes in the liver, from which *Bacillus aerogenes capsulatus* was isolated. The autopsy was eight hours after death.

Hintze⁹¹ has recorded a postmortem observation of gas in the inflamed bile-ducts with cholelithiasis. He cultivated only the colon-bacillus, but it does not appear that he made anaërobic cultures.

From the foregoing cases it is to be inferred that the gas-bacillus may invade the bile-ducts and gallbladder from the intestine, and sometimes during life, and that it may not only produce gas but also necroses and pur-

ulent inflammation. The presence of gallstones, cancer of the bile-ducts and operations on the gallbladder appear to favor this mode of infection.

Rist⁹² found the gas-bacillus (*Bacillus perfringens*) without gas or other lesion attributed to it in an extirpated gallbladder containing a calculus and clear viscid fluid.

INTERSTITIAL EMPHYSEMA OF THE GASTROINTESTINAL, GENITOURINARY AND BILIARY TRACTS.

One of the most interesting lesions produced by *Bacillus aerogenes capsulatus* is the formation of submucous or subserous gas-cysts or blebs, of which the earliest examples attributed to this organism were reported by P. Ernst, Goebel, and Welch and Flexner. They are sufficiently common to have been observed by nearly all investigators who have had much experience with the gas-bacillus in human beings. My list of cases includes 25 instances of this condition, of which 5 were of the stomach, 11 of the intestine (far oftener of the small than the large intestine), 5 of the gallbladder and bile-ducts, 3 of the urinary bladder, 1 of the renal pelvis, and 1 of the vagina. The majority of the cases were observed by Flexner, Howard, and myself, and in all the gas-bacillus was demonstrated. The case of emphysema of the vagina was reported by Lindenthal.⁹³

These gas-cysts vary in size from microscopic dimensions to large blebs. They are most common in the submucous coat, but may be present in the mucous membrane, the muscular coat or beneath the serous covering, in fact in any part of the membranous wall. They may be few or in enormous numbers, in groups or scattered. In one of our cases the whole small intestine from the duodenum to the ileocecal valve was studded with small gas-cysts. Gas-cysts of the same general character may be found in the mesentery and omenta.

These gas-cysts are in their inception simply such gas-holes as we are already familiar with in the liver and other organs in cases of local or general invasion with the gas-bacillus. They indicate a foamy or emphysematous condition of the walls of the stomach, intestine, gallbladder, bile-ducts, urinary bladder, and vagina, due to the invasion into these parts of the gas-bacillus.

The condition of the walls of the blebs and of the surrounding tissues varies. Some of the cavities are round and their walls smooth, others are irregular in shape and have ragged walls. They may correspond to dilated lymphatics, but more frequently they do not represent dilation of any preformed channels. There may be communication between adjacent cavities, but oftener the cysts are distinct from each other. The tissue in the immediate neighborhood of the cavities may present no alteration not explicable by the mechanical pressure of the gas, or it may show necrosis in varying degree and extent. Inflammatory changes or cellular reaction which could be reasonably referred to the presence of the cysts or of the gas-bacilli causing them were not noted. Sometimes a little coagulated, homogeneous or granular material is present in sections of the cysts in hardened tissues, as indeed may often be found in gas-holes in the organs.

In sections stained by Gram there is usually no difficulty in demonstrating the relation of the gas-bacilli to the cysts. The bacilli may be in masses in the walls of the cysts, but sometimes they are not more numerous there than in the tissue at a distance from the gas-blebs,

and occasionally it requires some searching to find them. By anaërobic methods the gas-bacillus can be cultivated from the cysts or the adjacent tissue.

All of the instances of submucous and subserous gas-cysts in my list were observed *post mortem*. In the larger number of cases gas-bacilli and gas-bubbles were more or less widely distributed in the blood and organs, but without evidences of ordinary postmortem decomposition. There are, however, several cases in which these gas-cysts in various situations were the sole manifestation of the presence of the gas-bacillus in the body. Howard has shown that if careful, systematic search is made for areas of necrosis and minute gas-cysts due to *Bacillus aerogenes capsulatus* in the stomach and intestine, these lesions can be found much more frequently than has been supposed.

It is with our present information a difficult matter to say in how many of these cases the emphysematous state existed before death. It is certain that, at least in the great majority of cases in my list, the emphysema was not the result of ordinary postmortem decomposition. In a large number of the cases the autopsy was made within a few hours after death. Howard in one of his cases of gas-cysts, limited to the intestine, made the autopsy one hour after death. I have already emphasized the importance of great caution in interpreting as vital processes the various gaseous conditions of parts and organs not open to inspection during life, even when autopsies are made soon after death and there is entire absence of putrefaction, and I can only repeat this caution here. Mere absence of nuclear staining around gas-holes, I do not regard as proof of their origin during life.

It would lead altogether too far to enter here into a discussion of the general subject of submucous gas-cysts concerning which there is a large literature, the principal references to which will be found in the articles by Eisenlohr,⁹⁴ Camargo,⁹⁵ Winands,⁹⁶ Dupraz,⁹⁷ and Lindenthal.⁹⁸ It would appear from a study of the records of the subject that anatomically different conditions have been described under the designation "gas-cysts" (*cystides aeriferæ*). Some have been apparently of long standing and show chronic inflammatory changes in their walls and surrounding tissues. The most voluminous literature relates to the gas-cysts of the vagina (*kolpohyperplasia cystica* of Winckel, *emphysema vaginae* of Eppinger).

At present we have no warrant to identify the more chronic gas-cysts with thickened walls with the acute emphysematous condition which I have described as referable to *Bacillus aerogenes capsulatus*. Nevertheless the former are probably of bacterial origin also, although I am unable to accept the bacteriological findings of Eisenlohr, Camargo and Dupraz as at all convincing, for they made no use of anaërobic methods of cultivation. It is quite possible that *Bacillus aerogenes capsulatus* is concerned also in the etiology of the gas-cysts of long standing; certainly it is important to apply hereafter anaërobic cultural methods to their study. Lindenthal has no hesitation in identifying the emphysema of the vagina observed by him *post mortem* and from which in a single case he cultivated what he chooses to call *Bacillus emphysematis vaginae* (in reality our *Bacillus aerogenes capsulatus*) with Winckel's *kolpohyperplasia cystica*, but, while he may be correct, further observations are needed before this anatomical and etiological identification can be accepted.

The only instance in which gas-cysts of the human intestine have been recognized during the life of the patient is reported by Hahn,⁹⁹ who found them in large number upon opening the abdomen. It is to be regretted that no thorough bacteriological examination of this case was made.

In my original communication on the gas bacillus I ventured the surmise that the bacillus found by E. Fraenkel¹⁰⁰ in hardened sections from a case of gastritis emphysematosa might be identical with *Bacillus aerogenes capsulatus*, and this suspicion has gained in probability by Goebel's statements based upon an examination of the sections, his work having been done under Fraenkel's supervision.

Notwithstanding an effort at compression, so much space has been occupied in the presentation of the foregoing subdivisions of our subject, which in less than a decade has grown to considerable magnitude, that I shall only summarize very briefly a few remaining topics, although all deserve fuller treatment.

Pulmonary and Pleural Infections.—To the two instances of invasion of the lungs by the gas-bacillus, reported by Welch and Flexner, I can add the cultivation of this organism from a gangrenous lung by Dr. Flexner in my laboratory. It has been found also by Rist¹⁰¹ and Guillemot¹⁰² in pulmonary gangrene.

Of much importance is Levy's¹⁰³ demonstration of *Bacillus aerogenes capsulatus* as a cause of pneumothorax without perforation. This case and those of pneumoperitonitis without perforation to which I have already referred have settled affirmatively the long-standing controversy concerning the possibility of the generation of gas within closed serous sacs during life.

Nicholls¹⁰⁴ has reported an instance of pneumothorax and pneumopericardium without perforation in which the gas-bacillus was probably present. Rendu and Rist¹⁰⁵ also isolated the gas-bacillus (*Bacillus perfringens*) in a case of putrid pleurisy with gas. May and Gebhart¹⁰⁶ and Finley¹⁰⁷ attribute their two cases of pneumothorax without perforation to the colon-bacillus, but in neither were anaërobic cultures made. It is important in all gaseous affections to search for anaerobes.

Gas-Bacillus in the Blood During Life.—Extremely interesting is the demonstration by Gwyn,¹⁰⁸ both by cover-slip specimens and by cultures, on repeated examinations, of *Bacillus aerogenes capsulatus* during life in the blood of a patient, in the Johns Hopkins Hospital, with chorea insaniens and acute endocarditis. I had the opportunity of examining his cultures, which were entirely typical. The patient died, but unfortunately no autopsy could be obtained. There was no evidence during life of free gas in the blood or tissues. The case is of importance as demonstrating that gas-bacilli may be in the circulating blood for days in sufficient number to be demonstrable, both microscopically and culturally, without evidence of free gas. I have already expressed my suspicion that Achalmé's anaërobic bacillus, which has likewise been cultivated from the blood, as well as from the tissues, of several cases of acute articular rheumatism, is identical with *Bacillus aerogenes capsulatus*.

Presence of the Gas-Bacillus without Gas.—In this connection I may say that the gas-bacillus may be present and even multiplying within the human body without the production of gas. Certain organs—above all, the liver—offer much more favorable pabulum for the generation of gas than do others, but even in the liver

the bacilli may be present without gas. I have found gas-bacilli in small clumps within the spleen and kidney, surrounded by areas of necrosis, without recognizable gas. I have already cited the demonstrations by Cushing and by Pratt and Fulton of the gas-bacillus in small abscesses without gas, the observation of the latter being particularly complete and satisfactory. Rist¹⁰⁹ has cultivated the gas-bacillus (*Bacillus perfringens*) from cases of fetid otorrhea and of mastoid abscess. He does not mention the presence of gas in these cases, nor in the case of the gallbladder already cited. Dr. Harris, in my laboratory, isolated the gas-bacillus in pure culture from an abscess containing blood and pus in the neck of a dog, following an operation on the jugular vein. There was no gas in the abscess. Aërobic cultures were entirely negative. These observations, however, are not the only ones demonstrating that the gas-bacillus may, under certain circumstances and in certain situations, manifest pyogenic capacity.

Meningitis. Pyogenic Capacity of Gas-Bacillus.—Howard,¹¹⁰ in April, 1899, reported a case of acute fibrino-purulent meningitis, following operation for urethro-perineal fistula. *Bacillus aerogenes capsulatus* was found in pure culture in the meningeal exudate. Likewise Hitschmann and Lindenthal¹¹¹ have recorded another convincing example of acute cerebral meningitis following fracture of the occipital bone, in which the gas-bacillus was found unmixed with other bacteria. These authors call attention to the pyogenic power of the gas-bacillus when it attacks the meninges, but, as already shown, the same power may be manifested elsewhere.

Cavities in the Brain.—Finally I would call attention to Reuling and Herring's¹¹² and Howard's studies of cavities in the brain produced by *Bacillus aerogenes capsulatus* and to the light which their observations shed upon certain obscure examples of cerebral cavities previously reported.

In this excursion into pneumatopathology I have invited you to the survey of fields comparatively new and little trodden. I can only hope that our journey has not been without some interest and some profit to you. To me the opportunity to present before such a body as the Massachusetts Medical Society the results of these investigations is one which I highly appreciate.

I desire in closing to pay my tribute of respect and to call to your grateful remembrance the founder of this lectureship, Dr. George Cheyne Shattuck. That the subject of this address would not have been without interest to him may be inferred from the title of his first Boylston Prize dissertation on the theme propounded in 1806 and entitled "The difference between mortification produced by an external cause and that which is produced by a constitutional defect, the diagnosticks and proper mode of treatment of each."¹¹³ By his noble character, professional services and liberality Dr. Shattuck deserved well of the medical profession of his city and State, and indeed of the whole country, and his memory is worthily perpetuated, not only by the foundation of this lectureship, but also by the endowment of the chair of morbid anatomy in the Harvard Medical School.

REFERENCES AND NOTES.

¹ Levy's description in 1891 (*Deutsche Zeitschr. f. Chirurg.*, xxxii) of "kleine, feine" bacilli, cultivated from a gaseous abscess and growing in long threads and chains only at body-temperature and cultivable only in the first generation, without animal experiments, cannot be accepted as an identification of *Bacillus aerogenes capsulatus*, or indeed be readily reconciled with its characters.

- ² *Bulletin of the Johns Hopkins Hospital*, 1892, iii, p. 81.
- ³ *Centralbl. f. Bakt.*, xiii, p. 13.
- ⁴ Ueber Gasphlegmonen, Hamburg u. Leipzig, 1893.
- ⁵ *Virchow's Archiv*, cxxxiii, p. 308.
- ⁶ *Columbus Medical Journal*, xii, p. 55.
- ⁷ *Annals of Surgery*, xix, p. 187.
- ⁸ *Journal of Experimental Medicine*, 1896, i, p. 5.
- ⁹ *Centralbl. f. allg. Path. u. path. Anat.*, vi, p. 435.
- ¹⁰ *Jahrb. d. Hamburgischen Staatskrankenanstalten*, iv.
- ¹¹ Thus v. Hbler in 1899 (*Centralbl. f. Bakt.*, xxv, p. 513 et seq.) in an elaborate study of pathogenic anaërobes is entirely ignorant of our work and that of other American investigators on *Bacillus aerogenes capsulatus*. The information of Hitschmann and Lindenthal (*Sitzungsb. d. K. Akad. d. W., Math.-Naturw. Cl.*, Wien, 1899) on the American work is secondhand and both incomplete and inaccurate, in these respects being in unfavorable contrast to that of Muscatello and Gangitano (*Riforma Med.*, 1900, ii, p. 508, et seq.) writing also on the subject of emphysematous gangrene. Knowledge of *Bacillus aerogenes capsulatus*, under the name "*Bacillus perfringens*," has begun to appear in France in the last two years, but without any evidence of acquaintance with the American publications. Even allowing for the great difficulties in keeping pace with the literature of any subject in medicine, a decade would certainly seem sufficient for the light to penetrate even into dark places.
- ¹² Migula, who, with considerable success, has attempted to reform bacteriological nomenclature, has given the binomial names "*Bacterium Welchii*" to *Bacillus aerogenes capsulatus* and "*Bacterium emphysematosum*" to *Bacillus phlegmones emphysematosæ* (*System der Bakterien*, ii, pp. 392 and 383, Jena, 1900). He is, however, in error in describing this organism under two different names, as his *Bacterium Welchii* and *Bacterium emphysematosum* are identical.
- ¹³ As regards these characters, it will suffice here to say that the microorganism is a rather coarse, non-motile, anaërobic bacillus, staining by Gram, growing on all of the ordinary culture media under anaërobic conditions, best at body temperature, but also at room temperature, forming spores incessantly according to the race and the culture-medium, and capable of forming gas not only by fermentation of sugars but also from proteids. The full description of the characters may be found in Welch and Nuttall's paper. The gas, according to Dunham's analyses, is composed approximately of 64% hydrogen, 28% carbon dioxide, and 8% of a residual gas believed to be mainly nitrogen. It has no foul odor.
- ¹⁴ *Bulletin of the Johns Hopkins Hospital*, 1897, viii, p. 68.
- ¹⁵ In our original communication we noted peptonization and softening of gelatin, but this was so slow and slight with the particular specimen studied that we then preferred to class the bacillus among the nonliquefiers. Further experience has shown that the bacillus is a liquefier, but generally a slow one.
- ¹⁶ *Boston Medical and Surgical Journal*, June 7, 1900, p. 599.
- ¹⁷ *Wiener klin. Wochenschrift*, 1897, p. 3, et seq.
- ¹⁸ *Arch. de Méd. exp.*, 1898, x, p. 539.
- ¹⁹ *Compt. rend. Soc. de biol.*, 1898, 10. S., v, p. 1017.
- ²⁰ *Bull. et mém. Soc. méd. d. hôp. de Paris*, 1900, 3. S., xvii, p. 216.
- ²¹ *Centralbl. f. Bakt.*, 1898, xxiv, p. 369.
- ²² Achalmé, *Ann. de l'Inst. Pasteur*, 1897, xi, p. 845; Pic and Lesieur, *Journ. de phys. et de path. gén.*, 1899, i, p. 1007, and Savtchenko and Mielkitch, *Arch. russes de path.*, 1899, viii, p. 145.
- ²³ *Contributions to the Science of Medicine*, dedicated by his pupils to William Henry Welch, on the twenty fifth anniversary of his doctorate, p. 461, Baltimore, 1900.
- ²⁴ *Münch. med. Woch.*, 1899, Nos. 42 and 43.
- ²⁵ Cless, *Luft im Blute*, Stuttgart, 1854, and Couty, *Thèse*, Paris, 1875.
- ²⁶ *Lancet*, 1894, i, p. 1236.
- ²⁷ *Comptes rend. Soc. de biol.*, 1873, v.
- ²⁸ *Deutsches Arch. f. kl. Med.*, 1882, xxxi, p. 458.
- ²⁹ *Therapeutic Gazette*, 1889, 3. S., v, p. 606.
- ³⁰ Marshall's case reported by May, *Trans. Path. Soc.*, London, 1858, ix, p. 157; Durand-Fardel's case also cited by May, and Pirogoff's case in his *Grundzüge d. allgem. Kriegschirurgie*, p. 1063, Leipzig, 1864.
- ³¹ Cited from Hitschmann and Lindenthal, *loc. cit.*
- ³² Such cases have been reported by Bloodgood from the Johns Hopkins Hospital in *Progressive Medicine*, 1899, iv, December, p. 158.
- ³³ *Gaz. méd. de Paris*, 1853, p. 592.
- ³⁴ *Grundzüge d. allgem. Kriegschirurgie*, pp. 867 and 1006, Leipzig, 1864.
- ³⁵ *Gior. d. r. Accad. di med. di Torino*, 1871, 3. S., x, pp. 1121 and 1138.
- ³⁶ *Bull. Acad. de méd.*, 1884, 2. S., xiii, p. 604.
- ³⁷ *Deutsche Chirurgie*, 9. Lief. Stuttgart, 1886.
- ³⁸ *Die Mikro-Organismen bei den Wund-Infektions-Krankheiten des Menschen*, p. 91, Wiesbaden, 1884.
- ³⁹ An exception is Guillemot (*Compt. rend. Soc. de biol.*, 1898, 10. S., v, p. 1017), who has found B. aërog. caps. in a case of gaseous gangrene and who controverts the prevalent belief of authors who attribute this disease exclusively to Pasteur's vibrio.
- ⁴⁰ In the case reported recently by Brabec (*Wiener klin. Rundschau*, 1900, xiv, pp. 145 and 167) the identification of the malignant edema-bacillus seems satisfactory. Here there was extensive bloody edema without gas, so that the case was not one of emphysematous gangrene. On the other hand, the latest writers on the subject, Hämig and Silberschmidt (*Correspondenzbl. f. Schweizer Aerzte*, 1900, xxx, p. 361), bring no proof of any consequence that they were dealing, as they supposed, with the malignant edema-bacillus in two cases of gangrene foudroyante.
- ⁴¹ Chiari, v. Dugern, Bunge, Klemm, Hlava, Evans, Grasberger, Hauser, Margarucci, Muscatello, Hitschmann and Lindenthal.
- ⁴² *Ann. d. Istit. d'Igiene sper. d. Univ. di Roma*, 1891, N. S. i, p. 365, and *Ztschr. f. Hyg.*, 1893, xiv, p. 352.
- ⁴³ *Centralbl. f. Bakt.*, 1891, x, p. 186.
- ⁴⁴ *Ann. de l'Inst. Pasteur*, 1897, xi, p. 860.
- ⁴⁵ This list includes 16 cases observed in Baltimore, mostly at the Johns Hopkins Hospital, of which 2 are unpublished, and the remaining 14 have been published by Mann (1), *Ann. Surg.*, 1894, xix, p. 187; Welch and Flexner (6), *Jour. Exp. Med.*, 1896, i, p. 5; Martin (1), *University Bulletin*, 1896, i, No. 3; and Bloodgood (6), *Progressive Medicine*, 1899, iv, December, p. 158. The notes of an additional unpublished case observed in Manila have been given me by Dr. Flexner. There are also 3 unpublished cases, for the records of which I am indebted to Dr. Carroll, of Washington.
- The references to the remaining 26 cases are as follows: E. Fraenkel (4), Ueber Gasphlegmonen, Hamburg u. Leipzig, 1893; Passow (1), *Charité-Annalen*, 1895, xx, p. 275; Dunham (5), *Bulletin of Johns Hopkins Hospital*, 1897, viii, p. 68; Ferguson (1), *Trans. Indiana Med. Soc.*, 1897, p. 339; Erdmann (1), *Med. Record*, February 5, 1898, p. 205; Le Boutillier (1), *Med. Record*, March 5, 1898, p. 353; Love and Cary (1), *Med. Record*, April 8, 1899; Norris (1), *Amer. Jour. Med. Sc.*, 1899, cxvii, p. 195; Hitschmann and Lindenthal (5), *Sitzungsb. d. k. Akad. d. Wiss., Math.-Naturw. Cl.*, Wien, 1899, cviii, Heft iii, Abth. iii, p. 67; Thorndike (2), *Boston Med. and Surg. Jour.*, June 7, 1900, p. 592; Muscatello with Gangitano (3), *Riforma med.*, 1900, ii, pp. 508, 519 and 530; Guillemot (1), *Compt. rend. Soc. de biol.*, 1898, 10. S., v, p. 1017. A few other cases in which the gas-bacillus was found are not reported with sufficient detail to be available for analysis. It is safe to say that B. aërog. caps. has now been found in over 50 cases of gaseous gangrene.

⁴⁶ Soupazilt and Guillemot (*Bull. et mém. Soc. méd. d. hôp. de Paris*, 1900, 3.S., xvii, p. 216) have reported 2 gaseous abscesses following hypodermic injections of salt-solution, and a third which they regard as metastatic, all due to the gas-bacillus (*B. perfringens*). These cases came to my notice too late to be included in my statistics.

⁴⁷ Ueber Gasphlegmonen. Inaug.-Diss., Halle, 1898.

⁴⁸ *Quart. Med. Jour.* (Sheffield), 1896-97, v, p. 237.

⁴⁹ *Op. cit.*, p. 1006.

⁵⁰ It is to be regretted that in the cases reported by Prutz (*Deutsche Zeitschr. f. Chirurg.*, 1898, xlviii, p. 591) as traumatic entrance of air into the knee joint, no bacteriologic examination was made.

⁵¹ *Deutsche militärärztl. Zeitschr.*, 1872, i, p. 260.

⁵² *Semaine méd.*, 1890, p. 403.

⁵³ *Op. cit.*, p. 174.

⁵⁴ *Wiener klin. Wochenschr.*, 1897, pp. 3 and 35.

⁵⁵ It is usually stated that this condition was known to Celsus, but he does not expressly mention the presence of gas, although this is to be inferred. In the chapter on extraction of the dead fetus, he says: "Solet etiam evenire, ut in infans humore distendatur, exque eo profluat foedi odoris sanies." Milligan's "Celsus," p. 394, Edinburgh, 1831.

⁵⁶ *Bulletin of the Johns Hopkins Hospital*, 1897, viii, p. 24.

⁵⁷ *Bacteriologie des weibl. Genitalkanale*, Teil ii, p. 167, Leipzig, 1897.

⁵⁸ *Amer. Jour. Obstetrics*, 1898, xxxviii, p. 185.

⁵⁹ *Ibid.*, 1899, xxxix, p. 42.

⁶⁰ The older hypotheses and records on physometra and emphysema of the fetus are fully presented by Staudé, *Zeitschr. f. Geb. u. Gynäk.*, 1878, iii, p. 191.

⁶¹ *Monatsschr. f. Geb. u. Gynäk.*, 1898, vii, p. 269.

⁶² *Zeitschr. f. Geb. u. Gynäk.*, 1893, xxvi, p. 480, and 1897 xxxvii, p. 132.

⁶³ Halban (*Monatsschr. f. Geb. u. Gynäk.*, 1900, xi, p. 102) states that he has found lactose once in the amniotic fluid of a normal puerpera. Further studies of this subject are needed.

⁶⁴ *Monatsschr. f. Geb. u. Gynäk.*, 1900, xi, p. 88.

⁶⁵ *Arch. f. Gynäk.*, 1898, lvi, p. 199.

⁶⁶ Gas-sepsis in this sense occurs also in other infections with the gas-bacillus than the uterine.

⁶⁷ *Monatsschr. f. Geb. u. Gynäk.*, 1896, iv, p. 581.

⁶⁸ These are the cases reported by Graham, Steward and Baldwin, P. Ernst, Krönig and Menge, F. C. Wood (*Med. Record*, April 15, 1899), and Halban, to whose papers references have already been given.

⁶⁹ *Am. Jour. Med. Sc.*, 1888, xcv, p. 594. This infection, although attributed to the bacillus of malignant edema, was probably due to the gas-bacillus.

⁷⁰ *Boston Med. and Surg. Jour.*, 1897, cxxxvi, p. 154.

⁷¹ Dobbin has reported his examination, with further notes of this case, in the *Monatsschr. f. Geb. u. Gynäk.*, 1897, vi, p. 375.

⁷² Zorn (*Münch. med. Woch.*, 1898, p. 567) may be cited as an example.

⁷³ Such cases are reported by Welch and Flexner, Goebel, Dunham, and Howard, in papers already cited.

⁷⁴ These do not include some instances of very extensive postmortem emphysema of the organs, with gas everywhere throughout the body.

⁷⁵ Case 23 of our list in *Journal of Experimental Medicine*, 1896.

⁷⁶ This case is briefly reported by Kelly and MacCallum (*Jour. Amer. Med. Assoc.*, 1898, xxxi, p. 376), whose paper may be consulted for the full literature of pneumatocystitis.

⁷⁷ *Ziegler's Beiträge*, 1888, iii, p. 101.

⁷⁸ *Thèse de Genève*, 1891.

⁷⁹ *Centralbl. f. allg. Path. u. path. Anat.*, 1898, ix, p. 817.

⁸⁰ *Op. cit.*, p. 491.

⁸¹ *Canada Lancet*, May, 1900.

⁸² *Boston Medical and Surgical Journal*, June 7, 1900, p. 593.

⁸³ Welch and Flexner have reported an instance of perforated gastric ulcer causing peritonitis in a rabbit, in which the gas-bacillus was found.

⁸⁴ The purity of the culture in this case is explicable by the results of Cushing and Livingood's interesting bacteriological and experimental studies of the duodenal flora published in *Contributions to the Science of Medicine*, dedicated by his pupils to William Henry Welch on the 25th Anniversary of his Doctorate, p. 543, Baltimore, 1900.

⁸⁵ *Op. cit.*, p. 35.

⁸⁶ Heydenreich's paper on "Emphysem der Leber" (*Centralbl. f. Bakter.*, 1897, xxi, p. 305) may be mentioned as a curiosity. He had never heard of the gas-bacillus, or of any other investigation of the subject, later than 1872. In contrast to this is the interesting article of P. Bernhardt on pneumothemia and foamy organs, with full consideration of the recent literature. *Deutsche med. Woch.*, 1900, p. 83.

⁸⁷ *Op. cit.*, pp. 475 and 476.

⁸⁸ *Boston Med. and Surg. Jour.*, June 7, 1900, p. 599.

⁸⁹ *Brit. Med. Jour.*, 1897, ii, p. 1844.

⁹⁰ *Med. Record*, 1898, liii, p. 354.

⁹¹ *Münch. med. Woch.*, 1895, xliii, p. 209.

⁹² *Thèse*, Paris, 1891.

⁹³ *Wiener klin. Woch.*, 1897, pp. 3 and 35.

⁹⁴ *Ziegler's Beiträge*, 1888, iii, p. 101.

⁹⁵ *Thèse de Genève*, 1891.

⁹⁶ *Ziegler's Beiträge*, 1895, xvii, p. 38.

⁹⁷ *Arch. de Méd. exp.*, 1897, ix, p. 282.

⁹⁸ *Wiener klin. Wochenschr.*, 1897, pp. 3 and 35.

⁹⁹ *Deutsche med. Woch.*, 1899, p. 657.

¹⁰⁰ *Virchow's Archiv*, 1889, cxviii, p. 526.

¹⁰¹ *Thèse*, Paris, 1899.

¹⁰² *Thèse*, Paris, 1898.

¹⁰³ *Arch. f. exp. Path. u. Pharm.*, 1895, xxxv, p. 335.

¹⁰⁴ *Loc. cit.*

¹⁰⁵ *Bull. et mém. Soc. méd. d. hôp. de Paris*, 1899, 3.S., xvi, p. 133.

¹⁰⁶ *Deutsches Arch. f. klin. Med.*, 1898, lxi, p. 323.

¹⁰⁷ *Philadelphia Monthly Medical Journal*, 1899, i, p. 569.

¹⁰⁸ *Bulletin of the Johns Hopkins Hospital*, 1899, x, p. 134.

¹⁰⁹ *Thèse*, Paris, 1898.

¹¹⁰ *Bulletin of the Johns Hopkins Hospital*, 1899, x, p. 66.

¹¹¹ *Op. cit.*

¹¹² *Bulletin of the Johns Hopkins Hospital*, 1899, x, p. 62.

¹¹³ Published in Boston in 1808.

THE EARLY RECOGNITION OF ECTOPIC PREGNANCY.

By DEWITT G. WILCOX, M.D.,

of Buffalo, N. Y.

(Concluded from page 170.)

A SALPINGITIS, either acute or chronic, seldom influences the menstrual period to any great degree; neither does it produce any sign of pregnancy. It causes tubal pain and produces a lump on one or both sides, but it is generally more of a constant, dull ache, accompanied, especially in the acute stage, with high temperature, rapid pulse, tense abdomen and the general signs of peritonitis. When it has passed the acute stage and the temperature and pulse have come down to nearly normal, the condition has existed so long as to throw out all question of tubal pregnancy; moreover, we can generally get a history of this acute stage having previously existed, a symptom confirmatory of the diagnosis of salpingitis.

Ovarian tumors, pelvic abscesses, fibroid growths, polypi, and peritonitis, all have their distinguishing features distinct from the one under consideration. Another exception must be noted, and that is, the tube may never rupture fully and thus the fetus may be retained there, reaching full development and viability, either to be removed alive by surgical art or die from imprisonment; but it is rare that the tube endures to full term. Indeed, it seldom holds out over there months, while the greater number rupture at six weeks.

Again, we may have the condition known as tubal abortion, in which the ovum of four or six weeks, or the fetus of three months, escapes from the tube by the way of the fimbriated extremity, carrying with it the decidua or placenta, according to the age of development. Up to the point of such escape, the conditions do not essentially vary from those just laid down, but at the moment of such abortion there is a marked shock, distinct pain and more or less sign of hemorrhage, thus varying but little from the signs of rupture. The loss of blood may be quite as severe and even fatal, as if rupture had taken place. The treatment is the same as in tubal rupture.

Thus far we have considered the symptoms produced by tubal pregnancy before and including the moment of rupture. We will now go further and note the condition weeks or months after the ovum or fetus has escaped from the tube, either by tubal abortion or rupture. We will assume that the shock at the moment of rupture was so slight that neither patient nor physician was aware that such had occurred; or the shock may have been great and the patient barely escaped with her life, and only after long weeks of suffering has she again assumed her place in the family. However that may be, our assumption is that the patient lived, but because of long-continued ill health she seeks medical advice. After the rupture, one of two things happens to the escaped ovum: either it lives or dies. If it lives, it is because it has escaped with its membrane intact and its placenta or decidua still attached, and because this placenta has been able to fasten itself upon some surface from whence it can draw sufficient nourishment for the support of the dependent ovum. This surface may be the intestines, the bladder, the omentum, peritoneum, outer surface of the uterus, or any place to which it can adhere.

Again all goes well and the ovum continues to develop as rapidly as though at home in the uterine cavity. We will assume at the fourth or sixth month, the

Rain in Parts of India.—The latest reports from India state that sufficient rain for agricultural purposes has fallen, except in parts of Baroda and in Okhamandal and Kathiawar where cattle are dying of starvation and there is scarcity of water.

patient consults a physician, believing that she is normally pregnant. She has forgotten her early history, how she had ovarian pain, gushes of blood, a little shock, some faintness, etc., because it was months ago. She only knows she is pregnant because she feels motion and she has enlarged. Why should the physician suspect that all is not right? First, because she has had more abdominal pain from the start than any normally pregnant woman should. Second, she will look anemic; the physician will be impressed that all is not well; she has most obstinate constipation and some attacks of fever, owing to localized peritonitis. The reciting of these symptoms will induce the physician to make an examination, by which he discovers that the uterus is very small for a six-months' pregnancy. The cervix is hard and contracted and the entire pelvic floor is thick and unyielding. He then asks the leading questions which will bring out the almost forgotten early history, and behold, the problem is solved and he has saved himself the mortification of sitting up nights and waiting days for a delivery which can never take place.

Next is the other alternative, namely, that the ovum perished after its escape from the tube. Here is what takes place: The escaping blood, shreds of membrane, decidua, and clots settle into various places in the lower abdomen and pelvis. Through rare good fortune, nature has sealed the bleeding points in the ruptured tube, so further danger from that source is averted; but a new danger at once springs up, namely, septic peritonitis or general septicemia. The clots and membranes have no means of self-preservation, hence they must disintegrate and the peritoneum must absorb them. If, perchance, the patient has sustained this second danger and pushed through septic peritonitis, she should be rewarded with future good health; but no such good fortune awaits her. She is doomed to future invalidism unless the true condition is recognized and the right remedy applied.

How may we recognize it, even at so late a period? Only by getting a careful history from the very first of the break-down and noting every symptom carefully. The attack of peritonitis will be distinct in her mind because of its severity. The first question for the physician then to answer is, What caused the peritonitis? Women do not have such attacks without cause. Was it salpingitis, traumatism or an escaped ovum? Her story will answer it.

I recall such a case in a woman who had been treated a year for what seemed malaria. I was called in council, simply because she had pelvic pain. She told so straight a story that I was enabled to diagnose her condition even before I made an examination. One year before she had gone with a few friends on a tramp into the country; it was a few days prior to her menstrual period and she got her feet wet; she failed to flow on time but attributed it to the cold; in a few days she began having uterine pain, but no flow; two weeks passed and she suffered such pain she must needs go to bed, then came a little flow, followed a few days later by more; later came a severe pain which required her doctor in the night; she was in agony, nauseated, a cold sweat and rapid pulse. He gave her morphin for the pain and whisky for the faintness. She was confined to her bed for six weeks with what he called malarial fever, because she had high temperature and occasional chills. Gradually she got around, but was never free from pain and still had occasional attacks of chills and

fever. Upon my advice she submitted to an operation and I removed, even at that late date, the products of a ruptured tubal fetation. In the posterior culdesac was a mass of semiorganized tissue, the remains of the decidua, which was keeping up a continual septic condition, while nature was trying her best to absorb and carry it away.

The question arises, how can a woman survive a tubal pregnancy whatever may be its outcome. Some are saved from the fatal hemorrhage at the time of rupture by reason of the rupture taking place at a point remote from the placenta and ovarian artery, in which case bleeding will cease of itself, yet be it remembered that internal bleeding is always more dangerous because there is no air to aid in coagulation of blood. Again, the rupture may take place at the lower surface of the tube, and the ovum and blood escape between the two layers of the peritoneum making up the broad ligament; in that case the bleeding must be self-limited. Another question: Can a woman live with a live child in the abdomen external to the uterus? Yes, she may not only live till the child dies, because of its inability to receive sufficient oxygen from the mother, but she may live long after all vestige of such a being has been removed piecemeal from her body. Gradual disintegration may take place until the soft parts are absorbed and the bones discharged by the rectum, through ulceration, into the bowels, or they may ulcerate through the vagina or abdominal wall. Again, a fetus may reach a development of three months in the tube and there die without rupture of the tube or without causing any great amount of disturbance. In such a case the fetus becomes mummified or calcified and remains throughout the life of the mother.

The foregoing are not imaginative conditions or textbook rehearsals but bedside symptoms, as I have been able to draw them out and later verified the predicted condition by opening the abdomen and removing the product of fecundation in whatever state it was found. At a recent State meeting of physicians, I listened to a paper written by a physician, who had just seen his first case of tubal pregnancy. He with two fellow physicians had the case under observation for about six weeks. It went on to the stage of rupture and the patient was barely saved by a timely operation. He made this statement: "Up to the time of the rupture there was not the slightest symptom to suggest tubal pregnancy." In discussing the paper, I brought out the fact that there were all the symptoms one could possibly want to enable one to say positively that it was tubal pregnancy, for in relating the history of his case, he used these words: "I was called to see Mrs. X at such a date, she was suffering from very severe sharp pains extending up the abdomen from the ovary. She informed me she had not menstruated for two months. The pains were so severe as to compel her to lie down. When I saw her a few days later, she had noticed some slight flow," and so he continued to relate the course of the most typical case of tubal pregnancy I ever saw; but until after the rupture he insisted there was not a symptom to suggest it.

It is beyond my intent to enter into the treatment, but as that can be summed up in a word, I will give it: As soon as it has been demonstrated that tubal pregnancy exists, there is but one safe treatment—removal of the tube. The moment rupture has taken place, the patient stands but one chance in a hundred of recovering, unless the abdomen is opened, the tube

tied off and hemorrhage controlled. If the patient has survived this accident and has become septic, the abdomen must be opened to remove further infection. If the child has grown to full term and is alive or dead, it is next to manslaughter not to open the abdomen and save one or both victims; hence, the one word for treatment of this condition is "operation."

Two cases have come into my hands within the last few weeks, illustrating the comparative ease of recognizing tubal pregnancy before rupture.

CASE 1 was in an unmarried woman of 24 years. She menstruated normally June 4, and from subsequent events I believe that the ovum which was then on its way to the uterus became impregnated. She felt perfectly well until about June 25, when she became conscious of the right ovary by a sensation of pressure and general discomfort. She failed to menstruate July 2. She was not nauseated, but had some soreness in her breasts July 19 (just six weeks from her last normal menstruation) she was seized suddenly with severe pains in the right ovarian region, extending up the right side as far as the kidney. She was obliged to lie down and had some faintness and nausea. A physician was called who promptly diagnosed, "stone in the kidney," and gave morphia hypodermically. She was on her feet next day and immediately noticed she was flowing slightly, which she regarded as her tardy menstruation. Two days later her pain returned with increased severity and a further gush of blood. Her physician saw another stone in her kidney and cured it in the same way as previously. For two weeks she continued having severe attacks of pain at intervals of about two days, with corresponding flow. At first she could be up and around between attacks, but later she was confined to bed constantly. At this period the "stone" doctor was discharged and No. 2 called. Because of pain in the right side and exquisite tenderness, he saw nothing but appendicitis. The fact that she was flowing every few days had no significance to him. For the next two weeks she was treated for appendicitis and was constantly urged to have an operation. She had now become very anemic, and could scarcely stand; the right ovarian region was very sensitive. On August 15 (just ten weeks from last normal period) she discharged the decidua; this was, as she described it, a mass of flesh about as large as her hand. After this she had an alarming flow; but still doctor No. 2 insisted upon appendicitis and operation. At this period, her friends desired council and one of our most prominent surgeons was called. He made a vaginal examination, discovered a lump, noticed the tenderness, diagnosed an inflamed ovary, and recommended palliative treatment. I saw her August 25, heard her history, which she gave with the greatest clearness, made a mental diagnosis of tubal pregnancy and verified it by finding upon digital examination, the right tube oblong in shape and as large as a lemon. I operated next morning, found the abdomen full of free blood and many old clots. The tube was still unruptured and I removed it in that state. By examining it carefully, I found numerous tears upon its surface, some of which were filled with small clots; others had well nigh healed. The tube was about three inches long and one inch in diameter, was a purplish black with its fimbriated extremity sealed. Upon opening it I came first to the decidua, which was nearly one-half inch thick, closely adherent to the lining of and shaped like the tube, in fact, it filled the entire distended portion of the tube; in all respects it looked like a placenta. In the center of this lay the fecundated ovum, still encased in its membrane.

By a careful study of this ovum, I became convinced it did not exceed five weeks in age. The fact that it might be twelve weeks old because that time had elapsed since the last menstruation, when, it was assumed, the ovum became impregnated, is explained by the evidence that the ovum died at the first attack of severe pain, July 19, which pain was caused by a partial rupture of the tube and a consequent hemorrhage, but not an entire escape of the ovum from the tube. In fact, all of her attacks of pain were due to rents in the tube. The patient recovered perfectly from the operation.

CASE 2 followed the first in three weeks and was almost a reproduction, save that the patient did not have the sudden severe pains, because, as I found by examining the tube, there had been no rents therein. She had missed one period by two weeks then had periodic flow. She had a steady pain in the right ovarian region, extending upward, but had no temperature or pulse that would suggest salpingitis; she was nauseated and breasts sore. Her physician had called it appendicitis and called me in to operate. The history alone gave me the clue and a diagnosis accordingly made. The tube was more distended than in Case 1, the decidua and ovum larger, the latter being six weeks old and apparently alive at time of removal. Like the preceding case, the tube was removed unruptured and patient recovered.

Another case of much interest, because of the history and the conditions produced, came into my hands a few days ago. A woman, aged 35, with no children, yet married 16 years, gave a history of dysmenorrhea since puberty. During the last two years the menses were delayed at times for three and four weeks. She was unwell from July 23 to July 29, and suffered more pain than usual. Owing to vaginismus, normal copulation had been impossible until about seven days following this menstruation, when complete entrance was effected. She was well during August, but early in September began having some pelvic discomfort, amounting later to a decided pain. September 24, eight weeks after normal menstruation, on attempting to rise from the bed, she was taken suddenly with so sharp and severe a pain that she fainted. During the week following she had a slight daily flow, but did not regard it as her menses. October 2 (nine weeks from last normal menstruation) she began flowing profusely, many large clots, one of which she described as being very firm like meat and of light color. This flow lasted seven days, the pain in the pelvis being constant and severe. On October 13 the pain was so severe as to cause a faintness again; she now went to bed and her family physician saw her daily. The temperature was at times 101°; the pulse, 90. She had occasional slight flow, but only about enough to stain a napkin. The family physician was in doubt between appendicitis and salpingitis. She had much pain about the seat of the appendix, for which there was reason as will be seen subsequently. I saw her November 2, she then had a temperature of 100.2°, exquisite tenderness throughout pelvis, a lump at the right of the uterus, the size of a lemon, uterus and pelvic floor rigid, slight uterine discharge. Diagnosis was tubal pregnancy with rupture, probably within broad ligament, at the seventh week. I operated November 3 and found the right broad ligament greatly distended and slightly fluctuating; on the upper surface of the ligament and toward the uterus was a tumor, the size of an English walnut. This proved to be a dilated portion of the tube; the distended portion of the ligament and tube was removed. Pregnancy had taken place about the middle of the tube and rupture had occurred at the outer or fimbriated end of the same and the blood had found its way between the layers of the broad ligament. This cavity in the ligament contained about a pint of brownish fluid of the consistency of water with blood-clots intermixed. The decidua was found in tact in the tube. It was evident rupture had taken place September 24, seven weeks from conception, and that the uterine decidua came away October 2, eight weeks after conception; fourteen weeks had elapsed from such occurrence until operation and the patient was gradually running into septic fever. The tip of the appendix was attached to the inflamed tube, which accounted for the pain in that region.

I might continue to recite numerous cases, illustrative of the various points made, but time will not permit. If I have drawn my paper out to a tiresome length, it has been with a desire to draw so clear a picture of a condition, dangerous in the extreme, that it may be recognized at an early stage by any careful man.

Typhoid at Ladysmith.—The fever-cases at Ladysmith from the date of the relief to the week ended May 18 amounted to 799. Including the above, the total admissions for all the forces in Natal during the 12 weeks ended May 25 were 2,330, and the deaths 550. This would give a mortality of over 23%.

A CASE OF CONJUNCTIVAL BURN; RECOVERY WITHOUT SYMBLEPHARON.¹

By HOWARD F. HANSELL, M.D.,

of Philadelphia.

On the evening of January 10, 1900, J. P., aged 18 years, was brought into the accident ward of the Jefferson Medical College Hospital, suffering with burns on his arms, face, and left eye that had been received from molten solder (1 part tin, 3 parts lead). An hour or two before, while going down a dark stairway, he stumbled and fell, throwing the contents of the solder can that he was carrying in his hand over the upper part of his body. The injury to the skin was insignificant, but that to the eye was very unusual. Dr. Snell, the resident surgeon, removed from the upper conjunctival sac a piece of congealed solder that was a perfect cast of the part, conforming in size and shape to the space between the lid and ball, from the upper corneal margin posteriorly to the fornix and extending laterally nearly a centimeter on each side of the median line. The cast was concavo-convex, very



thin, and measured $1\frac{1}{2}$ cm. by 1 cm. After thorough cleansing of the eye, Dr. Snell instilled fluid vaselin and applied ice water compresses during the night. The following day the opposed conjunctival surfaces of the upper sac were denuded of their epithelium, swollen and white, and the cornea showed signs of injury in the loss of epithelium and

of transparency of its upper half. Hot water bathing was substituted for the cold compresses, atropin was instilled, oil injected into the superior culdesac, and the lid separated from the ball many times daily by the probe and by the fingers.

The cure progressed uninterruptedly until January 15, when my colleague, Dr. deSchweinitz, assumed charge of the case. The opacity of the cornea had given way to renewed transparency, the edema of the conjunctiva had disappeared and no symblepharon had formed. The swelling of the lids that had been of high degree had entirely subsided, and the patient was nearly ready to leave the hospital.

CONGENITAL TUBERCULOSIS.

By BENJAMIN F. LYLE, M.D.,

of Cincinnati, Ohio.

ON December 2, 1899, B. P., female, single, colored, aged 32 years, was admitted to the Cincinnati Branch Hospital for Consumptives. Her family history was incomplete; her father and mother were both dead from causes unknown; her only brother died of consumption. She had had one

throat and incontinence of urine. She had never been sick before, but had been intemperate. She had an attack of hemoptysis two years before, losing a large quantity of blood, and since then had only expectorated small quantities; had profuse night-sweats for past year. She was pregnant, presumably in the seventh month. The temperature was 101.6° ; pulse, $10\frac{1}{2}$; respiration, 30. She was not weighed; height, 5 feet $2\frac{1}{2}$ inches; circumference of chest 26 inches, expansion one-half inch. Physical examination: Palpation, negative because of weak voice. Percussion, right anterior; tympanitic resonance above fifth rib, dullness below. Right posterior, tympanitic resonance above fourth rib, dullness below. Left anterior, dullness over entire area. Left posterior, dullness over entire area. Auscultation, whispered pectoriloquy, cavernous breathing and coarse rales over tympanitic areas. Bronchial breathing over remaining areas. The urine contained albumin. She was very much prostrated and usually delirious.

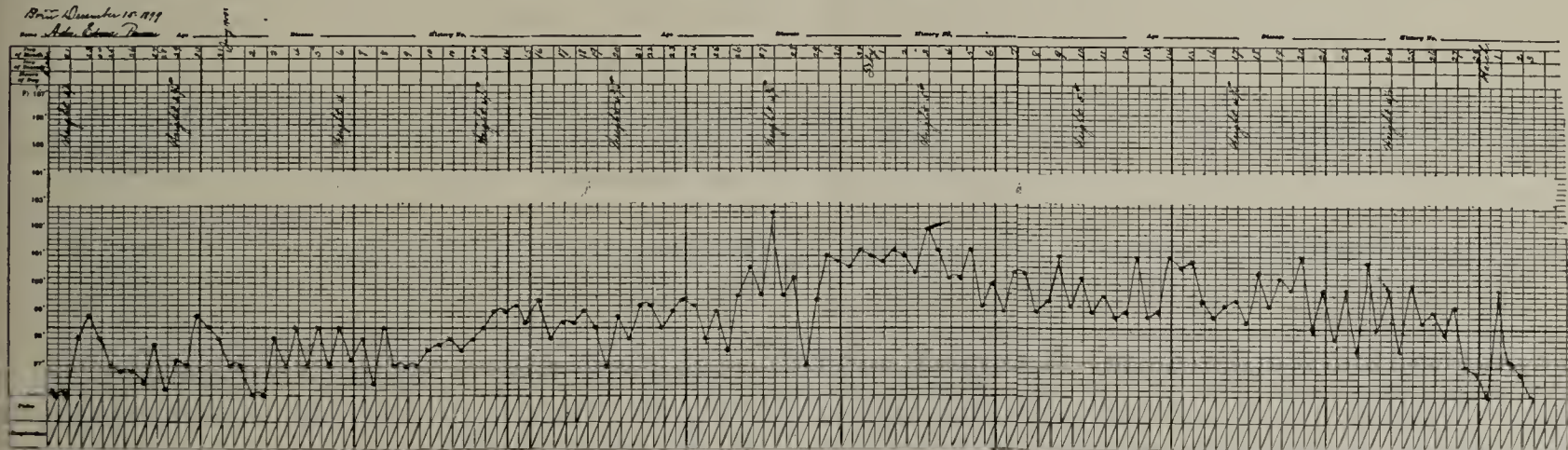
On December 15 she gave birth to a child. How long she had been in labor it is impossible to surmise; she was in the room with a number of patients and had not indicated by her actions that anything unusual was transpiring. The first intimation of labor was the crying of the child. The placenta came away naturally and presented no pathologic changes, the uterus contracted well, and the patient appeared oblivious of her travail; she was cognizant of the birth, however, as she asked to see the child, after expressing regret that it was not a boy, she named it. She remained in a somnolent condition until her death, which occurred on December 17.

One of the most interesting points in her history is the fact that she was able to carry and give birth to two living children while a victim of tuberculosis.

Postmortem examination: Pleurae thickened and adherent over both lungs. Upper and middle lobes of right lung honeycombed with cavities. Lungs consolidated except at bases. Heart normal. Small intestines ulcerated and mesentery congested. Kidneys congested and small extravasations seen throughout cortices. Uterus size of cocoanut and apparently normal.

The child weighed $3\frac{1}{2}$ pounds when born, and apparently had reached full term. It was always very weak, and about the only animation it displayed was to move its head when its attention was attracted, to manifest hunger by crying or contentment by sucking its finger. Its weight slowly increased during the first 8 weeks to 5 pounds, and then decreased to $4\frac{1}{2}$ pounds, its weight a few days before death.

The temperature was subnormal during the first 4 weeks, varying between 96° and normal, the latter sometimes being the evening temperature. For 12 days the temperature showed a slight rise above normal, this



child which died 4 months previous to her admission, the child was 18 months old, the cause of death unknown. Patient gave a history of having been sick two years, and complained of a severe cough, profuse expectoration, sore

was followed by hyperpyrexia which did not subside until the vital forces reached a very low ebb during the last week of the child's existence. The accompanying chart will illustrate the temperature-changes. Like all children fed artificially, it had indigestion at times, the

¹ Read before the Section on Ophthalmology, College of Physicians, Philadelphia, April 17, 1900.

stools containing curdled milk and being of a greenish color. It had a good appetite until the second week before death; but the last week took its food with avidity.

Postmortem examination: The child was very much emaciated, and the soft parts over the ribs were no thicker than parchment. The lungs were filled with myriads of minute caseous tubercular deposits, some of which had coalesced, one of the masses in the left lung being a centimeter in diameter. The spleen and liver showed deposits as numerous as in the lungs, and in the same caseous condition. The kidneys had a few caseous deposits scattered through the cortical substance. The bronchial glands were much enlarged. The masses contained tubercle-bacilli. Intestines and mesenteric glands normal.

That this is an instance of congenital tuberculosis we believe for the following reasons:

The child was removed from all danger of inspiring the germs by being kept away from the wards.

That disease was not contracted through the milk is shown by the freedom of the intestines and the mesenteric glands from indications of disease.

The child was evidently ill at birth, this is shown at first by the subnormal temperature; after the child gained strength, the temperature became elevated and continued so long as the vitality of the child would permit. The temperature-curve throughout is characteristic of tuberculosis.

The enormous number of deposits in various organs, all in the same stage, indicates a synchronous infection through the blood of the child. The only source of the bacilli could be the mother's blood.

ANTISTREPTOCOCCIC SERUM—A CASE IN WHICH IT WAS USED WITH APPARENTLY REMARKABLE RESULTS.

By D. H. GALLOWAY, M.D.,
of Chicago, Ill.

On January 31, 1899, I was called to see a young lady who was suffering from sore throat. A red rash had covered her body a few days before, and I would have made a diagnosis of scarlet fever had I not known that she and the four other children in the family had had scarlet fever a few years before. Eleven days later I was again called to this family, this time to see an older sister, a young lady 22 years of age. I found her with a sore throat, temperature 102° F., and with a scarlet rash covering nearly the entire body. A third sister had developed a similar rash a week before, but as she did not seem to be very sick it was not thought necessary to call a doctor. I made a diagnosis of scarlet fever this time, and the diagnosis was confirmed by a fourth member of the family coming down with the disease a few days later, in whom it ran a typical course.

On February 16 the patient's temperature was 103.5° F. On the 17th it was 102°; teeth and tongue were very sore and covered with a heavy, white coating. The glands on both sides of the neck were enlarged; on the right side one was particularly large and tender. The patient's mouth was washed and sprayed every hour with Dobell's solution or some other antiseptic, and I treated it every day with a saturated solution of copper sulfate on a cotton swab. For the next 5 days the local conditions grew steadily worse; the tumor on the right side of the neck was now the size of a man's fist, head turned to the left and rigidly fixed, mouth could not be opened more than $\frac{1}{2}$ of an inch. Patient could swallow nothing but liquids, and those only with great difficulty and pain. A culture had been made from the throat but no diphtheria-bacilli found.

February 22 a consultation was had with a surgeon and a laryngologist with a view to operation on the tumor as it threatened suffocation. They both advised against an operation, as it was believed that the patient could not take an anesthetic on account of the condition of her mouth, nose, and throat. Local applications to the mouth were no longer

possible, and it seemed that nothing further could be done but let the disease take its course. We believed the swelling to be a streptococcic abscess and determined to try antistreptococcic serum. On February 23 I administered 10 cc. of this serum. On the 24th I believed the abscess had ceased to enlarge, and I administered another 10 cc. of the serum. On the 26th the abscess was certainly smaller, and the third dose was given. On the 27th and 28th the serum was repeated, and on the latter date the abscess was not one-quarter as large as it had been when the treatment was begun. I had now given 6 doses of 10 cc. each, and the medicine was discontinued. The temperature was 100.5° F. when the serum-treatment was begun, and it continued at about that point throughout, falling to 99° on the morning of the 24th, 25th, and 28th, but rising to 102.4° on the afternoon of the 28th.

On March 1 the patient was able to open her mouth, and I treated the entire surface with the copper sulfate. When I pressed on the roof of her mouth with the cotton swab, pus oozed out around the margins of the upper teeth. The mucous membrane was separated from the upper teeth by a necrotic line perhaps $\frac{1}{3}$ of an inch wide completely around the upper arch both inside and outside. From this space pus was continually oozing, particularly when the swollen tissues were pressed upon anywhere in the neighborhood. This pus contained staphylococci. Another culture was taken on the 27th, but no diphtheria-bacilli were found. On March 2 a troublesome urticaria developed on the body and face and continued with more or less severity for 3 or 4 days. Day after day I cleansed the mouth with a solution of copper sulfate and other antiseptics and a steady but slow improvement was noticeable.

The coating on the tongue did not get any less and on careful examination I found it to consist of slender filaments from a quarter to a half inch in length, growing vertically from the surface of the tongue and as close together as they could stand. I tried all sorts of antiseptics, even to strong solutions of formaldehyd, without avail. I then pulled off some of the filaments with a pair of forceps and found that they left the mucous membrane smooth and red but intact as it did not bleed. I then curetted the tongue removing the growth completely. On examining this material with the microscope I concluded that it was a fungus, but a kind that I had not before seen. I submitted some of it to Dr. Jaques, Dr. Gehrman, and others who are expert with the microscope, but none could identify it. Various culture-mediums were inoculated but in no case was there a growth of the filament. Some of it was sent to the Division of Botany of the Agricultural Department at Washington and they reported that it was not a fungus at all, but probably sarcoma. They sent some of it to the Johns Hopkins University, but I have not heard their opinion of it. I am now of the opinion that it was an outgrowth of the epithelium.

On March 8 there still remained a small indurated mass where the supposed abscess had been, but on the 14th no trace of it could be found. The enlarged glands were decreasing in size. March 22 the patient was able to be up, but convalescence was very slow and she remained weak for many months. Her hair fell out completely and was very slow in coming in again.

The pulse remained between 70 and 90 till March 3 when it went up to 130 and remained at or near that point for four days; temperature ranging from 100° to 102°. On March 7 pulse and temperature were normal and did not again rise.

Unfortunately we have no positive proof that the swelling in the neck was a streptococcic abscess. If it was, there can be little doubt that the antistreptococcic serum saved the patient's life, for neither of the consultants believed she would survive either with or without an operation.

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GEORGE M. GOULD, M.D., *Editor*

Collaborators

JOSEPH SAILER, M.D.
D. L. EDSALL, M.D.
D. RIESMAN, M.D.
J. M. SWAN, M.D.

M. B. TINKER, M.D.
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The Assassination of King Humbert.—Medical science cannot ignore the diseases of the body politic, for these, unfortunately, are too often but evidences of disordered mental and physiologic processes in the people. The assassination of the Italian king is a symptom of a malign social disorder. Apart from its political and strictly personal aspects, it has importance as an indicator of a widespread moral and intellectual degeneracy for which the present era in more ways than one is becoming entirely too conspicuous. We are passing through an epidemic of assassination which within a few years has claimed for its victims a czar, a president, a prime minister, an empress, and a king. This list does not include our two American presidents whose murderers were actuated by somewhat different motives. That this epidemic has spent its force is by no means evident. Abortive attempts to kill princes, statesmen and shahs are reported with some degree of periodicity, while threats to kill are uttered by redhanded anarchists with impunity, and published with promptness by the daily press. The truth is the world has not yet learned how to meet and to treat this disorder; least of all has it learned that the imperative duty is prevention and restraint. The public does not take heed from the teachings of science, and learn to estimate at its full value the mental degeneration of the times. Under the panoply of freedom of speech anarchistic fanatics are today in this country assembling and propagating their kind. Imitation is the obscure psychologic law that leads these creatures on. What one has done, another also can and will do. This is a principle of psychiatry that is well enough understood in the asylums but not in police stations and the courts. The fire must be stamped out in the bush before it has spread to the whole forest. These political paranoiacs who commit murder aim at a bright and shining mark because thereby some imaginary luster is shed upon their deed. They kill for glory more than for revenge. They desire to be talked about and to be imitated, for they know that "the youth who fired the Ephesian dome, outlives in fame the pious fool who raised it."

The Plague in London, Yellow Fever in Florida, and Smallpox in Cape Nome.—The Marine-Hospital Service reports the receipt of a cablegram, dated August 3, from Past Assistant Surgeon A. R. Thomas,

who is detailed for duty at the United States Consulate-General in London, to the effect that two deaths from plague had just occurred in the English metropolis. The diagnosis had been confirmed by bacteriologic examination. No details were given as to the origin of the cases. The Marine-Hospital authorities think that the precautions taken at our own ports are sufficient to safeguard this country from the disease. It is probably too soon to feel alarm, but this outbreak of the plague is unpleasantly near.

From the same authority at Washington we learn that on August 2 Surgeon J. H. White reported two cases of yellow fever in Hillsboro County, Florida. This is only a small beginning, but it is still early in the season, and these cases may serve as reminders that the annual problem regarding yellow fever is before us. The United States Marine-Hospital authorities have shown their ability to combat the disease successfully on former occasions, notably at Hampton, Virginia, last year, and we may feel confidence in their alertness and competence. They do not place their reliance on shot-gun quarantine, but on scientific methods.

From far-distant Cape Nome, in Alaska, comes the report of the prevalence of smallpox among the gold-hunters. Up to July 10, 22 cases had been reported. The patients had been removed to a camp outside the town as soon as possible after discovery, and every means had been taken to prevent a spread of the disease, but from local conditions and lack of facilities Lieutenant Jarvis reported that there was great danger. The United States has established quarantine stations in Alaska. From these several reports it is seen that from various quarters there are threats of epidemic disease. To be sure, their geographic centers are widely separated, but geography in these days of steam is a local affair, and it is well to be on guard. Fortunately, no extensive prevalence of disease has been reported among the troops in China.

The Famine in India.—This visitation is an almost unprecedented tragedy. If reports are true the government in India is providing for six millions of people daily. The highest mortality is naturally in the native States, where the government has little control. In the worst stricken sections 60,000,000 of people are more or less affected, and one-sixth of this number are threatened with death by starvation. The worst of it is

that the prospects of relief from natural causes are exceedingly poor. Not much rain had fallen at the last reports, and even if the rain does come in abundance the poor tillers of the soil have no seed to plant. Hence, relief is needed literally from the ground up. The cause of the famine, as is usual in densely crowded countries, was a failure of the crops. These crops must now be provided for in another planting, and yet, so pathetic is the situation, there is nothing to plant. The suffering, to be appreciated, must be seen, and, thanks to the camera, it is being seen in highly realistic photographs, which are being sent to the ends of the earth. These represent the wretched natives grouped in all the horrors of emaciation and death. The Citizens' Permanent Relief Committee of Philadelphia publishes some of these dreadful pictures along with its circular asking for aid. They utter an appeal more eloquent than words. It is something to the credit of American philanthropy that with all our urgent foreign cares, not to speak of our own domestic needs, we are not forgetting these poor starvelings in far away India. Three cents a day will save a life. The treasurers of the fund are Messrs. Drexel & Co.

The Plague Situation in San Francisco.—A careful perusal of the official correspondence of the Marine-Hospital Service as published in its weekly *Bulletin*, and consideration of the various scientific articles contributed to current medical literature by members of the profession of San Francisco, leaves little doubt that a disease corresponding in all its essential particulars to the bubonic plague has existed in San Francisco. That all of the cases but one have thus far escaped recognition until after death does not invalidate this conclusion. When commercial cupidity and false local pride have arrayed themselves in line with the general ignorance of profession, it is not to be wondered at that the initial cases have not been recognized before death.

The situation as it exists today is a grave one. The scientific workers of the local health-board and of the Marine-Hospital Service concur in pronouncing the disease to be plague. The Chinese population, the Six Companies, a large proportion of the medical profession, the daily newspapers, the Governor of the State, and the judge of the United States Court all unite in saying that the disease is not the plague. In consequence of the decision of the United States Court it has been necessary for the President to nullify the quarantine proclamation of the Marine-Hospital Service formerly approved by him. This does not mean that the President disapproves of the quarantine, but that as a law-abiding citizen he feels bound by the decision of the court until such time as that decision is reversed, if it ever should be. It was most unfortunate that the revocation of the quarantine proclamation should have followed shortly upon a very peculiar, intrusive and characteristic political message from a delegation of

California politicians, demanding such action upon pain of political defection. There are no good grounds for supposing that the political appeal had any influence in deciding the course of action of the President; that action was in all probability due solely to respect for the decision of the court.

That the court erred, and erred most grievously in presuming to decide adversely to the health authorities, who had done a difficult duty with courage, determination, and good judgment, as rare as it was commendable, can hardly be doubted by those who have studied the full reports of the situation. That the health authorities themselves also erred in permitting the representatives of the Six Companies to delude them by promises of cooperation in certain measures, thus getting in a false position before the public and the court, seems also to be the case. Yet the very error in this respect on the part of the health authorities is but the more convincing evidence of their sincerity in belief and their propriety in action. That they were tricked and that the court sustained the tricksters simply reflects more credit upon the integrity of the health-officers and less credit upon the other persons involved.

The situation is such that the precautions already taken may possibly have proved effective in limiting the spread of the infection, but this is not likely. The developments of the succeeding year will prove whether or not the sporadic cases that have thus far occurred have as yet sufficiently infected the city to establish either an endemic or an epidemic next winter. If the city should be exempt, the credit will be due to the work already performed by the faithful officers of public health,—but the people whom they represent will probably give them neither thanks nor recognition. If, on the other hand, an epidemic should occur, the Six Companies and the court should have the credit for such occurrence,—but the public will probably fail to give credit where it is due in that event also. All of which goes to show that duty must be done (in public-health work, at any rate) for its own sake.

Monogamy, Longevity and the Diseases of Late Life.—The increase in the death-rate from carcinoma in recent years has directed considerable attention to the causation of this affection, and many have believed that it was owing to the increase in the average length of life into the carcinomatous age now more than formerly; but in an article discussing this subject, Harry Campbell (*Lancet*, June 9, 1900) contends that it is monogamy that tends to favor the increase in our race of all late-life diseases, carcinoma among others, and to shorten the vital span. The world is filled with a vast multitude of the unfit, people who fall short of the standard which makes life worth living, who, in virtue of their unfitness, suffer more than they enjoy. The ability to live into the sixties and seventies, or longer, we owe to the vigorous man of fine physique, who re-

tains his procreative power into advanced life. Woman, on the other hand, has played no part in the evolution of this power; her ability to live beyond 40 or 45 has no racial influence, since it does not increase her opportunity of leaving offspring to inherit it. The majority of civilized men have children by one wife only, and she is generally about the same age as her husband, the result of this is to reduce the age-limit of reproduction in the man to that of the woman. Monogamy reduces the superior man to the reproductive level of the inferior man, and this fact is to increase the racial tendency to diseases after middle life, and to shorten the vital span. While, however, monogamy is thus exercising an injurious influence on our race, polygamy is a sociologic impossibility. The best and only way to raise the racial standard is for the unfit to submit to voluntary elimination by abstaining from marriage.

Interesting as are Campbell's statements we can not believe that they are entirely correct. In the first place we doubt if the racial standard will ever be greatly elevated by the voluntary abstinence from marriage of the unfit; indeed the unfit are usually most likely to marry and have numerous children, and the worst of their class very often have numerous illegitimate children. Other things being equal, we doubt if facts will show that the child begot by a man in advanced life is more vigorous and more likely to live to a healthy old age than the child of the prime of his life; that is, if a vigorous man be married twice to equally healthy women, to one in the most vigorous period of his early manhood, to the second one in advanced life, we believe that the child of the period of his greatest powers is more likely to attain a good old age than the child of his declining health and strength. Moreover, we believe that Campbell much underestimates the importance of a vigorous maternal ancestry. Stock-raisers well understand that no matter how worthy the sire, it is impossible to raise the finest blooded stock without a good mother, indeed the mother seems much more likely to transmit her powers to the child than the father, and there seems no good reason why she should not transmit the tendency to longevity in as great a degree as physical and mental peculiarities. Are not the tendency to monogamy in all civilized races and the limited reproductive life of the female Nature's wise selective factors in evolution which make it improbable in most cases that either the male or female shall propagate their kind at any period except during their greatest health, strength, and vigor? And are not these factors beneficial rather than detrimental to the moral, mental, and physical progress which we know has been made by the human race?

The Adulteration of Food.—In a speech delivered in the U. S. Senate on May 2, Hon. William E. Mason made a strong plea in favor of legislation for pure food. Senator Mason spoke as chairman of a com-

mittee appointed by the Senate to investigate the adulteration of food-products in this country. The extent to which such adulteration is carried on is simply amazing. This committee summoned many of the leading expert chemists and hygienists of the United States, and their evidence, as published by the Government, especially on the subject of baking powder, is most enlightening. Senator Mason himself spoke chiefly on this subject of baking powder, but he did not entirely ignore other articles. For instance, he spoke of honey (so-called) in a jar of which it was proved by analysis that 1% was real honey, with a little honeycomb on the top, and the rest glucose. This stuff is, of course, a fraud on the purchaser, although it is not injurious to health. It seems that many industries are engaged in palming off glucose as various kinds of jellies—for instance, apple, peach, etc. The parings of the fruit are used to impart a flavor, and the cheap glucose does the rest.

But the worst features of these frauds are found in those adulterations which are not merely "sophistications" but are directly injurious to health. The chief of these is baking powder. The old-fashioned baking powder is made of cream of tartar, which is a product of the grape. It supplies an acid which, uniting with the bicarbonate of sodium, liberates carbonic-acid gas, and thus leavens the dough. In order to secure this liberation of carbonic-acid gas by means of a substance less expensive than cream of tartar, a class of manufacturers in this country began about 25 years ago to substitute alum. This salt, which is a double sulfate of aluminum and another base—either potassium, sodium, or ammonium—supplies the acid (sulfuric) which attacks the sodium bicarbonate, and thus sets free the carbonic-acid gas just as in the case of the cream of tartar. But, unfortunately, in this chemical reaction between ordinary alum and sodium bicarbonate, there is left aluminum hydroxid, with perhaps some other basic compounds, especially the phosphate, and some of the original sulfate which has not undergone complete change. It was contended for a while by the manufacturers that nothing was left but the hydroxid and phosphate of aluminum, and that these, being insoluble, were inert. Chemical research, however, has demonstrated that these substances are soluble in weak acids (such as the acid contents of the stomach) and hence may be absorbed and act as poisons; moreover, some of the original alum (the double sulfate) is not changed in the ordinary process of bread-making, and it too may act in the same way. Whether these substances are absorbed in sufficient quantities to be injurious to health may be an open question, but that they may at least act as local irritants upon the mucous membrane of the stomach and thus disturb digestion, seems not to admit of doubt.

Senator Mason, who deserves great credit for his ex-

position of this subject before the U. S. Senate, said that alum baking powders were prohibited by law in most of the countries of Europe. The question remains, are the cream of tartar powders entirely harmless? Is the Rochelle salt, formed by reaction in baking and which remains in the bread, muffins, etc., of no consequence? Certainly it is of no practical hygienic significance when only a couple of breakfast muffins, prepared from a cream of tartar baking powder, are eaten. How about the matter when all the bread, muffins, biscuits, etc. are baked with such powder? In this case we suspect that a strong case could be made out against the use of this powder also. Small and repeated doses of Rochelle salt are absorbed and give the urine an alkaline reaction. Its laxative tendency is still manifest when the doses are not too small. For one pound of flour about 3 rounding teaspoonfuls of cream of tartar are used, say $\frac{1}{2}$ ounce. The resulting Rochelle salt would weigh more. We think that all baking powders, except in the preparation of muffins and fancy breads, which should constitute only the smaller and accessory part of the bread-diet, should be avoided.

Air Embolism During Surgical Operation.—J. Basil Hall (*Quarterly Medical Journal*, for Yorkshire and adjoining counties, England, May, 1900) relates a case in which embolism occurred during the removal of a recurrent growth of the breast. The mamma, together with the pectoral muscle, had been turned back according to Halsted's method, and a somewhat extensive mass of glands was being dissected out at the apex of the axilla. A small vein had been cut across, so insignificant in size that pressure forceps were not applied at the moment. A loud sucking noise was heard, precisely like that produced by a small puncture in the pleura. There were three distinct inspirations of air before the vein was clamped, as the patient was breathing rather rapidly at the time, the ether inhaled having just been reapplied after an interval for refilling it. Within a few seconds there was a sudden stoppage of respiration, followed by four or five inspiratory gasps; extreme pallor overspread the face, the pupils dilated widely; there was a slight tetanic spasm of the body and risus sardonicus of the face. The pulse became fluttering and imperceptible, but the heart continued beating rapidly and tumultuously, while a distinct thrill was perceptible to the hand placed over the precordium. The muscles relaxed, all respiratory efforts ceased, the heart-beats became imperceptible and the patient was to all intents and purposes dead. The whole period, from first hearing the entrance of air to the final stoppage of respiration, was not longer than 15 or 20 seconds. Artificial respiration was at once begun and vigorously carried out, while a large dose of strychnin was administered hypodermically. After an interval of a few minutes a spontaneous inspiratory effort occurred. Respiration was restored after a lapse of 15 minutes. The operation was then hurriedly completed. The patient remained in a somewhat critical condition for an hour or two, but ultimately made a good recovery. The surgeon who has once experienced such accident will take pains to clamp all veins before dividing them when operating in dangerous regions, more especially when the vessels are being dragged on by the necessary manipulation of the part, since inspiration of air cannot occur in a wet wound. The first thing to be done, if the opening cannot be seen, is to flood the wound with any fluid that may be at hand. Vigorous and persistent artificial respiration must be persevered with, together with the injection of cardiac stimulants. If immediate syncope does not occur, and cardiac distress continues, bleeding to relieve the right side of the heart will do most good, but bleeding undertaken with the view to empty the air from the veins is useless. [M.B.T.]

Reviews.

The Medical Diseases of Childhood. By NATHAN OPPENHEIM, M.D. (Coll. P. & S., N. Y.), A.B. (Harv). Author of "The Development of the Child;" Attending Physician to the Children's Department of the Mt. Sinai Hospital Dispensary. With 101 original illustrations in half-tone, and 19 charts. 653 pages. New York: The Macmillan Company, 66 Fifth Avenue. Price, \$5.00.

This book will constitute a valuable addition to pediatric literature, and is a concise statement of the present status of knowledge on the subject. The aim to present it in a philosophical and logical way, with the avoidance of details and statistics, is well carried out; the sections on treatment are possibly a little too brief to be of great help to the pediatricist. The book is well-balanced and well-written, and although it is difficult to single out chapters for special mention, noteworthy ones are those on Development, General Hygiene, Examination and Diagnosis, and Diseases of the Bronchi, Lungs and Pleura. As in every book, minor mistakes occur, which will of course be corrected in the second edition, which we predict will soon be reached. We cannot accustom ourselves to the author's use of the word "track" for "tract" in referring to a system. More serious errors are found on pages 80 and 191; on the former the statement is hard to believe that a quart of milk will give only 2.5 grams (about half a teaspoonful) of 8% cream; on the latter, in the prescription, the dose for strychnin has changed places, in Apothecaries' weight, with that for aloin and belladonna. The illustrations are good half-tones of very good photomicrographs and have been chosen with judgment, there being but one (Fig. 34) whose presence, perhaps, would not be missed.

Die Technik der Speziellen Therapie. (The Technic of Special Therapy) By PROFESSOR F. GUMPRECHT. Second and enlarged edition. Jena: Gustav Fischer, 1900.

To nearly all practitioners, and to every hospital resident, this work is certainly a godsend. It discusses all forms of technical manipulations, the method of use of apparatus for special therapy, the manner in which it should be prepared, the details of its use, the indications for repetition in its use and the various practical points which are so often difficult of decision for those who are inexperienced. As examples, the work begins with the discussion of the various methods of puncturing and incising the skin of anasarca. This is followed by a discussion of the use of transfusion, then follow the various methods of treating the esophagus by sounds and other instruments, the use of the stomach-tube and other apparatus, which may be necessary in the management of diseases of the stomach and intestines, and following this there are descriptions of the instruments used in treating diseases of the upper air-passages, and the methods and indications for their use. Thoracocentesis and paracentesis of the pericardium, puncture of the abdomen and lumbar puncture are discussed, and the final portion of the book is devoted to instrumental methods of treating diseases of the urinary passages. The book, as the author states, discusses the small details which so readily lead one into embarrassments. It considers the questions as to whether the procedure is difficult or not, whether it needs previous practice or special experience, exactly what indications should lead one to carry it out, and at what time it should be done. All the instruments necessary are listed, in order that one may be prepared with everything on the table by his side. The possible complications that may appear in the procedure are noted, and the subsequent treatment is discussed. The work is purely practical, and it fills a need that has been very evident. The second edition appears only about a year after the first, indicating the favor which the former edition has met. A number of new procedures have been introduced and are discussed; for instance, infusion of salt-solution the treatment of typhoid fever, subcutaneous nourishment, cocainization of the spinal cord, and other recent procedures.

The Clinical Examination of Urine, with an Atlas of Urinary Deposits. Forty-one original plates, mostly colored. By LINDLEY SCOTT, M.A., M.D. Philadelphia: P. Blakiston's Son & Co., 1900. Price, \$5.00 net.

In the 49 pages of text in this volume, Dr. Scott discusses briefly certain general considerations, the composition, the physical properties, and the normal and abnormal constituents of the urine; he refers briefly to the bacteriology and toxic properties of the urine and to the examination of the urine for life insurance; and he finally gives a table indicating the leading characters of the urine in disease. This portion of the book is eminently concise, practical, and to the point. No attempt is made to detail all the tests that have been proposed for the determination of the normal and abnormal constituents of the urine, but Dr. Scott mentions only those that he himself had found especially useful and trustworthy. Thus he prefers the potassium ferrocyanid and acetic acid test for the detection of albumin, and he says of the heat and nitric acid test, that it is neither delicate nor trustworthy—a statement to which some will take exception. He also mentions that more mistakes are made in the use of Fehling's test for sugar in the urine than in the use of any other urine test, and that the phenylhydrazin test is the best for the determination of sugar—statements that can be heartily endorsed. The 41 plates, many of which are appropriately colored, are in general good and convey an excellent idea of what they are intended to portray. Some of them, however, are poorer than we would expect in a volume selling at the price for which this is offered. The volume is neither the best book on the chemic investigation of the urine nor the best atlas of urinary deposits, but as an eminently practical guide to the clinical examination of the urine must it be commended.

The Students Hand-Book of the Surgery of the Alimentary Canal, being an abridged and amended edition of the author's treatise on the same subject. By A. ERNEST MAYLAND, M.B., B.S., Lond.; Surgeon to the Victoria Infirmary at Glasgow; External Examiner in Surgery to the Victoria University, Manchester; Examiner in Surgery for the Fellowship of the Faculty of Physicians and Surgeons of Glasgow. Pages 510; 97 illustrations. Philadelphia: P. Blakiston's Sons & Co. Price, cloth, \$3.00.

As stated in the title, this volume is an abridged and amended edition of the author's larger and well-known work upon this subject. The volume is divided into 4 sections; the first 92 pages are devoted to the consideration of the surgical affections of the esophagus; the second part, comprising the next 72 pages, is devoted to the stomach; the third part is divided into 3 sections, the first dealing with the duodenum, the second with the jejunum and ileum the third with the large intestine and appendix; the fourth section of the book is devoted to diseases of the rectum. In concise form a large amount of important information is given with regard to the very common surgical diseases of the alimentary tract. The book shows evidence of the author's wide reading and study, and its teachings, for the most part, are modern and reliable. Certain sections need revision, however; in the consideration of the operative treatment of gastric ulcer the author fails to notice any of several valuable papers which have appeared in American literature since 1896; in considering the treatment of typhoid perforation he quite properly states that, "not to subject the patients to laparotomy under such circumstances is to fail in carrying out the only and proper means of saving life," but, as in the treatment of gastric ulcer, the latest and most exhaustive sources of information have evidently not been consulted. Thrombosis of the mesenteric vessels is considered, a topic which has been very commonly omitted by writers on this subject; however, no definite instructions are given as to the indications for operations or methods of operative procedure. In a small book brevity is to be expected and is quite excusable, but entire omission of certain topics seems to us hardly justifiable in a

special volume of this kind. Among such omissions we notice that there is no mention of the operative measures which have been employed in the treatment of hour-glass contraction of the stomach, gastrolisis is not mentioned, nor is there any mention of the use of the Laplace forceps or any of its modifications in intestinal anastomosis. While there are several minor failings of this kind, the teachings of the book are, on the whole, very trustworthy and it should prove a very valuable aid to the general practitioner for whom the book was primarily intended.

Correspondence.

A KINDLY WORD FROM BUFFALO.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

AN exceedingly interesting editorial, entitled "A Great Light from Philadelphia," appears in the August issue of the *Buffalo Medical Journal*. It comments in a delightfully caustic and breezy way on an editorial on The Reorganization of the New York State Medical Association, in the PHILADELPHIA MEDICAL JOURNAL, of July 21. It is not worth while to dissect the so-called criticisms of the article, as time is far too valuable.

The editorial criticised was evidently written by one who has been thoroughly conversant with medical matters in the State of New York since long before the State Medical Society degenerated into a machine manipulated in the interests of and by a clique composed of less than half a dozen men. If the writer of the *Buffalo Medical Journal's* editorial is a member of the State Society he is either young and guileless, complacently ignorant that when the string is pulled he dances to the whistling of a one-man band, or he has passed the period when live issues appeal to his cerebration. Whichever it may be, it is evident that he has not even the remotest knowledge of the subject he has allowed himself to write about. This man, in elegant phraseology, says: "How empty of think is one's think-tank who concludes a ponderous paragraph for the enlightenment of the American medical profession as to the history of the profession in the State of New York and its State Society, with the idiotic conclusion that because 'The State Society now numbers about 600 members out of an estimated total of 9,500 medical practitioners in the State,' therefore the former cannot represent the latter." Considering the manner in which the latter are represented, as a matter of fact, the statement does not seem so idiotic, after all. If the *Buffalo Medical Journal* will study the signs a bit it may not prove a disadvantage. The fact that several of the County Medical Societies have seceded bodily from the State Society and applied for charters from the State Association is an indication of the way this representation is regarded. The additional fact that the membership in the State Association was increased by nearly one thousand in less than two months, when the plan of reorganization was made known, is significant, to say the least. This plan of reorganization will be acted on by the State and County Associations in October next. It perhaps would be wise for editorial solons to trim their sails in accordance with the direction of the wind; if not, they may soon be sailing in a handicap race all by themselves.

In conclusion, with the extremest courtesy and good will, I venture to recall a sentiment once uttered by Dumas, the younger: "*Dieu a fait les imbéciles pour que les gens d'esprit regrettent moins la vie.*" And to this I would add the advice. Read, learn, and digest!

ONLOOKER.

Special Article.

SOME INCIDENTS IN THE EVOLUTION OF THE MODERN PHYSICIAN.¹

President's Address Delivered at the Sixty-eighth Annual Meeting of the British Medical Association.

By WILLIAM ALFRED ELLISTON, M.D.,

Senior Surgeon, East Suffolk and Ipswich Hospital.

THE progress of medicine was traced step by step from the beginning of the sixteenth century and the effect of each step on the evolution of the profession fully analyzed. The great men of each period were also considered in their relation to the general progress and the effect of Parliamentary measures traced.

The important legislation of the nineteenth century was the Apothecary's Act of 1815. This Act has been proved to be one of the greatest boons ever conferred upon the medical profession, and whatever may be the sentimental objection to a learned profession being connected with traders, we are bound to remember that to those who sought the Act of 1815 we are indebted for a reform which has been far-reaching in its results. Previous to this Act the education of the medical practitioners of England and Wales was entirely optional on their part, and although many of them possessed degrees or licenses of the universities or colleges, the greater number possessed no such qualification, and many of them were wholly illiterate or uneducated. About the year 1850, a preliminary examination in arts was instituted as a necessary and independent requirement before proceeding to the medical curriculum. In 1858 the Medical Act became law, and by this Act the L.S.A. of London was permitted to practise through Scotland or Ireland. The Apothecaries' Amended Act passed into law in 1872. Women were admitted to practice in 1876. In 1878 the pharmaceutical chemists were licensed by Act.

It is worthy of observation that the State has hitherto not interfered to prescribe the subject-matter, or the minimum standard of medical examination, although there has been at least one attempt by the Government of the day to establish a uniform minimum. Under the beneficent legislation of the century, and particularly by the establishment of the General Medical Council, jealousies between the different branches of the profession have mainly disappeared, it is difficult now to realize that at the commencement of the present century it was far otherwise, then we find a young physician advanced by his college in 1808 as a reward for a pamphlet against the growing pretensions of army surgeons.

Increased desire for knowledge of anatomy and surgery had a remarkable effect. At the early part of the century, with some few exceptions, very few surgeons, even of large hospitals, had personally dissected the human body; and the demand then for subjects became so great that a disreputable association had to be entered into between the teachers of anatomy and a class of men who were termed "Resurrectionists," to supply them with subjects. The sums paid to these body-snatchers were frequently exorbitant, and a scandal arose which at the time created a great sensation, as, in addition to the many indecencies undoubtedly committed, it was alleged that murders were incited. The excitement was happily allayed by the passing of the Anatomy Act of 1832, which, by affording facilities for the practical study of anatomy, gave a great impetus to study in this country.

One of the curious features at the early part of this century was the continuance of the system of private medical teaching. Some of these schools attained a great degree of prosperity.

It was at Grainger's School that the body of the English philosopher, Jeremy Bentham, was dissected and lectured upon, in accordance with his will, by his friend, Dr. Southwood Smith; after the examination his body was embalmed and dressed in his clothes and is still preserved at University College, London. During the ceremony a violent thunderstorm shook the building, but Smith proceeded with a clear unflinching voice, with a face as white as the dead philosopher's

before him. Brougham, Grote and Mill were present at the examination of their dead friend.

The growth of the medical press and the influence it had upon the medical profession commenced with the efforts of William Sharman, M.D., who was at Harwich in 1767. He commenced in 1810 to edit a periodical, which was styled the *New Medical Physical Journal or Annals of Medicine, Natural History, and Chemistry*. It was in existence in 1815.

In 1815 Thomas Wakley was a student of the Borough Hospitals; the greater part of his medical education was acquired at the Grainger School. In 1817 he became a M.R.C.S., and commenced practice. Fortunately, perhaps, he did not altogether succeed, and his great talents were turned in the direction of journalism. He founded the *Lancet* in 1823, with the primary object of disseminating much-needed information hitherto regarded as the exclusive property of members of the London Hospitals, and also with a view of exposing the family intrigues that influenced the appointments in the London hospitals and the medical corporations. For the first ten years of its existence the *Lancet* provoked a succession of fierce encounters between the editor and the members of the privileged class in medicine. In the first number Wakley made a daring departure in commencing a series of shorthand reports of hospital lectures. On December 10, 1824, Mr. Abernethy applied to the Court of Chancery for an injunction to restrain the *Lancet* from publishing his lectures. The injunction was refused by Lord Eldon, on the ground that official lectures in a public place for the public good had no copyright vested in them. He then commenced a regular issue of hospital reports of cases and notable operations. The irritation at them was so great that his exclusion was ordered at St. Thomas's Hospital. He also carried on a campaign against the Royal College of Surgeons. Mr. Wakley and his successors have done work which has advanced the general interest of the profession by leaps and bounds, and during the long period of its usefulness it has always availed itself of the best talent, and many of those who have achieved success in other departments have given their early work to the advancement of medical journalism. At the present time the influence of the press is enormous. The *British Medical Journal*, reflecting the opinions of this Association, shares with the *Lancet* and many other medical periodicals in guiding the profession upon every question to the direct issues constantly occurring.

PHYSICIANS AND SURGEONS OF THE CENTURY.

It is, of course, quite impossible to give anything more than quite a brief enumeration of the brilliant work of the physicians and surgeons of this century, but there are some incidents that deserve notice—take, for instance, the remarkable advance in practical medicine by the physicians of Guy's Hospital. Richard Bright's discoveries in the pathology of kidney disease, which results were published to the world in 1872; Hodgkin, pathologist of the hospital, who published his observations on some morbid appearance of the lymphatic glands and of the spleen; and Thomas Addison who, from 1849 to 1855 was directing attention to the relationship between anemia and disease of the suprarenal capsules. These diseases are now known all over the world as Bright's disease, Hodgkin's disease, and Addison's disease. In 1873 another Guy's physician, Sir William Gull, described to the Clinical Society of London a cretinoid state supervening in adult life in women.

In 1837, Gerhard, a young American physician, clearly laid down the difference of the two diseases of typhus and typhoid fever. After much doubt and discussion the question was finally settled in England by Sir W. Jenner in 1849-50.

The credit of recognizing the connection between the acceleration and violent actions of the heart and the enlargement of the thyroid gland, two of the great cardinal symptoms of exophthalmic goiter, undoubtedly belongs to the great Dublin physician Graves, who in 1835 pointed out in a published lecture that the disturbance of the heart's action is not necessarily associated with organic disease of the heart. Five years later a German physician, Basedow, published a more complete and elaborate account of the clinical features.

Hughes Bennett first described leukocythemia in 1845. A few weeks afterwards Virchow published a case which had been independently observed by him previous to the publication of Bennett's first communication on the subject, and pointed out that the white corpuscle found in the blood were

¹ From advance sheets by courtesy of the *British Medical Journal*.

not pure cells, and termed the disease leukemia. A violent controversy sprang up between those two celebrated men and other supporters. Of this Byrom Bramwell says "that while Bennett was the first to observe and publish a detailed case of the pathologic appearances and blood-changes, Virchow was the first to give an intelligent explanation of the peculiar alteration of the blood which is the essential characteristic of the disease."

Among other great contributions to the advance of scientific medicine, one can but enumerate the works of Marshall Hall, Elliotson, Stokes, Alison, Sir Thomas Watson, the FARRS, Sir W. Jenner, Sir J. Simpson, Tyler Smith, the Budds, and Sir James Paget. In connection with the name of Dr. Elliotson, who aroused such a famous controversy in relation to his association with mesmerism, it is interesting to note that he was the first in 1826 to discard the style of dress then prevalent with physicians—namely, knee-breeches and silk stockings. He was also one of the earliest in England to adopt the practice of auscultation.

In surgery, more perhaps than in medicine, the tendency has been to specialize. Some of them inevitable and most desirable, others quite unnecessary. Dentistry is now practised as a special branch of surgery. The earnest work of Sanders, Sir W. Lawrance, and later of Sir W. Bowman, Critchett, and many others, has established ophthalmic practices in this country. In aural surgery, George Pilcher, Toynbee, Yearsley, Harvey, Hinton, and many still living have raised aural surgery from a neglected condition to a recognized position as a legitimate branch of surgery.

In all the domains of surgery there has been no more brilliant advance than in abdominal surgery. Operations that scarcely more than forty years ago were deemed unjustifiable—so great was the mortality at that time—are now performed with success in every hospital. For this our thanks are due to Sir Spencer Wells, Keith, Clay, Greig Smith, and many of those still living, but to none more than he to whom all surgery is indebted for antiseptic precautions in treatment.

It is not, perhaps, so generally known as it deserves to be, that William Jeaffreson, of Framlingham, in the County of Suffolk, an East Anglian surgeon, was the first surgeon in England to perform the modern operation of ovariectomy by a small central incision. The circumstances, as recorded in the *Transactions* of the Provincial Medical Association of 1837 are as follows: "Mr. Jeaffreson in 1833 lost a patient suffering from an abdominal tumor. She died from tuberculous disease of the lungs, and, obtaining the consent of the friends, he made a postmortem examination, which satisfied him that the tumor could have been removed, and but for the disease of her lungs her life might have been spared."

In November of the same year Jeaffreson and his friend King attended together a lady in her confinement with a small tumor. They subsequently advised an operation, and in May, 1836, a central incision was made, about $1\frac{1}{2}$ inch, the cyst tapped, withdrawn, the pedicle secured by ligature, and the ends cut off short. The wound was adjusted by two sutures, and napkins wrung out in the coldest water were constantly applied to the wound. Sulfate of magnesia was administered every four hours, and all went well until the tenth day, when he was called to his patient at 3 A.M., to find her pulseless, with incessant vomiting and hiccough, with griping pains in her body. A stimulating enema, with 2 grs. of opium, gave her speedy relief, and she recovered.

His friend and neighbor King, at Saxmundham, Suffolk, about ten miles away, operated a few weeks later, with complete success, his incision being somewhat longer—about 3 inches. Two years subsequently a third East Anglian surgeon, Crisp, of Harleston, who lived about twenty miles from Jeaffreson, who was also successful, with an incision of 2 inches. These three cases, which were performed by three surgeons in general practice in this country, were the first in England, in response to the doctrines of William and John Hunter, and are the more remarkable when we consider that no operation of the kind was attempted in London until four years later, and no ovariectomy was performed in a London hospital until ten years after Jeaffreson's case.

Of another special branch of practice, the treatment of mental affections has greatly improved, and the provision of suitable institutions has generally extended. Among many others to whom we are indebted are William Tuke, 1732-1822, and other members of the same family; Sir E. Bucknill, and many other physicians at home and abroad. A provincial

physician, Dr. Robert Gardner Hill, who was Mayor of Lincoln in 1851, deserves to be specially remembered. In 1839 he published lectures on the management of asylums and the treatment of the insane. He argued that in a properly-constituted building, with a sufficient number of suitable attendants, restraint is never necessary, never justifiable, and always injurious to all cases of lunacy whatever.

Of the further practical results in surgery the results are so well known that it goes without saying that the advance has been enormous, thanks to Sir R. Brodie, Aston Key, Sir W. Lawrance, Robert Liston, Sir James Paget, Syme, and the Edinburgh surgeons Sir W. Ferguson, John Hilton, and the Dublin surgeons, Sir George Humphry and many still living, as well as by the brilliant achievements of surgery in all parts of the world.

The two great discoveries of the nineteenth century in connection with both medicine and surgery are the antiseptic treatment (for which we are indebted to the genius of a living surgeon, Lord Lister), and the use of anesthetics. Those now in general use are nitrous oxid gas, discovered by Sir Humphrey Davy in 1800; of sulphuric ether, by Faraday; and chloroform, by Liebig. I shall not detain you by a history of the introduction of anesthetics into surgical practice, but as we have still living in East Anglia a most distinguished surgeon (Mr. William Cadge), who was present on the occasion of the first operation in London under the influence of ether, I thought it would be interesting to hear his record of the circumstances. Mr. Cadge says: "Robert Liston was the first surgeon in this country to use ether, and those who were present at University College Hospital on December 21, 1846, and witnessed the complete and perfect success of that first venture, will not easily forget the dramatic character of that scene. I was present and assisted at the operation—amputation of the thigh by the double flap method. Some one present timed the operation; it took 30 seconds; the few arteries were tied, and all signs of blood cleared away. A towel was then thrown over the stump, and we watched anxiously for the patient to show that he was not dead; he presently woke up, and when asked once or twice if he could stand the pain of the operation, he accused us of cruelly trifling with his feelings, and when the towel was removed and he saw the naked stump, he burst into tears, and I thought Liston would do the same."

Many fresh fields of inquiry and separate study have been instituted. In 1831 Alfred Swaine Taylor, the famous chemist and medical jurist, was appointed Lecturer on Medical Jurisprudence at Guy's Hospital. His inaugural course was the first delivered in this country, and was attended by many leading counsel and some judges.

In 1842 Parkes was assistant surgeon to the 8th Regiment, when he retired and became physician to University College Hospital. He was the founder and first teacher of military hygiene, and was a great factor in, if not the founder of, the science of modern hygiene.

The elaborate directions in the Mosaic laws for the preservation of health, through scrupulous attention to cleanliness and the isolation of the sick and extreme care in the use of wholesome articles of food and drink, are well known to Biblical students.

The subject has in later years been studied to considerable advantage. In 1801 Heberden wrote: "The cause of so great an alteration in the health of the people of England—for it is not confined to the metropolis—I have no hesitation in attributing to the improvements which have gradually taken place, not only in London but in all the great towns, and in the manner of living throughout the kingdom, particularly in respect to cleanliness and ventilation. Two centuries ago the mortality of London is stated to have been 80 per 1,000; at the present day it is under 20. A century ago ships could barely keep the sea for scurvy, whilst gaols and hospitals were in many cases the hotbeds of fatal disease. Now these conditions are rectified, or at least the means of rectifying them are known."

The special departments which concern the surroundings of man—his personal health, food, drink, clothing, hours of labor, and certain other points, such as the management of infancy, the prevention of disease, the hygiene of the sick chamber, and the disposal of the dead—have been the subjects of legislation during the present century.

State medicine, as an organized department of administration, is entirely of modern growth. The first Act in this

direction was the Towns Improvement Act of 1847; but it was not until the following year, 1848, that a general Public Health Act, embracing the whole of England (except the metropolis), was passed.

The Local Government Board was created in 1871, and finally in 1875 the existing laws were digested into the Public Health Act of 1875 (38 and 39 Vict.).

These Acts were the result of the labor and agitations of many sanitary reformers and associations, such as the Health of Towns Association, the British Association for Improving the Dwellings of the Industrial Classes, which built the first model dwellings.

Such are some of the incidents of the past that have helped to make us what we are. I am deeply sensible of the imperfect and fragmentary sketches I have recorded, but they show, I hope, a record of progress in the physician of today in education, in social status, and in all that goes to make professional life more pleasant. Questions are constantly arising affecting the interests of the profession, and many at this moment require combined as well as personal action. It is the consideration of these matters, in addition to our scientific work, which justifies the existence of the British Medical Association.

In conclusion, may I briefly refer to the growing expense of medical education? It is certainly the most costly of all the learned professions. This is due to the long period of time required for the medical curriculum, and to the multiplication of qualifications, which I regard as a fashionable absurdity. I am not unmindful of the up-to-date requirements of general culture; of an accurate knowledge of anatomy, chemistry, physiology, biology, bacteriology, pathology, physics, optics, mechanics, electricity, and photography, which are all essential to the well-educated physician, they are daily called into requisition in order to diagnose and to direct the eye and hand in the treatment of disease. The necessity for the highest education for this mental training is obvious, and it rests with the General Medical Council to see that this can be obtained without undue restrictions. What I venture to think is wanted is early qualifications, and if the elements of science were more generally taught in school-life that would be easily possible. After obtaining a diploma or license to practice it would be well if the General Medical Council could see their way to institute the requirement of practical experience.

In passing the milestone of life in the year A.D. 1900 I have thought it might be well to take a retrospect of our advance to our present position, and to express the hope that as time goes on our profession may continue to uphold its regard in the estimation and affection of all, and its usefulness may continue unchecked for the advantage of humanity.

Hematomyelia.—Lloyd (*Journal of Nervous and Mental Disease*, February, 1900) reports a case occurring in a negress, 53 years of age, who had fallen down stairs, and immediately was paralyzed. The kneejerks were greatly exaggerated, but there was no ankle-clonus. There was complete paralysis of the bladder and rectum. Sensory disturbances were complete loss of all forms below an irregular line passing around the shoulders just below the clavicles and the spines of the scapulae. Gradually sensation returned, pain being felt in the right leg and left foot, and pain and temperature in the left leg and both arms. There was also recovery of the position sense, and slight tactile sensation in the left foot. A few days later all sensation was again abolished. The patient was very much worse and finally died of pulmonary edema. At the autopsy the cord was macroscopically apparently normal, excepting that in the cervical region there was a small effusion of blood into the central portion. The hemorrhage extended from the fifth to a point above the second cervical segment, and was found chiefly in the anterior portion of the posterior columns. In analyzing this case, it shows that the center of the phrenic nerve was probably involved, although its function was not totally abolished. The sensory symptoms indicate a lesion as high as the third cervical segment. The reflexes, contrary to the usual experience, were increased. In conclusion, Lloyd calls attention to the interesting fact that above the line of sensory disturbance there was hyperidrosis, and below it anidrosis. [J.S.]

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

The Harrisburg Hospital received during the month of July \$1,090.40 in donations.

The death from cholera of United States Consul, W. Irvin Shaw, of Pennsylvania, at Barranquilla, Colombia, has been reported and afterward denied.

Lost in Alaska.—Dr. J. W. Hickman, formerly of Oxford, Pa., mysteriously disappeared in Alaska some time ago. He was hunting, and is supposed to have fallen into a deep blowhole. For the past 12 years he had practised at Tacoma, Wash.

Catarrhal Conjunctivitis is said to be spreading rapidly throughout Philadelphia and threatens to be almost an epidemic. The cause is said to be the fine dust which blows from the asphalt pavements. With the exception of Washington the disease is said to be more prevalent here than in any other city in the country.

Chemicals in the Milk.—The New Jersey State dairy Dairy Association summoned to Court 17 milkmen charged with selling milk that contained formaldehyd to the North Jersey coast resorts. The milk dealers claim that they are not responsible for the introduction of the chemical into the milk, and say that if the formaldehyd was found in the milk it was placed there at the dairy.

The Christian Scientists.—The refusal of Judge Pennypacker, of Philadelphia, to grant a charter for a church of Christian Scientists here, on the ground that the statute law of Pennsylvania to protect the public from illicit medical practices must be upheld, drew the line of cleavage sharp and clear as a woodman's axe. What we want as a next step is a court that will deal with Christian Science "healers" in the same spirit.—[*Philadelphia Times*.]

Vital Statistics of Philadelphia for the week ended August 4, 1900:

Total mortality		439
Disease.	Cases.	Deaths.
Inflammation of appendix 1, bladder 4, brain 15, nerves 1, kidneys 14, heart 1, tonsils 1, lungs 19, peritoneum 4, pleura 2, stomach and bowels 25, spine 2		89
Marasmus 29, debility 4, inanition 21		54
Lungs—tuberculosis of 42, congestion of 1, hemorrhage from 1, edema of 1		46
Cholera infantum 40, morbus 2		42
Heart—disease of 22, fatty degeneration of 2, neuralgia of 1		25
Bright's disease 11, uremia 8, diabetes 1		20
Old age		16
Carcinoma 1, of bladder 1, bowels 1, cecum 1, lips 1, esophagus 1, rectum 1, uterus 1, stomach 5, sarcoma of jaw 1, prostate gland 1, abdominal tumor 1		16
Apoplexy 9, paralysis 4		13
Diphtheria	81	10
Typhoid fever	62	10
Brain—disease of 4, dropsy of 1, congestion of 4		9
Convulsions		8
Pyemia 2, septicemia 4		6
Dysentery 4, diarrhea 2		6
Liver—cirrhosis of 5, disease of 1		6
Casualties		5
Cyanosis		5
Suicide—carbolic acid 3, illuminating gas 1, shooting 1		4
Measles		4
Croup 1, membranous 3		4
Scarlet fever	34	1
Pelvic abscess 1, abortion 1, alcoholism 2, asthma 2, aneurysm of aorta 1, burns and scalds 1, cerebrospinal meningitis 1, pelvic cellulitis 1, drowned 3, dropsy 2, epilepsy 2, erysipelas 1, malaria 1, whooping-cough 1, tetanus 1, tabes mesenterica 2, syphilis 1, stricture of esophagus 1, scrofula 1, rheumatism 1, locomotor ataxia 1, jaundice 2, intussusception 1, hernia 2, hemorrhage from uterus 1, senile gangrene 1.		

Women's Hospital.—The report of the Women's Hospital of Philadelphia, for the month of July, is as follows: Number of patients in hospital July 1, 92; admitted since July 1, 95; discharged, 88; remaining, 89; 1,547 visitors at the clinics, including those of 352 new patients; 2,453 prescriptions filled at the hospital, and 64 operations performed.

Citizens Object to Dredger.—New Jersey's Sewerage Commission received an emphatic protest, August 3, from the citizens of Lyndhurst against a dredger which, under a Government permit, is pumping sand from the Passaic River. "The dredger," said the protest, "is stirring up the bed of the river and disturbing the bed of the river to such an extent that the stench is fearful." A copy of the protest has been sent to the Secretary of War.

The Harrisburg Filter Question.—According to the *Independent* some difference of opinion appears to exist in Harrisburg in regard to the best means of obtaining a pure water-supply. Some are in favor of sand-filtration, while others recommend mechanical or chemical processes. If the water must be taken from a polluted source, filtration is a necessary and, if properly maintained, a salutary process. But experience has taught that if the supply can be brought from a pure source it is safer than to trust to filtration under municipal management. If the city can be supplied with pure mountain water at a cost not exceeding that at which it is now supplied from the Susquehanna why incur the indebtedness of the installation of a filter and its maintenance? It is said that a line of water pipe not over 16 miles in length will bring to Harrisburg a supply of pure soft water sufficient for the needs of 200,000 people.

NEW YORK.

St. John's Guild.—The floating hospitals of St. John's Guild carried in July 31,206 children and mothers, and the seaside hospital gave 9,209 days of treatment.

The Metropolitan Hospital and Dispensary for Women and Children, of New York, has received \$2,000 by the will of the late Dr. Henri Guilbeault of that city.

Elmira Reformatory.—Dr. Frank W. Robertson, formerly of Bellevue Hospital, New York, and for some months senior resident physician of the reformatory, has been appointed acting general superintendent.

Christian Science and Appendicitis.—The County Physician in Newark is investigating the death of Reginald W. Berry, who died of appendicitis, August 1, having refused all medical attendance, and entrusted himself to a Christian Science healer.

Dust from Elevated Cars.—The result of the investigation by the Sanitary Inspector of New York with reference to the cleaning of cars on elevated tracks and rendering life miserable for the residents in the vicinity, is that they are at present cleaned in the railroad yards.

College for Hypnotism.—The American College of Science was incorporated recently at Newark, N. J., with a capital of \$100,000. The incorporators are residents of Rochester. The object of the "college" is "to give instruction in personal magnetism, hypnotism and magnetic healing."

A Prize Essay.—Dr. Adolph Knopf, of New York City, has won the prize of 4,000 marks offered by the Tuberculosis Congress for the best essay on the subject, "How to Fight Tuberculosis as a Disease of the Masses." There were 81 essays offered in competition. The award was made by a committee containing several of the leading German physicians, Count Posadowsky Wehner, and the Duke of Ratibor.

Hospital Against Railway.—The State Railroad Commission in New York, August 2, heard the complaint of the Hudson River State Hospital against the Poughkeepsie and Eastern Railroad Company. The hospital people complain that the freight charges are too high, and that it costs more to get goods from Poughkeepsie to the Hospital than it does in Poughkeepsie to get goods from New York. The chairman indicated that the decision would favor the railroad.

Physician Fined for Fast Driving in Automobile.—Dr. Wallace C. Clark, of New York, was arrested July 30, while answering an emergency call in his automobile. He was fined \$3.00 by the magistrate, who said the law did not allow him to discriminate in favor of physicians.

A Human Ostrich.—With the x-rays, the tenpenny nails and bone checks which Josn Tassel swallowed for 55 cents in a Brooklyn saloon recently have been located. Tassel is now in the Eastern District Hospital, Brooklyn, and as soon as his condition is such that an operation can be performed the nails will be removed.

The Röntgen Society of the United States will meet in New York December 13 and 14, 1900, at the Academy of Medicine. Papers have been promised by eminent men abroad and in the United States, and a successful meeting is apparently assured. There will be offered advantages to the visiting members for instruction in x-ray work that cannot be had under any other conditions.

Tuberculosis Experiments.—The Tuberculosis Committee of the State Board of Health of New York is at present conducting experiments with the milk of a tuberculous cow. This milk is being fed to rabbits, which are also inoculated with it. Besides the rabbits, some guineapigs will be inoculated with the milk, and also with the human tubercle-bacilli, and the result carefully noted.

Albany Medical College.—Dr. Clarkson C. Schuyler, A. M. C., '75, offers a yearly prize of \$100, to be awarded at the annual meeting of the Alumni Association, for the best essay written by a graduate of this college on some prescribed subject. The subject for next year is: "The Influence of the Discovery of the Relation of Bacteria to Disease on the Practice of Medicine Exclusive of Surgery."

Lives with a Broken Neck.—Although the first cervical vertebra and the base of the skull are broken, physicians believe the life of Philip Scheuerman of Fayetteville, N. Y., can be saved. His body is paralyzed, but he is able to take nourishment and retain it. The upper portion of his body, including the neck and head, was placed in a plaster cast, leaving only the face exposed. Tension straps were adjusted to relieve the spinal cord of pressure. The case is similar to the Duryea case in New York, previously mentioned in these columns, in which the fifth cervical vertebra was broken. Walter B. Duryea is at Dansville and is slowly but surely improving in general health.

NEW ENGLAND.

Boston's Cold-Water Fountains.—An appropriation of \$3,000 has recently been made in Boston to buy ice for 30 free cold-water fountains, established in various parts of the town.

Physician Nominated for Governor.—At a meeting of the State Democratic Convention held at Concord, N. H., August 1, Dr. Frederick E. Potter, of Portsmouth, was nominated for Governor.

Patrol Wagons as Ambulances.—According to the *Boston Medical and Surgical Journal* a decided improvement has recently been made in the police service of Boston, by converting patrol wagons into auxiliary ambulances. The wagons are now provided with rubber tires, and the seat so arranged that room may be made for a stretcher if necessary. It is said that new wagons which from this time on shall be added to the department will have dropped axles similar to those on ambulances. At one of the police stations an emergency room, properly equipped, has been fitted up, an example which might well be generally followed. Particularly during the excessive heat of summer are such added conveniences desirable.

CHICAGO AND WESTERN STATES.

Chicago's Drinking-Water.—The recent heavy rains failed to pollute the drinking-water of Chicago. This is due to the current created from the lake by the drainage canal. The only pollution from which the water-supply can now suffer will be caused by the sewage of Evanston and other northern suburbs.

Dr. Harry F. Kneedler, of St. Louis, Major in the Medical Department of the U. S. Army, will sail for China August 16.

Faith-Healers Driven from Mansfield.—On July 31, 4 faith-healers were driven from Mansfield, O., by a howling mob. Two had been previously decorated with blue paint.

Rubbish in Chicago River.—In spite of repeated warnings the wholesale houses along the Chicago river persist in polluting its waters. Orders have been issued by the Harbor Engineer to arrest these parties if the practice is not discontinued.

Isolation Hospital of Chicago.—One case of smallpox remains in the isolation hospital, Chicago, and the patient will leave soon. Then the hospital will be vacant for the first time since October. In June there were 16 cases at the hospital, the largest number in the institution at any one time since the disease became epidemic last fall.

Impure Milk.—Formaldehyd poisoning is said to be the cause of the death of 3 children in the Indianapolis Orphan Asylum. The chemist noted the presence of the poison in the samples of milk secured at the Institution. Physicians say that as a rule a preservative of some kind is being used in the city, and investigations are being made to ascertain just what it is.

Smallpox in California.—In all, 62 cases of smallpox have been reported in California with two deaths. The disease is now under control. Dr. H. H. Look, who was commissioned by the State Board of Health to visit the districts where smallpox had broken out, has fulfilled his mission and now declares that there is immediate necessity for a number of the smaller towns in the State to give attention to the matter of better sanitation.

Cavalry Horses Have Glanders.—Glanders has broken out among the horses at the Presidio, San Francisco. There are about 1,200 horses at the Presidio stables belonging to the various cavalry regiments and awaiting shipment to China on the horse transports. As soon as the presence of glanders was discovered, 8 infected animals were shot. The commanding officer has received orders to spare no efforts or expense in stamping out the disease before it can become epidemic.

Is the Garbage Crematory a Menace to Health?—This is the question to be decided by a Master in Chancery in Chicago. Employes of the crematory testify that the odors are sweet and healthful, while the residents in its vicinity testify that the stench is terrible. Charles B. Gibson, chemical expert, and Professor Haines, of Rush Medical College, said that it might be harmful in 3 ways: first through the direct deleterious action of gases on the human body, second by producing nausea, and third by the nervous shock due to the effect of the stench on the olfactory nerves.

Poisonous Bugs in Mushrooms.—At Harvey, Ill., recently, three members of a family died, supposedly from eating toadstools, but it was shown that they had eaten mushrooms of the finest quality. A mushroom expert testified that in his opinion the poisoning was caused by a small black bug which, he said, he had found recently making its home in the top of mushrooms. Men well versed in entomology said they had heard of such a bug in South America which makes its home in certain plants and causes the death of any animal which eats the foliage. None of them had heard of the insect in this country.

SOUTHERN STATES.

New Orleans Marine Hospital.—Dr. C. P. Wertenbaker, of the United States Marine-Hospital Service, assumed command at the New Orleans Marine Hospital, August 4.

Discharge of Physician Causes Strike.—At Clarksburg, W. Va., August 2, 300 miners went on a strike because the company has discharged the physician whom the miners pay for at \$1.00 a month each, and substituted a stranger of the company's own selection.

Yellow Fever at Tampa.—Two cases of yellow fever are reported at Tampa and the infection is said to be general. Quarantine restrictions are placed on the city until the arrival of the State Health Officer of Florida.

Lightning Causes Paralysis.—While Dr. H. R. Brightbell, of Saxton, Md., was driving July 28, lightning struck a tree at the roadside. He was rendered unconscious and is now in a serious condition from paralysis, the result of the shock.

Women Petition City Council.—The ladies of Salisbury, Md., have requested the City Council to put on a garbage-cart and suppress the hog-pen nuisance. They also demand punishment of the men who expectorate on the pavements of Salisbury.

Physicians Nominated in Delaware.—At a meeting of the Union Republican party of Delaware, held at Dover, August 6, Dr. George W. Marshall, of Milford, was nominated for governor, and Dr. Caleb R. Layton, of Sussex County, for the long term in Congress.

Quarantine Against Central America.—The Louisiana Board of Health on August 2 proclaimed a quarantine of 5 days against all fruit vessels from Central America carrying passengers. A few days ago the Board quarantined against Costa Rica, because of the appearance of yellow fever at Port Limon.

Resignation of Dr. Burch Accepted.—Dr. W. B. Burch, one of the police surgeons of Baltimore, resigned because the Board of Police Examiners refused to recede from its position requiring physical examination of applicants for appointment on the force to be made before the mental examination by the Examiners.

State Law to be Enforced.—Dr. Samuel T. Haffner, health officer for Frederick County, Md., acting under the advice of the State Board of Health, has appointed subregistrars in the various election districts of Frederick County, in order to enforce the law passed by the last legislature in regard to the registration of deaths and births.

Taxing Charities.—The Board of Estimates of Baltimore recently decided to grant no favors to charitable or religious institutions in the matter of permits for minor privileges. As a result there is some dissatisfaction about the price fixed by the Board for permits enabling the Baltimore Orphan Asylum to lay a drain to connect with the city sewer.

District Health Officer Appointed.—Dr. W. C. Woodward has again been appointed health officer of the District of Columbia, the Commissioners have suspended the order issued by the board in 1894, which limited the term of that office to 3 years. In suspending this order the health officer is placed on the same level with the majority of other District officials.

An Epileptic Asylum.—The Special Building Board, appointed by the last legislature of Texas, to decide upon the plans and specifications for the building of the Epileptic Asylum at Abilene, Tex., met July 31 and passed on the plans, and the work of erecting the buildings for the institution will be pushed as rapidly as possible. An appropriation of \$50,000 has been made.

Surgeons Reappointed.—On August 3, Drs. W. Thompson Burch and Frank P. Vale were reappointed members of the Board of Police and Fire Surgeons by the Commissioners of the District of Columbia and in doing so they made the term of office of the surgeons to continue at the pleasure of the Board of Commissioners. The next appointment of consequence is that of Coroner.

Quarantine Against Tampa.—State Health Officer Blunt has instructed the quarantine stations at Galveston and Sabine Pass to place in quarantine all ships entering those ports from Tampa, owing to the presence of yellow fever there. The quarantine will be established on all the rail lines between there and New Orleans if necessary, but for the present the Galveston and Sabine Pass quarantines are considered sufficient.

To Prevent Filthy Gutters.—At the request of Health Commissioner Bosley, Baltimore's policemen are instructed to report filthy or obstructed gutters to the Health Department.

Municipal Hospital Site.—The District of Columbia Commissioners have received, in response to their advertisement for bids for a site for the new Municipal Hospital, offers from more than 50 property holders. The prices ranged from \$175 to \$16,000 an acre. The sum of \$100,000 was appropriated for this purpose by Congress.

MISCELLANY.

India Famine Relief Fund.—John Crosby Brown, treasurer of the Committee of 100 on India Famine Relief, reports that subscriptions up to the present time aggregate \$194,268.66.

Meats for Soldiers in the Orient.—Chicago packers were asked by the United States Government to furnish 2,000,000 pounds of meats within 30 days for the American soldiers in the Orient. This is said to be the largest requisition ever issued by the Government.

Serum-Treatment of Yellow Fever.—Advices from Vera Cruz show that Dr. Bellinzaghi's experiments with yellow fever patients continue to show remarkable results. All new patients treated with the serum are improving, and the black vomit has been stopped.

Famine as a Chinese Factor.—It is said by prominent Chinamen that famine has much to do with the Boxer uprising, and that it is largely the battle of the poor, who have nothing and are starving, against the rich. The hostility to the native Christians is on account of their receiving from the missionaries food and aid, while there is nobody to give to the Chinaman who is not Christianized.

Quarantine Stations in Alaska.—As there is no local quarantine at Cape Nome or Dutch Harbor, Alaska, national quarantine stations have been established for these two ports by the Surgeon-General of the Marine-Hospital Service with regard to incoming vessels. For vessels, cargo or persons leaving these ports for other ports and places in the United States the interstate quarantine regulations will be enforced.

For Segregation of Lepers.—General MacArthur has convened a board consisting of Major Lewis M. Maus, surgeon; Captain George P. Ahren and Captain W. E. Horton, to select an island in the archipelago for the segregation of lepers, to prepare plans and estimates for suitable buildings thereon and estimates of salaries for the necessary officials and employes. The board is also charged with fixing the ration and other allowances for the support of such leper colony. This action was taken in view of the large number of people in the Philippines afflicted with leprosy, who are reported as a menace to public health.

Hospital-Ship "Solace" Sails from Taku to America.—The following telegram has been received: *Solace*, with sick and wounded, proceeded Nagasaki, Yokohama, Guam, Honolulu, and Mare Island; 5 marines and navy officers, 5 army officers, 9 navy men, 19 marines, 65 Ninth Infantry. All men will remain aboard *Solace* unless otherwise recommended by army medical authorities at Nagasaki. Army hospital relief ship *Relief* preparing at Nagasaki for Taku. Japanese hospital ship alternating here at our disposal, if needed. Lieutenant Leonard's condition more favorable; recovery hopeful.

Duration of Life in Various Employments.—From the following statistics given in the *Medical Record* it will appear that average longevity apparently has little to do with employment which is not in itself dangerous. Of the poets, 46 averaged 66 years; 39 painters and sculptors, 66 years; 30 musicians, 62 years; 26 novelists, 63 years; 40 men of letters, 67 years; 22 religious, 66 years; 35 women, 69 years; 18 philosophers, 65 years; 39 historians, 65 years; 58 scientists and inventors 72 years; 14 agitators, 69 years; 48 commanders, 71 years; 112 statesmen, 71 years. A general summary shows that the average duration of life has been about 68 years and 8 months.

Obituary.—CURTIN M. C. ENGLAR, of Baltimore, July 30, aged 27 years.—E. M. ROSENCRANZ, of Chicago, July 30, aged 61 years.—JAMES D. GRAY, of Philadelphia, July 31, aged 42 years.—E. W. NORTONI, of New Cambria, Mo., July 31, aged 70 years.—J. M. JEFFRIES, of Albermarle County, Va.—W. C. LENCE, of Jonesboro, Ill., August 1, aged 55 years.—ELISHA CHENERY, of Boston, August 1, aged 71 years.—F. W. HULSBY, of New Haven, Conn., in Luzon, August 1.—R. H. WHITE, of Pine Bluff, Ark., August 4, aged 51 years.—I. S. MOORE, of Northwood, Ia., August 2.—DAVID S. MILLS, of Pine Bluff, Ark., August 3, aged 71 years.—A. T. HARRIS, of San Francisco, July 26.—P. S. POSTELL, of Iberville, La., August 3.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended August 4, 1900:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
ALASKA:	Cape Nome	July 1	17	
KANSAS:	Wichita	July 21-28	4	
LOUISIANA:	New Orleans	July 21-28	7	4
MASSACHUSETTS:	Lowell	July 21-28	4	
MICHIGAN:	Au Sable Twp.	July 14-21	1	
"	Durano	July 14-21	2	
"	Grand Rapids	July 14-21	2	
"	Hersey	July 14-21	1	
"	Walker Twp.	July 14-21	1	
"	Springwells Twp.	July 14-21	8	
NEW HAMPSHIRE:	Manchester	July 21-28	3	
OHIO:	Cincinnati	July 20-27	1	
"	Cleveland	July 21-28	18	
UTAH:	Salt Lake City	July 21-28	3	

SMALLPOX—FOREIGN AND INSULAR.

AUSTRIA:	Prague	June 30-July 14	8	
BELGIUM:	Antwerp	June 30-July 7	1	
"	Brussels	June 30-July 7	1	1
ENGLAND:	Liverpool	July 7-14	1	1
"	London	July 7-14	17	
FRANCE:	Lyons	June 30-July 7	4	
"	Paris	July 7-14	3	
GERMANY:	Frankfort on the Main	June 23-30	1	1
"	Königsberg	June 30-July 7	1	1
GIBRALTAR:		July 1-15	1	1
GREECE:	Athens	July 7-14	1	4
INDIA:	Bombay	June 26-July 3	3	3
"	Calcutta	June 23-30	27	
"	Karachi	June 24-July 1	3	2
MEXICO:	Vera Cruz	July 14-21	5	
PHILIPPINES:	Manila	June 8-16	1	
RUSSIA:	Moscow	June 23-July 7	12	7
"	Odessa	June 30-July 7	5	1
"	St. Petersburg	June 30-July 14	76	25
SCOTLAND:	Glasgow	July 13-20	52	1
SPAIN:	Madrid	June 2-23	43	
STRAITS SETTLEMENTS:	Singapore	June 2-9	2	2
SWITZERLAND:	Geneva	June 23-30	2	

YELLOW FEVER—UNITED STATES.

FLORIDA:	Hillsboro Co.	Aug. 2	2	
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YELLOW FEVER.

COLOMBIA:	Barranquilla	July 1-14	5	
"	Hocas del Toro	July 26-31	4	1
COSTA RICA:	Port Limon	July 19	1 case	suspicious.
CUBA:	Cienfuegos	July 17	1 case	on transport "Sedgewick."
"	Havana	July 16-23	9	
"	Matanzas	July 26	1 death	in barracks.
"	Santa Clara	July 21	2	
MEXICO:	Vera Cruz	July 14-21	7	
SALVADOR:	San Salvador	June 27	Present.	
VENEZUELA:	Cartegena	June 1-30	16	

CHOLERA.

CHINA:	Hongkong	June 16-23	1	1
INDIA:	Bombay	June 24-July 3	109	
"	Calcutta	June 23-30	55	
"	Madras	June 23-29	1	

PLAGUE.

ENGLAND:	London	Aug. 3	2 on SS. "Rome."	
INDIA:	Bombay	June 26-July 3	49	
"	Calcutta	June 23-30	2	79
"	Karachi	June 24-July 1	2	1
PHILIPPINES:	Manila	June 8-16	6	3
TURKEY:	Beirut	July 2	Present.	

Yellow Fever in Havana.—Surgeon Carter, of the United States Marine-Hospital Service, says there has been a steady and fairly rapid increase in the number of yellow fever cases reported in Havana. He says that no one who has had any experience is willing to make a very definite prognosis as to the spread of yellow fever, especially where those susceptible to the disease form so small a proportion. It seems probable that this season will be one of average severity. On account of yellow fever at the Havana naval station, the Secretary of the Navy has directed that all the marines who can be spared from that station be returned to the United States, although only 35 cases are officially reported in Havana and the mortality from the disease is said to be very low.

Surgeons Assigned to Duty.—Major H. E. Kilbourne, surgeon, has been ordered to Newport News, to make a sanitary inspection of the transport *Buford*, refitting at that place. The following assistant surgeons have been ordered to San Francisco for assignment to duty with troops going on foreign service: Lieven de Poorter, at Cuba; A. W. Dumm, at Columbus, Ohio; J. W. Holland, at Westfield, Mass.; Thomas J. Strong, at Burlington, Vt., and C. C. Whitcomb, at Camden, Me.; Patrick McGrath, at Washington, D. C.; D. W. Overton, at New York City; John Piquard, at Vinita, I. T.; E. F. Slater, at New York City; J. W. Thornton, at Ayreshire, O.; G. M. Van Poole, Salisbury, N. C.; Vernon J. Hooper on the transport *Sedgwick*, and C. B. Mittelstaedt and E. C. Schultze at New York City.

Changes in the Medical Corps of the U. S. Army for the week ended August 4, 1900:

NOUEL, AUGUSTE A., acting assistant surgeon, is assigned for duty to Pinar del Rio Barracks.

STEPHENSON, Major WILLIAM, surgeon, will proceed on the Army transport "Sumner," via Nagasaki, Japan, direct to Tuku, China, and report to Brigade-General Adna R. Chaffee for assignment to duty.

ZAUNER, ROBERT H., acting assistant surgeon, will proceed to his home at Washington, D. C., where he will report by letter to the Surgeon-General of the Army, for annulment of contract.

VAN METER, B. F., acting assistant surgeon, will proceed to his home at Lexington, Ky., where he will report by letter to the Surgeon-General of the Army, for annulment of contract.

READ, W. P., acting assistant surgeon, will proceed to his home at Philadelphia, where he will report by letter to the Surgeon-General of the Army, for annulment of contract.

MITTELSTAEDT, CHARLES B., will proceed to his home in New York City, where he will report by letter to the Surgeon-General of the Army for annulment of contract.

CURRY, JOSEPH J., acting assistant surgeon, is assigned to temporary duty at the U. S. General Hospital, Presidio, awaiting transportation to the Philippine Islands.

BROWN, Major IRA C., surgeon, is granted leave for 1 month, with permission to apply for an extension of 1 month.

STONE, First Lieutenant J. HAMILTON, assistant surgeon, is relieved from duty at Santa Clara Barracks and will proceed from Santa Clara to Matanzas, Cuba, for duty.

BROWN, WILMOT E., acting assistant surgeon, will proceed to Fort Huachuca for duty with troops of the Ninth Cavalry, en route to the Philippine Islands.

NAGLE, JOHN S., acting assistant surgeon, now in St. Paul, Minn., will proceed to Seattle, Wash., and report to the commanding officer First Cavalry, for duty with the troops of that regiment en route for the Philippine Islands.

WALL, FRANCIS M., acting assistant surgeon, will proceed to Wilcox, Ariz., and upon arrival there of troops from Fort Grant, will report to the commanding officer for duty with that command, en route to the Philippine Islands.

STOEKLE, CHARLES H., acting assistant surgeon, will proceed to Holbrook, Ariz., and upon arrival there of troops from Fort Apache, will report to the commanding officer for duty with that command en route to the Philippine Islands.

OWEN, Major WILLIAM O., surgeon, is granted leave for 1 month, to take effect when his services can be spared.

GRUBBS, ROBERT B., acting assistant surgeon, will proceed from Washington, D. C., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

CORBUSIER, Major WILLIAM A., surgeon, is granted leave for 2 months.

WILLIAMSON, First Lieutenant LLEWELLYN P., assistant surgeon, is relieved from further duty in the department of Western Cuba, and will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to China.

USHER, First Lieutenant FRANCIS M. C., assistant surgeon, will proceed from New York City to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to China.

HAYWARD, EDWIN P., acting assistant surgeon, is relieved from duty

at the General Hospital, Presidio, and will report to the commanding general, department of California, for assignment to duty with troops en route to China.

DEAN, GUY S., acting assistant surgeon, will proceed from Kenton, Ohio, to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to the division of the Philippines.

GRIFFIS, FRANK C., acting assistant surgeon, will proceed from Mt. Gilead, Ohio, to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to the division of the Philippines.

ROBERTS, WILLIAM M., acting assistant surgeon, will proceed from Baltimore, Md., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to the division of the Philippines.

TEFFT, WILLIAM H., acting assistant surgeon, will proceed from Belmont, N. Y., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route for the division of the Philippines.

WOODHULL, Lieutenant-Colonel ALFRED A., is granted leave for 8 days from July 20.

KILBOURNE, Major HENRY S., surgeon, medical superintendent, army transport service, will proceed to Newport News, Va., for the purpose of making a sanitary inspection of the transport "Buford," now refitting at that place.

CURRY, JOSEPH J., acting assistant surgeon, granted leave for one month.

POORTER, LIEVEN DE, acting assistant surgeon, granted leave for 15 days from July 30.

POORTER, LIEVEN DE, acting assistant surgeon, is relieved from further duty in the division of Cuba upon the expiration of the leave granted him, and will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops going on foreign service.

DUMM, ALBERT W., acting assistant surgeon, will proceed from Columbus, O., to San Francisco, Cal., and report to the commanding general, department of Cal., for assignment to duty with troops en route to the division of the Philippines.

HOLLAND, JAMES W., acting assistant surgeon, will proceed from Westfield, Mass., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to the division of the Philippines.

STRONG, THOMAS J., acting assistant surgeon, will proceed from Burlington, Vt., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to the division of the Philippines.

WHITCOMB, CLEMENT C., acting assistant surgeon, will proceed from Camden, Me., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to the division of the Philippines.

HARVEY, Major PHILIP F., surgeon, leave is extended 7 days.

GIBSON, Major ROBERT J., surgeon, now on leave, will proceed to Washington, D. C., and report to the Surgeon-General of the Army for further instructions.

CORBUSIER, Major WM. H., surgeon, upon expiration of the leave granted him, July 27, will proceed to Fort Columbus for duty.

WINN, Major WM. B., is relieved from further duty in the department of Western Cuba, and will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

BAKER, First Lieutenant DAVID, assistant surgeon, is relieved from further duty in the department of Western Cuba, and will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

LAWRENCE, W. P., acting assistant surgeon, is granted leave for 1 month.

SHELBY, W. D., acting assistant surgeon, is granted leave for one month.

ALEXANDER, JAMES A., acting assistant surgeon, is relieved from duty in the division of Cuba, and will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

ESCOBAR, JULIUS A., acting assistant surgeon, is relieved from duty in the division of Cuba, and will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

McLAUCHLIN, WHARTON B., acting assistant surgeon, is relieved from duty in the division of Cuba, and will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

JACKSON, THOMAS W., acting assistant surgeon, is granted leave for 15 days, with permission to apply for an extension of 15 days and permission to go beyond sea.

DAVIS, OSCAR F., acting assistant surgeon, will proceed from Bloomington, Ind., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

FEENEY, JOHN M., acting assistant surgeon, will proceed from Huntsville, Ala., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

HELLER, JOSEPH M., acting assistant surgeon, now in Washington,

D. C., will proceed to Fort Columbus for duty, to relieve Acting Assistant Surgeon W. Edson Apple.

BROWER, THOMAS E., hospital steward, now on furlough at Fort Columbus, is relieved from further duty in the department of Puerto Rico, and will report for temporary duty at Fort Columbus.

BROWN, Major IRA C., surgeon, is relieve from duty at present station and will report on the transport "Hancock," scheduled to leave June 15 to San Francisco, Cal., for duty thereon while en route, reporting for duty to the commanding general, department of California, for instructions to return to the Philippines.

CURRY, JOSEPH J., acting assistant surgeon, is relieved from duty at present station, and will report on the transport "Hancock," scheduled to leave June 15, to San Francisco, Cal., for duty thereon while en route, reporting to the commanding general, department of California, for instructions to return to the Philippines.

READ, WM. P., acting assistant surgeon, is relieved from duty at present station, and will report on the transport "Hancock," scheduled to leave June 15, to San Francisco, Cal., for duty thereon while en route, reporting to the commanding general, department of California, for annulment of contract.

VAN METER, BENJAMIN F., acting assistant surgeon, is relieved from duty at present station, and will report on the transport "Hancock," scheduled to leave June 15, to San Francisco, Cal., for duty thereon while en route, reporting to the commanding general, department of California, for annulment of contract.

ZAUNER, ROBERT H., acting assistant surgeon, is relieved from duty at present station, and will report on the transport "Hancock," for duty thereon while en route, reporting to the commanding general, department of California, for annulment of contract.

MITTELSTAEDT, CHARLES B., acting assistant surgeon, is relieved from duty at present station, and will report on the transport "Hancock," scheduled to leave June 15, to San Francisco, for duty thereon while en route, reporting to the commanding general, department of California, for annulment of contract.

PENROSE, Major GEORGE H., surgeon, is granted leave for 1 month on surgeon's certificate, with permission to visit Japan.

TURRILL, Major HENRY S., surgeon, will proceed to Iloilo Panay, reporting to the commanding general, department of the Visayas, for duty as chief surgeon of that department, relieving Major Louis W. Crampton, surgeon, who will proceed to Manila for instructions.

BANISTER, Major WILLIAM B., surgeon, is relieved from duty at his present station and will report to the commanding officer, Ninth Infantry, at the Exposition Barracks, Malate, Manila, P. I., for duty with that regiment on the expedition to Taku, China.

MARROW, First Lieutenant CHARLES E., assistant surgeon, is relieved from duty at his present station and will report to the commanding officer, Ninth Infantry, at the Exposition Barracks, Malate, Manila, P. I., for duty with that regiment on the expedition to Taku, China.

CALHOUN, WILLIAM W., assistant surgeon, is relieved from duty at his present station and will report to the commanding officer, Ninth Infantry, at the Exposition Barracks, Malate, Manila, P. I., for duty with that regiment on the expedition to Taku, China.

BARNEY, FRED. M., assistant surgeon, is relieved from duty at his present station and will report to the commanding officer, Ninth Infantry, at the Exposition Barracks, Malate, Manila, P. I., for duty with that regiment on the expedition to Taku, China.

IVES, Major FRANCIS J., surgeon, will proceed from New York City to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to China.

CARTER, HENRY R., Jr., acting assistant surgeon, now at Vancouver Barracks, is assigned to duty temporarily at that place.

TRUAX, J. P., acting assistant surgeon, is granted leave for 2 months.

HOOPER, VERNON J., acting assistant surgeon, now at New York City, is relieved from further duty on the transport "Sedgwick" and will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

MCGRATH, PATRICK, acting assistant surgeon, will proceed from Washington, D. C., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

OVERTON, DAVID W., acting assistant surgeon, will proceed from New York City to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

PINQUARD, JOSEPH, acting assistant surgeon, will proceed from Vinita, Ind. Ter., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

SLATER, ERNEST F., acting assistant surgeon, will proceed from New York City to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

THORNTON, JAMES W., acting assistant surgeon, will proceed from Ayrshire, Iowa, to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

VAN POOLE, GIDEON M., acting assistant surgeon, will proceed from Salisbury, N. C., to San Francisco, Cal., and report to the com-

manding general, department of California, for assignment to duty with troops destined for foreign service.

MITTELSTAEDT, CHARLES B., acting assistant surgeon, will proceed from New York City to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to China.

SCHULTZE, ERNEST C., acting assistant surgeon, will proceed from New York City to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to China.

O'REILLY, Lieutenant-Colonel ROBERT M., deputy surgeon, is relieved from the command of Josiah Simpson U. S. General Hospital Fort Monroe, and will turn over the quartermaster's property for which he is responsible to Major Wm. J. White, quartermaster, and dispose of the property of the medical department under instructions from the Surgeon-General of the Army.

The following changes in the stations and duties of officers are ordered: Major ROBERT J. GIBSON, surgeon, is relieved from further temporary duty at San Francisco, Cal., and will proceed to that city and report to the commanding general, department of California, for assignment to duty as attending surgeon and medical superintendent of the Army transport service in that city, to relieve Major WILLIAM H. ARTHUR, surgeon. Major Arthur will proceed to Taku, China, and report to Major-General Adna R. Chaffee, commanding the United States forces in China, for assignment to duty.

Changes in the Medical Corps of the U. S. Navy, for the week ended August 4, 1900:

WOODS, G. F., medical director, detached from the Naval Hospital, New York, August 18, and ordered home and to wait orders.

BABIN, H. J., medical director, ordered to duty in charge of the naval hospital, New York, August 18.

VON WEDEKIND, L. L., passed assistant surgeon, detached from the "Indiana," and ordered to the naval hospital, Chelsea, Mass., for treatment.

ELMER, N. E., assistant surgeon, ordered to the Boston Navy Yard. August 1.

GORDON, F. T., pharmacist, warranted pharmacist from July 28, 1900.

RICHARDS, T. W., passed assistant surgeon, detached from the "Natchias," when put out of commission, and ordered to the "Indiana."

DELANCY, C. N., assistant surgeon, ordered to additional duty at the naval hospital, Newport, R. I.

STUART, A., assistant surgeon, detached from the "Yankton" and ordered to temporary duty on the tug "Fortune" at the New York Navy Yard. August 4.

Changes in the U. S. Marine-Hospital Service, for the week ended August 2, 1900:

WHITE, J. H., surgeon, to proceed to Mullet Key Detention Camp, Florida, as inspector. July 27.

WILLIAMS, L. L., surgeon, to proceed to Stapleton, N. Y., as inspector of unserviceable property. July 31.

SMITH, A. C., passed assistant surgeon, leave of absence granted by Bureau letter of June 30, revoked July 27.

WICKES, H. W., passed assistant surgeon, Bureau letter of June 26, granting leave of absence for 15 day, amended so that said leave shall be for 4 days only. August 1.

GREENE, J. B., passed assistant surgeon, granted leave of absence for 23 days. August 1.

MATHEWSON, H. S., assistant surgeon, granted leave of absence for 1 month from September 5. August 1.

WALKLEY, W. S., acting assistant surgeon, granted leave of absence for 2 days. August 2.

RYDER, L. W., hospital steward, granted leave of absence for 15 days from August 1. July 30.

Tuberculous Infection.—Edward R. Baldwin (*Yale Medical Journal*, March, 1900) discusses the means of infection by tubercle-bacilli, and how the dangers may be lessened. Direct transmission of the germ from mother to fetus has been conclusively shown, but is believed to be rare. The germ cannot develop except in susceptible soil,—this is transmitted. About one-half of all persons afflicted with tuberculosis have tuberculous relatives. Long exposure, such as living with persons afflicted with tuberculosis, appears to be responsible for fewer infections than is commonly thought,—especially when the ordinary precautions are taken. The most common means for conveying the germ are handkerchiefs, sputum, soiled hands, beard, and mustache, contamination of food by coughing. But the germ appears to be ubiquitous, and the proper treatment looks to the proper power of resistance of the individual. Spitting in public places should be prohibited. Mouth-breathing should be corrected. Handkerchiefs should be made of cheap material, never washed, but destroyed. [M.B.T.]

Foreign News and Notes.

GREAT BRITAIN.

Bristol Lunatic Asylum.—The new wing of the Bristol Lunatic Asylum is now completed. It consists of 4 wards, which will provide accommodation for 150 female patients, and also rooms for the nursing staff. A small hospital for infectious diseases, fitted with 6 beds, 3 for each sex, has also been added. The institution will now afford accommodations for about 1,000 patients. The estimated cost of the new building is £45,000.

University of Birmingham.—Sir James Chance has given £50,000 to the endowment fund. Lord Calthorpe and his son gave land which is valued at £20,000. The new university has been fortunate in the friendship of those who have made large donations. Mr. Andrew Carnegie gave £50,000, and an anonymous donor a similar sum. The total amount promised in land and money reaches about £400,000, of which amount one-half has been furnished by six donors.

Plague in London.—The Marine-Hospital Service has received the following dispatch from Past Assistant Surgeon Thomas: "There have been 4 cases of plague and two deaths from plague in London. Diagnosis confirmed by bacteriologic examination." Health Officer A. H. Doty, of New York, received the following cable from Dr. Murphy, of the City Council, at London, in relation to the existence of bubonic plague: "None in London. Two occurred last in native crew from East, in hospital mouth of Thames."

Results of Antityphoid Inoculation.—The Director-General of the Army Medical Department is reported to have stated that the results of inoculation for typhoid fever, while it afforded some protection against contracting the disease, rather increased the risk of death when contracted, but that this only applied to the men, as both the incidence and case mortality among officers appeared to be increased by inoculation. Recent statistics of Professor Wright, of Netley, show that both attacks and deaths from typhoid fever were 7 times less in the inoculated than in the uninoculated. It is not known whether this applied equally to officers and men separately.

The Extinction of Rabies.—It appears that the Board of Agriculture, of Manchester, has now no muzzling orders in force. In 1895 as many as 672 cases of rabies were reported, but they have gradually decreased till last year when there were 9. The county of Lancaster suffered specially, having nearly a fifth of the total number of outbreaks. There were only 5 cases in 1898 and none since, so that we may hope to have done with the disease unless there is reimportation. The restrictions as to the movements of dogs into and out of the country seem, in some cases, unnecessary, but it is as well to err on the side of caution and safety even at the cost of occasional private inconvenience and annoyance.

The Cork and Kerry District Lunatic Asylums.—In the Cork Asylum there are 1,496 inmates, which is 239 over the standard limit; while in the Killarney Asylum there is still a small margin of accommodation available, as the number of patients was 526 and the number for which there is accommodation is 683. In his report the resident medical superintendent of the Cork Asylum makes the following instructive observations on the causes of insanity: "A further explanation for the steady increase in numbers must, I think, be set down to heredity. In many of my annual reports for the past 25 years I have laid stress on this fact, but some things cannot be said too often, and as the composition of asylum boards has within the last year so materially changed I think no harm can be done by again referring to the matter. Emigration tends to remove the fittest, those best able to withstand the battle of life, from our midst, leaving at home the delicate, the neurotic, and many liable to transmit to posterity the seeds of disease; the result is that at least 35% of cases of insanity in this country are directly traceable to heredity."—[*Lancet*.]

Belper Isolation Hospital.—At a meeting of the committee of the Belper Union Isolation Hospital representative of the contributing districts, some very extraordinary statements were made with regard to the management. The hospital was opened for the reception of patients in March, 1899. It is stated that the medical superintendent resigned in November and that the new superintendent then appointed resigned after a short period. Another medical superintendent was then appointed, and the meeting to which we have referred had before it a letter from him making various complaints as to the general administration of the hospital by the matron; among other allegations made by him is that a dress worn by the housemaid was sent by the matron to be repaired by a convalescent patient, and that the dress was given back to the housemaid without disinfection, and that at the time the letter was written this girl had come under treatment for the disease. Letters of complaint were also read from nurses employed in the hospital, one of whom stated that she had to employ a ball syringe for giving nutrient enemias for syringing the throat also. Medical men will recognize that these statements are of a serious character, and will hope that the matron will be able to give some satisfactory explanations at the adjourned meeting of the committee.

Centenary of the Royal College of Surgeons of England.—The proceedings in connection with the Centenary Festival of the Royal College of Surgeons of England began July 25. Prof. C. Stewart gave demonstrations to the Fellows, members and guests in the museum of the college, and at the same hour Dr. T. G. Brodie gave lantern demonstrations at Examination Hall, in illustration of the work done under his supervision as director of the laboratories of the Corjoint Board. The August Council meeting of the college was held in the afternoon, the president, Sir William MacCormac being in the chair. Dr. Frederic Shepherd Dennis was introduced and after signing the by-laws and making the required declaration was admitted a Fellow of the College. The president stated that the vacancy in the Board of Examiners in Dental Surgery caused by the death of Mr. Storer Bennett, July 19, would be filled up at the quarterly Council meeting in October. The Council appointed Mr. H. G. Howse and Mr. A. Pearce Gould to represent the college on the Senate. Professor Pachoutine, president of the Imperial Military Academy of Medicine of St. Petersburg, presented to the Council an address of congratulation on the centenary of the College. Addresses of congratulations were also received from Professor Sklifosovsky on behalf of the Imperial Clinical Institute of the Grand Duchess Helena Pavlovna, from the Royal College of Physicians of London, and from the Royal Institute of Public Health. In the evening a conversazione was held at the College when the English surgical and scientific world was well represented. On the morning of July 26, Professor Stewart and Dr. Brodie continued their work of demonstrating and in the afternoon Sir William MacCormac delivered the address of welcome. Among other things he said that "a knowledge of the history of our art and science tends to make us juster judges both of our own work and that of others. When we search the history of the development of scientific truth we learn that no new fact or achievement ever stands by itself, no new discovery ever leaps forth in perfect panoply as did Minerva, from the brow of Jove. Absolute originality does not exist, and a new discovery is largely the product of what has gone before. Again and again we may read in words of some half-forgotten worthy the outlines of an idea which has shown forth in later days as an acknowledged truth. We see numerous instances of this in the history of surgery. Some fellow-worker in years long past has discovered a new fact or indicated the path leading to a fresh truth. It is forgotten, and a century later something nearly the same, or mayhap a little better, is discovered afresh. The psychologic moment has arrived, and the discoverer reaps the reward not only of his own labors but of those of his predecessors as well. The countless trials and experiments which ended in the general use of ether and chloroform in surgery—that trebly blessed discovery of a sure relief from pain—were guided by the experience of previous trials, half successful, half failures. Science knows no narrow national boundary. It is the common property of us all. We desire to sympathize with our fellow-workers

abroad and to appreciate their work, as we trust and believe that they appreciate ours. In this address I have ventured to urge that we are much beholden to those who have gone before. In but a few years all who are now present will also belong to the past. Let us hope that, as we have not altogether forgotten those who preceded us, we, too, may be remembered a little by those who are to follow."

CONTINENTAL EUROPE.

Canned Meat for Troops.—Consul Pitcairn, at Hamburg, Germany, writes as follows to the State Department: "The Government authorities at Kiel are compelled to buy canned meats whose import was to be excluded on account of alleged impurities dangerous to the health of consumers, at a high price in foreign countries, because of the inability of Germany to supply home demands. In consequence of this exclusion the provisioning of troops for China has been greatly interfered with."

Light-Therapy in Russia.—The Dowager Empress of Russia, who, like her sister the Princess of Wales, takes the greatest interest in Professor Finsen's method of treating lupus by means of light, has founded an institute in St. Petersburg on the lines of the one in Copenhagen. Dr. Sarapin, a Russian physician, who at the instance of the Empress, has studied the method under Professor Finsen, is placed in medical charge of the new institute, and a Danish lady has been engaged as superintendent.

Dr. Tez's typhoid extract has been tried at the University Hospital, Zürich, in 8 cases, which were chosen among the worst cases in the first or second week of the disease. After injections they rapidly improved and were free from fever within 4 days. In one other severe case which had lasted 3 weeks and in which the temperature ran up to from 103° to 105° F. continuously the injections of this serum were successful in 7 days, an ensuing relapse being also treated successfully. No deleterious effects were observed.

Tuberculin Injection for Diagnostic Purposes.—Though not an advocate of tuberculin injections for therapeutic purposes Professor Eichhorst, of Zürich, strongly recommends them to secure diagnosis in doubtful cases with pulmonary and other symptoms. The injection of one milligram of Koch's old tuberculin must be followed by a feverish reaction to secure a positive diagnosis of tuberculosis. Should no reaction follow, 3 and eventually 5 milligrams may be injected at intervals of from 2 to 3 days. A case of morbus Addisonii and a case of pseudoleukemia were thus diagnosed as based on tuberculosis.—[*Lancet*.]

Sanatorium for Tuberculous Patients.—The first annual report for 1899 of the Canton of Zürich's Sanatorium for Consumptives in Switzerland offers several points of interest. This sanatorium is situated at Wald at an altitude of 907 meters. The heliograph marked in the 4 winter months 465 hours of sunshine. There are 88 beds, of which an average of 72 were continually occupied. 319 patients were admitted and remained an average of 104 days, 36.4% belonging to the first stage (Dr. Turbin's scale), 26.3 to the second stage, and 37.3 to the third stage. Out of 76 patients in the first stage 48 were cured and 22 were eminently better. Of those in the second stage (55) none were cured and 35 were eminently better. Of those in the third stage (78) only 13 were eminently improved. These statistics go far to prove that only cases in the first and also the beginning of the second stage promise good results.—[*Lancet*.]

The First International Congress on Medical Ethics or Deontology.—In the Palace of Congresses, Paris, July 23, more than 200 medical men, coming from all parts of the world, met to inaugurate the first international congress of medical men who have gathered together solely for the purpose of discussing how to organize the profession so as to take an active part in the economic struggles of the day. Dr. Lereboullet, President of the Congress, expressed his thanks to all who in France and abroad had helped to render the Congress not only possible, but successful and representative. He pointed out that the time was propitious, for the questions at issue had now reached the domain of practical politics. He denounced quacks, the sale of secret

medicines, and unprofessional advertising, as contributing, as well as the societies that organize contract-work, to degrade the profession morally and to lower the incomes physicians might legitimately hope to earn. All these evils could only be met by the organization of strong medical unions for the purpose of defence and of educating the profession to a knowledge of its economic position. Honorary presidents were then selected from each nationality, and the general secretary, Dr. Jules Glover, gave a short account of the origin and scope of the Congress. On July 24, the first paper presented was written by Dr. Cuylits, of Brussels, on the **Relations of medical men with benefit societies**. In Belgium there were 556 benefit societies in 1895, and in 1899 they had increased to 2,928. He estimates that out of the 6,670,000 persons that constitute the population of Belgium, 3,000,000 receive medical aid in some way or other, and do not pay the usual medical fees. He says the evil is rapidly increasing and insists that organization can only be met by counter-organization. In the afternoon, Dr. Schwalbe, of Berlin, opened the discussion on the **Conditions of practice enjoyed by medical men in other than their own country**. Some States, notably Denmark, were very hard on foreign practitioners. Great Britain was very lenient. **Hospital abuse** was the subject of a paper by Dr. Paul Thiéry, of Paris. He claims that the evil—namely the use of hospitals by those who can afford to pay fees—is rapidly increasing. Physicians are frequently to blame, for they readily give letters of recommendation for treatment at a hospital to patients who should be independent. On July 25, Dr. Descourt, of Paris, read a paper on the **Illegal practice of medicine**. He considers that in Paris alone from 15,000 to 20,000 consultations are given daily by others than qualified practitioners. In regard to the **Formation of medical unions** a most encouraging report was presented by Dr. Ernest Jendrassik, of Budapest. The final paper was given by Dr. Grasset, of Montpellier University, in which he explained what is meant by the term "deontology."

The First International Congress of the Medical Press.—The inauguration ceremony of the Congress took place July 26, 1900, in the Press building at the Exposition, with M. Milleraud, the Minister of Commerce, in the chair. About 300 representatives of the medical press of the world, particularly of Europe, were present, among whom could be seen Posner, of Berlin; Ceccherelli, of Parma; La Lorre, of Rome; Petersen, of St. Petersburg; Tijace, of Liege, and the editors-in-chief of the *Lancet* and of the *British Medical Journal*. At half-past two Professor Virchow, of Berlin, took his seat together with Drs. Cornil, Richet, Le Dentu, Garel, and Lucas-Championnière, and Dr. Bonnafy, Surgeon General of the Navy. The President, Dr. Cornil, welcomed Professor Virchow and all the members and delegates of the Congress in an address in which he traced the history of the progress of medicine. The Minister of Commerce then welcomed the guests on the part of the city of Paris, and Professor Landouzy did the same for the Faculty of Medicine. Professor Virchow spoke a few words in French, in which, with a voice full of emotion, he congratulated the Association of the French Medical Press for its idea of organizing an International Congress of the Medical Press, and said that he was particularly happy about the event, because almost 60 years ago he had initiated an International Scientific Association of the same kind. Dr. Blondel reviewed the work of the Organizing Commission of the Congress, and M. Victor Mennier welcomed the members of the Congress on the part of the entire French press. The officers were then elected as follows: President, Prof. Cornil; vice-presidents, M. Bichet and M. Lucas-Championnière; secretary-general, Dr. Blondel; treasurer, Dr. Cézilly. The honorary presidents are: MM. Virchow, of Berlin; Posner, of Berlin; Fraenkel, of Vienna; Spatz, of Munich; Love, of St. Louis; Matthews, of Louisville; Vonesco, of Bucharest; Volin, of Stockholm; Hansson, of Christiania; Valledos, of Madrid; Baccelli, of Rome; Bossi, of Gênes; Ceccherelli, of Parma; Gallet, of Brussels; Podwyssowski, of Kief; Ehlers, of Copenhagen; Tigerslidt, of Stockholm; Sprigge, of London. The honorary vice-presidents are: MM. Landouzy, of Paris; Bourneville, of Paris; De Mauraeas, of Paris. The secretaries are: For England and the United States, MM. Smith and Fassett, of St. Louis; for Italy, MM. André Ceccherelli and Landi; for France, Drs. Romme and Regnier; for Germany, Drs. Rick

The Latest Literature.

British Medical Journal.

July 21, 1900. [No. 2064.]

1. Our Numbers and Our Work at the Close of the Century. GEORGE EASTES.
2. The Ethics of Secrecy in the Learned Professions. CHARLES R. STRATTON.
3. Thirty-five Years' Retrospect in the Profession, Including Some Experiences, Chiefly Surgical. T. A. BUCK.
4. The Preliminary Education of Medical Students. PAUL Q. KARKEEK.
5. Some Medical Questions of the Day. MILNER MOORE.
6. The Alleged Increase in Insanity. REGINALD H. NOOTT.
7. The Future of the Profession and of the Association. SYDNEY WILSON MACILWAINE.
8. Observations on the Organization of the Branches of the British Medical Association. W. GORDON.

3.—Buck gives a general idea of the **progress which surgery has made** in the past 35 years. In his student days "laudable pus" was the delight of the surgeon, and while healing by first intention was sometimes seen, especially in wounds about the face, it was exceedingly rare. When occurring about the head or face it was attributed to abundant blood-supply. The hemostatic forceps was unknown. All ligatures were left with long ends lying without the wound. All wounds were dressed wet and covered with oiled silk. Patients, as a rule, were not bathed. The only anesthetic used was chloroform, and no instruction was given concerning its administration. He speaks of his association with and memory of John Hilton, and his advice to students to let no opportunity to examine a rectum pass unused. The author never uses the ligature nor cautery, but rather the clamp, in operations for hemorrhoids. He does not introduce sutures in recent lacerations of the perineum, but prefers to keep the patient's legs approximated for 2 or 3 weeks, keeping the bowels loose, and irrigating the vagina daily. He feels greatly indebted to 3 men whom he never saw, Lister, Tait, and Gamgee. Lister was practically the father of aseptic and antiseptic surgery, and he was ever ready to adopt any improvement on his own methods. Tait taught us abdominal surgery, and Gamgee taught us the value of dry, absorbent dressings. The author believes in making abdominal incisions sufficiently large, and in irrigating the abdominal cavity. He speaks of the wonderful improvement often following the simple opening of the abdominal cavity of those suffering from tubercular peritonitis. He advocates intravenous injections of saline fluids, not only to combat shock, but any condition of diminished intravascular pressure. The after-treatment of abdominal operations is discussed. He prefers to give no food by the mouth for 24 hours or longer, but an enema of beef tea every 6 hours; no morphia unless absolutely necessary to relieve pain. His favorite aperient is calomel $\frac{1}{10}$ grain every quarter of an hour. [A.B.C.]

Lancet.

July 21, 1900. [Vol. 2, No. 3.]

1. Malaria and the Malarial Parasite. PATRICK MANSON.
2. Modern Methods of Amputation at the Hip-joint, with a Table of 15 Cases. THOMAS F. CHAVASSE.
3. On Rupture of the Apparently Healthy Esophagus. E. J. MCWEENEY.
4. A Case of Pernicious Anemia Following on Traumatic Stricture of the Small Intestine. ARTHUR E. BARKER and WILLIAM HUNTER.
5. A Case of Ulcerative Endocarditis, with Recovery Under the Use of Antistreptococcic Serum. J. MICHELL CLARKE.
6. The Varieties of Acute Pneumonia. HENRY HANDFORD.
7. Rodent Cancer of the Cornea; Operation; Recovery with Retention of Good Sight. SYDNEY STEPHENSON.
8. Four Cases of Puerperal Eclampsia. T. B. BROADWAY.
9. A Case of Supernumerary Testis. G. R. TURNER.
10. Four Cases of Chorea Treated with Large Doses of Arsenic. A. H. CARTER.

1.—Manson's second lecture on **malaria and the malarial parasite** deals principally with the morbid anatomy and the diagnosis of the disease. The pronounced and rapidly evolved anemia of malaria is due to the very large number of parasites found in the central circulation. The organism is not normally found, except in very small numbers, in the peripheral circulation. The periodicity of the disease may be explained, (1) by the habit of the parasite to live a more or less definite number of hours; and (2) by the diurnal rhythm in the periodicity of the physiologic processes of the human body. Pernicious attacks of malaria have been rather neglected by English writers, but are more thoroughly treated by the French. The most common type of pernicious malaria is the form known as pernicious comatose malaria, which resembles apoplexy; a second form bears a close resemblance to sunstroke, and is characterized by hyperpyrexia. Children in tropical countries frequently have epileptic seizures as the first indication of malaria. In adults, on the other hand, aphasia has been noted as a primary symptom. These attacks are due to the fact that the capillaries in the brain are crowded with malarial parasites. In some districts malaria presents the clinical picture of cholera. A practitioner in a tropical country ought always to suspect that any sudden and inexplicable attack, such as blackwater fever, may be malarial in origin. On the other hand, he should not conclude that every case of tropical disease that cannot be diagnosed positively is malarial in origin. Certain physicians in temperate climates seem to think that everyone who has passed through the Suez Canal, who has visited Rome, or who has lived in a tropical country is the subject of malarial infection. There are 3 pathognomonic tests for malaria, (1) a periodicity of 48 or 72 hours; (2) the effect of quinin properly administered, and (3) the discovery of the parasite in the blood. A periodicity of 24 hours in a syndrome cannot be depended upon in the diagnosis of malaria, since there are so many other conditions that present a quotidian periodicity. When there is an idiosyncrasy against quinin, methylene-blue may be given in doses of 3 or 5 grains 3 or 4 times a day. [J.M.S.]

2.—Chavasse presented a patient, aged 27, who had had **both legs removed at the hip-joint**. She had suffered from tuberculous caries of the tarsal bones of the right foot and in October, 1895, Symes' amputation at the ankle-joint was done; tuberculous osteitis occurred later at the end of the tibia, and in October, 1896, Smith's amputation was done at the knee-joint. The last stump never properly healed but became the seat of another tuberculous deposit and on May 29, 1897, Chavasse removed the femur at the hip joint; healing was extremely protracted and it was 6 months before the stump was sound. In April, 1899, she came for treatment, the left foot and ankle being very edematous and signs of fluctuation being obtained on the outer side of the ankle-joint; a large tuberculous ulcer had existed for 3 months on the lower third of the leg, the knee-joint presented the usual symptoms of tuberculous disease. The left leg was removed at the hip-joint and healing was again protracted but eventuated favorably. Chavasse has used only 2 methods of operating. In the first, anterior and posterior skin-flaps were shaped from without inward and the muscles and vessels divided high up, as close as possible to the pelvic bones, by circular incision. He considers this theoretically the best method in case of malignant neoplasm, although it undoubtedly increases somewhat the shock, while the high division of the muscles necessitates direct compression of the aorta. He has had great success whenever he has used it. The second method is known as the external racket operation, a combination of the vertical and circular incisions. This he has employed in most of his operations, varying the incisions slightly to meet the necessities of the individual case. Of the 15 operations performed on 14 patients 11 of the operations were successful and 4 patients died, a mortality of 26.6%. These cases were taken just as they occurred in practice without selection of patients. In 3 out of the 4 fatalities he thinks that deferring of the operation too long was the factor that caused the fatal issue; he quotes the figures of Estes and Wyeth with a mortality respectively of 14.2% and 12.3%, and thinks that with the improved modern technic in suitable cases there is no longer any excuse for procrastination and that surgeons are justified in urging operation when previously they merely recommended it. In early operation there is every prospect that the imme-

diate mortality will, in future, be greatly reduced even below Wyeth's figures. [M.B.T.]

3.—McWeeney reports the case of a man of 40, who complained of pain in the lower part of the chest, swelling of the neck, cyanosis, dyspnea, and collapse. The swelling of the neck was extensive, extended to the face and chest, and was due to subcutaneous emphysema. The man was of alcoholic habits and had been drunk nearly every night for 20 years. He used to vomit every morning and was much given to dry retching. On the evening before his death he had eaten tinned salmon, and the next morning had retched more than usual. He went to his customary work, but his neck became swollen, and on that account and because of the chest-pain and dyspnea he went home and to the hospital. At the necropsy a linear rupture of the esophagus nearly 1.5 cm. long was found on the anterior surface of the esophagus, just above the diaphragm. The epithelium in the neighborhood of the rupture was fairly well preserved; the subepithelial tissue was much damaged and had lost its staining power; the muscular coat was quite thick and well developed; the fibrous coat was necrotic, where it had come in contact with the extravasated fluids, and presented numerous bacterial forms. McWeeney has collected 16 other cases of **rupture of the apparently healthy esophagus** from the literature, which he has arranged in tabular form. He concludes that the factors causing the condition are: (1) Softening of the coats of the esophagus; and (2) sudden increase of pressure from within. The softening is partly due to intravital digestion, and partly to inflammatory infiltration. The intravital digestion may be accounted for by a circulatory disturbance, or by the retention of peptic matters in the gullet from prolonged retching. The increased pressure from within is due to the violent propulsion of the gastric contents into the lower part of the esophagus, while its upper outlet is obstructed by the contracted muscle. [J.M.S.]

4.—The authors report the case of a man of 28, a lawyer, who had been run over by a loaded wagon 7 years before. Two of the wheels passed over the thorax breaking 5 ribs and splintering a sixth; this was followed by an illness of 14 weeks' duration after which the patient began to complain of extreme weakness and anemia with periodic attacks of pain and vomiting. The attacks occurred at intervals of a week or a month and lasted from 7 to 14 days. They were accompanied by fever and sometimes by diarrhea. The blood-count showed 2,000,000 red blood-corpuscles, 54,000 leukocytes, and 30% hemoglobin. The urine examination was of negative value and a subsequent blood-count showed red corpuscles 1,000,000, 1 leukocyte to 450 reds, and 20% hemoglobin. Megalocytes and microcytes were present, but no nucleated reds were seen. An operation was decided upon for the relief of an obstructed bowel. There was a slight **stricture of the small bowel** just below the transverse colon with a kink in the small intestine. The patient died after the operation. At autopsy the transverse colon was found to be adherent to the small intestine and the structure was found to be due to the contraction of an ulcer produced by the crushing of the mucous membrane where the cart wheel had pressed the intestine against the vertebrae. The serous coat of the duodenum had been crushed and healed and the upper extremity of the right kidney had been crushed and replaced by fibrous tissue. The ethmoidal air-cells were full of pus and all these factors combined to cause the **pernicious anemia**. There were characteristic pigment changes with large excess of iron in the liver and kidneys and intensely deep color of bile, denoting excessive hemolysis. The teeth were badly decayed and there were pus sacs at the roots of many of them. [J.M.S.]

5.—Clarke reports the case of a woman, of 22, who had had an attack of muscular rheumatism at the age of 18, followed by left-sided pleuritis with effusion. The patient complained of weakness, dyspnea, precordial pain, and edema of the ankles. During the period of treatment for these symptoms she had a sudden chill and her temperature rose to 103°. The temperature remained high for 4 days and then fell to normal, where it remained for about a week, when it again rose and prevailed over a very irregular course for 9 days. The heart presented a systolic apex murmur, a loud systolic murmur in the pulmonary area, and a faint diastolic murmur at the right base. Bacteriologic examination of blood taken from the median basilic vein gave negative results. A diagnosis of **acute ulcerative endo-**

carditis was made and **treatment with antistreptococcic serum** was instituted. Injections were given from December 31, 1899, to February 9, 1900, sometimes every day, at other times every other day, and once there was an interval of 5 days between 2 injections. The doses varied from 10 cc. to 20 cc.; usually 15 cc. was given. The patient recovered, and the cardiac examination showed the apex in the fifth interspace, in the nipple line, and a loud, blowing systolic murmur heard all over the precordium and in the back, but loudest in the aortic area. [J.M.S.]

6.—Handford speaks of the **varieties** in the symptoms and physical signs and varieties in causation of **acute pneumonia**. A puzzling symptom in lobar pneumonia that is rare is a low temperature. A case is reported in which the highest temperature recorded was 100.5°. Among the varieties in causation may be mentioned infection with the pneumococcus, *Bacillus pestis*, the typhoid bacillus, and the influenza-bacillus. A series of 6 cases in one family is recorded in which the pneumonia appeared to be of the influenzal type, and to be transmitted from one to the other. [J.M.S.]

7.—Stephenson reports a case of **rodent cancer of the cornea** in which he operated, burning the ulcer with the galvanocautery under cocain-anesthesia. Extreme care was used not to interfere with the clear cornea that lay in front of the pupil. Some edema and ecchymosis of the eyelids followed, as well as marked redness of the globe. Nine weeks after operation the lower half of the ulcer had cicatrized in a smooth and satisfactory way, but the remainder was roughened, uneven, and permeated by fine vessels. The operation was repeated, the galvanocautery being freely applied to the roughened portions of the cornea. The ulcer had completely healed 4½ months later, and with presbyopic correction the patient could read slowly the smallest type on Jaeger's test-card. To judge from the refraction, the operation had slightly altered the curvature of the affected cornea. [M.B.T.]

8.—Broadway reports 4 cases of **puerperal eclampsia** which present some points of interest. Case 1 was remarkable for the high temperature, 106.2° F., and the length of time this persisted, although there was no septic cause for it. He was called to see the patient, a strong, healthy woman of 19, the fifth day after delivery, the convulsions having begun on the third. He found her lying in a comatose condition with dilated pupils, temperature 106.2°, and pulse 140. He gave a hypodermic injection of 2 grains of pilocarpin nitrate, an enema of 1 ounce of magnesium sulfate, and 1 dram of potassium bromid, and ordered her kept on milk and soda-water, feeding her every half hour. There was no recurrence of the convulsions, though she remained unconscious several days until her temperature was reduced to 102.4°, when she became conscious and ultimately recovered. Case 3 began with convulsions the second day after delivery, but these soon yielded to a treatment similar to Case 1. In Cases 2 and 4 the convulsions accompanied or preceded delivery, and were relieved after an instrumental delivery. [W.K.]

9.—Turner reports the case of a child aged 3½ admitted for an irreducible swelling on the right side of the scrotum resembling a hernia above a hydrocele. On operation a cyst was found containing no gut and not connected with the peritoneal cavity, below it were 2 testicles. The upper one had a normal tunica-vaginalis and a distinct cord of its own and the lower and larger one was in the usual position of the testis with the sac of the tunica-vaginalis the seat of hydrocele; the left testis appeared normal. The case is of interest from the fact that the possibility of a **third testis** has been denied until very recently. [M.B.T.]

10.—Carter reports 4 cases of **chorea**, 3 of which occurred in girls, aged 13, 6, and 7 years respectively, and the fourth in a married woman, aged 25. The patients were given 15 minims of solution of arsenic three times a day until vomiting occurred, when the dose was reduced. During the administration of the drug the patients were kept in bed and on a good diet. Eighteen days was the average residence in the hospital of the 4 cases reported. [J.M.S.]

New York Medical Journal.

August 4, 1900. [Vol. lxxii, No. 5]

1. The Treatment of Metacarpal Fracture. CARL BECK.
2. The Present State of the Galvano-Cautic Operation of Bottini for Ischuria. GRANVILLE MACGOWAN.

3. Appendicitis: When to Operate. J. H. CARSTENS.
4. Hysteria: Its Nature and Etiology. CHARLES LEWIS MIX.
5. Vulvovaginitis in Children. HERMAN B. SHEFFIELD.
6. A Case of Enlargement of the Liver and Spleen Succeeding Chronic Catarrhal Cholangitis. STANLEY S. CORNELL.
7. Glandular Complications of Acute Follicular and Acute Suppurative Amygdalitis when Accompanied with Grip. WENDELL C. PHILLIPS.

1.—Beck says, **fracture of the metacarpal bones** is of much more frequent occurrence than was commonly supposed, now that we have the Röntgen-rays to examine them carefully. Many of the cases which were once thought to be dislocations are now shown to be fractures. In regard to treatment he says, if the immobilizing dressing is perfect, the formerly displaced fragments must be found in exact apposition, when skiagraphed through the dressing. Various experiments showed us that the metacarpal fragments are invariably held in place by elastic pressure. For this purpose two rubber drainage-tubes of moderate size are chosen, which are lightly pressed into the adjoining interosseous spaces, so that they fill them up to a certain extent. They are kept *in situ* by adhesive-plaster strips. Thus the recurrence of the displacement is prohibited. The whole is surrounded then by a moss splint, a material which, after being dipped in cold water, adapts itself to the contours of the hand like a plaster-of-paris splint, over which it possesses the great advantage of being absorbent and much lighter. It frequently takes longer for these bones to unite than is commonly supposed. The dressing should never be left off until the skiagraph shows there is complete union. [A.B.C.]

2.—See PHILADELPHIA MEDICAL JOURNAL, Vol. VI, No. 3, p. 104.

3.—Carstens says **appendicitis** is of more frequent occurrence than was formerly supposed. In all abdominal troubles we should look to the appendix as a possible source of trouble. Most cases of appendicitis are easily diagnosed but a few rare cases present difficulties. Beginning typhoid fever, ovarian or tubal trouble, cholera morbus, gallstones, extrauterine pregnancy, movable kidney, hysteria, etc., may all present symptoms simulating appendicitis, but ordinarily there should be no trouble in excluding any of them. The fever and pulse in appendicitis vary so much that we are often deceived in our prognosis, but the diagnosis we should certainly make. When the infection is limited to *Bacillus coli communis* the temperature is low. With mixed infection, that is, with staphylococcus, and streptococcus the fever is high and the pulse rapid. If we bear in mind that in most cases the patient first complains of pain in the region of the stomach with more or less nausea, and has a high temperature, but notice that, as often happens in such cases, the pain in the region of the stomach and the nausea subside within 24 hours, and that the only soreness complained of is in the region of the appendix (always assuming that opium has not been given), then we shall not make a mistake very often in diagnosing appendicitis. **Operate** when the diagnosis is made except (a) when the environments are bad; (b) when no experienced operator or proper facilities are at hand, and (c) in mild first attacks. [A.B.C.]

4.—In a very good paper on the **nature and etiology of hysteria**, Mix locates the seat of disturbance in the cerebral cortex. The manifestations are always functional in character and may be (1) deadening of sensory excitability of the cerebral cortex resulting in hypesthesia, anesthesia, hypalgesia, or analgesia; or a deadening of the cortical motor discharge, resulting in paresis or paralysis. (2) There may be an intensification of the perception manifested by hyperalgesia and hyperesthesia; or an intensification of the energy of the motor discharge, resulting in spasms and convulsions, often reflex in character. (3) There may be confusional interpretation of entering impulses, manifested by paresthesia; or confusion in the motor discharge, resulting in hysteria, ataxia and contractures due to imperfect distribution of motor impulses to groups of opposing muscles. The author assumes that hysteria has beneath it, as an underlying nervous defect, a perversion or confusion of the normal relationships of the neurosis. In the diagnosis of the condition it should be remembered that

every case of nervous disease should be approached with 3 ideas: that it may be functional; that it may be organic; that it may be a combination of both. One's first duty is to look for signs that cannot be functional, but that must be organic. The development of hysteria is, as a rule, gradual. The causes of the disease are predisposing and exciting. Of the predisposing causes heredity plays the most important part. Race is closely connected to heredity; the worst cases of the disease are found in the Latin races, in the Slavs, and in the Jews. Hysteria usually appears at about the age of puberty. The majority of hysterical patients are females, although the disease is common in men. Protracted and exhausting constitutional diseases predispose toward hysteria by weakening nervous control, so that a slight exciting cause may suffice for a hysterical outbreak. Diseases of the sexual organs are probably only of slight importance as exciting causes. Faulty education and home training is a last and very important predisposing cause. The exciting causes are psychical trauma, physical trauma, suggestion, and various toxemias, such as alcoholism, lead-poisoning, etc. Psychic trauma, physical trauma, and toxemias are merely special methods by which the one great exciting cause, suggestion, operates. [J.M.S.]

5.—Sheffield classifies **vulvovaginitis in children** as follows: A. Catarrhal vulvovaginitis, that may be due to (1) want of cleanliness, (2) to chemic irritation. B. Traumatic vulvovaginitis, that may be due to (1) masturbation (?), (2) mechanic injury, (3) indecent violence. C. Parasitic vulvovaginitis, that may be due to (1) oxyurides, (2) saprophytes, and (3) pathogenic microorganisms, especially the gonococcus. The author believes that it is much more probable that masturbation is a result rather than a cause of the disease, since there must be an irritated state of the erectile tissue with the inflammation of the other parts of the genitalia. In the treatment of the condition the author uses protargol solution as the safest remedy. In gonorrheal vulvovaginitis he uses a 2% solution; in other forms a 1% solution. The child is placed in the dorsal posture and the legs are spread wide apart. The exuding pus is wiped away with absorbent cotton and then a 5% solution of sodium bicarbonate is injected, $\frac{1}{2}$ ounce at a time, until the accumulated pus is removed. This is to be followed by the injection of $\frac{1}{2}$ ounce or 1 ounce of the protargol solution, which is to be retained for about 5 minutes. This process is to be repeated from 3 to 5 times in 24 hours. When the urethra is infected, the following formula is made into 12 crayons, each of which should be 2 inches long and $\frac{1}{8}$ inch in circumference: 12 grains each of protargol and iodoform, 6 drops of Peruvian balsam, 1 grain of extract of belladonna, and a sufficient quantity of cacao butter. One of these crayons may be introduced into the urethra once or twice a day. One of these crayons may be placed in the vagina at bedtime. [J.M.S.]

6.—Cornwell reports the case of a girl, aged 20 years, who had a syphilitic family history, and whose mother had died at the age of 60 years, of "jaundice." The patient complained of sudden pain in the back in June, 1899, which began in the sacrolumbar region and radiated through the abdomen toward the stomach. Since then the pain has returned at intervals of 1, 2, or 3 days. The first attack of pain was followed by jaundice, and the menstruation ceased. The attacks of pain have been accompanied by chilly feelings, followed by fever, and sometimes by sweats. The liver and the spleen were enlarged; the patient was deeply jaundiced and much wasted; she vomited solid food; she was constipated; and after alternate periods of improvement and relapse, she died. There was no autopsy. The case is diagnosed **enlargement of the liver and spleen succeeding chronic catarrhal cholangitis**. [J.M.S.]

7.—Phillips has found **simple inflammatory and suppurative involvement of the lymph-nodes very common as sequels of tonsillar affections of an influenzal character**. The author believes that absorption from the infected tonsils through the lymph-vessels was the cause of the condition. The disease has involved both the superficial and the deep cervical lymph-nodes. In one case, in which a bacteriologic examination of the pus from a suppurating lesion was made, streptococci were present. The cases on which the paper is based have seemed to be more severe than usual. [J.M.S.]

Medical Record.

August 4, 1900. [Vol. 58, No. 5.]

1. Cancer of the Stomach and Intestines. B. FARQUHAR CURTIS.
2. Hydrotherapy in Pneumonia. SIMON BARUCH.
3. The Use of Hypnotism in General Practice. E. H. MARTIN.
4. Some Points Bearing on the Medical Treatment of Appendicitis. CHARLES ROSEWATER.

1.—Curtis limits his paper to the consideration of **cancer of the stomach and intestines**, omitting the rectum. The mere size of the tumor in cancer of the stomach is not an indication of such extensive involvement of the glands or of such extensive adhesions as to forbid operation; tumors of the stomach may reach a large size and involve a large part of the organ without very extensive adhesions and without extensive infection of the glands. The modern technic enables removal of portions of the colon, of the liver, and even of the pancreas in these operations without serious increase of risk; some of the longest surviving cases after operation had secondary involvement of other organs. Enlarged glands may not be carcinomatous and even when the glands are infected with carcinoma a wide removal may be successful. Each case should be judged on its own merits, just as is done in cancer of the breast and other organs. The majority of the patients who died from recurrence after **pylorectomy**, not only enjoyed a period of freedom from the symptoms, but lost strength gradually, dying with less suffering than those who have not been operated upon. The chances of cure by operation depend upon early diagnosis. When a tumor is present it may be discovered accidentally before any stomach symptoms have developed, but it is often impossible to determine the real condition of affairs without opening the peritoneal cavity and examining the contents. Unfortunately a very large proportion of cases of cancer of the stomach present no palpable tumor on physical examination, at best only showing dilation of the organ and late symptoms; chemical examination of the stomach contents, although not absolutely reliable, is more valuable as a means of diagnosis. The indications for operation in cases of septic malignant disease are the presence of tumor, dilation of stomach, obstructive vomiting, marked mechanical changes in gastric contents, hematemesis, and severe gastric pain. Cancer is very often preceded by a chronic ulcer of the stomach, or develops directly upon the base of such ulcer. It is only with the development of modern methods of diagnosis and of modern surgical treatment of benign lesions of the stomach that the coexistence of a beginning carcinoma was discoverable. The clinical history in many cases will show that a grave lesion of the stomach must have preceded the cancer by years; many cases of chronic ulcer run a latent course, giving no sign until pyloric stenosis develops. Curtis cites 3 cases in his own practice in which the symptoms previous to operation proved the prior existence of ulcer. **Gastroenterostomy** will have little or no effect in relieving pain when this is the prominent symptom of the cancer for the reason that pain seldom originates in the stomach itself, but is generally due to the pressure of enlarged retroperitoneal glands on the nerves. Malignant tumors of the intestines are quite rare with the exception of those of the rectum; the sarcomas are often more frequent in the small intestines than in the large, but are so rare as to be of little surgical importance; primary carcinoma of the small intestine is also rare, the most frequent situations for these tumors being the sigmoid flexure, the splenic flexure and the ileocecal valve. Tumors of considerable size are likely to be of colloid material. The annular tumor contains a large proportion of fibrous tissue and the intestinal wall involved is contracted. The epithelial growth is very slow, the annular lesion often not extending an inch; even when symptoms of constriction have been present for a year or more the glandular involvement is equally slow. As in small tumors of the stomach the symptoms are largely, sometimes entirely, the result of mechanical obstruction, an early diagnosis of carcinoma of the intestine is seldom made and often late operations may effect a permanent cure or greatly prolong life. The mortality of **resection of the intestine** is serious but is constantly being reduced and in simple cases should not exceed that of pylorectomy. **Resection of the cecum** gives the best results. When the obstruction of the bowel is

complete, or nearly so, and the patient is in poor condition, the only proper method of treatment is to relieve the obstruction by the formation of an artificial anus, leaving the treatment of the tumor to a later period. **Intestinal anastomosis** is suitable for many cases of tumors of the intestine which can not be removed, but it should not be undertaken in the face of an acute intestinal obstruction; in the face of such obstruction the intestinal wall above is likely to be in bad condition, the point of anastomosis is likely to be near the diseased part of the bowel and in many cases it becomes involved in the disease later. [M.B.T.]

2.—Baruch considers the **indications in pneumonia** to be (1) strengthening the heart, (2) fortifying the nervous system, (3) elimination of toxins, and (4) reduction of temperature, deepening of inspiration, and the production of sleep. He uses hydrotherapy in the form of wet compresses about the chest in adults; as a full bath (at 95°–80° F.) or cold effusions (70°–60° F.) in the bronchopneumonias of children. He insists that mild cold is a stimulant, not a depressant, and produces general stimulation and especially arteriolar contraction, thus lessening the work of the heart. The compresses are made of three folds of old linen wrung out of water at 60° F. or as high as 95° F. if the fever be high and if there be much excitement. Chilling and cyanosis should always be avoided. The use of ice water internally (about 4 fluidounces at 45° F. every 2 hours) materially increases the secretion of urine. Cold is not a curative agent but fulfils the indications. [D.L.E.]

3.—Martin somewhat enthusiastically recommends **hypnotism** as being superior to drugs in a series of conditions which are exemplified by insomnia, the nausea and pressure pains of pregnancy, and "wrenched back." He also considers that it is a very helpful adjuvant to drugs and other treatment even in such grave acute diseases as pneumonia. He wisely says, however, that it should be used only when one thinks that the case demands it. [D.L.E.]

4.—Rosewater thinks that much can be done for **appendicitis without the aid of a surgeon**. The conditions in the special case must be well studied, but when the physician or patient decide against operation he recommends a calomel purge, followed by a mild saline, and a large colonic injection of salt-solution, unless there is danger of rupturing an abscess. HCl should be applied locally and opium should be avoided. The diet should be nonirritating even for months after an attack. Matting of the bowels and other organs may be to some extent avoided by the use of ammonium iodid and copious draughts of hot water. [D.L.E.]

Medical News.

August 4, 1900. [Vol. lxxvii, No. 5.]

1. The Treatment of Summer Diarrhea in Infants. CHARLES GILMORE KERLEY.
2. On Methods of Closure of Abdominal Incisions. MAURICE H. RICHARDSON.
3. The Consumptive in Los Angeles. WM. H. DUKEMAN.
4. The Evolution of the Modern Physician. WILLIAM ALFRED ELLISTON.
5. The Surgeon in the Nineteenth Century. FREDERICK TREVES.

1.—Kerley gives a brief description of the various types of **summer diarrheas**. He has found as a result of autopsies made upon 226 children dying of this condition that the lesions correspond to the duration of the illness. In the most acute toxic cases the gross alterations are slight. In the prolonged cases there is considerable ulceration. Treatment consists of elimination and diet. The former is secured by calomel in divided doses, or castor oil. In some cases the movements are infrequent, not more than 3 or 4 times per day, but are exceedingly offensive and contain large quantities of mucus. These cases require the most active purgation. The diet should be modified as soon as the symptoms appear. Milk should be stopped at once, no matter in what form it is given. If there is vomiting, the stomach should be washed and then later a little water administered. If this is not retained lavage must be employed. The foods used are barley water or flour water (two teaspoonfuls of either to a pint of water, boiled twenty minutes, and strained. At 100° F. a diastatic preparation is added). When the child recovers and milk is again given it should be modified and

not too strong. Other drugs that are useful are bismuth subnitrate and opium. The former is given in doses of 12 to 20 grains per hour. Opium is never given excepting in those cases when the movements are very frequent and when there is fever and prostration. Irrigation should be employed in cases in which the stools are infrequent and in cases where there is blood or mucus. About a pint is all that is required and to it may be added a little boracic acid or normal salt. General hygiene should be carefully observed, the clothing should be comfortable, and the child kept as cool as possible. [J.S.]

2.—Richardson, in discussing the relative advantages of layer sutures and the through-and-through sutures for **closing abdominal sections**, says dead spaces are unavoidable with the layer method. These dead spaces provide a place for fluids to accumulate and hence infection and hematomas are much more likely to occur. This method, however, possesses the theoretical advantage of accurately approximating the several layers of the abdominal wall. The author, however, is of opinion that the clinical facts do not prove that a firmer cicatrix is formed by this method of suturing than by the through-and-through method. He prefers a combination of the two methods. First the through-and-through sutures are passed through the abdominal wall and the edges of the wound brought near to each other, the suture ends being held by the assistant. Now as many rows of the layer sutures as desired—usually one or two—are placed, bring the wound edges together. Later the ends of the through-and-through sutures are tied. He believes this method combines all the advantages of both methods. Non-absorbable suture-material is used, silk for buried sutures and silkwormgut or silver wire for external wounds. The non-absorbable suture-material adds mechanical strength to the closed wound while the cicatricial tissue is forming and contracting. The plan of threading the suture from each end and passing the needle from within outward is preferred, because of a lessened liability to stitch-abscesses. The few cases of suppurating wounds the author has had have most all been the result of the layer-suture method necessarily employed in radical cure for inguinal hernia. Ventral hernias through cicatricial tissue are very rare, and are due more to indiscretions on the part of the patient than to any method of suturing. For three months following an abdominal incision the patient should engage in very little exercise that puts a strain on the abdominal muscles. [A.B.C.]

3.—Dukemann calls attention to the **great error** that many **consumptives make** in going to Los Angeles where they are obliged to occupy small, ill-ventilated rooms and to engage in very confining occupations in the town. He thinks their presence is a great detriment to the regular citizens. He gives some general advice, the most important of which is that all patients should live in the country, should endeavor to get well, take much exercise, and observe the ordinary precautions of those suffering from a contagious disease. He considers the serum treatment the least valuable of all the therapeutic measures suggested for consumption. [J.S.]

4.—See PHILADELPHIA MEDICAL JOURNAL, Vol. VI, p. 226.

5.—See PHILADELPHIA MEDICAL JOURNAL, Vol. VI, p. 183.

Boston Medical and Surgical Journal.

August 2, 1900. [Vol. cxliii, No. 5]

1. Asphalt Pavements; Their Nature and Desirability. CLIFFORD RICHARDSON.
2. The Transportation of Disease by Dust. HAROLD C. ERNST.
3. Effects of Dust Upon the Lungs. VINCENT Y. BOWDITCH.
4. The Effects of Dust on the Upper Respiratory Tract. SAMUEL W. LANGMAID.
5. Recurrent Luxation of the Ulnar Nerve. F. J. COTTON.

1.—Richardson, in an article read before the Boston Society for Medical Improvement, gives a concise and clear history of the employment of **asphalt for paving**, together with a description of the sources of supply and the nature of the substance itself. He believes that the ordinary lake asphalt, such as that found in the island of Trinidad, unquestionably the best for paving purposes, and that the mixture of sand renders it equally satisfactory for a foothold for horses as any other form of pavement. He describes the

method of laying the pavement in 3 parts, the base, the binder, and the asphalt surface, the second being designed to prevent the latter from sliding. It has the following advantages over other pavements: Its surface offers the least resistance to traction consistent with a good foothold for horses; it is impervious to moisture; it offers no irregularities for retaining dust; produces practically no detritus itself; it is easily cleaned and is as noiseless as possible. The first cost is considerable, but as it is usually guaranteed for five years, it in the end is probably the cheapest form of pavement. Another marked advantage is the readiness with which it may be repaired. It sustains the heaviest traffic, increases the value of property, and in comparative studies has shown that less dust can be collected from asphalt surfaces than from any other. It diminishes the number of repairs required by vehicles. The amount of saving in this respect for the City of Philadelphia is \$100,000,000 per annum (?). It apparently reduces the death-rate very considerably, does not prevent the escape of illuminating gas from leaking drains, and in all respects is at present the most desirable form of paving. [J.S.]

2.—Ernst has studied dust. He quotes the work of Germano, who studied in relation to it the typhoid and diphtheria bacilli and the streptococcus and pneumococcus, besides a number of others. All of these showed that most of the **bacteria** could not resist prolonged drying, and Coolidge therefore concludes that it is the irritant particles in the air that are most dangerous. [J.S.]

3.—Bowditch calls attention to the extremely dirty condition of Boston due to the **filthiness of its streets**. He has collected a twenty-pound butter firkin full of various kinds of filth from his own doorstep in the course of 4 hours. [J.S.]

4.—Langmaid calls attention to the fact that after a high windstorm which creates a dusty atmosphere, an **epidemic of sore-throat** is very common. He believes that the quantity of dust depends largely upon the nature of the pavement. Other mucous membranes are also likely to be irritated. [J.S.]

5.—Cotton details 3 cases of **recurrent luxation of the ulnar nerve**, saying that this condition, although it has been definitely described, is not often mentioned, perhaps not always recognized. The first was in a woman of 25, who fell, striking her elbow; she had much pain on the inner side of the elbow on motion and a thick cord was felt lying in front of the internal condyle; on extension this cord slipped back upon the epitrochlea to the normal position of the ulnar nerve, and the nerve in luxation came forward well in front of the epicondyle. The arm was put in a splint at an obtuse angle and a pad placed over the internal condyle to guard against luxation of the nerve. Four months later she could use the arm nearly as well as ever and complained only of occasional pains in the hand. The nerve still slips out of its normal place when the elbow is flexed, but slips only inward to the tip of the epicondyle, not in front of it. The second case was in a girl of 11, following a fall upon the elbow; the ulnar nerve slipped out of place, with flexion of the elbow when an angle of 60° of upper arm and forearm was reached, moving inward and forward a little anterior to the internal epicondyle; the nerve-trunk was not obviously thickened. The arm was put up in an internal angular splint at a right angle. There was gradual improvement until an approximately normal condition was reached, except that the subluxation still occurred in flexion. The third case, also the result of a fall, occurred in a boy of 10, and was really only a subluxation. The patient did not return after the first examination. Cotton is of the opinion that the nerve-symptoms, not the lesion in itself, should first be considered in deciding between conservative and operative treatment aimed at the reformation of the groove to contain the nerve. [M.B.T.]

Journal American Medical Association.

August 4, 1900. [Vol. xxxv, No. 5.]

1. The Angiotribe in Abdominal Surgery. HUGH M. TAYLOR.
2. Improved Technic in Major and Minor Surgery of the Female Generative Organs. HENRY PARKER NEWMAN.
3. Myomectomy per Vaginam. J. RIDDLE GOFFE.
4. Myofibroma Uteri. HERMANN J. BOLDT.

5. Arrhythmia Cordis Complicating Fibromata Uteri. J. WESLEY BOVEE.
6. The Value of this Section's Work and How to Advance It. Address of Chairman. EDWIN ROSENTHAL.
7. Four Cases of Malaria Associated with Acute Abdominal Pain. JOSEPH A. CAPPS.
8. Some Incidents in the Evolution of the Modern Physician. WILLIAM ALFRED ELLISTON.
9. The Surgery of the Nineteenth Century. FREDERICK TREVES.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1277.

2.— " " " " " " "

3.—Goffe believes in the superiority of the **vaginal** method over the **abdominal** method for **myomectomy** and enumerated the following advantages: The dangers are less; convalescence is smoother and simpler, the patient being relieved of the annoyance of stitches, adhesive plaster, bandages and dressings; there is no visible scar, and above all there is no danger of hernia. The question arises: What shall be the upper limit to the size of fibroids that can be dealt with in this way? Experience and facility of operation on the part of the operator can alone determine this question, although the location of the tumor plays a large part in its solution. Three cases are reported in which this operation was performed with excellent results. [M.B.T.]

4.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1277.

5.— " " " " " " " "
6.— " " " " " " " " 1281.

7.—Carps reports 4 cases of malaria associated with

7.—Capps reports 4 cases of malaria associated with severe abdominal pain. In all these cases there were intermittent fever, nausea, and vomiting and enlargement of the spleen. There was acute abdominal pain of such intensity that exploratory laparotomy was considered by men of experience. The acute pain subsided along with the fever and with the other symptoms after the administration of quinin. Typical intracellular forms of the tertian parasite of malaria with motile pigment granules were present in the peripheral blood, but were never very numerous. Leukocytosis was invariably absent. A considerable degree of anemia existed of the secondary type. The cause of the abdominal pain was not at first apparent. The explanation does not lie in the vomiting and straining of the abdominal muscles, for the pain often preceded and outlasted vomiting, and was also present independently. In two cases local lesions were found that might have caused some pain, but not of such acute character. Moreover, a lighting up of old pelvic cellulitis or salpingitis sufficient to cause an acute attack of pain, fever and gastrointestinal disturbance would always produce a leukocytosis, while these cases had counts of 5,800 and 5,000, respectively, which are even lower than normally. The chronic disease may be considered in the role of a predisposing condition, rendering the part peculiarly susceptible to the malarial poison. The most rational supposition is that the pain is a neuralgia caused by the malaria toxin in the blood. [M.B.T.]

8.—See PHILADELPHIA MEDICAL JOURNAL, Vol. VI, p. 226.

9. " " " " Vol. VI, p. 183.

American Journal of the Medical Sciences.

March, 1900. [Vol. cxix, No. 3.]

1. Gangrenous Dermatitis Complicating Typhoid Fever. B. FRANKLIN STAHL.
2. Conclusions Based on Sixty Cases of Fatal Gastrointestinal Hemorrhage Due to Cirrhosis of the Liver. R. B. PREBLE.
3. The Histology and Histological Diagnosis of Adenomyomata of the Uterus. JOHN COCKE HIRST.
4. A Case of Traumatic Varix of the Orbit in which Ligation of the Left Common Carotid Artery was Successfully Performed. CHARLES A. OLIVER.
5. The Ehrlich Diazo Reaction. JAMES R. ARNEILL.
6. A Case of Tricuspid and Mitral Stenosis with Adherent Pericardium. T. L. CHADBOURNE.
7. A Critical Summary of the Literature on Retroperitoneal Sarcoma. J. DUTTON STEELE.

1.—Stahl reports 10 cases of typhoid fever complicated by **gangrenous dermatitis**. Illustrations from photographs accompany a description of the cases. All the patients were young men who went out as soldiers in the Spanish war.

The author speaks of the failure of most textbooks to discuss this complication of typhoid fever. Bacteriologic examinations from unbroken vesicles and from ulcers showed the staphylococcus albus and aureus; indifferent bacteria, cocci and diplococci, were found in cultures from an ulcer. That the disease is inoculable was proved by the fact that it was contracted by a nurse who brought a swab, which had been used in cleansing the gangrenous patches, in contact with her hand where the skin was broken. In Stahl's cases the gangrenous patches appeared on the trunk, face, arms, thighs, and in 2 instances on the scrotum. The extremities were attacked in but one instance. The treatment consisted of cleansing the necrotic areas and applying acetanilid and bovine. Internally they were given whisky, strychnin and iron. Of the 10 patients 3 died. Two autopsies were held. The oval shape of several of the areas, the development of phlegmasia in some cases, the postmortem finding of ecchymotic areas in the stomach, infarcts in both lungs, in one instance, and in the left kidney of one case—all suggest that the disease is of thrombotic or embolic origin. A history of each of the 10 cases is given in detail. This complication in typhoid fever appears to be very rare. [C.A.O.]

2.—Preble has collected a total of 60 cases of **fatal gastrointestinal hemorrhage** due to cirrhosis of the liver. These include all the cases which could be found in literature, including only those cases in which the hemorrhage—either as a hematemesis or a melena—was the immediate cause of death, and in which the diagnosis was confirmed by postmortem examination. His conclusions are as follows:

1. Fatal gastrointestinal hemorrhage is an infrequent but not rare complication of cirrhosis of the liver.
2. In the great majority of the cases the cirrhosis is atrophic, but it may be hypertrophic.
3. In $\frac{1}{3}$ of the cases the first hemorrhage is fatal; in the other $\frac{2}{3}$ the hemorrhages continue at intervals over a period varying from a few months to several years, the maximum given being 11 years.
4. In $\frac{1}{3}$ of the cases the diagnosis can be made at or before the time of the first hemorrhage. In the other cases the diagnosis cannot be made at all or only after months or years, during which time other symptoms of cirrhosis may have developed.
5. Esophageal varices are present in 80% of the cases, and in more than half of this 80% the varices show macroscopic ruptures, and it is probable many other ruptures would be found if the varices were tested by injections of air or fluid.
6. Fatal hemorrhages occur in cases which show no esophageal varices, and they are probably due to the simultaneous rupture of many capillaries of the gastrointestinal mucous membrane.
7. The hemorrhages in this class of cases are usually preceded by other symptoms of cirrhosis, but the first symptom may be a fatal hemorrhage.
8. In 6% only of the cases which showed esophageal varices was the cirrhosis typical, *i. e.*, showed ascites, enlarged spleen, and subcutaneous abdominal varices. [C.A.O.]

3.—Hirst, in a valuable article, discussing the **adenomas of the uterus**, gives the following conclusions: 1. In the uterus of an adult were found embryonal, epithelial inclusions from the mucous membrane of the uterine body (Müller's duct), situated in the peripheral, subserous layer of the myometrium. 2. Isolated glands and cysts, included in the uterine wall, and originating from the mucous membrane, are provided with a cystogenic tissue-sheath, but not invariably. 3. The cystogenic tissue is found accompanying remains of the Wolffian body *only* when adenomatous proliferation is present in them, and this applies both when it occurs at the normal site of the paroöphoron, and in transposed portions of it. 4. Adenomas, with glands and cysts *in scattered arrangement*, are to be considered as from the mucous membrane as soon as they are provided with cystogenic tissue-sheaths around the glands. 5. The epithelial ducts in the uterine and tubal wall, which have heretofore been characterized as aberrant canals from the Wolffian body, have not been proved as such, and are of uncharacteristic anatomic structure. For this diagnosis we must have specific figures of the paroöphoron or connection with Gaertner's duct. 6. We have shown that the formation of subserous adenomyomas from these incorporated glands of the uterine mucous membrane is possible. [C.A.O.]

4.—Oliver reports the case of a man of 27, who was struck or kicked on the left eye. On the third day the eyelids became much swollen, and on the fourth the eyeball became prominent. There was a constant buzzing and some pain in

the temporal and auditory region. The upper lid was much swollen and edematous, and there was chemosis of the ocular conjunctiva. Ophthalmoscopic examination showed the retinal veins to be enlarged and tortuous. There was a marked bruit in the temporal region. When the left common carotid artery was forcibly compressed for a short time, the affected eye slowly sank into place. Digital and mechanical compression upon this artery was tried for 11 days, but the condition became worse and the bruit so intense as to be almost unbearable to the patient. The left common carotid was ligated, the eye resumed its normal position, and gradually the swelling of the lids subsided. The eye became totally blind, there being present a condition of absolute secondary glaucoma. Oliver is of opinion that a head-crush, which was received when the patient was 4 years of age, most probably caused either an **aneurysmal varix**, situated between the petrous and the cavernous portions of the internal carotid and the corresponding cavernous sinus, or a **varicose aneurysm**, in which there was an intervening sac between the two vascular channels. The recent blow upon the diseased region, in a debilitated subject, increased the opening into the venous structure, so as to give as its most prominent ophthalmic sign an orbital varix. [C.A.O.]

5.—Arnell, after experimenting with **Ehrlich's diazo reaction**, says the results of his observations have been to confirm in most particulars the statements of Ehrlich. They also agree with the results published in 1893 by Warthin. The fact that during the past 8 years the test has been made in the same way in his clinical laboratory makes the author's results trustworthy. He says, in deciding upon the clinical value of the Ehrlich diazo reaction, we can fairly discard the work of all investigators who have not performed the test in accordance with the directions laid down by Ehrlich, or who have not considered the **pink foam** as the important factor in the test. In this list are included the names of Penzoldt, Petri, von Jaksch, Munson and Oertel, and Edwards. These statistics, presented by numerous investigators who have performed the test correctly, are overwhelmingly convincing as to the value of this reaction in the diagnosis and prognosis of typhoid fever, and the prognosis of disease such as pneumonia, diphtheria, septicemia, and especially tuberculosis. The author states that all cases of tuberculosis giving the diazo reaction continuously for several days may be considered in the third stage of the disease. In such cases the prognosis is grave and the patients will not be benefited by a change of climate. Out of 22 cases of typhoid fever, 19 gave the diazo reaction; 3 which failed to give the reaction were very mild. [C.A.O.]

6.—Chadbourne describes the case of a woman of 36 who had had typhoid fever and inflammatory rheumatism of the lower extremities, and who at the age of 31 began to have epileptic seizures which appeared to be of the type of idiopathic grand mal. She complained of dyspnea, became cyanotic, had to be propped up in bed, and had marked edema of the feet and puffiness of the face. The heart-dulness was enlarged to the left, with a blowing murmur at the apex. The woman suddenly died and necropsy showed a complete obliterating chronic pericarditis. The heart was extremely flabby and there were minute atheromatous spots in the aorta and coronary arteries. In the examination of the whole fresh organ it was discovered that both the **mitral and tricuspid orifices were so narrow** as to admit only the tip of the index finger, the edges being thick, rigid, and almost cartilaginous in consistency. All the chambers were much distended without much hypertrophy of the ventricular walls. In view of the postmortem findings the author is inclined to view the epileptic attacks as belonging to a type of convulsions known as "cardiac epilepsy." [C.A.O.]

7.—Steele, after an exhaustive review of the literature on the subject, finds 61 cases of **retroperitoneal sarcomas**. After making a study of these cases he comes to the following conclusions: 1. Retroperitoneal sarcomata, while rare, occur with sufficient frequency to warrant more attention from the standpoint of diagnosis than they have heretofore received. 2. Males appear to be somewhat more predisposed than females (60 to 40%). The condition is more common in the first, fourth, fifth, and sixth decades of life. Traumatism does not seem to play much of a part in their causation. 3. It is a quickly-growing tumor, the average duration in 30 cases being 8.7 months. 4. The tumor gener-

ally originates in the lumbar region (57%). The next most frequent seat is the central portion of the posterior wall of the abdomen, about the attachment of the mesentery (41%); 2% grow from the pelvis. Lateral tumors are more frequently on the right than the left side. The tumor is prone to degeneration, and such degeneration is oftenest hemorrhagic in character, but may be puriform or myxomatous. Metastasis is not common, but when it occurs, the liver and lungs are oftenest affected. In the majority of cases the growth involved the intestine and the softened central area tended to rupture into the gastrointestinal tract or the peritoneal cavity. 5. The onset is insidious. The earliest manifestations are functional disturbances of the digestive tract. The first symptoms that are characteristic are those of pressure upon the lumbosacral nerves and upon the venous supply of the lower extremities, manifested by neuralgic pains or edema of the feet and legs. 6. In the earlier stages the physical examination is difficult; in the middle stages the colon is pushed up and lies upon the anterior surface of the tumor. In the lateral growths the small intestine is pushed to the opposite side of the abdomen, and lies in an irregular circle around those occupying the median position. This arrangement of the bowel is very characteristic of all retroperitoneal growths. The tumor may fluctuate and may move with respiration, or be movable by palpation. 7. The pressure symptoms and evidences of intestinal obstruction are the most valuable points in differential diagnosis. It is often impossible to distinguish the growths of the retroperitoneal space from those of the kidney and suprarenal capsules by physical examination alone. The difficulty of diagnosis is increased when the growth fills the abdominal cavity. An exploratory incision is the only sure method. Surgical interference offers the only opportunity for prolonging the patient's life. [C.A.O.]

Berliner klinische Wochenschrift.

April 23, 1900. [37. Jahrg., No. 17.]

1. The Nourishment of Infants and Infants Diseases. ADOLF BAGINSKY.
2. What Are Our Opinions with Regard to Getting Rid of Infectious Diseases, Particularly Tuberculosis. W. DÖNITZ.
3. The Treatment of Nevus and Similar Congenital Conditions. E. HOLLANDER.
4. The Pest in the Light of Later Investigations. P. FROSCH.

1.—An interesting review of the history of the development of **infant feeding**. [D.R.]

3.—Hollander finds, as the result of considerable experience in the treatment of birthmarks, that cauterization with **superheated air** is the best method of treating growths which it is impossible to extirpate. This method is much preferable to the painful, repeated puncture with the thermocautery, which has been recommended by some surgeons. There is no loss of blood, the scar is hardly noticeable, unless the **nevus** is extensive, and the method is applicable to all parts of the body and on the mucous membranes. When the air-stream strikes the parts they first become pale, they then shrink and dry to a leathery consistency and appearance. The after-treatment is that usual for any granulating wound. No very definite directions as to the use of the method are given. [M.B.T.]

4.—There are **three forms of plague: bubonic, pulmonic, and dermal**; the pulmonic form is prognostically the most unfavorable. Its diagnosis is often very difficult; the great gravity of the disease, the profound prostration of the patient, and the rapid death (in from two to three days), should arouse suspicion. The poison in the bubonic form usually enters through small lesions of the skin, although there are some who hold that infection may occur through the unbroken epiderm. Plague septicemia and plague pyemia are not independent forms, but are due to the entrance locally of the bacilli; in the pyemic form metastatic deposits of bacilli are found in various internal organs; lung, liver, spleen, brain, etc. The lesions are the size of a hazelnut, yellowish-white or grayish, are surrounded by an inflammatory zone, and harbor innumerable bacilli. There is every reason to believe that there is a toxin produced in plague; the marked nervous symptoms and the occurrence of hemorrhage into the tissues constitute strong

evidence. It is also proved by the findings in the fetuses of plague-infected mothers. Although bacterially sterile, these have shown the characteristic visceral lesions of plague, viz.: the hemorrhages into the organs. There is no special *facies pestica*. The disease as a rule sets in acutely after a period of incubation averaging five days. The most dangerous form of plague, so far as the hygienic combat against the disease is concerned, is the pulmonic form, on account of the fact that innumerable bacilli are contained in the secretion of the lungs. Many of the lower animals are susceptible, only the birds having so far shown themselves refractory. Rats and guineapigs are so sensitive that the mere application of the smallest quantity of culture to the intact skin invariably causes their death from plague. As rats and other rodents are probably spontaneously susceptible, they constitute one of the chief dangers of the spread of the plague. It may be that the disease is maintained endemically in certain localities through the medium of rodents. In an endemic plague-focus in the Himalayas there exists a species of *Arctomys* that is subject to an epidemic disease closely resembling the plague in man. Epidemics usually begin in an insidious manner with a few scattered cases, and gradually increase in intensity. They subside in the same way. A relation between the disease and the soil, climate, altitude, temperature, and season cannot be discovered; nor does age, sex, race, or occupation have any influence upon the mortality. The hygienic conditions, however, are of great importance. The dissemination of the bacilli through insects is possible, but probably does not play an important role. Different states have taken active measures to combat the disease, and a congress was held in Venice to settle upon questions of quarantine. Frosch is a believer in prophylactic vaccination against the disease. [D.R.]

April 30, 1900. [37. Jahrg., No. 18.]

1. The Demonstration of Bone Structure by Röntgen-Ray Pictures. JULIUS WOLFF.
2. Combating Tuberculosis as a General Disease. WILHELM WINTERNITZ.
3. The Occurrence of Peculiar Crystals in the Bones of Rachitic Children which were Treated with Suprarenal Substance. STOELTZNER and SALGE.
4. What Are Our Opinions as Regards Getting Rid of Infectious Diseases, Particularly Tuberculosis. W. DÖNITZ.

2.—Winternitz believes that **hydrotherapy** is of great value in the prophylaxis and treatment of tuberculosis, and sums up his conclusions as follows: 1. Prophylaxis: The increase of the resistance of all those threatened with tuberculosis by cold baths, effusions, or douches. 2. In the sanatoriums and people's baths provision for hot, warm, and cold, automatically-regulated shower-baths, steam baths, etc. 3. Sanatoriums in all hospitals, with provision for cold and carbon dioxid douches. A trained staff to give cold rubbings and apply chest compresses. 4. The providing of all phthisis sanatoriums with simple devices in the sleeping-rooms for giving cold or carbon dioxid douches. By the hydrotherapeutic method he claims to have achieved arrest or relative cure in 80% of the cases of chronic afebrile phthisis; in phthisis florida, in 32% more or less prolonged arrest and relative cure. In the incurable cases the method produces comfort and awakens hope of cure. [D.R.]

3.—The authors describe the occurrence of **crystals** in the bones of 3 cases of **rickets** that had been treated with suprarenal extract. The crystals are soluble with difficulty in alcohol, readily soluble in water, and have a remarkable affinity for silver salts. [D.R.]

Münchener medicinische Wochenschrift.

June 5, 1900. [47. Jahrg., No. 23.]

1. Condition of the Urine after Palpation of the Kidney. C. MENGE.
2. A Special Form of Chronic Icterus. BETTMANN.
3. The Treatment of Joint Effusions by Hot Air. RUDOLPH KLAPP.
4. A Case of Idiopathic Distention of the Esophagus. GUTTENTAG.
5. A Case of Tuberculous Cerebrospinal Meningitis Cured. M. HENKEL.

6. Koplik's Spots by Measles. KARL MANASSE.

7. Agglutination of Intestinal Bacteria by the Blood-serum in Typhoid Fever. F. KÖHLER and W. SCHEFFLER.

1.—The author found **albumin and blood in the urine** in small quantities **after palpation of movable kidneys**. The appearance of the abnormal constituents depends (1) on the forcibleness and the duration of the palpatory pressure; (2) on the general nutrition of the patient; (3) on the tension of the abdominal walls; (4) on the degree of nephroptosis; (5) on the sensitiveness of the palpated organ. The author seems to be of opinion that many cases of cyclic or periodic albuminuria are connected with pressure upon the kidneys. These intermittent forms of albuminuria are most frequent in childhood and at puberty, especially in lean individuals. The albumin is usually present only in the daytime after the patients have left the bed and assumed an upright position; in other words, at a time when the kidneys descend lowest and are subject to the pressure of the clothing. [D.R.]

2.—Bettmann's case tallies with those described by Hayem, under the term "*ictère chronique infectieux splénomégalique*." The patient was a merchant of 29, who had had jaundice for a number of years. The bowels were never clay-colored. There was no bile in the urine. The liver was not enlarged, but there was an enormous **splenic tumor**. No definite cause could be found for the condition. An interesting point was that the patient seemed to be subject to **paroxysmal hemoglobinuria**, and the author suggests that this may have played a part in the production of the splenic tumor. Regarding treatment, tonics seemed to be indicated; potassium iodid and arsenic were of no value. The question of splenectomy was negatived on account of the fact that the splenic tumor was probably merely the result of the effort of the spleen to store and elaborate the hemoglobin set free in the serum. It was, in other words, a so-called **spodogenic splenic tumor**. [D.R.]

3.—A report of a number of cases of **joint effusion** benefited by the **hot-air treatment**. Experiments on animals are reported in which it is shown that when saline solution is injected into the peritoneal cavity, and the animal subjected to heating, the solution is much more rapidly absorbed than under ordinary conditions. [D.R.]

4.—Guttentag reports an interesting case of **idiopathic dilation of the lower end of the esophagus**. The patient was 17 years old, and first noticed the beginning of his ill health 5 years before. It began with difficulty in swallowing, and recently there developed vomiting of uncurdled milk which he had drank many hours before. A soft stomach-tube was easily passed for 40 centimeters, when it seemed to enter a dilated portion of the esophagus, from which could be emptied some 50 cubic centimeters of liquid contents which did not contain free hydrochloric acid. With a little difficulty the tube could be passed 8 centimeters further, when it was found to enter the stomach, as shown by the contents containing free hydrochloric acid. Inflation of the stomach with carbon-dioxid showed that this organ occupied its normal position, the greater curvature reaching to within 2 finger-breadths above the umbilicus. The patient could empty the esophageal reservoir by pressing firmly over the sac. [G.B.W.]

5.—The author reports the **recovery** of a case of undoubted **tuberculous cerebrospinal meningitis**, tubercle-bacilli having been found in the fluid obtained by lumbar puncture. [D.R.]

6.—**Koplik's spots** are often valuable as an early symptom of measles, but they may be present without measles following or they may be absent when measles exist. [D.R.]

7.—The author's conclusions are as follows: Colon-bacilli are often agglutinated by the serum of normal individuals. Frequently the serum of typhoid fever patients which **agglutinates typhoid bacilli** does not agglutinate the colon-bacilli cultivated from the stools of the same patient; at times it does agglutinate them. The serum of typhoid fever patients may not agglutinate the colon-bacillus, while the serum of a healthy individual may do so. The conditions under which the serum of typhoid patients agglutinates those colon-bacilli isolated from their stools, and those under which the serum of healthy persons agglutinates colon-cultures are entirely unknown. The view of Pfaundler that the

serum of human beings during the course of life acquires the power to agglutinate intestinal colon-bacilli has not been proved. A differentiation between the typhoid bacilli and the colon-bacilli through the serum-reaction is not possible. [D.R.]

Deutsche medicinische Wochenschrift.

June 23, 1900. [26. Jahrg., No. 26.]

1. Examination of the Behavior of the Milk Bacteria in the Milk Thermophore. DUNBAR and W. DREYER.
2. Danger of Conveying Tuberculosis Through Milk and Milk Products. LYDIA RABINOWITSCH.
3. Fat Emboli. HUGO RIBBERT.
4. Concerning Iodipin. VICTOR KLINGSMÜLLER.
5. A New Pathologic Club-shaped Bacterium of the Lymph. E. LEVY and H. FICKLER.
6. The Significance of the Oliver-Cardarelli Sign. SIGMUND v. RITOOK.
7. Rare Complication in Tracheotomy. E. THOMAS.

1.—The authors investigated the value of the **milk thermophore** in the limitation of the growth of bacteria in milk. They decided that after allowing the milk to stand 10 hours in the thermophore no growth of bacteria is seen in the milk. On the contrary, in pasteurized milk, or raw milk, the bacteria decreased decidedly in number, and often no cultures of living bacteria were obtained. Therefore, there is no danger of any change in the milk when it is kept in the thermophore. They consider this instrument a valuable one for preserving milk temporarily for the use of children. It is one that may be readily used by nurses, etc. [D.L.E.]

2.—Rabinowitsch investigated 8 samples of milk specially prepared for children. They were not sterilized. In 3 instances the milk came from herds in which the **tuberculin-test** is regularly used and affected animals are excluded from the herd, while in 5 other cases the tuberculin-test was not regularly carried out. In 3 of the former the bacilli were regularly absent, and in 3 of the 5 herds of the latter class virulent tubercle-bacilli were repeatedly found. Rabinowitsch also found streptococci in considerable number repeatedly in special milk for children. She has several times found tubercle-bacilli in kefir, and thinks that this preparation should be made only from pasteurized milk or from milk from cattle that have been tested with tuberculin. Bacilli were absent from 2 specimens of plasmon examined, but they were found in both the specimens of sana (an artificial preparation of cow's fat). Rabinowitsch therefore decides that these investigations show even more forcibly than before the necessity for the use of tuberculin-tests in cattle which supply milk. [D.L.E.]

3.—Ribbert believes that **fat emboli** are the result of shocks and blows against the bones and not of direct injuries of the veins following upon fractures. The fracture itself, he believes, has very little to do with the occurrence of fat emboli the blow being the actual cause through the violent disturbance of the bone-marrow which sets free fat emboli and results in their lodgment in the veins and subsequently in the small arterioles or capillaries. He has regularly found emboli in every case of trauma that was associated with severe contusion of the bones, and he found that dropping rabbits from a moderate height upon the floor, while associated with no fracture, was practically always associated with fat emboli. He thinks that fat emboli frequently result in human beings even after jumping from a moderate height, though they are of no clinical consequence as a rule under these circumstances. [D.L.E.]

4.—The author has in all used subcutaneous injections of **iodipin** in about 100 cases. The results were extremely successful, and the conclusion that he reaches is that the subcutaneous use of iodipin is an extremely valuable one. It is an easy method and the effect is certain, energetic, and protracted. [D.L.E.]

5.—The bacterium described is believed to belong to the diphtheria group, and to be one of the class commonly called **pseudo-diphtheria bacilli**. The authors place it in the group of the actinomycetes. They have no definite statements to make as to its relation to vaccinia. The cultural and morphologic characteristics are described at length. [D.L.E.]

6.—Ritook reports a case of aneurysm of the innominate artery in which there was marked pulsation of the larynx both laterally and vertically which could be both seen and felt. Pulsation, however, was from beneath upward, and not from above below. In another case he found the tracheal tug and the **Cardarelli symptom** with no other associated symptoms of consequence excepting stenotic breathing. The postmortem showed primary tuberculosis of the bronchial glands. It is intimated that these glands were adherent on one side of the aorta and on the other side to the left bronchus. This, however, is not definitely stated. Another case, which is of much interest, proved to be a left-sided circumscribed pleural effusion, which disappeared almost entirely after aspiration and the subsequent use of salicylates. This effusion had caused a decided tracheal tug. The explanation of this was that the fluid collected in the circumscribed area, and the costomediastinal space had crushed the aorta down upon the left bronchus, and had thus given rise to the tug. The author insists, however, that these cases do not show that the symptom lacks value. Such opportunities for error are extremely rare. [D.L.E.]

7.—The **complication of tracheotomy** reported by Thomas consisted in a form of cicatricial contraction of the sternohyoid muscles which pulled the larynx so far downward that it was surgically impossible to approach the trachea. At the operation, which was being performed for diphtheric stenosis, the larynx was the only available portion of the respiratory tract, and this was consequently opened, but the opening so high up failed to give sufficient relief, so that the patient died in a very few minutes. The postmortem showed the true state of affairs. [G.B.W.]

Sundry French Journals.

1. Endotheliomas of the Bone. L. THEVENOT. (*Revue de Chirurgie*, May 10, 1900. 20me Année, No. 5.)
2. Splenomegalic Biliary Cirrhosis. CHAUFFARD. (*Sem. Méd.*, May 23, 1900. 20me Année, No. 22.)
3. The Identity of the Bacillus Lactis Aerogenes and the Pneumobacillus of Friedländer. GRIMBERT and LEGROS. (*Sem. Méd.*, May 23, 1900. 20me Année, No. 22.)

1.—In concluding his paper on **endothelioma of the bone**, Thevenot states his belief that with his case only about 14 cases have been seen thus far reported which deserve to be so classified, and in which thorough histologic examination was made. Probably many earlier observations of aneurysms of the bone deserve this name, but histologic examination was lacking. The permanent results are seldom reported, and it is impossible to give any definite statements with regard to prognosis. The patients usually die of general extension of the disease. In case of doubt an early conservative operation is recommended. [M.B.T.]

2.—Chauffard divides the cases of **hypertrophic biliary cirrhosis with splenic involvement** into 3 classes. 1. Those in which the spleen and the liver seem to be attacked simultaneously and to an equal degree, which may be termed splenomegalic hypertrophic biliary cirrhoses. 2. Those in which the spleen is undoubtedly diseased before the liver and to a greater degree; they are thought to be instances of hepatitis of splenic origin and may be known as metasplenomegalic hypertrophic biliary cirrhosis. 3. Those in which the hepatic lesion precedes and appears to be the cause of the change in the spleen; these may be known as presplenomegalic hypertrophic biliary cirrhosis. [J.M.S.]

3.—The study of the morphologic and biochemic characters of four typical specimens of the **Bacillus lactis aerogenes** has led the authors to admit the complete identity of that organism with the **pneumobacillus of Friedländer**. The bacilli that have been studied are immobile; they do not stain by Gram's method; they do not produce spores; they become encapsulated in pus, in the blood, and in the serous exudates of inoculated animals; they are facultative anaërobic organisms; and their cultures in 3% peptonized water never produce indol. Baked albumin is not modified by them and milk is rapidly coagulated by acidification, without alteration of the casein. The bacilli in question ferment glucose, lactose, saccharose, and dextrin with the production of ethyl alcohol, acetic acid, lactic acid and succinic acid. [J.M.S.]

Practical Therapeutics.

Under the charge of

A. A. STEVENS, A.M., M.D.

Cannabis Indica.—Lewis (*Merck's Archives*, July 1900) states that he has found cannabis indica most efficient in relieving the various neuroses accompanying pregnancy and the climacteric, and believes that for allaying the violent nerve-storms of the artificial menopause it is without an equal. In dysmenorrhea, not due to anatomical or inflammatory causes, no drug acts so promptly and with fewer after-effects. The drug is very useful in profuse menstruation, decreasing the flow without completely arresting it, as ergot frequently does.

Lithemia.—Bruce (*Treatment in Practical Medicine*) recommends the following antacid and stomachic mixture:

R.—Bicarbonate of sodium 15 grains.
Aromatic spirits of ammonia 10 minims.
Compound infusion of gentian to make 1 ounce.

Three times a day, 5 minutes before meals.

Alterative and tonic mixtures like the following are sometimes serviceable:

R.—Fowler's solution 3 minims.
Tincture of nux vomica 5 "
Ammonium carbonate 4 grains.
Spirit of chloroform 8 minims.
Infusion of quassia to make 1 ounce.

Three times a day immediately after meals.

The Treatment of Appendicitis.—Gaub (*Pennsylvania Medical Journal*, July, 1900) reports 124 cases of appendicitis, with 15 deaths, a mortality of 12.1%. Two patients were in extremis on admission. Thirteen patients were not operated on for various reasons. Of 109 cases in which there was an operation, there were 12 deaths, a mortality of 11%. From the study of the cases presented, the writer concludes:

1. A typical cure by nature is the exception.
2. Nature may adapt herself to the pathologic conditions present, to the patient's comfort and longevity.
3. The first attack of appendicitis usually determines the outcome with regard to fatality.
4. Any type of appendicitis may lead to a fatal issue.
5. In 50% of the cases the process proceeds to abscess formation.
6. We may expect a mortality of 10% in abscess cases operated late in the disease.
7. Cases of acute septic peritonitis, complicating gangrenous appendicitis, have always been fatal.
8. In abscess cases death is due to rupture, metastatic abscesses or toxemia.
9. At the present time we are unable to map out the clinical course of the disease from the symptoms, etc., at its onset.
10. Early operation offers the best results in appendicitis.
11. Progress in appendicitis must aim at the early recognition of the intensity of the infection, as typified in a gangrenous appendicitis.

Pulmonary Tuberculosis.—Foxwell (*Essays in Heart and Lung Diseases*) states that when there is great exhaustion and the sputum clings about the throat and trachea, so that the patient experiences an agonizing dread of being choked, the application of lemon and glycerin to the fauces is useful, and that the following mixture does more than any medicine of which he knows towards maintaining life and producing euthanasia:

R.—Spirits of ether }
Aromatic spirits of ammonia } of each.... 30 minims.
Tincture of orange 10 minims.
Camphor-water to make 1 ounce.
To be taken every 6, 4, or 2 hours.

Cacodylic Acid.—Frassi (*Gazz. degli osped.*, March 18, 1900) has studied the action of cacodylic acid in chlorosis and tuberculous affections. The treatment was carried out for a long period. The drug was given hypodermically, the strength of the solution being gradually increased. At first the injections were given every other day, but later, daily. The injections did not excite pain, and were never followed by symptoms of intoxication. In chlorosis the treatment

was always followed by a gain in weight, and a marked increase in the elimination of urea, while at the same time the quantity of urine was diminished. As in the case with arsenic, cacodylic acid diminishes the oxidation of the hydrocarbons, and increases the decomposition of the proteids. In tuberculosis the general effect of the drug was more noticeable than the local action. As regards the action of the drug on the blood the author finds that while the hemoglobin is constantly increased, the influence on the number of cells is much more marked. Iron, on the other hand, affects the hemoglobin more than the number of cells. Arsenic is, therefore, more cytoplasmic in its action than hemoglobinoplastic. When administered hypodermically, cacodylic acid is eliminated in the urine, from which it is recovered unchanged.

The Bath-Treatment of Typhoid Fever.—Bäumler (*Sonderabdr. aus Deutsch. Archiv f. klin. Med. and British Medical Journal*, June 14, 1900) gives the results obtained in 1,019 cases of typhoid fever by the cold-bath treatment in the medical clinic of Freiburg-in-Breslau. The mortality, which was 9.32%, or, excluding cases which were moribund on admission, 7.9%, contrasts favorably with Sydney Philip's estimate, made in 1898, that the average death-rate from typhoid fever was still 18%. Baths act not so much by lowering the temperature as by improving general nutrition through the circulation and nervous system. Several factors influence the circulation; the peripheral vessels contract, the difference between the arterial and venous blood pressure, on which depends the rate of flow in the vessels, is accentuated, and the heart is stimulated mechanically; at the same time the respirations become deeper. For any permanent benefit to be obtained it is essential that the baths should be repeated frequently, so that the flow of blood from the peripheral to the central parts and from the central to the peripheral continues uninterrupted. It is an open question whether the bath-treatment has any influence on the mortality from intestinal perforation, and on the mortality from hemorrhage it has almost certainly none. Apart from intestinal lesions the greater number of deaths (27.3%) were due to pulmonary complications, though bronchial catarrh was certainly less common than in cases treated without baths. The reason for this is that, owing to the comparatively good general condition of the patient, descending tracheobronchitis from the inhalation of infected material from the upper air-passages—and this is the commonest cause of bronchial catarrh in typhoid fever—is avoided. It is most important to give the patient a drink of water after every feed in order to remove any remnants of milk or other decomposable material. As a rule the heart stands repeated baths excellently, and they are not generally contraindicated in cases complicated by nervous tachycardia, or by a rapid pulse due to pulmonary changes (emphysema, fibrosis, or chronic bronchitis) even when accompanied by great cyanosis. The same is true of cases complicated by anemia and fatty degeneration of the heart, though naturally caution is necessary. Practically, then, the only contraindications are abdominal pain and collapse, and when peritonitis, perforation, or hemorrhage are suspected. The actual technic used at Freiburg is as follows: Whenever the temperature in the axilla reaches 103° F., a bath at from 82.4° to 75.2° is given. The patient remains in it with his head resting on an air cushion until he begins to feel cold, generally from 8 to 10 minutes, the skin, especially over the extremities, being rubbed constantly. After the bath he is wrapped in a dry sheet and covered with blankets; a hot-water bottle is placed at the feet. Some wine is given before the bath, and immediately after it more wine and hot soup. If there is great mental dulness, delirium, or pulmonary catarrh with atelectasis, or bronchopneumonia, cold water at 50° F. to 59° F. is poured over the patient for a short time at the end of each bath. Whenever possible, one bath should be given during the night. If the first bath is well borne, and the patient's strength is maintained, the temperature of the baths is soon reduced to 68° F. The diet should be liquid, and not too much alcohol should be given; large quantities relax the arteries and have the same action as the typhoid toxins. When there is great cardiac weakness, camphor is very useful and ammonia may be tried. Antipyretic drugs are only harmful. The patient should be made to drink large quantities of fresh cold water all through the illness.

Original Articles.

MILITARY SURGERY.

By W. C. BORDEN ("EDRO"), M.D.*

Captain Medical Department U. S. Army; Professor of Surgical Pathology and Military Surgery, Georgetown University, Washington, D. C.

MILITARY surgery may be defined as the application of surgical methods, under the conditions which obtain in war, to the treatment of traumatisms made by military weapons.

In military surgery three main factors present themselves for consideration: First, the character of the traumatisms inflicted in war; second, the treatment to be adopted; third, the conditions under which the patient is placed during treatment. The practice of military surgery therefore demands of the military surgeon a knowledge of these factors and of their relation to each other.

It may at once be stated that of these factors two are of preeminent importance in modern military surgery. These are the character of the wounds inflicted by the small-caliber compound bullet now so largely used, and the effect of the application of the principles of aseptic and antiseptic surgery to the surgery of war. The first derives its importance from the fact that the great majority of wounds in war are due to rifle fire; the second, to the fact that aseptic and antiseptic methods are applicable to all wounds however inflicted, and that the application of these methods has as greatly affected the treatment, progress, and prognosis of the traumatisms of war as they have surgery in general.

It is necessary, therefore, to consider the character of wounds received in war, both in their immediate and remote effect, their course and treatment, and the conditions under which the patient is likely to be placed, during the time of treatment. Traumatisms which might be treated conservatively in civil practice, often require radical operations under the environment and conditions incident to military surgery; and, on the other hand, injuries which, in civil practice, would require immediate surgical intervention, are frequently best treated expectantly, under the conditions which obtain in the field. The latter is well illustrated in the difference which obtains in civil and military surgical treatment of gunshot wounds of the abdomen. With the resources of the civil hospital and surrounded by aseptic safeguards, the civil surgeon uniformly opens the abdominal cavity wherever penetration of this cavity by gunshot is suspected; while the military surgeon, having in view the frequent recovery of such cases when treated expectantly, and knowing the almost absolute certainty of producing infection under the conditions which obtain in field hospitals, does not usually resort to laparotomy unless death without operation may be considered certain.

While the conditions incident to environment are practically similar for all classes of wounds received in war, in that all are received in the field and have to be treated under the restrictions imposed by the location and the supplies at hand, the traumatisms themselves may be divided into two great classes, in accordance with

the weapons by which they are inflicted. This division arises from the fact that one class of wounds, and that comprising the greater number, is characterized by peculiarity of form, complication, and course of healing, while the other class does not differ markedly from the traumatisms often observed in civil life.

To the first class belong all bullet wounds; first, those made by the small caliber compound bullet; and second, those made by revolver and shrapnel bullets. Of this class those made by rifle-bullets are the most important, as they are by far the most numerous, and as they produce traumatisms having special characteristics.

To the second class belong all wounds made by missiles of large caliber, by fragments of shell, by indirect missiles, by bayonet, lance, saber, or like cutting or puncturing weapons. The wounds of this class furnish the minority of cases and are all characterized by being more or less lacerated, or by having a considerable extent of skin-surface involved and of being almost invariably infected, thus necessitating their being treated as infected wounds and by the open antiseptic method. The comparative infrequency of this class of cases is shown by the following table, in which the percentage of wounds inflicted by small arms, artillery, and side arms, is given for four recent wars:

TABLE I.—PERCENTAGE OF WOUNDS BY DIFFERENT ARMS.

WARS.	SMALL ARMS (percent).	ARTILLERY (percent).	SIDE ARMS (percent).
American Civil ¹	90.1	9.8	0.37
Franco-German ²	94.	4.7	1.3
China-Japan, Third Division, Second Army Corps ³	90.8	7.6	1.5
Spanish-American (U.S. Regu- lars) ⁴	92.2	7.8	0.0

It may therefore be estimated that considerably more than 90% of all wounds in war are inflicted by rifle bullets. This proportion will vary in different engagements. In siege operations and in attacks on fortifications the percentage of wounds from artillery fire will be above the average, as in the storming of Paris, where 36% of the German loss was from this cause (Rawitz). On the other hand, in general engagements the wounds from artillery fire and side arms will be few and nearly all the casualties will be due to rifle fire, as in the battle of Colenso in the Anglo-Boer war, where 97.5% of the wounds were due to rifle fire and but 2.5% to shell injuries. For this reason consideration of the ballistics of the modern military rifle in relation to the traumatisms produced by it is of the greatest importance.

THE MODERN MILITARY RIFLE.

The modern military rifle is the result of the gradual evolution of firearms which has for its end greater precision, long range, greater penetration, flat trajectory, rapidity of fire, and small weight of ammunition. The result is a class of weapons all of which are practically identical in the particulars above named.

These rifles (Table II) weigh approximately from 8 to 10 pounds; are of magazine type, carrying from 5 to 12 rounds in the magazine; vary in caliber from 6.5 mm. to 8 mm., and use smokeless powder varying from 1.94 to 2.74 grams for each charge. The projectile is a compound bullet consisting of a lead or hard lead core swaged into a casing of cupro-nickel, or cupro-nickel

* The paper signed "Edro" was awarded the Sander prize (a gold medal) for the best paper on military surgery, submitted for competition at the annual meeting of the Association of Military Surgeons of the United States, held in New York City, May 31 to June 2, 1900. The committee of award consisted of Brig.-Gen. J. D. Griffith, Surg.-Gen. N. G. Mo.; Medical Director Geo. W. Woods, U. S. Navy; and Major A. C. Girard, Surgeon U. S. Army, and all papers were submitted to the committee with their *nommes de plume* only.

TABLE II.—BALLISTIC DATA OF THE NEW SMALL-CALIBER RIFLES NOW ADOPTED BY DIFFERENT NATIONS.

ARMY.	RIFLE.	BULLET.					Smokeless Powder, grams.	Muzzle Velocity, feet per second.
	Designation.	Cal., mm.	Cal., mm.	Weight, grams.	Length, mm.	Structure, Core, and Casing.		
Austrian	Mannlicher, 1888-1890 . .	8.0	8.19	15.8	31.8	Hard lead, steel case	2.74	2034
British and Canadian . .	Lee-Metford, 1893, Mark II.	7.7	7.89	13.9	31.5	Hard lead, cupro-nickel	1.97	2000
Brazil, Chili, Mexico and Spain	Mausser, 1894-1895. 7.0 . .	7.0	7.22	11.3	30.9	Hard lead, cupro nickel, steel	2.39	2288
Danish	Krag-Jorgensen, 1869 . . .	8.0	8.19	15.4	30.0	Lead, cupro-nickel	2.19	1968
French	Lebel, 1886-1893	8.0	8.19	15.0	30.00	Hard lead, cupro-nickel	2.79	2073
German	Mausser, 1888	7.9	8.10	14.7	31.25	Hard lead, cupro-nickel, steel	2.74	2034
Italian	Mannlicher Carcano, 1891.	6.5	. .	10.5	30.5	Hard lead, cupro-nickel	1.97	2395
Russian	Kapit-Mozen, 1891	7.62	7.79	13.68	30.2	Hard lead, cupro-nickel	1.97	2034
Roumanian	Mannlicher, 1893. 6.5 . .	6.5	6.70	10.34	31.5	Hard lead, cupro-nickel, steel	2.44	2395
Swiss	Schmidt-Rubin, 1889 . . .	7.5	8.10	13.7	31.7	Hard lead, steel point, paper jacket .	1.94	1968
Turkish	Turkish Mauser, Belgian, 1890	7.65	7.89	13.8	30.8	Lead, cupro-nickel	. .	2139
United States	Krag-Jorgensen, modified, 1892	7.62	7.82	14.26	30.63	Hard lead, cupro-nickel, steel	2.09	2000

steel. It (Figure 1: 1, 2) has a caliber of from 6.7 mm. to 8.19 mm.; a length of from 30 mm. to 31.8 mm.; a weight of 10.34 grams to 15.8 grams; and a muzzle velocity of from 1,968 to 2,395 feet per second.

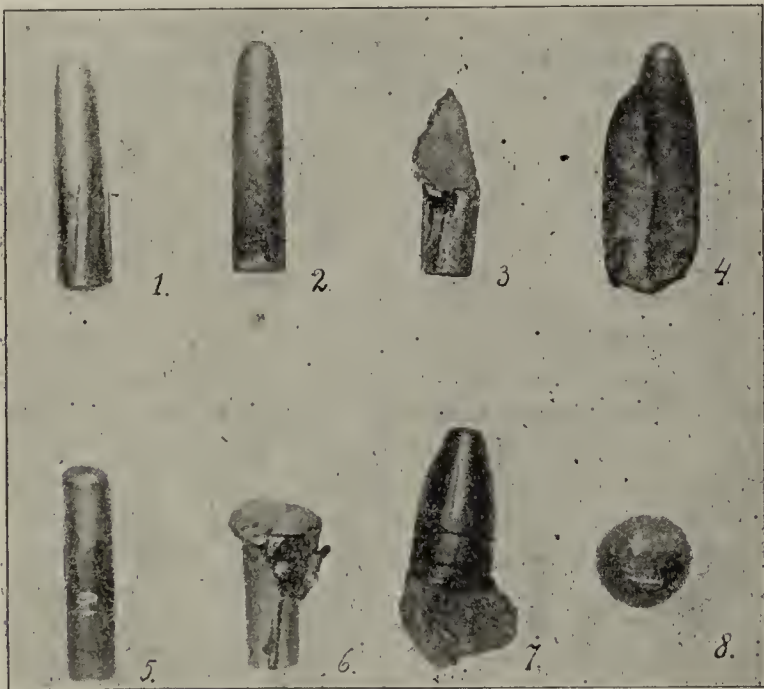


FIG. 1.—Photograph of lodged, undeformed and deformed bullets removed from Spanish-American war cases; natural size. 1. Undeformed Krag-Jorgensen. 2. Undeformed Mauser. 3, 4, 5, 6. Mauser bullets deformed by ricochet. 7. Brass-jacketed Remington, caliber 42. 8. Shrapnel bullet, soft lead.

With this weapon and projectile the danger zone has been greatly increased, the range being practically point blank up to 600 yards, while the weapon is capable of inflicting a mortal wound up to a distance as great as 5,000 yards.

The compound bullet used with this weapon has 4 properties of great importance: (a) high velocity; (b) great section density; (c) cylindro-conoidal form; (d) great resistance to deforming violence. These properties combine to give it great penetrating power; while its velocity at the time of impact has a marked effect upon the amount and form of traumatism which it produces in animal tissues, and its velocity and resistance to deformation combined, make it much more liable to ricochet with sufficient violence to produce marked traumatisms even after violent ricochet impact.

Result of the Use of the Modern Small-Caliber Rifle.—Upon the adoption of the modern military rifle by different nations, much speculation was indulged in and many experiments were undertaken to determine its effectiveness as a weapon of war and the effect of its projectile upon the human body. Of these it may be said that the experiments of Demosthen⁵ and of von Coler and Schjerning⁶ upon living animals at actual ranges were the most satisfactory.

But while these experiments gave in part the physical traumatic effects which might be expected of the compound bullet, *the physiologic effects and the results from the standpoint of surgical therapeutics could only be determined by its use in actual war.* These we now have as a result of experience in the Spanish-American war and reports from the Anglo-Boer war, so that we may now consider ourselves in position to act with intelligence and authority in this department of military surgery.

TABLE III.—SHOWING PROPORTION OF KILLED TO WOUNDED.

	KILLED.	WOUNDED.	RATIO.
With old smooth-bore weapons; Blenheim (1704) to Waterloo (1815) 13 great battles. ⁷	91.732	222.699	1 to 2.43
With improved rifled breech-loading weapons; Crimea (1866) to Lizaine (1871) 23 great battles. ⁷	81.331	322.171	1 to 3.96
With modern small-caliber rifle; Spanish-American War. ⁸	.280	1.577	1 to 5.6
Anglo-Boer War up to February 17, 1900. ⁹	1.407	5.303	1 to 3.7

Reports from the Anglo-Boer War up to the present writing indicate that the ratio of killed to wounded, 1 to 3.7, is fully equal to that of the older weapons; the average since the adoption of rifled arms being 1 to 3.96. The ratio of killed to wounded was somewhat lower in the Spanish-American War, being 1 to 5.7, but this was undoubtedly due to the long range at which much of the fighting was done. Different wars, like different battles, will give a different ratio of killed to wounded; the difference being due, not only to the form of weapon used but to the terrain, methods of attack and defence, and many other factors. Thus in the American Civil War the ratio was 1 to 4.7, while in the Turko-Russian

War, in which practically similar weapons were used, the ratio in the Russian Army was 1 to 2.01, and in some battles the killed even exceeded the wounded in number. The conclusion reached, therefore, is that *as many deaths upon the battlefield may be expected from the use of the modern small-caliber rifle as from the older fire-arms.*

Far different, however, is the mortality of the wounded. The percentage of the wounded who die has been greatly reduced since the adoption of the small-caliber rifle.

TABLE IV.—NUMBER OF WOUNDED, NUMBER DIED OF WOUNDS, AND PERCENTAGE OF RECOVERIES AND DEATHS AMONG THE WOUNDED IN RECENT WARS.

NATION-ALITY.	WAR.	WOUNDED.	DIED OF WOUNDS.	TO 100 OF THE WOUNDED.		
				Died.	Recovered.	Ratio.
English	Crimean War (Mat-thew)	12,094	1,840	15.2	84.8	1 5.5
French	Crimean War (Chenn)	39,924	4,354	10.9	89.1	1 8.1
French	Italian War (Chenn)	17,054	2,962	17.3	82.7	1 4.7
Federal Troops	Civil War (Otis)	246,712	31,978	12.9	87.1	1 6.7
Prussians	Danish War (Löffler)	2,021	316	15.6	84.4	1 5.4
Prussians	Austrian War (Löffler)	13,731	1,455	10.5	89.5	1 8.6
Germans	Franco-German War (Official)	99,566	11,023	11.0	89.0	1 8.0
Russians	Russo-Turkish War (Official)	56,652	6,824	12.0	88.0	1 7.3
Japanese, Third Division	Chinese War (Hagu)	1,105	108	9.7	90.3	1 9.3
Americans	Spanish-American (Of-ficial)	1,594	106	8.6	93.4	1 14.1
English	Anglo-Boer ¹	5,303	265	5.0	93.0	1 19.0

¹ Statistics from *British Medical Journal* of March 3, 1900.

This great percentage of recoveries of the wounded is due to two factors: (a) the treatment of the wounds by modern aseptic and antiseptic methods; and (b) the peculiarities of the traumatisms produced by the small-caliber compound bullet. The wounds produced by this missile are usually either almost immediately fatal or of such character as to make the probability of recovery very great except in the case of wounds of certain regions or organs, as will be pointed out hereafter.

THE TRAUMATISMS PRODUCED BY THE UNDEFORMED COMPOUND BULLET.—The character of the traumatisms from the compound bullet varies with (a) the velocity of the bullet at the time of impact, and (b) with the structures of the tissue wounded.

With certain tissues, skin, muscle, fascia and adipose tissue, its effect is practically identical at all ranges. It perforates these tissues cleanly and directly, cutting whatever lies in its way, be it artery, vein or nerve. The spongy bones, as those of the face, carpus, metacarpus, and epiphyses of long bones in young subjects, or bones softened by disease, it generally perforates cleanly or with little shattering, at all ranges.

Upon the shafts of long bones or bones composed of compact tissue, upon organs with fluid contents (stomach, intestines, bladder,) and organs of spongy texture containing large quantities of fluid (brain, liver, spleen, kidneys,) the compound bullet at long range produces its minimum amount of traumatism, *but in these tissues and organs the destructive effect of the bullet increases in proportion to the shortness of the range* until, at about 600 yards and under, it will smash the shaft of a femur or a humerus to fragments,¹⁰ and upon the brain, liver, kidneys, spleen or stomach, unless the latter is empty, will act practically with explosive violence.

From this wide difference in the traumatic effects produced by the compound bullet it is easy to understand

why the wounds made by it are so frequently immediately fatal, or, on the other hand, give such excellent opportunity for recovery.

Much has been written of the so-called *explosive effect* of this bullet, and this effect is of the greatest importance. It means simply the results of the lateral transmission of energy imparted to the tissues by the rapidly moving missile. If energy were transmitted only in a line directly in front of a bullet, the bullet would make clean-cut perforations in all organs or tissues through which it passed and immediate fatal results would arise only from direct wounds of bloodvessels, perforations of the heart, or impingement of the bullet upon some vital part of the central nervous system. Lateral transmission of energy, therefore, is a factor of the greatest importance, for the majority of severe traumatisms and immediately fatal effects are due to it.

This transmission of energy to an extent sufficient to cause extensive solutions of continuity occurs to marked extent only in certain organs and tissues and in these only when the velocity of the missile is great.

As this destructive effect occurs only in certain organs and tissues, it must follow that it is because these best transmit the energy imparted by the bullet; and as the structures which transmit this energy with trauma-producing violence are either compact bone or organs containing fluid, or those practically saturated with fluid, it seems most probable that this energy is transmitted in two ways: either through the transmission of vibration by the closely-knit, compact bone-tissue or through the incompressible fluid in fluid-saturated or fluid-containing organs. In compact bone, with the missile at high velocity, by the suddenness of the shock, the bone is disrupted, and the osseous particles, acting as secondary missiles, are forced outward, increasing the disruption and traumatism by lateral transmission of the energy imparted.

In fluid-containing organs or fluid-saturated organs, the impact of the bullet when at high velocity is so sudden and violent that its energy is transmitted in all directions by the molecules of the incompressible fluid and disruption in all directions occurs.

With the bullet moving at lower velocity the shock in bone or organ is less, the disruption consequently less, and with still lower velocity the ball may enter and pass through the same tissue or organ with practically no lateral destructive effect. In a broad way the result may be likened to the difference in effect produced by throwing a bullet into water contained in an open leaden vessel or firing it into it. In the first case the bullet will enter, making slight commotion and that mainly upon the surface of the water, while if the bullet is fired into the water, the containing vessel, even though open at the top, will be completely destroyed through the lateral transmission of energy by the incompressible fluid. (Figure 2.)

The penetrating and perforating wounds made by the small-caliber bullet are seldom infected.

The aseptic quality of these wounds was noted by Senn¹² in the Cuban campaign, who called attention to the necessity for, and value of, immediate protection of the wound, in order to prevent infection.

Foreign material or pieces of clothing are rarely carried into the wound, and when carried in are usually so small in amount that if they produce suppuration it is generally superficial.

According to Makin¹³ the frequency with which portions of clothing are carried into the wound depends

considerably upon the material. In khaki, from its hardness, the bullet generally makes a clean slit, but loss of substance from a flannel shirt or the Highland kilt is more common.

Effect of the Compound Bullet on the Soft Parts other than Fluid-containing and Fluid-saturated Organs.—In these tissues, as before stated, the bullet produces but little damage, the lesion being mainly confined to the line of



FIG. 2.—Showing effect produced by firing into a leaden vessel open at the top and containing water.—Stephenson.¹¹

its course. The skin, connective tissues, adipose tissue and muscle, from their loose and open structure and from not being fluid-saturated, transmit lateral impulses but feebly and consequently escape the extensive traumatic effect produced in dense bone and fluid-containing or fluid-saturated organs when the bullet is at high velocity.

The entrance and exit wounds made by the compound bullet are quite small and very similar in appearance. They are generally circular in shape, are usually from 0.75 to 1.25 centimeters in diameter and are usually slightly depressed and covered with a black scab. (Figure 3.)

In some cases, after a few days, the edges of the wound have the appearance of slight superficial necrosis or infection.¹⁴ When the bullet enters quite obliquely, the wound of entrance is generally oval in outline. In some cases the wound of exit is slightly lacerated or is slit-like, and heals with a scar difficult to detect.¹⁵ With the old, slow moving, lead bullet, the exit wound was generally much larger and much more lacerated than that of entrance, but with the modern compound bullet the wounds are so similar that it is frequently difficult to determine by which the bullet entered. Under an antiseptic dressing the wounds, unless infected, heal within a week or ten days without suppuration.

The course of the bullet and consequently the track of the wound is almost invariably in a straight line. When undeformed, the bullet is rarely deflected from its course, even by bone.

The track of uncomplicated flesh-wounds heals readily, but, according to Makin,¹³ the resulting cicatrix in the deeper parts of the wound is often of extreme density and may produce impairment of the function of a limb by involving tendons or tying the whole thickness of the traversed muscular structures together. This report of Makin is made early after the healing of these wounds and it is probable that in the majority of these cases muscular exercise will cause yielding of the cicatricial bands as it does in cases of subcutaneous cicatricial formation following deep-seated abscesses.

Bloodvessels and nerves are easily cut or severed by the compound bullet. The comparatively slow-moving lead bullet formerly used, frequently shoved these structures aside and passed them without severing or

wounding them. With the small-caliber bullet the case is entirely different. From its high velocity, this missile does not slip by these structures, but severs, perforates or makes clean-cut lateral wounds. Undoubtedly one of the causes for the immediate high mortality among those struck by the compound bullet is from wounds of bloodvessels. The necessity for the immediate arrest of hemorrhage in wounds of important arteries by the compound bullet is apparent, for from the clean-cut nature of the wounds, bleeding is bound to be rapid and profuse, and first aid upon the firing line should be practised to the greatest extent possible under the conditions which obtain there. Relative to this proneness of the compound bullet to wound the bloodvessels, Treves,¹⁶ speaking of his experience in the Anglo-Boer war, remarks upon the number of traumatic aneurysms which have come under his observation and states that he has seen aneurysms of this variety of the brachial, femoral, popliteal and posterior tibial arteries, several varicose aneurysms of the thigh and an aneurysmal varix in Scarpa's triangle. In a case of large arterio-venous aneurysm in Hunter's canal with great swelling of the thigh he placed a temporary ligature on the common femoral, opened the sac, discovered the holes in the artery and vein, and ligated the artery above and below the wound and the vein on the proximal side only. Before the incision was closed the temporary ligature was removed. The case did well.

It is evident that wounds complicated by injury to bloodvessels will frequently have to be dealt with by

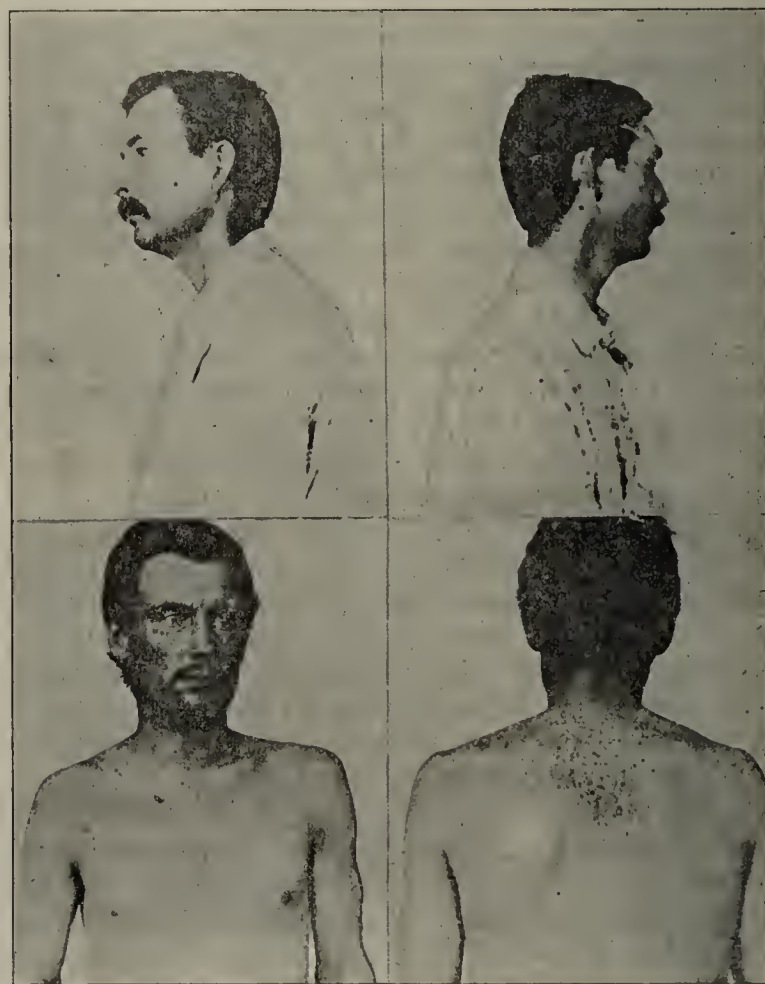


FIG. 3.—Entrance and exit wounds by Mauser bullets. 1. J. M., Private 1st Vol. Cav., entrance left cheek; exit right side of neck; range 200 yards; recovery. 2. H. B., Private 6th U. S. Infantry, entrance right breast; exit back, 1 inch to right of spine; traumatic pneumonia; recovery. Photographed by E. J. Meyer, Acting Assistant Surgeon, U. S. A., at U. S. A. General Hospital, Fort Monroe, Va., and reported by him to the Surgeon-General, U. S. Army.

military surgeons, and that ligation of the vessels under aseptic precautions will be indicated and will be followed by excellent results.

Secondary hemorrhage, however, will be rarely met with, as this complication is so frequently due to infection, a condition which will be much less common than formerly both from the generally aseptic nature of the wounds made by the modern bullet and from the fact that infection, when it does occur, is now generally readily controlled by antiseptic methods.

Wounds of the nerves will also be a frequent complica-



FIG. 4.—Multiple wounds. From photographs by Edward J. Meyer, Acting Assistant Surgeon, U. S. Army. 1. J. A., private, Co. H., 16th Infantry; missile passed through thigh and lodged in penis. 2. J. D., private, 6th Infantry; multiple wounds both thighs.

tion of wounds by the small-caliber bullet as well as will *traumatic neuritis* due to involvement of nerves in resulting cicatrices, or to degenerative changes set up in the nerve by traumatic injury. Dent¹⁷ gives several interesting cases of neuritis which came under his observation in the hospitals at Toynberg, Cape Colony. He relates a case in which pain, hyperesthesia and paralysis led to operative exposure of the ulnar nerve to relieve it from suspected cicatricial involvement, but the cicatricial track of the missile was seen to involve neither the nerve nor any of its branches. He instances other cases in which the nerve was not severed, yet distinct symptoms supervened. He concludes that from the high velocity of the bullet it may entail what the Germans call a violent *Erschütterung* of the nerve-trunk by passing in its immediate vicinity without directly wounding the nerve, but leading to rapid degenerative change and referred neuritis.

In cases in which the symptoms are due to involvement of a nerve in the cicatrix, operation under aseptic precautions will be indicated, and by liberating the nerve, improvement may follow, as in a case cited by the same writer. Where important nerves are severed they should be sutured by one of the methods used for this purpose, in order if possible to prevent paralysis of the parts distal to the traumatism.

Multiple wounds from the great penetrating power of the small-caliber bullet are common, as for instance the arm and forearm, the elbow being flexed; or the bullet may pass from side through the arm or chest or through both thighs (Figure 4).

In the case of multiple wounds by the same missile, the second wound of entrance is sometimes larger than the first and is more likely to be slightly infected, probably from infection of the bullet by passing twice through the skin and through several layers of clothing. That the compound bullet does not always become infected in this manner and that it is not extremely liable to become infected under such circumstances, is shown by a case which came under my personal observation,

that of Lieut. W. C. S., 6th U. S. Cavalry, in which the bullet passed through the body of a man standing in front of that officer and then passed through his arm and chest. Symptoms of lung-involvement appeared, but there was no infection of any of the wounds and the officer returned to duty in a few days.

EFFECT OF THE COMPOUND BULLET ON BONES.—In fractures of the bones by rifle bullets, the extent of the fracture, its form, and the amount of comminution are governed: (a) by the part of the bone struck; (b) by the velocity of the missile; and (c) by the angle of incidence. As all these factors can hardly be identical in any two cases, bone-lesions are bound to vary within certain limits. Of principal importance in these factors is the part of the bone struck, especially when the velocity of the missile is great. The physical qualities of the cancellous tissue of the epiphyses are so different from those of the compact tissue of the shaft of the long bones that, under conditions of violent impact, different traumatic results occur according to whether one or the other of these parts are struck.

FRACTURES OF THE DIAPHYSES OF LONG BONES.—When the shaft of a bone is struck at short range extensive comminution is produced, whatever the angle at which the bullet may impinge against the bone. The bullet in these cases produces an explosive effect in accordance with the reasons already given (Figure 5).

This effect is not confined to the bone alone; the bone-fragments driven out into the surrounding tissues act as secondary missiles, produce extensive traumatism of the subcutaneous soft parts and may even be driven out through the wound of exit and into a neighboring limb. In a case of this sort which came under the observation of the writer, the shaft of the femur was shattered for 5 inches of its length and largely reduced to bone-sand. The bullet passed through both thigh and leg, and on examining the wound in the latter, bone-

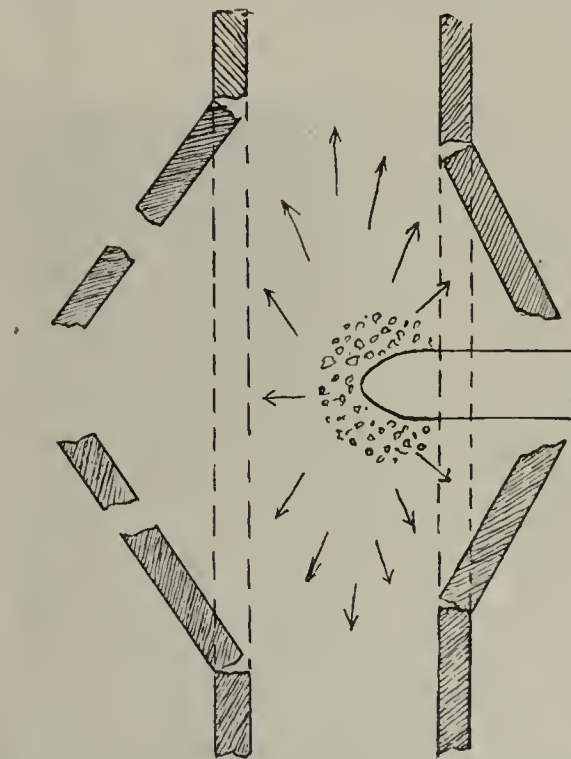


FIG. 5.—Lateral transmission of energy in the shaft of a long bone. Diagrammatic, modified from Beyer. A similar effect is produced in fluid-containing and fluid-saturated organs.

sand and several fragments of bone were found which had been carried through the first wound of exit and driven into the second wound of entrance by the force of the missile.

In another case the whole of the distal part of a meta-

carpal bone was blown out through the exit wound which was but little larger than usual (Figure 6).

This lateral transmission of energy by compact osse-



FIG. 6.—Radiograph showing explosive effect. The distal part of the fourth metacarpal entirely destroyed by a Mauser bullet (short range).

ous tissue is so great that a bone may be shattered by a bullet which barely grazes it. This is shown in Figure 7, from one of my cases. In this case the passage of a

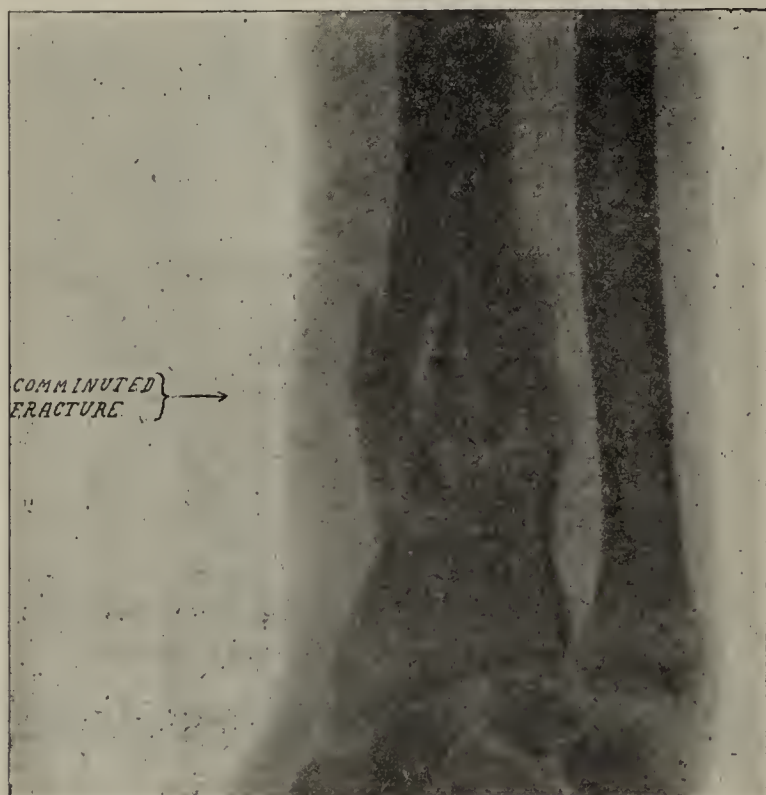


FIG. 7.—Radiograph showing comminution of the radius by a Mauser bullet (high velocity) which barely grazed the bone.

Mauser bullet at high velocity across the front of the wrist cut nearly all the flexor tendons and though

merely grazing the radius shattered it completely. (Figure 7.) The same effect is seen in "gutter" wounds of the skull and will be treated of under wounds of the head.

This shattering effect decreases with the velocity of the bullet until it appears only where the angle of incidence is perpendicular to the shaft and the impact of the bullet is median. In cases where these factors are present, marked comminution may occur even when the velocity of the bullet is considerably reduced.

This is illustrated in Figure 8, which shows comminution of the femur the result of the passage of a bullet directly through it from before backward, the range being something over 600 yards.



FIG. 8.—Radiograph showing comminuted fracture of femur from median perpendicular impact of bullet; mid-range.

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(To be continued.)

Cape Town Hospital Foul.—Rudyard Kipling, testifying before the South African Hospital Inquiry Commission August 1, said he found little fault generally, except with the Woodstock Hospital at Cape Town, which was horribly foul.

TRANSMISSION OF TUBERCULOSIS THROUGH THE MEAT AND MILK-SUPPLY.*

By JOHN J. REPP, V.M.D.,

of Ames, Iowa.

Professor of Pathology and Therapeutics, and Veterinarian to the Experiment Station, Iowa State College.

It is not long since the matter of transmission of tuberculosis through meat and milk was apparently settled, and the discussion of the subject was not considered of much importance. But within the past two or three years so much has been said and written upon this question both by those who by their knowledge of the subject are warranted in expressing themselves and by those not so warranted, principally the latter, that much scepticism has arisen, in consequence of which the subject has again been brought prominently before the public and its discussion has become a matter of vital importance. Whether the reason for this revival of the question has been a good one or not, I shall attempt to discover by reviewing the knowledge we possess on the subject. No amount of heated talk and speculative rehearsal will aid the solution of the problem in the minds of those who have been trained to think and to reason. Nothing but cold facts and logical inductions and deductions will suffice for these. It is my desire to view this subject from a plane on which nothing but facts and reason shall have position.

For the sake of clearness the subject may be treated under two general subdivisions, viz: (1) Transmission to Animals, and (2) Transmission to Man.

The meat and the milk of the bovine species only shall be considered.

I.—Transmission to Animals.

A. BY MEAT.

The portions of the body not commonly used for food, such as the brain, large lymphatic glands, spleen, bladder, uterus, lungs, testicles, mammary gland, skin, shall be excluded. The tongue, muscles, small intermuscular lymphatic glands, digestive tube, liver and kidneys are included.

No reference will be made to experiments in which the material inoculated or fed is not such as we have chosen to consider, or in which the character of material is not stated, of which classes there are a great many experiments which by their positive results demonstrate that tuberculosis can be transmitted from animal to animal of the same or of a different species.

1. By Artificial Methods.

Arloing¹ inoculated the muscle-juice of ten tuberculous cows into guineapigs and the result showed that the muscle-juice of two of the cows was infecting, 3 out of 10 guineapigs, 30%, inoculated from these two cows becoming tuberculous.

Galtier² infected two rabbits with the juice of the flesh of a tuberculous cow. It is noteworthy that two calves and two pigs fed on flesh from the same cow did not contract the disease.

Nocard³ produced tuberculosis in 1 case out of 21, 5%, by injecting juice of the flesh of 21 cows condemned at the abattoirs on account of tuberculosis.

Woodhead⁴ produced tuberculosis by injecting into the peritoneal cavity of two rabbits the raw juice from

the intercostal muscles of a tuberculous cow, after the tuberculous pleura had been stripped off.

Veyssière and Humbert⁵ inoculated two rabbits with 1 cc. of flesh-juice from a tuberculous cow in very good condition, and both became tuberculous, 100%.

As closely related and perhaps directly concerned it may be asserted that Bang⁶ found the blood of 2 out of 20 highly tuberculous cows infecting when inoculated, 10%.

Several experimenters got entirely negative results from inoculation with the blood of tuberculous cattle.

2. By Natural Methods.

Nocard⁷ failed to produce tuberculosis in any of several litters of kittens which he fed with meat of cattle condemned on account of tuberculosis.

Perroncito⁸ had like negative results in case of 18 young pigs fed from three to five months on the flesh of condemned cattle.

Johne⁹ fed 35 animals with the raw flesh from animals attacked with tuberculosis and 8, or 22.5%, became tuberculous.

Gerlach¹⁰ fed 46 subjects in the same manner and 6, or 13.1%, contracted the disease.

Peuch¹¹ caused 2 young pigs to consume 5 pounds of raw flesh, without bone, in 10 days, and in 2 and 3 months respectively these animals presented discrete glandular tuberculosis, 100%.

In speaking of the transmission of tuberculosis to animals through meat we must not lose sight of the fact that in the process of removal of the tubercular organs not ordinarily used as food, and which are for this reason not considered here, and in the cutting up of the carcass, some of the food parts of the carcass may be smeared with material rich in tubercle-bacilli. Such contaminated meat would of course be much more highly infectious. It is also to be noted that the muscles of swine and their intermuscular lymph-glands are more apt to be tuberculous than is the case with similar bovine structures. An examination of the literature to which I have had access indicates that but very little experimentation has been done to determine the infectiousness of those organs and tissues of tuberculous animals which are used for food. Much experimentation has been done with tissues other than food-tissues, but chiefly for the purpose of determining the general infectiousness of the disease. If these experiments with the food-tissues should be extended, there is no reason to doubt that they would indicate that this is a more extensive source of infection than is at present apparent. Also, none of the experiments cited, nor any other so far as I can learn, have been made with the liver as the object fed. German slaughter-house statistics¹² collected during 1888 and 1889 show that in all tuberculous cattle examined the liver showed the disease in 28% of cases. If a series of experiments were made by feeding this organ a much higher rate of infection would be observed. It will be noted that this is classed as a food-organ.

The experiments referred to nearly all have to do with the meat of highly tuberculous cattle. In these cases it is quite probable that the tubercle-bacillus was carried into the muscular system through the blood-vascular system, it being a well-recognized fact that in generalized tuberculosis the blood contains the microorganisms of the disease. It is quite unlikely that the food-organs and tissues in mild, localized cases would contain the bacillus, unless it might be the liver, with a possible rare occurrence in some of the other organs or tissues.

* Read before the Iowa Tuberculosis Convention, Des Moines, Iowa, January 9, 1900.

under consideration. The food-organs or tissues of these mild cases ought not to be found infectious unless contaminated from nonfood organs or tissues in slaughtering or dressing. We have no evidence to show that the food-parts of these mild, localized cases would be unsafe for food-purposes if the nonfood organs and tissues and all tuberculous food-tissues were removed at the time of slaughter, provided that no contamination by smearing would take place.

It is well known that heating to a temperature of 158° F. and maintaining the temperature at this point for 15 minutes will devitalize the tubercle-bacillus. With this in view we are led to say that thorough cooking will render inert any tubercle-bacilli which may be in any way connected with a piece of meat. But the cooking must be so thorough as to subject the interior of the piece of meat to this heat for this length of time. Tous-saint¹³ found broiled steak infected after heating its interior to 176° F. It is presumed that he did not maintain this heat long enough. Woodhead¹⁴ found that rolls of meat weighing over 4 pounds which he had smeared with tuberculous matter were not sterilized by ordinary roasting and boiling.

Johne¹⁵ in 62 experiments administered notoriously tuberculous flesh after it had been submitted to cooking in boiling water for ten to fifteen minutes, and 35.5% of the animals became affected.

B. BY MILK.

This will be understood to mean milk and all of its products, as: skim-milk, buttermilk, cream, butter, cheese. The right is reserved to refer to any of these products as milk. The number of experiments and observations showing that tuberculosis may be transmitted from animal to animal of the same or different species through the medium of the milk of tuberculous cows is very great. In order to reinforce the assertion by the facts in the case a number of experiments and observations will be presented.

1. By Artificial Methods.

There is no attempt made in the following presentation to separate the experiments made with milk of cows with healthy udders from those made with the milk of cows with diseased udders, but attention is invited to the fact that the milk of cows with healthy udders is in a large number of cases infectious for animals.

Ernst¹⁶ reports that out of 88 guineapigs inoculated from 15 cows, 12, 13.6%, became tuberculous; of 90 rabbits, 6, 6.6%, became tuberculous.

Hirshberger¹⁷ produced tuberculosis in 14 out of a number of rabbits inoculated with the milk of 29 tuberculous cows with sound udders.

Bang¹⁸ by inoculation of guineapigs and rabbits found the milk of 9 out of 63 cows with apparently healthy udders infectious. On microscopic examination post-mortem 3 of these cows showed slight udder lesions.

Peuch¹⁹ produced tuberculosis in all 4 rabbits inoculated from the milk of a cow with tuberculous udder. A two-months-old pig fed five days with 4½ quarts of milk from the same udder did not show any lesions of tuberculosis when killed 56 days later.

Ravenel²⁰ experimented as follows: Five grade cows which did not show udder infection were selected and 10 cc. of the milk of each was at different times inoculated into the peritoneal cavity of 88 guineapigs, of which 11, 12.5%, became tuberculous. No preparation of the milk was made, but it was taken just as it came

from the cow. In another series of 52 guineapigs given the whole unprepared milk of the entire herd of 5 cows no tuberculosis developed.

Russell²¹ inoculated 17 guineapigs with 0.5 cc. to 4.0 cc. of milk of 7 different tuberculous cows only 1 of which showed tuberculosis of the udder. The 2, 11.8%, of these 17 guineapigs which were inoculated with the milk of the cow with tuberculous udder developed well-marked tuberculosis, although only 2.0 cc. and 1.0 cc., respectively, of milk was used.

Delépine²² injected the sediment obtained by centrifugation of 36 samples of country and town dairies into the subcutaneous tissues or the peritoneal cavity of 65 guineapigs and produced tuberculosis in 1 of them, 0.15%.

Schroeder²³ inoculated 40 guineapigs with the sediment resulting from centrifugalizing 19 samples of dairy and dealers' milk. Four died of intercurrent disease, and out of the 36 remaining 1 developed tuberculosis, 0.28%. Nothing is known of the cows from which the milk was obtained. In another series 32 guineapigs were inoculated intraperitoneally with centrifugalized milk of 15 cows either known to be tuberculous or which gave a tuberculin-reaction. Of these 1 developed tuberculosis, 0.3%. In still another series the centrifugalized or untreated milk of 4 cows whose udders were not diseased was injected into 16 guineapigs, each receiving intraperitoneally 5 doses on as many different dates. None of them developed tuberculosis.

Bollinger²⁴ produced tuberculosis in experimental animals with the milk of a cow with tuberculous udder, also with the milk of a cow with nontuberculous udder.

May²⁵ injected the milk of 6 cows, 1 of which had a tuberculous udder, and found the milk of the tuberculous udder infectious.

Stein²⁶ obtained by the same method 4 positive results out of 14 injections with milk from sound udders, 28.57%.

Nocard²⁷ inoculated the milk of 54 cows and obtained infection with 3 which had diseased udders.

Kanthack and Sladen,²⁸ in examining 16 sources of the milk-supply to the colleges in Cambridge, England, inoculated 90 guineapigs with the result that 23, or 25.55%, died of tuberculosis. Of these 23, 13 were inoculated from the creamy layer and 10 from the sediment. Of the 16 dairies examined 9 were infectious, 56.25%.

The Director of the Jenner Institute of Preventive Medicine²⁹ found by animal inoculation that the milk of 17 out of 100 samples was able to produce tuberculosis, 17%.

Adami³⁰ reports that he and Martin, in inoculating the milk from 10 tuberculous cows whose udders were free from tuberculosis, produced tuberculosis in 2 guineapigs out of 29 guineapigs and 26 rabbits inoculated intraperitoneally, 3.6%. A calf fed 5 months with the milk of the cow that produced the disease in these 2 guineapigs did not develop the disease.

The work of Rabinowitch and Kempner³¹ is very interesting as adding strong evidence to that already obtained of infectiousness of milk of tuberculous cows, even though the udder be sound. The experimenters used the milk of 15 cows which had reacted to the tuberculin test, in 10 of which the milk was found by inoculation of guineapigs to be infectious, 66⅔%. Of the 10 cows 1 showed clinical evidence of udder tuberculosis and another showed it on microscopic examination post-mortem. Two other cows were only slightly affected as

determined by clinical examination, and still two others showed no symptoms of the disease. The inoculations were made into the peritoneal cavity with a combination of the sediment, obtained by centrifuging, and the fat layer. Butter was made from the milk of 1 of these 10 cows, and by inoculating guineapigs with it tuberculosis was set up in 3 out of 4 guineapigs inoculated, 75%.

Obermüller³² reports that Brusaferro has obtained positive results with 9 samples of butter; Bang from 1 specimen from a tuberculous cow; Roth from 2 out of 20 samples from diseased cows and from the market. He also reports that as a result of his own experiments he succeeded in producing tuberculosis in 4 out of 41 guineapigs inoculated from 10 different samples of butter.

2. By Natural Methods.

Bang³³ reports autopsy on 34 milk-fed calves, 24, 70.6%, of which showed lesions of tuberculosis evidently produced by the ingestion of milk containing tubercle-bacilli. Since then this author has made numerous similar observations.³⁴

Law³⁵ fed 3 calves of healthy parents on the milk of 3 tuberculous cows with apparently sound udders with the result of producing tuberculosis in all 3 calves, 100%.

Ernst³⁶ fed 21 healthy calves on milk of tuberculous cows with healthy udders and 8, 38%, of them became tuberculous.

Ernst³⁸ fed 48 rabbits from one to three months on the milk of healthy udders, and 2, 4.1%, were infected with tuberculosis.

Bang³⁹ says, "In Denmark, the swine are almost always fed with skim-milk, buttermilk, and whey, in addition to grain, and formerly it was noticed that when these milk-foods were given raw the swine almost always suffered from tuberculosis, where this disease was prevalent among cows. Since attention has been directed to this danger, tuberculosis in swine has greatly diminished in my country."

Hills and Rich⁴⁰ record the observation made by one of them that 5 swine, born of apparently healthy parents, and fed on skim-milk from a creamery partly supplied by tuberculous cows, were found tuberculous on autopsy. Also that many of the pigs fed on the milk of a herd of 91 cattle, 78 of which were tuberculous, were found tuberculous on postmortem examination.

Russell⁴¹ fed 2 pigs, beginning at six weeks of age, from August 23 to November 10, on separator slime received from the college creamery. None of them became tuberculous.

Bang⁴² says: "In Denmark milk is often given to young or to sick horses, and in those parts of the country where this custom is frequent, tuberculosis is not rare in the horse."

McFadyean⁴³ says: "In a considerable proportion of cases there was a distinct history of the animal's having been fed with tuberculous milk. Now, when one reflects that certainly not one horse in several hundreds is at any period of its life fed on cow's milk, the frequency with which tuberculosis has been met with in horses that had been so fed becomes very striking."

The foregoing states briefly most of what has been carefully done and recorded by way of experimentation and observation to prove that tuberculosis is communicable to other animals through the medium of the milk and the food tissues and organs of tuberculous neat cattle. In addition there might be added other obser-

vations of less definite shape, but no less true and convincing, as for example, the great lessening of tuberculosis among calves of tuberculous dams which are separated at birth and fed on sterilized milk or the milk of sound cows, as has been so abundantly shown by Bang in the prosecution of his suppressive measures in Denmark. Reference might also be made to numerous observations of veterinarians pointing to the transmission of tuberculosis from tuberculous cows through their milk to calves and swine. Enough has been done to prove beyond the peradventure of a doubt that tuberculosis may be transmitted through the milk and the food structures of tuberculous animals to the animals that consume these products or are inoculated with them. Upon this all students of the subject agree. This much has been proven. But these facts do not decide the important question at issue, viz.: whether or not tuberculosis is transmissible from animal to man, nor would they if they were multiplied *ad infinitum*. They only furnish a basis from which we may reason. For this purpose they are invaluable, as they establish the premise that the meat and milk of animals do at times contain living, virulent tubercle-bacilli.

II.—Transmission to Man.

A. BY MEAT.

1. By Artificial Methods.

There is no evidence of any sort on this point.

2. By Natural Methods.

The evidence on this score is only presumptive. However, it is well known that since ancient times legislation and sanitary regulations have been moulded around the presumption that the meat of highly tuberculous animals is dangerous as human food on account of the risk of conveying the disease to man through this medium. At this time every civilized nation that has any legislation or sanitary regulations in regard to the meat of tuberculous animals, provides that such meat shall either be condemned or that it shall be sold under declaration. These laws and regulations are based upon the analogy between tuberculosis in animals and the same disease in man and the fact of the intertransmissibility of this disease among the various species of animals. Whether this evidence warrants such restriction on the use of meat or not, has not yet been positively demonstrated, and on account of the impracticability of direct experiment with human beings we will almost certainly never be able to make such demonstration. The question must be decided upon the evidence we already have, and upon the additional evidence of the same character which from time to time may be added. The rarity of tuberculosis among the Jews who are so careful about their meat-inspection, and the high mortality from tuberculosis among certain North American Indians, referred to by Dr. Holden, who eat the various parts of diseased cattle raw, appear to indicate that there is danger of tuberculosis-infection of man from meat.

Of course, cooking of meats as it is usually practised effectually disposes of most of such danger as would exist if meat were eaten raw and without any attempt at sterilization. On the other hand there is not one whit of evidence that tuberculosis is not to some extent transmitted from animal to man through ingestion of meat. All the evidence we have indicates that such transmission occurs to a limited extent.

B. BY MILK.

1. By Artificial Methods.

No evidence.

2. By Natural Methods.

The evidence of transmission in this manner consists of recorded observations which have been made in case of human beings who have used the milk of tuberculous cows.

Olivier⁴⁴ reports that in a young ladies' boarding school 5 girls, the children of healthy parents, died of tuberculosis of the intestines. The cow which had for years supplied the school with milk was found to have generalized tuberculosis including the udder.

Two daughters of a Scotch family of good health who were brought up on milk of tuberculous cows died of tuberculosis. Two sons in the same family who did not use the milk remained healthy.⁴⁵

Stang⁴⁶ reports the case of a five-years-old boy of sound parentage and ancestry who died of tuberculosis. The cow whose milk this boy used was found badly tuberculous.

Demme⁴⁷ reports the cases of four infants in the Children's Hospital at Berne, the offspring of sound parents, that died of intestinal and mesenteric tuberculosis. He was able to exclude all other sources of infection and to decide that they had been infected by the ingestion of the milk of tuberculous cows.

Hills⁴⁸ mentions the case of a child 21 months old, of a friend of his, which drank the milk of a highly tuberculous cow for one week while on a visit to his uncle, and three months later this child died of intestinal tuberculosis. Other sources of infection could be excluded. A second child brought up on sterilized milk is still healthy.

Hills⁴⁹ also reports the death of a boy 4 years old at Yonkers, New York, from tubercular meningitis. The infection was traced to the milk of 2 cows of whose milk this boy had drunk and which proved on autopsy to be tuberculous.

Ernst⁵⁰ reports the death of 3 children of one family from tuberculosis. These children had used the milk of a cow which later died of advanced tuberculosis including the udder.

Stalker and Niles⁵¹ report that 5 persons between 20 and 30 years of age of healthy ancestry died of tuberculosis within a period of two years. On the farm where these deaths occurred they found 17 cattle suffering from tuberculosis and other cattle had previously died of this disease.

Leonhardt⁵² reports the death from tuberculosis of the meninges, intestines, and mesentery of 2 children fed on milk of a tuberculous cow.

Sontag⁵³ reports the case of a six-months-old child of healthy parents which died of tuberculosis and which had been fed on the milk of a tuberculous cow.

Hermisdorf⁵⁴ has reported the case of a child dead of intestinal tuberculosis which had been fed on the milk of a tuberculous cow.

Rich⁵⁵ reports that a young man of healthy parents who died of tuberculosis had used plentifully of the milk of a herd of 74 cattle, 65 of which were tuberculous, some of them markedly so. Also, another young man died of tuberculosis. Two months later Rich destroyed 80 cattle out of the herd of the family, that is, about 90% of the entire herd. Also, a young woman died of tuberculosis, and a month later the cow whose milk she had used died of advanced tuberculosis.

Thorne⁵⁶ reports that 22 physicians out of 339 practising in Ohio replied in the affirmative to the question, "Have you been able to trace any cases of tubercular disease to the milk of unhealthy cows?" and that 33 replied affirmatively to the question, "Have you had reason to suspect the origin of tubercular disease in older children or adults to be in the milk- or meat-supply?"

This series of experiments and observations has been selected from literature with the greatest care. Any reports which appeared not to be well authenticated or of a doubtful nature have been excluded. Besides this mass of positive evidence there is much more, that, while not so positive, is not less convincing. It appears that the evidence collected by Thorne from physicians in Ohio is especially valuable, not only in itself, but because it indicates what might be learned by addressing the same series of questions to the physicians of all the States of the Union.

Still further corroborative evidence is offered in the fact that such great numbers of bottle-fed children die of abdominal tuberculosis, and in the fact that tuberculosis of adults is decreasing in many places while tuberculosis of infants and small children does not show this marked decrease and is, in fact, increasing. Death from tuberculosis in all its forms in England and Wales has decreased 39.1% in the past 35 years. The greater part of this diminution was in the lung forms of this disease; for the same period the intestinal form has decreased only 8.5%. It is noteworthy that in the same period the increase in abdominal tuberculosis in children under one year has been 27.7%. Northrup⁵⁷ and Still⁵⁸ have presented statistics of autopsy in children which show that the pulmonary form of the disease is most common; that is, that the pulmonary lesions are primary, thus refuting the conclusion of most other pathologists also based on autopsy. This difference of conclusion can hardly be accounted for except upon the supposition that it is due to a difference in judgment among pathologists as to what is a primary and what a secondary lesion. This is a point on which the pathologist must exercise great care. He must not in this connection overlook the fact that, even though the most marked lesions appear in the thoracic cavity, this does not exclude *primary* infection by way of the digestive tract, because, as is well known, the infective agent has easy channels of passage from the abdominal cavity into the thoracic cavity by way of the thoracic duct and the vena cava.

Theobald Smith⁵⁹ calls attention to this migration of the disease as having been observed by him and others (Spengler) experimentally. Even assuming the conclusions of Northrup and Still to be correct, although they are contrary to the opinions generally held, there is still left a large percentage of cases to be accounted for by intestinal infection, and enough to warrant the most earnest crusade against the source of such infection.

However, neither animal inoculation, with its unmistakable results so far as the animals themselves are concerned, nor the recorded observations of almost doubtless transmission to man through the milk and meat prove with the positiveness of a demonstration that tuberculosis is transmissible to man through the milk. Yet, to nearly all students of this subject this is convincing proof, and we find the results of it in the protective legislation which everywhere abounds.

We have still further and more valuable evidence both in fact and in reason.

Whether or not tuberculosis of animals is transmis-

sible to man depends upon whether or not the tubercle-bacillus of the animal species is *pathogenic* for man. If this could be demonstrated, we would have a positive proof that would be beyond all question. We know that the tubercle-bacillus of the bovine tribe exists in the meat and milk products of these animals in many cases where they are tuberculous, and we know that man consumes these products thus bearing the bacillus. Therefore, if the pathogenicity of this animal tubercle-bacillus for the human species can be proved, the question is no longer debatable. The following examples are offered to the reasoning mind for the value they possess. In my opinion they are capable of supplying the evidence we need.

Tscherming,⁶⁰ of Copenhagen, attended a veterinarian who had cut his finger in making a postmortem on a tuberculous cow. The wound healed, but there remained a swelling which soon ulcerated and refused to heal, so that the whole tumefied mass had to be cut out. The microscope revealed the distinct tuberculous process and the presence of the characteristically staining bacilli.

Pfeiffer⁶¹ attended, at Weimar, a veterinarian named Moses, 34 years old, of good constitution, and without hereditary disposition, who, in 1885, cut his right thumb deeply in making a postmortem on a tuberculous cow. The wound healed, but six months later the cicatrix still remained swollen, and in autumn, 1886, the man had pulmonary tuberculosis with bacilli in his sputa and death occurred in 2½ years after the wound. Postmortem revealed tuberculosis of the joint of the wounded thumb, and in the lungs extensive tubercles and vomicae.

Law⁶² reports that a young veterinary friend of his who was inoculated in the hand in opening a tuberculous cow, suffered from a tumefaction of the resulting cicatrix, with tubercle-bacilli.

Rich⁶³ reports that a man cut his finger on a spicule of bone while making a postmortem examination of tuberculous cows, and that in a few weeks he developed a tuberculous joint, and a few months later showed unmistakable signs of phthisis.

Ravenel⁶⁴ reports the case of a veterinarian who cut the knuckle of his finger while making a postmortem examination of a tuberculous cow. The wound healed badly, remained swollen, and showed decided tendency to ulcerate. Removal of the cicatricial mass was practised and the tissues sent to him for examination. They showed typical tubercular lesions, with giant-cell formation.

I am well acquainted with this case myself and believe it to be an undoubted case of direct transmission of tuberculosis from cow to man by inoculation. This veterinarian told me that he did not become alarmed about the wound on his finger until he noticed a swelling and tenderness of the lymphatic glands on the inside of the elbow.

Further evidence than this is not on record so far as I have been able to ascertain. Whatever our conclusions may be they must be drawn from this evidence together with some corroborative evidence of another character which will be referred to later on. Those who are in search of more convincing evidence of the pathogenicity of the bacillus of animal tuberculosis for man must be informed that it is not to be had without direct experimental inoculation or experimental feeding of members of the human species with tuberculous products of animals. That this is not likely to be done it

is needless to state. It is not impossible that some one may apply to tuberculosis experiments of the same nature as those described by Arning,⁶⁴ in which a criminal was inoculated with leprous material. Certainly this sort of experimentation might be done in case of criminals, but such experimental work can never be done in case of children. Hence the relation between the milk of tuberculous cows and children will never be decided on any evidence so positive as this. So far as adults are concerned, will not some of those who hold such a firm belief in the noninfectiousness for man of meat and milk of tuberculous animals offer themselves as willing subjects for rational experimentation? On account of their attitude in this matter it would be unreasonable (to their minds) and to say the least unkind in them not to demonstrate to the world that their position is correct when it could so easily and so safely (in their opinion) be done. I seriously doubt if any of those who say there is but little danger, or but slight danger, of transmission of tuberculosis from animals to man through meat and milk would show the courage of their professed convictions by personally using as food the meat or the milk of animals known to be tuberculous, much less would they submit themselves for experimentation.

Adami⁶⁵ considers as doubtful the conclusion that there has been a causal relation between the milk used and the tuberculosis of the persons using it, or between the wounds received while making autopsies and the subsequent tuberculosis in cases such as those cited in this article. He bases his opinion on the fact of the impossibility of *total* exclusion of all other sources of infection. This nonexclusion of all other sources of infection has been construed by some whose judgments are not to be considered valuable as an argument against the transmissibility of tuberculosis from animal to man, but when a scientist like Adami is unwittingly misled into giving countenance to such sophistry it is time to call attention to it. One who puts forth such a statement as an argument does not realize the abyss of fatalism into which he would plunge science in all attempts at discovering the source of infection in case of any of the infectious diseases; especially would this be the case in such a chronic disease as tuberculosis. If the argument were valid, it would apply to all diseases. It is not possible to absolutely and totally exclude all other sources of infection in any case. To do this would demand on the part of the experimenter and observer a knowledge of all possible sources of infection, other than the one under consideration, that might be active in a given case; and further, a knowledge of altogether hidden and entirely unknown causes which might act. Unless this were done the same objection might be raised, viz: The other causes have not yet all been excluded: there may be some source of infection of which neither you, nor I, nor any one else has any knowledge. *Reductio ad absurdum!* All we can do, and all that it is necessary to do, is to exclude all known or probable sources. We must decide upon an anchorage somewhere which the light of scientific knowledge points out. If we have done this, and get positive results in a sufficient number of cases, we have a legitimate right to draw conclusions accordingly. In the cases referred to it is to be considered that we have practically excluded all other sources of infection. Science does not require that more be done.

Some work has been done to ascertain whether or not there is any difference of morphology, character of culture, or virulence between the tubercle-bacillus derived

from man and that derived from animals, with the hope of incidentally shedding some light on the question of the transmissibility of tuberculosis from animal to man. It was taught by the earlier investigators from Koch forward with few exceptions that the bacilli from these two sources were virtually similar. This belief was held and taught until the recent experiments of Smith,⁶⁶ Pearson,⁶⁷ and Dinwiddie⁶⁸ were made and which show that the bovine tubercle-bacillus is distinctly more virulent for the species of animals thus far experimented upon than is the human bacillus, with a few exceptions in which no difference in virulence was seen. Theobald Smith is probably the only one who has made a comparative study of the bacilli from the bovine and the human source in culture and under the microscope of sufficient extent to be of any value. He has noticed some points of difference, but none that so far as we know, have any bearing upon the question under consideration. It is true that if there is a marked difference between the bacilli from the two sources it may in time be found out that, by a careful study of the bacilli themselves, we shall be able to differentiate cases of human infection from cases of bovine infection in man by an examination of the respective bacilli. However this may be, such a stage has not yet been reached. It may be that the cultures of human bacilli which Smith studied were all made from cases of human infection, and that the bacilli were adapted to the human system for generations. If a study of human bacilli from a case of supposed bovine infection could be studied side by side with bovine bacilli, the differences which Smith found might not be present. This seems to be a fertile field for investigation. It is not unlikely that the bovine tubercle-bacillus, by passing through the bodies of several persons, or even one, may be so modified as to present under study the characters which we ascribe to the human bacillus. Weight is added to this opinion by the experiments of Nocard⁶⁹ in which he succeeded by means of cultures *in vivo* in transforming the human bacillus into one of the avian type.

Neither the work of Smith, Pearson, nor Dinwiddie adds or pretends to add anything positive to our knowledge of the transmissibility of tuberculosis from animal to man through the meat and milk. All evidence we have from this work is that afforded by an interpretation of the results and the use of them as a basis for reasoning about what the result would be if the terms of the experiment should be reversed and human beings were inoculated with bovine bacilli. By such an examination of these results we find that they are rightfully interpreted as antagonistic to the idea that tuberculosis is not communicated from animal to man through the meat and milk. Smith's experiments have, evidently because of careless reading, been used by some writers as proof of a nontransmissibility from the animal to the human being. On the contrary, Smith's experiments do not indicate this, nor does Smith claim that they do. This author says, after announcing his experiments, without any reference to these experiments, "It seems to me that, accepting the clinical evidence on hand, bovine tuberculosis may be transmitted to children when the body is overpowered by large numbers of bacilli, as in udder-tuberculosis, or where certain unknown favorable conditions exist." As to numbers of bacilli it may be said that they have been found in milk, even from nontuberculous udders, by microscopic examination. Only one drop can be examined at a time by the microscope. If there is but one bacillus in each drop there would be at

least 5,000 in a pint of milk, which is about the daily allowance for an infant. Whether or not Smith would consider this an overpowering number, he gives us no hint. What the "unknown favorable conditions" are is only to be surmised. Smith concludes his article by saying,⁷⁰ "if in this brief summary I have presented nothing but problems to be solved and doubts to be entertained, I feel quite," etc., thus indicating that he has proved nothing, but that he has only pointed the way toward the proper field of investigation, something he has certainly done. Dinwiddie does not touch upon these points.

Now, what is the evidence *against* belief of the transmissibility of tuberculosis from animal to man? There is no valid argument, no observation, no proof. Writing has been done which shows that a few people will climb over all the evidence which is presented here, and which is conclusive to most minds, apparently unable to appreciate it, and call for *direct* evidence, a demand which in its very essence betrays on the part of the person making it an unfamiliarity with the whole subject, and condemns him as, because of this unfamiliarity, disqualified to speak authoritatively on the subject. Those who continuously call for proof, which they are unable to recognize when given, and who give none in return in support of their own conclusions, are unworthy of reply.

The work of Smith, Pearson, and Dinwiddie already referred to, which points to the conclusion that the bovine tubercle-bacillus is more virulent⁷¹ for a number of species than the human tubercle-bacilli and equally virulent⁷² for others, certainly warrants us, if we draw any conclusion at all with reference to man, that the bovine tubercle-bacilli are more virulent for man also. The extreme susceptibility of man to tuberculosis, indicated by the large percentage of the human race suffering from the disease, would further point to the soundness of such a conclusion. Manifestly the opposite conclusion would be eminently unfair. It has been intimated by Conn⁷³ that "if the human bacillus is only slightly pathogenic for cattle it is at least likely that the bovine variety may not be very dangerous to man." What nonsense! It would be as reasonable to say that, inasmuch as the American soldiers who at one time during the Philippine War were armed with Springfield rifles which were of short range were not dangerous to the Filipinos, neither were the Filipinos, at that time armed with long range Mauser rifles, dangerous for the American soldiers.

I consider that there is another point worthy of notice. It is this: In the comparisons of the virulence of bovine and human tubercle-bacilli which have been made by Smith and Dinwiddie they have compared the bacilli of human *sputum* with the bacilli of bovine *tissues*. Now, especially in view of the fact that Smith has pointed out that he has observed the sputum bacilli to be more saprophytic in nature than the bovine bacilli which he examined, is it not probable that this is the case, and that the bacilli of human *tissues* may show themselves more parasitic in nature than the *sputum* bacilli, and of equal virulence with *bovine* bacilli from tissues? It seems to me that if we use tissue bacilli on the one hand, we should use them on the other. Pearson has done this in his experiments, as yet unpublished, as I happen to know because I assisted in instituting the work. However, even here many difficulties present themselves and many errors can creep in. Comparisons can be made with cultures only, and not with the tissues themselves for reasons which are apparent to all. This whole subject is one surrounded with difficulty.

It may be stated *en passant* that students of this subject of transmissibility of tuberculosis by meat and milk, whether they be individuals or commissions appointed to study the matter, are almost unanimous in their opinion that there is danger of such transmission, and that this danger is great enough to call forth protective legislation and regulation against these sources of danger. What evidence has brought them to such conclusion? Practically that which has been presented in this paper.

SUMMARY.

The evidence presented here is:

1. That tuberculosis may be transmitted to animals through their eating the meat of certain other animals which are tuberculous or by their being inoculated with it.

2. That tuberculosis may be transmitted to animals through their ingestion of the milk of certain cows which are tuberculous, or by their being inoculated with it, both when the udder of the cows is diseased and when it is healthy.

3. That, therefore, the meat and milk of certain tuberculous animals contain living, virulent tubercle-bacilli.

4. That the tubercle-bacilli of cattle are pathogenic for man.

5. That, therefore, the meat and milk of certain tuberculous animals is capable of producing tuberculosis in human beings who use these products as food.

6. That there is no evidence that the converse of these conclusions is true.

PRACTICAL CONCLUSIONS.

1. In Regard to Meat.

The meat of all food animals, especially cattle, is unfit for food when the animal is highly tuberculous; but is safe for food when the animal is only slightly or moderately tuberculous, especially so if the meat is well cooked, provided the tubercular tissues are eliminated.

2. In Regard to Milk.

a. The milk of a cow with tuberculous udder is always dangerous for food unless it is well sterilized.

b. The milk of tuberculous cows with healthy udders is sometimes dangerous for food unless well sterilized. We cannot tell except by experiment, which is impracticable as a routine matter, when such milk is dangerous and when it is not. Hence the milk of tuberculous cows without disease of the udder should always be looked upon with suspicion, and either not be used or be used only after sterilization.

c. Tuberculous cows may be kept for breeding purposes provided they are isolated, even from their own offspring, and their products sterilized before use; or,—

d. They may be slaughtered for food under conditions imposed by the conclusion stated above in regard to meat.

GENERAL CONCLUSION.

All legislation and regulation should favor the disposition of tuberculous animals as suggested above, so far as meat and milk are concerned.

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MÜTTER LECTURES OF THE COLLEGE OF PHYSICIANS
OF PHILADELPHIA.The Surgical Treatment of Congenital and Pathologic
Disfigurements of the Face.

By JOHN B. ROBERTS, M.D.

Professor of Surgery in the Philadelphia Polyclinic.

LECTURE IX.—The Operative Treatment of Deformed or
Deficient Ears.

(Abstract.)

OPERATIONS for the relief of aural disfigurement have received very little attention until within the last six or eight years. This is rather remarkable because the deformities are quite conspicuous and the operations for their relief free from serious risk. It is the more strange because Italians of the time of Tagliacozzi and earlier did plastic operations upon the ear, and it is said by Szymanowski that such operations are mentioned in Sanscrit writings.

The ears of prize-fighters often receive injuries which result in permanent cicatricial deformity. Sexton called attention some years ago to the fact that the ancient Greeks must have been familiar with deformed ears in

boxers, because the characteristic disfigurement is, according to him, shown in statues representing ancient Greek pugilists.

The external ear is quite often the seat of incised and lacerated wounds which require accurate suturing to reproduce the normal outline. The auricle may be



FIG. 1.—Congenital deformity of ear, treated by elliptical incision and bending of the cartilage.

torn almost completely from the skull and yet be easily restored to its position by a few sutures. Completely detached portions should be cleansed and sutured into position, even if some time has elapsed since the accident. Union may sometimes be obtained even in these unfavorable cases.

Sloughing after frost-bite is a not unusual cause of aural disfigurement. Plastic operations may improve the appearance of the organ. A common injury is laceration of the lobule from earrings having been torn out of the ear by children, grasping at the trinket, while being carried by their mothers. The fissure so made may be easily closed, even if cicatrization has previously occurred, by freshening the edges of the cleft and applying sutures. I have operated when the ear has had several such cicatrized tears in its lobule. A similar plastic operation is necessary after the removal of the keloid growths that occasionally result after piercing the ears for earrings. A little ingenuity will greatly improve such cases, as I have proved in operating upon a good many patients.

Burns of the side of the head cause sloughing and cicatricial disfigurement. Pancoast many years ago made a new lobule to an ear by two crescentic incisions which enabled him to lift up sufficient tissue to construct a lobule.

A great loss of tissue from sloughing may need to be replaced by taking a flap from the hand, applied to the side of the head until circulation has been established. The tissue may then be cut from the hand. A large piece of tissue may be transferred from the abdomen. In such an operation the graft would first be attached to the hand, and two weeks later cut from the ab-

domen; and the hand would then be applied to the side of the head in such a way as to permit the new tissue to be attached to the region of the ear.

Irregularities of the auricle, enchondromatous nodules in the neighborhood of the ear, and fistulous openings occur as congenital defects. They are due to irregular coalescence of the branchial arches and imperfect closure of the branchial clefts. Sometimes there is a deficiency of cartilage in the pinna which allows the external ear to assume abnormal positions on account of its flaccid character. I recently operated upon the case of this sort which is shown in the figure. At other times the cartilage in the pinna may become buckled or bent during birth or soon afterwards, and asymmetrical ears result from want of correction of this abnormality. The lack of cartilaginous material may perhaps be compensated for by excising a portion of the skin back of the ear and stitching it to the side of the head. It has been suggested that a thin sheet of platinum or other material be inserted beneath the skin, to give rigidity and a proper contour to the external ear. This could perhaps be bent into shape, even after the tissues had healed over it. The deformity due to bending or buckling of the cartilage may be remedied, if the child is treated when young, by bending the organ in the opposite direction and holding it there by means of adhesive strips, or some form of spring going across the top of the head and having a pad to press upon the ear. If the deformity is slight, the contracting influence of collodion may be utilized.

Exceedingly large ears, due to a sort of hypertrophy of all the tissues, occasionally require curtailment. This may be done satisfactorily by excising a V-shaped portion of the auricle with the base of the V towards the outer margin of the organ. Careful suturing will restore the general outline and maintain the regularity of the natural elevations and depressions. The exsection of a crescentic piece from the central part of the pinna, with a tongue-shaped process extending from the convex border of the crescent to the border of the pinna, makes a rather neater operation and restores more accurately the normal contour. This method was, I believe, first suggested by Dr. Parkhill. Such elephantine ears are greatly improved by these operations. Flaring or out-



FIG. 2.—Diagram of method of Parkhill for reducing size of ear. Dotted lines show piece to be excised.

standing ears are very ugly, especially when the flaring condition is associated with great size. Such ears may be brought closer to the head by the excision of an elliptical piece of tissue behind the auricle, and the in-

sertion of stitches so as to draw the cartilage nearer to the surface of the cranium. The elliptical portion removed should have its long diameter in the vertical direction and should be wide at the point where it is desired to draw the cartilage inward to the greatest extent. The portion removed should be quite large and its outer edge on the posterior surface of the pinna should extend far outwards as the amount of retraction desired is greater.

The inner border of the ellipse on the surface of the skull should be comparatively close to the bottom of the furrow between the ear and the head. By the insertion of stitches in an oblique direction the axis of the ear can be somewhat changed.

Some operators have removed only the skin and subcutaneous tissue; others have taken out the entire thickness of the pinna, including the cartilage and the skin on both the back and front. It is probably best to remove a large portion of skin and subcutaneous tissue on the posterior surface of the ear and the skull, and to excise a wedge-shaped portion of the cartilaginous structures; but the cartilaginous piece which is re-

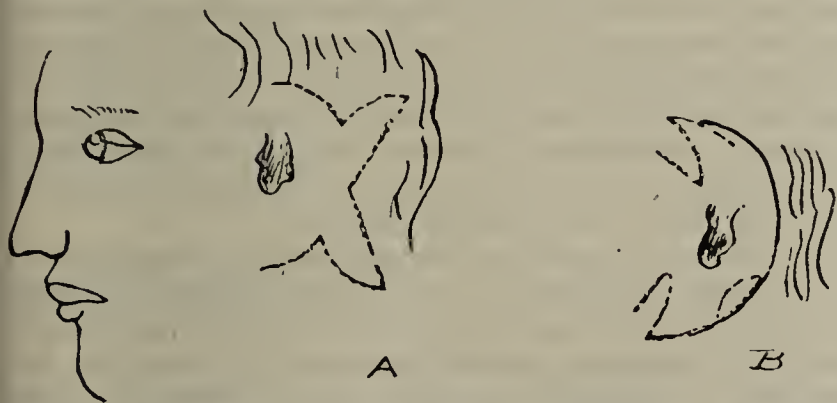


FIG. 3.—Method suggested by Szymanowski for constructing an auricle in congenital absence of the external ear. A. Dotted lines show incisions by which the skin is raised and doubled so as to make a crude auricle. The posterior flap is thrust under the anterior one and sutured by through-and-through sutures. B. Shows incisions made at a subsequent operation to model the crude auricle into more perfect shape.

moved should be much narrower than that cut out of the skin. This method I have used satisfactorily. It is usually not necessary to carry the incision through the skin on the front of the ear.

Congenital absence of the ears may be treated by the adoption of an aluminum ear properly tinted and held in place by a spring inserted in a slit in the soft tissues. Westlake adapted such a contrivance to a man's head, and the patient was able to unlock the artificial organ and remove it. This was done by means of a spring situated behind the artificial ear.

Szymanowski has suggested the making of a cutaneous ear in these cases of congenital absence of the organ. The diagram shows the incisions for the reconstruction of a rudely shaped ear which is afterwards to be modelled by smaller incisions and proper suturing. It seems as if it might be possible to insert an aseptic piece of metal into such a cutaneous reconstruction to give it rigidity and a contour like that of an ear.

The Physiologic Action of Phenactin.—From an extensive study of the drug Horatio C. Wood, Jr. (*University Medical Magazine*, July, 1900) concludes as follows: 1. The moderate dose of phenactin is without any distinct action on any vital organ. 2. Large doses lessen reflexes by a direct action on the spinal cord. 3. Doses of 0.5 gm. per kilo of body-weight (equivalent to a little less than one ounce for a 150-pound man) kill by arrest of respiration. 4. Doses even up to 0.5 gm. per kilo had no distinct effect on the circulation. [M.B.T.]

CLINICAL REPORT OF TWO CASES OF PARALYTIC DEMENTIA OCCURRING IN THE NEGRO.*

By W. K. WALKER, M.D.,

of Dixmont, Pa.,

First Assistant Physician to the Western Pennsylvania Hospital for the Insane.

I HAVE considered the following cases of sufficient interest to justify reporting at length, representing as they do a large and increasing proportion of patients today found in hospitals for the insane, but which, in the earliest and obscure stage of the disease must come under the notice of the general practitioner. They illustrate the two principal clinical types of paralytic dementia and are of further interest because found in a race which was practically exempt from this disease until emancipated and thus subjected to the manifold influences of civilization with its attendant evils. Today, because of greater indulgence in alcohol, increased frequency of syphilis and stress from greater psychic demands upon him, the negro is a frequent victim of this disease.

The first case under examination is one of uncomplicated paralytic dementia, *i. e.*, dementia and a progressive paralysis:

W. H., laborer, 35 years old, was admitted to the Western Pennsylvania Hospital for the Insane, March 1, 1900. Little can be learned of his family history, except that his mother has suffered from rheumatism all her life, and is now (at the age of 70) quite crippled from its results. The patient, nervous in boyhood, was taken from school at an early age because "the doctor said if he did not give up study he would go insane." Married at the age of 27, he is the father of 3 children; the eldest (a girl of 6 years) had convulsions during the period of teething. The patient freely acknowledges repeated attacks of gonorrhea but denies syphilis, and evidence that he has suffered from this disease can not be obtained. He has used tobacco freely, whisky continuously, and to excess since the age of 20. Previous to the onset of his present trouble his general health was good. Nine months ago he appeared to grow indifferent to his surroundings; became quiet and dull at home where he had previously been talkative and lively, and was easily irritated by the children. Heretofore industrious, he would leave his unfinished work and stand around in an absent-minded way. Gradually he became more stupid and dull until November (6 months after the first symptoms were noticed), when he complained of constant headache and could not sleep; since this time his memory has grown progressively worse. Sent to the store he would bring home useless articles, among them things which he could not well afford to buy. Upon one occasion he got a pair of shoes and attempted to leave the store without making arrangements to pay for them. Again, left at home to look after the children while his wife was at work, he killed a chicken and cooked it with no further preparation than removal of its feathers. He has difficulty in recalling the names of his children, and cannot remember their ages or his own. His appetite has been ravenous "never seems to get enough to eat;" he is obstinately constipated, has constant headache and sleeps but little. There has been no manifestation of violence; he is brought to the Hospital because he is such a care that his wife cannot look after him and at the same time make a living for her family. His wife states that his sexual appetite, previously manifested to an exaggerated degree, has been gradually lessening in the last 2 years, and for a month or more has practically been absent.

Upon examination he is found to be fairly well nourished, but with digestive functions imperfectly performed as evidenced in broad, flabby, and furred tongue. Heart: first sound weak, no murmurs. Pulse: irregular, frequency 86. No gross abnormality of any organ. Urine: dark amber in color, acid in reaction, specific gravity, 1.030, no albumin.

Station is good; gait slouching but not incoordinate. There

* Read before the Pittsburg Academy of Medicine, March 26, 1900.

is slight tremor of facial, manual and lingual muscles and incoordination of these upon effort to perform any complicated movement. Reflexes: Deep, are all exaggerated, more apparently upon the left side; ankle-clonus is present; the superficial are not markedly diminished. The cremasteric is plainly elicited. Dynamometer R. 95, L. 85.

Pupils are unequal—right 3 by 3 mm., left, $3\frac{1}{2}$ by $3\frac{1}{2}$ mm. The irids respond sluggishly to both light and accommodation. Ophthalmoscopic examination shows normal appearance of both optic discs.

The patient's manner is apathetic, but placid and good-natured. There is marked amnesia not only for names but for both recent and remote events. He is very feeble mentally and in a condition of dementia analogous in many ways to ordinary dementia; he has no delusions, however, nor is there marked condition of *bien-être*; at most a decided optimism manifest in the belief that he "can put \$500 in bank as the savings of next summer."

In Case 2 we have dementia and progressive paralysis with superadded insanity impressing upon the dementia certain special characteristics.

G. L., preacher, 55 years old, admitted May 2, 1899. No history was obtainable except that he had been traveling about the country collecting money for the purpose of founding a negro college in the West. Ten days previous to his admission he was found at midnight, preaching to an imaginary audience upon the streets of New Castle. Arrested and placed in the county jail, he became much excited, later raving, smashing the furniture of his cell to kindling wood and tearing his bed to shreds. He talked of great schemes for educating the negro; intended preaching in the opera house, and would in this way collect millions for the purpose. The sum of \$50 was found upon him, which he had succeeded in collecting.

Examination shows a well nourished, muscular mulatto. Station: sways slightly. Gait is unsteady and incoordinate. There is very marked twitching and tremor of facial and lingual muscles with tremor of the extremities. Voice is tremulous. Reflexes: Deep, are all exaggerated; ankle-clonus is present; superficial reflexes are diminished, cremasteric absent.

The pupils are unequal—right $2\frac{1}{2}$ by $2\frac{1}{2}$ mm., left $1\frac{1}{2}$ by $1\frac{1}{2}$ mm. Irids respond sluggishly to both light and accommodation. Ophthalmoscopic examination shows early gray degeneration of both discs.

The patient is in a condition of maniacal excitement and has delusions of grandeur; talks incessantly, shouts, sings and gives commands to those around him, saying that he is equal in power and greatness to God; that he is sent by God to educate the negroes of the West, for which purpose he has already collected \$600,000,000. He boasts of his sexual power; is the father of 50,000 children; masturbates incessantly when not restrained by camisole. In a few days he became much quieter under rest in bed, baths and hypnotics (trional), but manifested delusions of persecution; threatened to kill the rascals who were poisoning him, and developed mischievous and thieving tendencies. He soon earned the reputation of being the thief of the ward, stealing papers, books and the clothing of other patients and attempting to hide these articles under his bed.

Incidents in the course of this case were: August 3, the development of tenderness over the main trunks of the right brachial plexus of nerves followed by atrophy of all the muscles of the upper extremity; synchronously with this was developed herpes zoster of the cornea (right eye) with the characteristic herpetic eruption also upon the integument of the right brow and lid. December 8, carbuncle covering entire occipital region, measuring $5\frac{1}{2}$ inches in its greatest diameter; this large area, however, was entirely filled in by granulation and subsequent cicatrization despite progressive physical and mental deterioration which was rapid. Bedridden and helpless, the four extremities paretic, sphincters derelict, and scarcely able to articulate, he would talk incoherently of his vast schemes for educating not only the negroes of this country, but of the entire world; his room was a palace and the patients and

attendants around him but slaves to do his bidding; continued to boast of his fertilizing capacity which was now 50,000 daily, and when asked how he felt would invariably reply "never better in my life." He died February 8, 1900, of paralytic marasmus or cachexia.

In this case we have with the paresis, dementia and insanity, a succession of phenomena indicating widespread neuritic degeneration. It illustrates the apparently sudden onset so frequently noted as well as the rapid progress of the disease. It is the variable form of paralytic dementia which so many writers have given undue prominence, thereby misleading the general practitioner who often fails to correctly estimate the importance of the bodily accompaniments and the dementia which constitute the peculiar or the pathognomonic features of the disease.

In striking contrast with this is the gradual onset and development of the disease in Case 1, which illustrates uncomplicated paralytic dementia; this is generally conceded to be the form most frequently encountered at the present day and is characterized by predominance of the somatic signs, viz., facial, lingual and manual tremor, defective speech, involvement of the reflexes,—of which the deep are usually exaggerated while the superficial are diminished,—manifestations of incoordinate muscular activity (disordered handwriting, awkwardness or difficulty in performing finely adjusted movements), spasms and paresis, and defect in pupillary reaction; all these accompanied by a progressive dementia variable in degree.

In etiology Case 1 prominently presents three factors: 1. Arthritic diathesis in immediate ancestry favoring the nutritive and vascular changes underlying the subsequent pathologic alterations found in paralytic dementia. 2. Cerebral instability or vulnerability evidenced in the "threatened insanity" while attending school. 3. Exposure to the most frequent toxic cause of the disease, *i. e.*, alcohol.

Lemoine (quoted by Regis¹) is of the opinion that arthritism is the predisposing cause of paralytic dementia, for which it prepares the way, by its repeated congestions and by its overproduction of the products of disassimilation, for its later development by an exciting cause, such as intoxication; (alcohol, saturnism) or infection (syphilis, malaria); Kraepelin recently considers the first cause of this disease to be a sort of intoxication from disorders of the body metabolism, which brings about alteration in the ganglion cells.

It has been repeatedly observed that in paralytic dementia the neurotic heredity is not often strongly marked and this seems to be the opinion held by the majority of alienists at the present day. Naecke, however, lays stress upon inherited or acquired cerebral defect as a predisposing cause of paralytic dementia; in a report of the result of examinations made upon 100 male paretics² he finds a high percentage of abnormal heredity and degenerative stigmata, and concludes that the disease occurs in a predisposed brain. In the examination of cases admitted to the Western Pennsylvania Hospital for the Insane during the last $3\frac{1}{2}$ years I have not failed to obtain evidence of cerebral instability or vulnerability in all cases where the source of my information was reliable. That multiplying statistics will further demonstrate the etiologic importance of this factor I do not doubt.

Alcoholic intoxication is very generally acknowledged to be one of the causes of this disease. Kellogg writes: "The toxic origin of paralytic dementia is im-

portant; alcohol is the chief toxic agent—probably not less than 15% of the cases spring from alcoholic abuse.³”

No history of luetic infection was obtainable in this case. In the unsettled state of opinion regarding its etiologic importance, we must admit that syphilis has not been conclusively proved to be the only factor in the causation of paralytic dementia; it would appear that, like its congener, locomotor ataxia, it is polygenic in origin.

Modern investigation teaches concerning the architecture of the brain, that it is made up on the same general plan as are other complex organs; that it is subject to the same laws and suffers degenerative changes in the same manner as do other organs, whether from exhaustion due to overwork, excitement or anxiety, to disorders of metabolism (faulty production or elimination, or both), or poisons from external sources (intoxications, infections). The essential lesion in paralytic dementia begins as alteration in the nutritive state of its functional unit progressing to permanent structural change.

It is not always easy to discover the exact part played by each element in the production of a disease the onset of which is so insidious that “its origin is lost in the darkness of the past,” but we may assume that paralytic dementia is the result of a series of causes acting sequentially or in combination and in varying contributive degrees.

REFERENCES.

- ¹ Practical Manual of Mental Medicine.
- ² *Neur. Centralb.*, Sept., 1897.
- ³ Text Book of Mental Diseases.

PUERPERAL ECLAMPSIA, WITH REPORT OF TEN CASES.

By J. B. TODD, M.D.,
of Syracuse, N. Y.

In my experience cephalalgia is the danger-signal of coming eclampsia. A woman may have slight albuminuria and under proper care even recover, but if during labor and for two days afterwards the patient complains of severe pain in head there is danger of eclampsia.

In the treatment but slight reliance should be placed on diuretics, especially in digitalis and potassium acetate, which depress the heart but do not eliminate the urea. Hydragog cathartics are required to eliminate the poison or toxin and should be followed by iron and mercuric chlorid.

R.—Tr. ferri chlor..... 1 ounce.
Hydrg. bichlor 1 grain.
Ft. sol. Sig. Twelve drops in a capsule every 4 hours.

To control the convulsions there is nothing like morphin, provided it is given in sufficiently large doses. From $\frac{1}{2}$ to $1\frac{1}{2}$ grains should be given hypodermically, and the headache will be the criterion to tell you when to repeat the dose.

Whenever the patient complains of severe pain in the head give another dose, whether it has been one hour or longer since the last dose was given.

In the meantime give the hydragog, and I prefer elaterium because it may be depended upon to produce a thorough action.

I append brief notes of 10 cases which have occurred in my practice.

CASE 1.—Mrs. S., aged 17, was delivered of her first child without any trouble, but on the second day complained of headache and soon had a convulsion. I gave $\frac{1}{2}$ grain of morphin hypodermically. She had no recurrence of convulsions and made a good recovery.

CASE 2.—Mrs. H., aged 15, about 2 months pregnant, complained of headache and at 9 A.M. had a convulsion. For the time $\frac{1}{2}$ grain of morphin relieved her, but at 2 P.M. the condition returned and she soon had another convulsion. For the next 36 hours she would have a recurrence of pain in the head to be followed by a convulsion whenever the morphin became exhausted. The urine was scanty and highly albuminous; the entire body edematous. The morphin was given in increasing doses, until, from 5 to 9 A.M. on the second day, she received 4 grains and during the next 24 hours 8 grains. This quantity was not guessed at, but carefully weighed. She was not narcotized at any time, just quiet, and whenever there was a recurrence of pain in the head a hypodermic dose of from 1 to $1\frac{1}{2}$ grains of morphin would prevent the convulsion. As the kidneys did not eliminate the urea she was given elaterium, which produced a large number of watery evacuations from the bowels. The patient rapidly regained her normal condition and in 4 months expelled the placenta with the fetus macerated and absorbed. I have since attended her in 3 labors with no trouble.

This case would seem to show that it is not necessary to produce an abortion in every case of eclampsia occurring in the early months of pregnancy.

CASES 3, 4, and 5.—The next 3 cases were in women aged 29, 30 and 38. All had borne children, and in each there was headache during labor, and in each a single convulsion occurred shortly after labor, the hypodermic dose of morphin preventing any recurrence.

CASE 6.—Mrs. B., aged 19, labor at term, had a convulsion in the morning. An eclectic practitioner was called and remained with the case from 2 until 5 P.M., when he left. I saw the case at 9 P.M. She had had four convulsions and the child was dead. The woman died in a convulsion within a few moments.

CASE 7.—Mrs. S., aged 27, first child, she weighed 200 pounds. Labor had progressed through the first stage when she had a convulsion. I gave $1\frac{1}{2}$ grains of morphin and chloroform until she was unconscious, and delivered with instruments. Mother and child both did well.

CASE 8.—Mrs. H., aged 17, first child, at term, had slight labor-pains in the morning soon followed by a convulsion. I saw her at 10 A.M. She had already had two convulsions, and was semiu conscious but moaning with pain in head. I gave her 1 grain morphia sulfate and chloroform. The os was but slightly dilated, and I stretched it with fingers until forceps could be applied at superior strait. A living child was delivered and the mother made good recovery.

CASE 9.—Mrs. R., aged 31, the mother of one child, 3 years old, had slight albuminuria for 2 or 3 weeks previous to that confinement, and 3 hours after her delivery she had 8 or 10 convulsions, and was slow in her recovery. She became pregnant the second time in June, 1898, and except for being quite nervous she enjoyed good health until about the middle of January, 1899, when she began to have pain in the occiput, extending down the back of the neck.

At that time the urine was slightly albuminous, and she continued in about the same condition until February 7, when labor began. At 10.30 A.M. she was delivered of a female child, which weighed 3 pounds 5 ounces. She had headache. Her urine was scanty and albuminous, and her breath had uremic odor.

She had a convulsion at 1.30 A.M., February 8. I gave her 1 grain of morphin hypodermically and 3 grains of a 5% triturate of elaterium. The headache was relieved, but she did not sleep. At 9 A.M. I gave $\frac{1}{2}$ grain of morphin and 3 grains of the elaterin triturate. The bowels moved at 11.30 and 8 times to noon of the 9th, with large quantities of watery evacuation. The morphin, in $\frac{1}{2}$ -grain doses, was continued every 4 hours until the 10th, when she had 6 more watery evacuations. Her condition was now improved. She was put on tincture of the muriate of iron, 10 minims, and mercuric chlorid $\frac{1}{16}$ grain every 4 hours, and made quick recovery.

The babe was wrapped in cotton batting and kept on a tin water-bottle and fed every 2 hours with pasteurized milk, diluted one half, with cream added, and peptonized. At the present time it is a strong, healthy, child.

CASE 10.—Mrs. M., aged 21, in her second labor, September 9, 1899, was delivered in 2 hours. Her face was edematous and her feet swollen. Shortly after delivery she had a convulsion, and I gave her 1 grain of morphin hypodermically, afterwards putting her on iron and mercuric chlorid, and she made a quick recovery.

RECAPITULATION.—In 6 cases after labor there was a single convulsion; all recovered.

In 2 cases during labor. In one case there was a single convulsion, and in the other several. Both children and mothers lived.

In one case in the second month of pregnancy the patient carried the fetus for 4 months without the slightest inconvenience.

In one case, abandoned by an eclectic, death ensued before remedies could act.

REPORT OF A CASE OF RUPTURE OF THE PERINEUM IN COITUS.¹

By R. ABRAHAMS, M.D.,

of New York.

District Physician to the Mt. Sinai Hospital; Attending Physician to the Skin and Genitourinary Department, East Side Dispensary.

I REPORT an accident which is of extremely rare occurrence. According to a recent observer² medical literature contains but 22 recorded cases of rupture of the perineum in coitus.

My patient, Mrs. X., is 26 years old and was married in the latter part of December, 1899. Prior to her marriage she enjoyed perfect health. Her menstrual periods were regular, and she never complained of pain in or around the genital organs. She never had a prolapse of the rectum; never had hemorrhoids; never had an ischiorectal abscess, nor swelling or inflammation of the perineum. At the first intercourse the hymen was ruptured and a small quantity of blood escaped. Within a period of 6 weeks subsequent to their union the young couple cohabited from 6 to 8 times. In her last coitus she experienced "some little pain." This last act was attended by a considerable amount of bleeding. This unusual accompaniment of the sexual congress was interpreted by the young husband and wife as the last blow to the hymen, or, as my patient quaintly puts it, "the finishing touch to virginity." When, however, she made her morning visit to the lavatory she was amazed to find the feces escape from two places, the anus, and at a point higher up, near the vulva. She then consulted her mother, who in turn brought her for consultation to me.

On examination the external genitalia were found well developed and perfectly normal. There was the usual vestige of a hymen. Digital examination was neither difficult nor painful. The vagina and uterus were normal. The perineal body presented a tear which extended almost over its entire width. In examining this tear it was found that the penetration and rupture of the perineum were complete and perfect, just as if both were made by design and suitable instrument. There was very little laceration about the wound. First one and then two fingers were introduced into the opening. The examining fingers entered the rectum and encountered a large mass of fecal matter. A bivalve speculum was inserted and by distending its blades and getting rid of the feces a good view of the rectum was obtained. Careful examination failed to reveal any recti-vaginal or recti-vulvar communication. The rupture was clear through

the perineum into the rectum. It was what one would call a recti-perineal fistula. A finger in the anus could easily be made to go through the artificial opening, and vice versa.

I wish I could record the treatment. It seems that the unhappy bride was so terribly overwhelmed with this unspeakable accident that when she was told the nature of it and the best method of remedying it, namely suturing, she went and never returned, though she left me in possession of sufficient data to put her interesting but unfortunate mishap on record.

Epidemic Jaundice.—The *China Medical Missionary Journal* of January, 1900, contains, on pages 63 and 64, some notes by Dr. James Boyd Neal on an epidemic of jaundice which prevailed during the autumn of 1898 in Peking and Tientsin. During the past autumn of 1899 a similar epidemic has been very prevalent in many parts of the province of Shantung. In the eastern part of the province the disease has been comparatively light; no dangerous or fatal cases having come under the observation of the writer, though he has heard of a few deaths, supposed to be due to the disease, among pregnant women. The disease begins with vague feelings of discomfort and heaviness in the epigastrium, scarcely distinguishable from an ordinary attack of indigestion, accompanied with heightened color of the urine. There is no chill nor fever to indicate the ushering in of the disease. The feeling of discomfort in the pit of the stomach increases in severity, and is prominent throughout the attack; the color of the urine continues to deepen and stains the clothing yellow, giving in every case the reaction for bile coloring-matter with nitric acid; the sclerotics show a deep lemon color, which is so marked that the Chinese call the affection the "Yellow Eye Disease," while the skin, especially of the face, neck, and body, shows marked jaundice, and becomes decidedly itchy. The foreigners who have come under the observation of the writer, have none of them gone to bed, but have gone on with their usual duties, though with great discomfort, but the natives have, as a rule, taken to their beds, and in some cases have been laid aside from active duty for a fortnight or more. Indeed the Chinese seem to have had the disease more severely than foreigners. The above is a description of the disease as seen by the writer in Eastern Shantung and on the seashore. Dr. Faries writes from Weihien nearer the center of the province and in the interior: "There is a continued ill feeling in pit of stomach, and then pain in stomach and back, and most obstinate constipation; ten grains calomel and jalap not affecting the bowels. When the bowels move there is a complete absence of bile. Wheat-eaters' passages are as white as chalk. The urine is scanty; high-colored, reddish, or deep yellow, and stains clothing yellow. The eyeballs become yellow, and in a severe case the skin becomes very pale and yellow. The patient becomes very anemic, and the case runs for a month. In some cases the distress in the stomach causes great nausea, and also vomiting of blood. The pulse-beats are from 58 to 70 in the jaundiced cases, and in the early stage the pulse is not rapid. The first stage sometimes ends in profuse perspiration, or there may be several sweats with chills between. Some tell of an initial chill. Pain in eyeballs is frequent. The liver seems to be the organ most affected and the last to recover. I have neither seen nor heard of an eruption. A very great many pregnant women have been taken suddenly with great distress, then become delirious in a few hours, then comatose, with eyes closed and tongue out, then they abort and die, or perhaps die before aborting; the uterus making violent efforts. Eight women died in one street in the east suburb. Some men have died of the yellow-eyed disease with dropsy they say." Nothing in the way of treatment seems to affect the course of the disease, though doses of calomel and bicarbonate of sodium relieve the constipation, which is found in some cases, and seemed, in the writer's case, taken when the passages became white, to help restore the functions of the liver. It seems to be a self-limited affection, running its course like the ordinary acute infectious disease. Some of the Chinese say that just such an epidemic of jaundice prevailed in Shantung some thirty years ago, on the occasion of a drought equal in severity to the widespread dryness which is now affecting all North China. [M.B.T.]

¹ Read before the New York County Medical Association, January, 1900.

² Skrobanski: *Pract.*, December 4, 1899; *N. Y. Medical Record*, January 6, 1900.

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See Advertising Page 8.

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\$3.00 PER ANNUM

The Dangers of the Railroad.—That the arts of peace are not less dangerous than those of war would appear to be amply indicated by the figures of railway accidents for a year. According to the twelfth statistical report of the Interstate Commerce Commission, one among every 420 of the 417,508 men engaged in the work of railway transportation was killed, and one among every 27 was injured during the year ended June 30, 1899. Of trainmen proper, engineers, firemen, conductors, brakemen, baggagemen, etc., one was killed for every 155 employed, and one injured for every 11 employed. The total number of accidents among employes was as follows: Killed, 2,216; injured, 34,923. Of 523,000,000 passengers carried only 239 were killed and 3,442 injured. A good deal has been done to reduce to a minimum the dangers attending railway travel, but much remains that can yet be done, and the promise seems not extravagant that the time will come when there will be no more risk in traveling by rail than in any other form of progression or locomotion.

Hit by the Eclipse.—The recent eclipse of the sun does not seem to have been prolific of superstitious displays in the United States, and therefore we all the more welcome an amusing instance related by Dr. W. H. Morse in the *Albany Medical Annals* (July, 1900). According to Dr. Morse, it is the custom in Cuba for mothers to expose their young children entirely naked on the ground during the whole time of the obscuration of the sun or moon, in order to prevent their being "hit by the eclipse"—and, incidentally, by any devils that may be lurking about. If the child takes bronchitis, it is "hit;" if it escapes, it is blessed. This superstition clung to a Cuban woman living in New Jersey. She accordingly exposed her two infants, aged 3 months and 14 months, respectively, during the whole eclipse, with the result that the unfortunate innocents both took severe bronchitis. The husband, going for the doctor, announced, in terse Spanish, that "a mother and two daughters are three devils for a father." At the same time the priest was summoned, and he, being a level-headed and good-natured Irishman, lost no time in saying prayers, but took the doctor's prescription to the drug store to have filled. Fortunately no harm resulted, for the babies, after severe illness, recovered. The mother, of course, believed that they had been "hit by the eclipse," and gave all the credit for their

cure, not to the doctor, but to the priest, and especially for the splendid "holy water" which he had brought, and which was the doctor's prescription for eucalyptol!

Positive Prevention and Cure of Tuberculosis by the Nature-Cure Process, for both the Profession and the Laity. There is need for authority to revoke the privileges conferred by license to practise medicine from those who unworthily use or abuse such privileges. Charlatanism and quackery should not be tolerated, even though practised by one who holds the diploma of a recognized medical college and a certificate to practise medicine. These remarks are prompted by a pamphlet with the title that appears at the head of this note, issued by a man who appends Ph.D. and M.D. to his name and who appeals, among others, to physicians for a trial of his treatment. The novel proposition is made that "all forms of disease arise from one cause, viz.: the presence of unnatural substances in the body," and it is modestly claimed that "the methods described in this volume have proved an absolute panacea for all forms of disease, such as blindness, cancer, diabetes, Bright's disease, syphilis, insanity, epilepsy, etc., etc." Now these statements are so palpably absurd that they will not be given consideration by any one of even ordinary intelligence, and we refer to the subject only to illustrate the necessity for some means of controlling medical practice by those upon whom this privilege has been conferred. Too often the opportunity for successful treatment is lost through resort to methods that can result only disastrously, in consequence of the cupidity of men who do not scruple to make the sick, the maimed, the dying, their victims.

Mr. Brockway's Retirement.—When a man has done a great work in penology, such as the recent superintendent of the Elmira Reformatory has conspicuously done, and retires from his labors, it is a pity that his retirement should be made the occasion for criticism and controversy as to the merits of his work. It is still greater pity that his retirement should be made to appear forced. Mr. Brockway, if we are well informed, has reached a ripe age, and is entitled to repose; but as a competent public servant he should not be obliged to appear to be vacating his office undersomething of a cloud of misunderstanding. Mr. Brockway's name is closely identified with the system in vogue at the

Elmira Reformatory, and it will continue to be so identified for better or worse. That the practical results obtained in this institution have been remarkable is generally conceded, but that the methods of discipline were not the most enlightened is also apparent. To misjudge a good system because of a bad feature, is neither fair nor wise, and is not our intention here. We freely concede that Mr. Brockway has done a great work, the evidence of which will long survive him; but he has also made a reputation as a flogger which will not quickly die. The law at Elmira seems to have required that a record be kept of all the floggings; and we sincerely hope that Mr. Brockway will not have to support by this record all his claims to immortality as a great penologist. The record is its own best commentary, for it shows a steady numerical progression of floggings from one year to another. The inference is that the culprits in Elmira were growing steadily worse, or that the habit of flogging was growing steadily on Mr. Brockway. We fear that both these inferences are correct, and we hope that this lamentable record will stand for all time as a warning to all disciplinarians. For ourselves we cannot quite disabuse our mind of a sense of want of confidence in an institution in which such a practice prevails. Flogging is a confession of weakness, and rebounds from the posteriors of the condemned upon the heads of the floggers. As a method of discipline it is subject to frightful abuse—a fact which we fear is demonstrated by the Elmira record. There is no more reason why it should be practised in a penitentiary or reformatory than in the army or navy, and we trust that in the case of Elmira it will now be superseded by something more decent, more rational and more humane.

The Relation of Leprosy and Smallpox.—United States Consul Plumacher, at Maracaibo, writes to the State Department a short note on the alleged curative action of the virus of smallpox on leprosy. Mr. Plumacher says that he had been informed by reliable persons in the Republic of Colombia that patients afflicted with leprosy have been cured of this disease by an attack of smallpox. In the State of Santander, he alleges, one-fifth of the population have in them the germs of leprosy, and in the same State smallpox is spreading rapidly. An examination of the records of the lepers of Maracaibo revealed the fact that none of these patients had been vaccinated in former days before being attacked by leprosy. Mr. Plumacher, on this very scanty evidence, thinks that there may be "some connection" between the two diseases, and by this term he evidently means to suggest that the virus of smallpox may be inimical to the bacillus of leprosy. He would like to see this question solved by competent investigators. From his own personal observation he thinks that but few lepers in China and in Asia generally have been vaccinated.

We agree with the consul that it might be a good thing to test this question, for the incompatibility of one disease with another is sometimes a problem of interest and importance. There is nothing inherently improbable in the mutual antagonism of two infecting microbes. The struggle for existence in nature is a widespread and ferocious one, and takes place on many diverse fields. It may occur on a microscopic scale. So far as smallpox and leprosy are concerned, the subject seems thus far to be merely speculative. Mr. Plumacher's statement that one-fifth of the population of Santander have leprosy is unsupported by any evidence in his letter; and the mere fact that any number of lepers have not been vaccinated is no proof that if they had been vaccinated they would not have had leprosy. Such loose logic will not serve in pathology.

General Otis on Measles.—Like most commanding officers, General Otis evidently believes that soldiers are intended for fighting and not for lying sick in the hospitals. This would be an admirable theory in time of war if the facts only supported it; but facts are stubborn things, and soldiers will persist in getting sick, even in defiance of major-generals. In *Harper's Weekly* for August 4 Mr. William Dinwiddie contributes a bright sketch of the military hospitals in Manila, and incidentally throws some side lights on General Otis as a diagnostician and a sanitarian. On board the transport en route for Manila two soldiers fell ill with measles (a grave disease in military life), and the young assistant surgeon asked to have them put on shore at Honolulu in the Sandwich Islands. When the cases were reported to the commanding general, who was also a passenger, he exclaimed "Nonsense! Let me see the men." Being shown the patients he proclaimed that the disease was not measles, and ordered them kept on board. At this the young surgeon stated bluntly that he had made a diagnosis of measles, but that if General Otis would give him an official statement that the disease was not measles, he saw no reason why the men should be put ashore. Whereupon General Otis saw the point, and ordered the men to be taken off the ship.

In Manila General Otis rigged up an old Spanish hospital that was indescribably unsanitary, and crowded 1400 patients into it. This institution was called by the military surgeons "Otis's hospital," and Mr. Dinwiddie says that the general seriously handicapped its organization and administration. When 12 men were reported insane, the general, probably not wanting "to alarm the public at home" (a chronic fear of his), ordered that only half the number should be sent back to the United States, and that the first six in alphabetical order should be chosen! This surpasses Sancho Panza. When the hospitals got too full, the general declared that half the inmates were only shamming, and sent a staff officer to investigate and weed them out. As the staff officer presumably took his medical educa-

cation at West Point, it is evident what a valuable assistant diagnostician he must have been. But all medical affairs are not thus in Manila, and Mr. Dinwiddie describes several military hospitals, notably the Second Reserve Hospital, under Major F. R. Keffer, that are models.

The Thanks Given to Health Officers.—No more striking example of public ignorance of and indifference to the prevention of disease can be cited than the abuse so often bestowed upon sanitary officers who perform their duties properly. The local commercial interests so often temporarily interfered with by the activities of a conscientious officer have much to do with shaping expressions of sentiment. Newspaper editors and writers, usually devoid both of knowledge of sanitation or desire for the enforcement of good laws do much towards spreading dissatisfaction based upon falsehood. In the city of San Francisco we have had a very good illustration of the pernicious activity of banal commercialism and interested newspaper influence. Self-sacrificing health-officers who have braved personal danger of the gravest nature and performed most disagreeable duties under the imminent danger of death to themselves, have been vilified, slandered, and threatened. Heroism, because in the cause of science and humanity, has not only gone without recognition, but has brought fierce hatred upon the men who have shown it. This flagrant illustration of the spirit of the press and people is not an isolated one. From earliest history there have been many instances of the same kind. In Venice during the sixteenth century the officers corresponding to our sanitary officers are said to have been killed by the mob, under the impression that they were disseminating the disease. Hardly a metropolis of the world has been devoid of instances of mob violence towards health-officers engaged in suppressing small-pox. In a small western village last year the medical health-officer was shot down because he quarantined a case of scarlet fever.

There should be some way of opposing or lessening the unthankful and unappreciative spirit that such instances show to be so widespread. Plainly, the majority of persons who hold such views hold them because of ignorance. In some instances,—and these are especially regrettable,—they hold them because some physicians, not in sympathy with modern sanitary methods, encourage their clients to resist the health-officers. This form of opposition, however, usually expends itself in suits for damages rather than by resorting to personal injury. Both forms of opposition are reprehensible. What should be done is to appeal to the intelligence of the people in the effort to secure their cooperation. Explain every measure and show its reasonableness; appeal to the feeling of good citizenship; be patient and painstaking in explanation; today, tomorrow, and the day after, if necessary, repeat the

explanations, patiently and goodnaturedly. This is the kind of a policy that will enable the health-officer to secure the confidence and the appreciation of the people in the end. As for the doctor who finds the greatest outlet for his superfluous energy in opposing the health-office and instigating others to the performance of disagreeable acts, simply get him on record in the journals and societies as the advocate of his peculiar views,—the genuine sentiment of his professional brethren will do the rest.

The Alcohol Question Again.—During the past year much attention has been given to the question of the effects of alcohol on the system, as a result chiefly of Professor Atwater's calorimeter experiments and the controversies regarding the army canteen. Professor Atwater's conclusions have been favorably and unfavorably criticised by both medical and lay writers. His latest critic is Professor W. S. Hall, of Northwestern University (*Journal of the American Medical Association*, July 14, 1900). Among other matters Hall calls attention to the following facts with regard to alcohol as compared with foods. More and more of it is required to produce the same effect, which is not the case with real foods; when used habitually it causes an uncontrollable desire for more; it is likely to produce serious derangement of the central nervous system; it is a product of decomposition and excretion and in common with all excretions is poisonous; its use is followed by an accumulation of fat, by decrease in activity of muscle-cells and brain-cells, and the brain-action is less accurate after its use. Most of these criticisms are quite correct and deserve the attention of physicians who are in the habit of prescribing alcohol freely for their patients.

It appears, however, that Professor Atwater has been incorrectly reported by many of his critics and many of his conclusions have been misrepresented. In an address recently delivered before the National Educational Association and published in the *Educational Review* Professor Atwater takes occasion to correct some of the misapprehensions and misstatements of his critics. He considers that alcohol in small quantities is in a sense a food, but in large quantities always a poison. He has rarely if ever heard alcohol spoken of as a poison by any specialists of recognized position. Alcohol does not build tissue, is not stored in the body for future use, but it is oxidized and does yield energy and may be called a partial food when taken in moderate quantities and cannot then be properly called a poison. As to the injurious effects of large quantities no difference of opinion can exist. Professor Atwater specially calls attention to the current methods of teaching with regard to alcohol in the schools. He believes that what should be taught is that alcohol is not a food in the sense in which that word is ordinarily understood, that the moderate use of alcohol is dangerous; but if in-

telligent children are told that alcohol in the form of light wines and beer is a poison they know or will know that they are misled. It is wrong to teach that alcohol in small quantities is always necessarily harmful and it is false to teach that scientific observations have demonstrated any such conclusion. A great obstacle to temperance reform is the exaggeration and false statement which often makes so great a part of the means used to promote such reform. "Is not temperance advisable even in the teaching of temperance doctrine?" he asks. We regard Professor Atwater's review of the entire subject an admirable argument in favor of temperance in the highest sense. Reform is seldom promoted by misstatement of extremists, and rational people, whether children or adults, are more strongly influenced in the long run by careful adherence to the truth. If his address could be used as a substitute for the official doctrine which is taught in many schools no doubt the cause of temperance would be promoted as well as that of science.

Further Light Upon the Relationship of Epilepsy and Rickets.

—As a result of the investigations into the pathology of epilepsy which have been in progress during the last three years in the laboratory of the Ohio Hospital for Epileptics, particular prominence has been given to the coexistence of the lymphatic constitution and idiopathic grand mal. In a careful anatomic analysis of 100 cases this point has been verified. The lymphatic constitution is especially determined by the prolonged existence of a lymphoid thymus, by general lymphadenoid hyperplasia as shown in the regional lymph-glands and by the follicles of the spleen and intestines, by narrowed arteries, sometimes with evidences of old rickety osseous deformity. These conditions are, of course, to be sought in suitable cases before advanced growth-changes, wasting from pronounced debility or from the ravages of other diseases have eradicated them. Young adults, victims of idiopathic grand mal, dying suddenly in ordinary health, as these epileptics often do, are particularly favorable subjects for this demonstration, though the conditions are exaggerated in children.

Granting this concurrence of lymphatism and grand mal, what deductions may be made? Possibly it is merely coincidence, though one naturally looks further. Proceeding in this way it was found that certain neuroses of infancy and childhood, notably laryngismus stridulus, tetany, and teething convulsions, had been shown to be accompanied by the lymphatic constitution. These neuroses had long been suspected by clinicians as standing in some relationship to epilepsy; and were further supposed to be the results of that serious constitutional discord of infants, rickets. Lymphatism is also regarded as a rachitic adenopathy. Thus these studies were finally directed to rickets as a factor of apparently great importance in the pathogenesis of

epilepsy, and these conclusions find expression in Ohlmacher's papers.

From the clinical side similar inference had been reached, particularly by Gowers, who, from an analysis of the previous histories of epileptics, was strongly impressed with the influence of rickets in the production of epilepsy. The way, therefore, now seems opened both from clinical and pathologic investigations to place in one category whose anatomic basis is that form of rachitic disturbance known as the lymphatic constitution the spasmodic neuroses of infancy (laryngismus, tetany, teething fits, and possibly others) and the idiopathic grand mal of later life. This seems to mark a distinct advance in our knowledge of these affections, though much still remains to be done. What is the real nature of rickets, whose already sinister significance is magnified by these discoveries? A recent view and one which is gaining ground is that rickets is primarily an infection, and in this light epilepsy may be looked upon as the remote consequence of a peculiar microbic affection.

But while these important questions must remain for patient pathologic research to unravel we may profitably recall the well-established clinical fact that dietary and hygienic errors are potent, if not essential factors in preparing the way for rickets, and thus, while we are practically helpless as to the treatment of epilepsy once established, may we not reasonably expect to prevent this dreadful disease by adopting the measures of correct infant feeding and infant care which modern pediatrics has emphasized in the prevention or treatment of rickets? This practical conclusion is foreshadowed by Gowers, and independently reached by Ohlmacher.

A Simulated Abnormity.—An aged colored individual is making the rounds of the physicians' offices and hospitals, exhibiting himself as a man with two hearts. He also claims to be able to displace his hearts into the abdominal cavity. He has traveled widely in this country and has been in Europe. There is no evidence whatever that the man has two hearts, nor is there any sign that an aneurysm exists. When he is about to "dislocate his heart" he asks the examiner first to listen with the stethoscope or phonendoscope over the normal cardiac area for the heart-sounds. He then twists and contorts himself in various ways, using actively the muscles of the anterior abdominal wall. As he does this there is seen to rise suddenly in the left iliac region a rounded, pear-shaped prominence, which is pulsatile and to which he now asks the examiner to apply the stethoscope. An obscure rhythmic sound is heard over the area which is the size of a large fist, and which conveys to the palpating hand a sensation of throbbing. He can produce a similar swelling, though less prominent, on the right side. With a great show of effort he holds the prominence on one or the

other side for about 20 seconds. If the examiner, instead of listening over the supposed heart, places his stethoscope in the normal situation of the valve-points, he readily detects the heart-sounds in practically undiminished intensity. Moreover, percussion over the supposed hearts gives a more or less tympanitic note. The man has evidently by long practice gained a peculiar control over the superficial abdominal muscles—such as some persons have over the scalp and ears—by means of which he is able to throw a certain section into prominence and to produce a rhythmic vibration that closely simulates, both in character and rate, the pulsation of the heart.

Correspondence.

EPILEPSY WITH LUXATION OF JAW.

ALFRED FRIEDLANDER, M.D.,

of Cincinnati.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

THE report of two cases of epilepsy with luxation of the jaw, in the JOURNAL for July 14, leads me to report the following additional case: D. M., aged 72, an inmate of the Home for the Jewish Aged and Infirm, of this city, has had attacks of epilepsy for many years. Three years ago, after an attack, it was noticed that there was a complete luxation of the jaw. Since that time this accident has happened frequently, and in the past 15 months there have been 15 epileptic attacks, with luxation of the jaw each time. The reduction has always been accomplished without any difficulty. There has been no luxation at any time excepting during the epileptic seizure.

PSEUDOMENSTRUATION.

By M. CHERTLER, M.D.,

of New York.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

I NOTICED in JOURNAL of July 7 a second case of precocious menstruation, or, rather, called pseudomenstruation, reported by Dr. Wales of Chicago. I have under observation 2 cases which are of a similar nature. The first case is in the tenth child of a tuberculous woman, who passed through a normal. On the third day of the puerperium the attending nurse drew my attention to the genitals of the infant being bloody. I carefully separated the labia and fully convinced myself that there was no external injury to the parts, and that the discharge was vaginal, of a sero-bloody character. It increased in quantity on the fourth day, and ceased totally on the eighth day. There was no recurrence of the discharge within 10 months while under my observation. The second case was in the fifth child of a healthy mother. The discharge was noticed first on the third day and ceased on the ninth day, without recurring again within 6 months under observation.

The features of interest in these cases are that both mothers were of blond type and multiparas, and one mentioned of having heard her mother say that she was also

bleeding when born, a fact which I omitted to mention when describing the first case. In a discussion on purpura hæmorrhagica, held at the Eastern Medical Society of New York, I brought the attention of the society to the 2 cases, and some very eminent practitioners were of the opinion to classify these cases in the same category with purpura. Text-books and literature mention very little on the subject.

MEDICAL MISSIONARIES' EDUCATION.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IN the PHILADELPHIA MEDICAL JOURNAL of April 7, 1900, on page 780, under the heading Medical Missionaries, is the following: "We would like to know of the fact if any medical college has ever offered free tuition or free post-graduate courses to those of our brethren who have devoted their lives to carrying the gospel of scientific therapeutics to the peoples cursed with the horrors of the medicine of barbarism."

We beg to reply to the above by saying that the Laura Memorial Woman's Medical College, located in Cincinnati, Ohio, has given, and we believe continues to give, free tuition to those intending to engage in medical missionary work in foreign countries. At present one such member of its Alumni is in China, another in Manila, and a third in Korea, all engaged in medical work.

We are most grateful for the kind words, in editorial comment, in regard to medical work in the East. Its difficulties and its great need will become the better appreciated as it becomes the better known.

EMMA ERUSBERGER, M.D.

Seoul, Korea, June 4, 1900.

FACIES OF PHTHISIS.

By ALBERT S. ASHMEAD, M.D.,

of New York.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

THE characteristics of the "infrasupraorbital" region mentioned by Dr. Eadie, in the JOURNAL, July 14, whose absence he thinks would indicate predisposition to consumption, (non-resistance to the attack of years), in my opinion are certain signs of longevity. They are notably present in all the members of my mother's Jewish-Holland ancestry, especially the women of her race. Without exception these women have lived to a great old age, some of them over a hundred years. My mother lives at 77; her mother died at 93; her grandmother died at 98. Her grandmother's brother, died at 107. My mother's mother's sister lived to be 88. My mother's sister died at 89. My maternal great aunt died at 93, etc. All these women had that peculiar facial characteristic. They were money-makers; their husbands were rich; *the brain of the wives made the money*. This money-sense belongs to the family. Other mental characteristics of these people were cruel persistence, unswerving purpose, obstinacy even to the point of *brutality*; *moral, mental, and physical endurance*. They reasoned from the standpoint of an eye for an eye, and a tooth for a tooth. If any one did them a wrong, they would never forgive it. They bided their time, and stabbed back—a characteristic typical of longevity (unless the other fellow has a shotgun). However, these traits are not so well developed in the males of the race.

Carcinoma is rife in this blood, and so also is insanity.

TREATMENT OF LUPUS BY THE CONCENTRATED
LIGHT-RAYS.By HENRY W. STELWAGON, M.D.,
of Philadelphia.*To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—*

YOUR readers may be interested in knowing of the active work going on in Prof. Finsen's Institute in the treatment of that most rebellious and progressive cutaneous disease, lupus vulgaris. The method is now pretty generally known, the writings of Prof. Finsen, Dr. Bangs, and later of Dr. Bie, all of Copenhagen, having given the details and the brilliant results of this plan of treatment. It has now been practised for several years, and the gentlemen above and Drs. Forchheimer, Larsen, Sunding-Smith, and Balee, all associated with the Finsen Institute, are even more enthusiastic today than in the first year of its introduction. Their earnestness and enthusiasm must impress every medical visitor, as it did me, and indicate very positively that it is not its novelty that is attracting patients, but actual worth.

The Institute at present consists of several unpretentious small one-story buildings, used variously for laboratory, reception-room, room for treatment of the mucous membranes, and two for the light-treatment itself, and tables and stands for sun-condensers outside for the sunlight-treatment. In the latter are 5 strong arc-lights of 60 to 80 amperes. From each of these run four tubes containing the light-condensor and which are directed upon the part to be treated. These arc-lights are used in cloudy and rainy weather and during the cold winter days. The first two days I spent at the Institute it was rainy, and the treatment was carried on under these arc-lights. There were four operating tables about each lamp, on each of which lay a patient, making 20 patients under treatment at one time. At each table was a nurse, whose duty it is to press a hollow disk of glass on the spot previously marked out by an assistant, and through which the light is directed. Through the disk constantly circulates cool water to prevent severe burning action of the light-rays. This is kept pressed down firmly so as to push out the blood in the part and thus favor deeper penetration of the light. The light shines so brilliantly on the spot that nothing can be seen by the naked eye except a white dazzling area, so that in order to be able to inspect it satisfactorily and also to protect the eyes from the constant exposure to the light, the nurses wear very heavy dark glasses. The medical assistants pass around from time to time to see that the treatment is being given properly. One hour and a quarter is allotted to each set of 20 patients—one hour for treatment and the extra quarter for time necessary in changing the patients, adjusting the rays, etc. On days when the sun is shining, as it was on the third day of my visit, the treatment is carried on out of doors, and the arc-lights are temporarily dispensed with. The nurses become somewhat deeply bronzed from the sun exposure. From conversation with assistants the conclusion seems to be that upon the whole the arc-light is preferable. It is stronger in action and therefore the immediate reaction is sharper than by the sunlight-treatment. The various patients with whom I talked agreed with this.

The number of lupus cases here for treatment seems legion. The operating tables are occupied from half-past seven in the morning till nine in the evening, with the exception of one to two hours in the afternoon for rest of the assistants, nurses, etc. From seven patients treated the first year—1897—the clientele has grown beyond management. There are

now over 100 on the waiting-list. These patients are from all parts of the world, the larger portion being, of course, from Denmark. There are many from Germany, and a number from Austria, England, Scotland, and France; and I was informed by Prof. Finsen that he had had a few from our own country.

The cases varied in extent from slight to the most extensive types. Many had been treated by other methods, but unsuccessfully, or with only temporary success. The patients themselves seem enthusiastic, and come daily with unvarying regularity. The interest of the nation and city has been aroused, the government having contributed a quarter million kronen toward the erection and equipment of a commodious building. A private citizen has volunteered to pay the expenses of taking 14 of the cured patients to the International Dermatological Congress at Paris the coming August.

Among the skin-diseases observed here among the Danes, lupus would seem to form a good proportion; but Prof. Finsen informed me that this was not striking before the institution of this treatment here, since which time the cases have flocked here from all parts of the kingdom. A point that struck me forcibly is the large percentage of cases in which the mucous membranes—of nose or mouth—are involved. In these cases, while the skin-lesions are treated with the rays, the mucous membranes are necessarily otherwise managed. An application of a strong iodine solution is made daily, and twice weekly a galvano-cauterization is done.

The treatment seems successful. I saw several cured cases and many undergoing steady improvement. Recurrences seem rare so far, and readily managed. The patients are photographed before beginning treatment, and once or twice during the period of treatment, and when cured. The great disadvantage is the time necessary, and expense, and the constant attention and assistance in carrying out the treatment. In slight cases a few months at the most will suffice, but in extensive cases it extends beyond a year. I saw and conversed with a few patients, in whom this lupus involved the whole face and neck, who had had a daily sitting for more than a year, but even these were satisfied with the progress.

The treatment is paid for by patient or State—each patient from Denmark paying about \$18 monthly, and each patient from outside of the country about \$30 per month. The patients board themselves outside of the Institution—for the most part in two pensions especially established by two patients previously treated and cured. Rich and poor are treated in the same place and under like conditions.

In concluding, I take pleasure in stating that Prof. Finsen and his assistants extended me every courtesy for thoroughly inspecting the apparatus and the details of carrying out the method, afforded opportunity of seeing cured cases, and permitted free questioning of the attendants and the patients under treatment.

Spindle-celled Sarcoma of the Superior Maxillary.—C. A. Hamann (*Cleveland Journal of Medicine*, July, 1900) reports the case of a girl about 10 years old with a growth of the superior maxillary bone apparently starting in the antrum. The entire superior maxillary bone, part of the malar bone of the right side, and the floor of the orbit were removed, care being taken to preserve the orbital periosteum as a support for the eyeball. Recovery was uneventful and histologic examination showed the neoplasm to be a small spindle-celled sarcoma. It has been 2½ years since operation and there has been no recurrence. [M.B.T.]

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

The New Jersey Sewerage Commission served notice on the city of Plainfield that its sewage-disposal beds must be at once overhauled and improved or else proceedings would be instituted. The chief complaints come from the neighboring town of Dunellen.

Typhoid in Johnstown.—An epidemic of typhoid fever has recently visited Johnstown. Cambria Steel Company employes to the number of 150 are off duty on account of illness, about half of whom are suffering from that disease. One physician reports 16 cases. No particular cause has yet been assigned, for the water is in good condition.

Dr. Atkinson Injured.—While visiting the Mt. Gretna camp, Dr. William B. Atkinson, of the Pennsylvania State Board of Health, was thrown from a carriage and had his head badly cut and his hip crushed. He is now at his home in Philadelphia, in a serious condition. He had gone to the camp to make an official report of its sanitary condition.

Pure Water for Public Schools.—Some time ago \$35,000 was appropriated by the Councils of Philadelphia to furnish filters for use in public schools of the city. These filters have been referred to the Bureau of Health for a bacteriologic examination. The ordinance directs that no chemicals of any kind may be used and that each filter must have a capacity of removing 95% of bacteria.

Sanatorium for Fairmount Park.—Permission has been granted by the Park Commission of Philadelphia to a morning newspaper to establish a sanatorium in the Lippman mansion on the Wissahickon Drive. It is purposed to maintain there a temporary home during the summer months for anemic and debilitated small girls. The building will be thoroughly renovated and equipped and provided with nurses and caretakers.

Typhoid in Pittsburg.—Pittsburg is afflicted with an epidemic of typhoid fever, for which the sanitary authorities are unable to account. Some attribute it to impure water, but the ordinarily healthiest sections of the city are affected while the slums are free from the disease. When the matter is thoroughly investigated something else will possibly be found to be the potent cause. The epidemic in case the water-supply is at fault should be most virulent in those parts of the city where the filth-conditions are most favorable to its spread.

The Sanitarium Association of Philadelphia.—The Sanitarium Association of Philadelphia has now reached the 24th year of its active work, having opened for the present season on June 7. The admissions from that date to the present time were 115,652, being an average of 2,628 daily, and comprised 15,891 adults, 13,128 infants, and children over 2 years, 86,633. Of bathers there were 14,654 boys, 16,446 girls, and 2,466 infants. Admitted to the hospital, 61 sick small children with mothers. The increase of admissions over last year was 16,846. The largest on any single day was 5,157 on July 7.

Pennsylvania Hospital.—The one hundred and forty-ninth annual report of the Pennsylvania Hospital recently issued shows that during the past year 35,195 patients were treated. The hospital ambulance service answered 1,401 calls, and police patrol wagons brought 1,676 cases to the institution. The total income of the hospital from all sources was \$754,464.69; expenditures, \$655,409.34, leaving a balance of \$99,055.35. To feed patients during the year it was necessary to provide, among other food-supplies, 113,945 pounds of meat, 22,267 pounds of poultry, 12,142 dozen eggs, 12,155 pounds of butter, 58,668 pounds of bread, and 149,256 quarts of milk.

Paving Concerns a Menace to Health.—On July 18 the Philadelphia Board of Health, at a special meeting, received the reports of Chief Nuisance Inspector Kennedy and Chief Medical Inspector Taylor, in which it was stated that the plants of the Alcatraz Paving Company and the

Richardson and Ross Company were a nuisance and that the dust that emanated from the plants were injurious to health. In accordance with those reports the Board adopted a resolution in which the companies were allowed 20 days from the date of service to abate the nuisance, and on the failure of the companies to comply the Health Officer was authorized to close the works."

A Leaky Reservoir.—The north basin at the East Park reservoir, Philadelphia, has only 3 feet of water in it. The Water Bureau has drained 2 feet of water from the basin and allowed it to run into the river. A patch of the brick lining of the north embankment 15 feet square has been removed, but a repair of the troublesome leak has not yet been effected. Among the residents in the vicinity fear of inundation has given place to dread of offensive effluvia should all the water be drained off, exposing the settlements of years and thousands of fish which now alive, could not be expected to live in the mud. It is intended to keep a few feet of water in the reservoir while work is prosecuted, following up the line of the leak.

Vital Statistics of Philadelphia for the week ended August 11, 1900:

Disease.	Cases.	Deaths.
Total mortality		452
Inflammation of appendix 5, bladder 2, brain 11, bronchi 1, kidneys 11, heart 1, lungs 12, peritoneum 3, pleura 1, stomach and bowels 34		81
Lungs—tuberculosis of 56, congestion of 1, edema of 2, hemorrhage from 1, abscess of 2		62
Marasmus 28, inanition 19, debility 9		56
Cholera infantum 47, morbus 1		48
Heart—disease of 30, fatty degeneration of 3		33
Carcinoma of breast 2, liver 7, rectum 1, stomach 5, uterus 5, sarcoma of breast 1, tumor of brain 1		22
Old age		21
Apoplexy 12, paralysis 4		16
Casualties		15
Convulsions 13, puerperal 1		14
Bright's disease 6, uremia 6, diabetes 2		14
Brain—abscess of 1, congestion of 4, disease of 1, hemorrhage from 1, softening of 3, dropsy of 1		11
Diphtheria	46	7
Septicemia		4
Suicide—drowning 1, laudanum 1, hanging 2		4
Cirrhosis of liver		4
Sunstroke		3
Dysentery		3
Whooping-cough		3
Burns and scalds		3
Typhoid fever	52	2
Scarlet fever	29	
Abscess of thigh 1, alcoholism 1, asthma 3, atheroma 1, cerebrospinal meningitis 2, cyanosis 1, drowned 2, epilepsy 2, hemorrhage from bowels 1, intussusception 1, indigestion 1, puerperal hemorrhage 1, rheumatism 2, arterial sclerosis 1, surgical shock 1, sore mouth 1, syphilis 2, teething 1, unknown Coroner's case 1.		

NEW YORK.

Poisoned by Ice Cream.—At Reading Center, N. Y., 18 persons were poisoned recently by eating ice-cream. All will recover, but 12 were made violently ill.

The Geneva City Hospital will receive \$10,000 by the will of the late Judge Francis O. Mason. Upon the death of 2 sisters of the deceased, it will also receive \$80,000 additional.

The Boston Wage Earners' Emergency Hospital recently received an automobile ambulance from Philadelphia, the first vehicle of the kind built there. Only one other is known to be in service and that is in New York City.

To Improve Ellis Island.—Bids were opened at the Treasury Department, August 7, for the construction of surgeons' house, hospital outbuildings, ferry house, and covered way for the United States Emigration Station at Ellis Island, New York.

Addition to St. Catherine's Hospital.—A new wing for the care of tuberculous patients is about to be erected to St. Catherine's Hospital, in Williamsburg, Brooklyn. The estimated cost is \$30,000, and of this \$18,000 has already been raised by the hospital society.

Yellow Fever in New York.—Health Officer Doty, of New York, gave out a report concerning a patient at the Swinburne Island Hospital, who was removed from the Spanish steamer *Montserrat*, which arrived recently from Havana. Since then it has been discovered that he has yellow fever of a very mild type.

New Infant Asylum Building.—The Board of Managers of the New York Infant Asylum filed plans recently for a four-story brick asylum building, estimated to cost \$100,000, to be erected at Amsterdam avenue and Sixty-first street. The building will be constructed with a view to adding three stories in the near future.

The Board of General Appraisers in New York has decided that dried lizards are dutiable as a medicinal preparation and not as unenumerated merchandise. They are boiled in water very much after the manner of preparing herbs and similar articles. The resultant concoction is used as a drink to impart strength and vigor to the taker.

Plague and Immigration.—Health Officer Doty, of New York, cabled to the United States Consul at Hamburg for particulars in regard to plague at that port, from which large numbers of emigrants embark to this country. The following is his reply: "Merely suspicious; 1 sporadic case, sailor, South American, entirely isolated. Progress satisfactory, steamer quarantined, no danger." Later news announce the death of the patient.

Sore Eyes Caused by Public Bath House.—Many persons who have been using the free public bath on Bridge Street, Brooklyn, have suffered from a curious affection of the eye. Many of the cases have been treated at the Eye and Ear Infirmary. Some think a sewer which empties into the river near the bath-house may be responsible, while others think the steam-laundried towels may be the cause of the condition. An investigation will be made by the infirmary's physician.

Bellevue Dispensary.—The doctors and attendants of Bellevue Dispensary, New York, have been taxed to their utmost to care for the heat victims. During 4 days of the recent hot spell there has been an average of 61 children patients, suffering with disorders caused by the heat. The Outdoor Poor Department has received an average of 25 applications a day from mothers to have their children taken to Randall's Island. About 500 men and women have applied daily for treatment.

New Maternity Hospital.—The Bellevue University Building of New York, now used by the Cornell Medical College, has been converted into a maternity hospital, doing away with the old maternity hospital at Bellevue Hospital. There will be a dispensary on the ground floor, a maternity hospital on the first and second floors, and a dormitory for the Bellevue Hospital servants on the top floor. The Cornell Medical College will move into its new building soon, and the change will then be made.

NEW ENGLAND.

Divine Healer Got 32,000 Letters.—Postmaster Hibbard of Boston announces that the last piece of mail directed to Francis Truth, the "Divine Healer," has been sent back to the writers. The total number of letters was 32,000.

A Strange Medical Case.—Miss Hattie Stone, of Danbury, Conn., at present lies at her home in a precarious condition. Recently she began to sneeze violently and soon found that she could not stop. A physician was sent for and when he arrived she was weak and exhausted. The physician adopted heroic measures and the convulsions ceased suddenly. Twice the sneezes have returned, and each time the physicians have checked them, but they say that an unusually severe recurrence may result fatally. A nervous disorder is said to be the cause of the trouble.

CHICAGO AND WESTERN STATES.

The "Zion" leader, John A. Dowie, has started on a tour of the Old World.

Anthrax on a California Ranch.—Anthrax has broken out on the Tittmore ranch, 7 miles from Sacramento. Many cattle and several horses have died. Diagnosis is confirmed by microscopic examination.

Poisoned by Drug-store Soda.—Several people in Indianapolis have been poisoned by eating ice-cream served in soda water at some drug stores. No deaths have been reported, but several people have been made seriously ill.

St. Louis Marine Hospital.—Bids for the construction of the isolation ward and disinfecting annex to the United States Marine Hospital at St. Louis were opened recently. The lowest bid was for \$2,691, the work to be finished in 3 months.

Italian Smallpox Patients Released.—The eight Italians who were quarantined in an emigrant car near Adair, I. T., have been released. The railroad company took care of the smallpox patients, and when released from quarantine took them away as quickly as possible.

Smallpox in Illinois.—Dr. Charles B. Johnson, chairman of the State Board of Health, was called to Charleston, Ill., to examine the cases which have been designated as "Cuban itch." He pronounced them smallpox in a mild form. The chairman of the local Board of Health disagrees with this diagnosis.

Child-Labor.—Through the efforts of Factory-Inspector Williams, of Milwaukee, 25 boys have been discharged from the work of serving beer in the parks. The Wisconsin State law prohibits the employment of youths under 14 years of age, and also prohibits the employment of youths under 16 after 9 o'clock in the evening.

Milk Condemned in Milwaukee.—State Food and Dairy Commissioner Adams and members of his staff are in Milwaukee on a tour of inspection, particularly of the milk shipped into the city. Several cans of milk were dumped into the lake, the officials having good reason to believe that the milk came from cattle affected with tuberculosis.

Water of Lake Michigan Remains Cool.—Dr. Bennett, of the health department, went out on Lake Michigan recently to take samples of the water and to find its temperature. He found the temperature of the water at the intake tunnel was 46° F. Three-quarters of a mile from the shore the water near the surface showed a temperature of 56°.

Poultry Condemned by Chicago Health Department.—The Health Department of Chicago recently condemned 75,000 pounds of poultry, which was shipped there from St. Paul, having passed through a fire in a cold storage warehouse in that city. From the same fire \$60,000 worth of salmon was also expected, but the Chicago Health Department was notified that it had been sent to Des Moines.

The Health of Milwaukee.—The Associated Charities of Milwaukee report that there have been few cases of sickness among the poor in that city during the hot weather, while the health department records show an unusually light percentage of infant mortality. The crusade against dishonest milk dealers, which was conducted not long ago, is yielding good results, as is also the excellent quality of the water-supply.

Baking-powder Case.—What is known as the "baking-powder case" of Jefferson, Mo., has reached the Supreme Court. The style of the case is *State of Missouri vs. Whitney Layton*. Layton was convicted March 31, 1900, of manufacturing and selling "Health Food," a baking-powder which is alleged to contain alum, and he was fined \$100. The object of this appeal is to test the constitutionality of the pure food law enacted by the last Legislature. Should the docket fee be paid by the first day of September the case will be docketed for hearing at the coming October term of the Supreme Court. Layton's business is in the city of St. Louis.

A Peculiar Infection.—Many people in the vicinity of La Crosse, Wis., are suffering from a strange poisoning received while on the river. The usual form for it to appear is as a large swelling on the part infected, frequently extending to the limbs, and distorting them greatly. The malady is common at this time of year, and makes annual visits. The poison appears to gain entrance to the system through some abrasion of the skin.

Quarantine Against San Francisco Modified.—Dr. Blunt, State health-officer of Texas, has raised the quarantine against San Francisco so as to admit all white people from San Francisco who can show proof of noninfection. He believes that there have been 15 deaths from bubonic plague in San Francisco, and that the disease has become epidemic. The El Paso Chamber of Commerce will make another effort to have the quarantine abolished altogether.

A Crusade Against Quacks.—Dr. S. C. James, the Kansas City member of the State Board of Health, has begun the campaign against quacks that was decided on at the last meeting of the board. He says this is but the beginning of a crusade that will be pushed vigorously all over the State. Dr. James has asked the assistance of the local Board of Health, Prosecuting Attorney E. E. Yates, and the United States Post Office Department in the movement, and from present indications there will be some startling developments.

SOUTHERN STATES.

The Government Hospital Buildings at Savannah, Ga., which cost \$1,000,000, have just been sold for \$17,100.

Police Surgeon Appointed.—Dr. Pinkney Davis, of Baltimore, has been appointed police surgeon in place of Dr. William B. Burch, resigned.

Quarantine Removed.—Dr. Porter has officially removed all quarantines against yellow fever at Tampa, Fla., and declares that no suspicious cases were disclosed by the house-to-house inspection.

Smallpox Eradicated.—The District of Columbia is now free from smallpox. Since last October 75 cases have been reported, with 4 deaths. Recently 4 cases from Lakeland, Md., have been reported to the health-officer of the District.

Fever on Shipboard.—The Norwegian bark "Kotka" has been towed into quarantine at Norfolk. The captain signals that he has Chagres fever on board and some of the crew are reported dead. The Marine Hospital Surgeon has started to visit the bark.

Inspection of Milk.—The New Orleans Board of Health is collecting samples of milk as they come in from the country and testing them by chemical analysis. An inspection was made some time ago, and only two samples were found below standard.

Death-rate of Baltimore.—There were reported in Baltimore last week 197 deaths. Of these 92 were of children under 5 years of age. This heavy mortality of children is attributed by the health authorities to the excessive heat. There were 6 deaths from sunstroke. The death-rate per 1,000 for the whole population was 18.93; whites, 16.92; colored, 32.69.

Cocain Habit Among Negroes.—The City Council of Huntsville, Ala., has passed an ordinance prohibiting the sale of cocain and the refilling of prescriptions calling for cocain. The cocain habit is increasing at an alarming rate among the negroes in the South, and the time is probably not far distant when all Southern cities will find it necessary to enact a similar law.

Adulterated Milk.—Efforts are being made by the citizens of Dallas, Texas, to secure the enactment of the ordinance against the adulteration of foods. A few years ago Dallas had a milk inspector, and the milk-supply was pure, but recently the appropriation for an inspector has been cut off, and at present the adulteration is said to be a menace to the community.

Six Boys Die of Poison.—At Bluffdale, Texas, several boys went into a farmer's watermelon patch and ate and destroyed many melons. Later the boys wrote the farmer a note, telling him they would visit his patch again, and eat more melons than on the previous visit. The farmer split the stems of some of the melons and inserted strychnin. The boys visited the patch and ate of the melons. Two boys died in the patch, 2 on the way home, and 2 after reaching their homes.

CANADA.

The Hospitals of Ontario.—The thirtieth annual report of the hospitals of the province of Ontario shows that there are now in operation in this province of 2,000,000 people 50 hospitals directly receiving Governmental aid annually from the revenues of the province. The number of sick treated in these various institutions during the past hospital year numbered 26,825, exclusive of the thousands known as outdoor patients who receive advice and medicine from time to time. The total expenditure for the year has approached \$500,000. Of this amount the Government contributes a little over one-quarter. In addition to this there are some 40 houses of refuge in the province, 31 orphan asylums, 4 homes for incurables, 3 convalescent homes, 18 county homes for the poor, and 2 Magdalen hospitals, having an aggregate of 10,000 inmates. The Toronto General Hospital admitted 2,986 patients during the year; 3,388 were treated during the year, of whom 206 died. The revenue of this hospital was \$76,633.13 and the expenditure \$79,911.61.

MISCELLANY.

Tents Shipped to China.—Over 650 tents for the use of the hospital department of the American Army have recently been shipped to Taku.

Sick in the Philippines.—The following is Major-General McArthur's official report of the sick in his entire army on July 31, namely: Sick in hospitals, 3,755; sick in quarters, 1,081; percentage, 8.04

Importation from Smyrna Restricted.—The following dispatch has been sent to the consul at Smyrna by the Secretary of State on account of the plague in that city: "Shipment of figs and raisins prohibited. Also, second-hand or used rugs and carpets."

Starvation in Puerto Rico.—A hurricane has devastated a large area of Puerto Rico and as a result the inhabitants are said to be starving. The city of Ponce is suffering most, while in the municipality of Yanco, which has a normal mortality of 60 per month, 400 deaths have been reported in 3 weeks.

Surgeons for China.—The medical division of the War Department is making every preparation for war in China. Already 100 surgeons have been ordered to China, and another detail of 15 men for Chinese service was recently announced. Thousands of applications have been received by the Surgeon-General asking for appointment as contract surgeons for service in China and the Philippines.

Destitution at Nome.—A petition signed by 4,000 persons of Nome, Alaska, has been sent to the War Department asking it to send transports to take them away from Nome before the season of navigation closes. There are between 15,000 and 20,000 people at Nome, and Captain Tuttle, of the revenue-cutter *Bear*, recently reported that 10,000 of this number were penniless, and would be destitute in the fall; in fact, were practically so now.

The Health of Manila.—The president of the Manila Board of Health has completed his report for the army fiscal year which ended June 30. During the months from October to June inclusive, the total number of deaths recorded was 8,535. During this period the total number of deaths, exclusive of Chinese, from various diseases was as follows: Of tuberculosis, 992; beriberi, 242; malarial diseases, 338; diarrheal diseases, 1,073; acute lung diseases, 631; typhoid fever, 41; smallpox, 7; bubonic plague, 180; leprosy, 46; measles, 4.

Yellow Fever.—The disease is said to be increasing in Pinar del Rio, and 50 cases are under treatment in Havana. These conditions are said to be largely due to the advent of nonimmune Spanish immigrants, amounting to about 20,000. The outbreak of yellow fever among the troops stationed at Pinar del Rio, Cuba, is to be officially investigated by a board of army surgeons. It is their purpose to determine why the disease was not properly diagnosed and proper measures taken to avoid the spread of the contagion, and to what extent, if any, the post surgeon should be held responsible therefor, and to submit such recommendations as it may deem pertinent. The board is authorized to proceed to Pinar del Rio if necessary. It consists of Majors William C. Gorgas, Damaso T. Lainé, and Marlborough C. Wyeth, surgeon. United States Consul Thompson, at Progreso, Mexico, informs the State Department that yellow fever seems to be on the increase there, and is virulent at Merida, capital of Yucatan.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended August 10, 1900:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
LOUISIANA:	New Orleans	July 28-Aug. 4 . .	4	1
MASSACHUSETTS:	Lowell	July 28-Aug. 4 . .	5	
NEBRASKA:	Omaha	July 28-Aug. 4 . .	1	
NEW HAMPSHIRE:	Manchester	July 28-Aug. 4 . .	2	
OHIO:	Cincinnati	July 27-Aug. 3 . .	1	
"	Cleveland	July 28-Aug. 4 . .	6	1
WASHINGTON:	Tacoma	July 21-28	1	

SMALLPOX—FOREIGN.

BELGIUM:	Antwerp	July 7-21		4
EGYPT:	Cairo	June 23-30		1
ENGLAND:	London	July 7-21	31	
FRANCE:	Lyons	July 7-14		1
GIBRALTAR:		July 15-22	1	
INDIA:	Bombay	July 3-10		4
"	Calcutta	June 30-July 7 . .		18
"	Karachi	July 1-8	4	1
"	Madras	June 30-July 6 . .		3
MEXICO:	Vera Cruz	July 21-28		5
RUSSIA:	Moscow	July 7-14	8	3
"	Odessa	July 7-21	8	4
"	Warsaw	July 7-14		8
SCOTLAND:	Glasgow	July 19-27	48	2
SWITZERLAND:	Geneva	June 30-July 7 . .	5	

YELLOW FEVER.

AFRICA:	Goree Dakar	June 16-30	1	
"	Rufisque	June 30	Several.	
COLOMBIA:	Barranquilla	July 14-21	3	1
"	Bocas del Toro . . .	July 25	2	1
"	Cartagena	July 7-14	3	3
"	Panama	July 23-30	4	
CUBA:	Cardenas	Aug. 3	1 suspicious.	
"	Matanzas	July 25	1 death—U. S.	
"			Volunteers.	
"	Santa Clara	July 24	1	

CHOLERA.

INDIA:	Bombay	July 3-10		175
"	Calcutta	June 30-July 7 . .		37
"	Karachi	July 1-8	1	1
"	Madras	June 23-29		1

PLAGUE.

AUSTRALIA:	Sydney	June 16-30	18	3
EGYPT:	Port Said	April 29-July 9 . .	90	36
INDIA:	Bombay	July 3-10		60
"	Calcutta	June 30-July 7 . .		71
JAPAN:	Formosa, Tamsui . .	June 14-21	33	30
PHILIPPINES:	Cavite	June 16-23	1	
"	Manila	June 16-23	2	

Obituary.—JOHN A. PEARSON, of Bryn Mawr, Pa., August 4, aged 33.—JAMES STOUGHTON, of Lansingburg, N. Y., at Shanghai, aged 34.—CORTLANDT VAN RENSSELAER CREED, of New Haven, Conn., August 8, aged 70.—G. G. SHANNON, of Tulare County, Cal., August 4.—RIDGELY E. BAER, of Baltimore, August 7, aged 73.—ELIAS B. HARRIS, of San Francisco, August 7, aged 75.—JOHN FRANCIS BURNS, of Long Island City, August 8, aged 37.—J. C. MERRILL, of Portland, Me., August 8, aged 69.—HORACE NEWELL, of Ava, Ill., Au-

gust 8, aged 80.—DAVID CONAGHY, of Latrobe, Pa., August 10.—W. J. EISTON, of Washington, D. C., August 10.—H. J. COSTELLO, of Philadelphia, August 13.—HERMANN A. LOOS, of New York.

Vivisection.—It is not likely that there ever will be entire unanimity of opinion about the necessity of the practice of vivisection, says the *Inter-Ocean*. However, it is worth while to count over the real additions to scientific knowledge that vivisection has made. A sensitiveness to the infliction of pain or death does not necessarily argue a high degree of love for humanity. The people of India will starve rather than kill a bird, but do not hesitate to expose an unwelcome infant to death. A Hindoo may lay down his own life to save that of a tigress and her whelps, but he will stand unmoved before a widow's suttee. It took a nation that licensed vivisection to put an end to such a horror. For the study of anatomy the dead body suffices, but pathology requires the investigation of living processes. By means of vivisection the circulation of the blood was first understood. Transfusion was first demonstrated to be possible by experiments on dogs. The physiology of respiration was studied by the use of the air-pump on animals, and the effect of vitiated air and its restoration for lung use by growing plant-life was first made clear by means of mice in air-tight receivers. Jenner's experiments with cowpox and their results are widely known. Thiersch's experiments in studying cholera have resulted in saving thousands of lives. Present antiseptic methods, which reduced mortality from surgical operations 90%, owe their efficacy to vivisection. Koch and Pasteur came to their knowledge by the same way. The natural mode of the reproduction of bone was discovered by means of vivisection, and thousands have thus been saved from the loss of limbs. When one considers that artificial respiration, by which the drowning and the newborn are so frequently brought to life, the improved surgical operation for the cure of aneurysm, the successful study of the digestive secretions, the investigations of infectious and contagious diseases, the treatment of venomous wounds, the action of poisons, drugs, and medicines, would all be unknown but for vivisection, one must hesitate long before condemning it.

Changes in the U. S. Marine-Hospital Service,
for the week ended August 9, 1900:

FRICKS, L. D., assistant surgeon, has been assigned to duty as quarantine officer at the port of Ilo Ilo, by J. C. PERRY, passed assistant surgeon, the chief quarantine officer of the Philippine Islands, which assignment has been approved by the Secretary of the Treasury.

STANSFIELD, H. A., assistant surgeon, has been assigned to duty as quarantine officer at Cebu, by J. C. PERRY, passed assistant surgeon, the chief quarantine officer of the Philippine Islands, which assignment has been approved by the Secretary of the Treasury.

WHITE, J. H., surgeon, to proceed to Mullet Key Detention Camp, Fla., as inspector.

WILLIAMS, L. L., surgeon, to proceed to Stapleton, N. Y., as inspector of unserviceable property.

SMITH, A. C., passed assistant surgeon, leave of absence for 8 days granted by bureau letter of June 30, revoked.

WICKES, H. W., passed assistant surgeon, bureau letter of June 26, granting Passed Assistant Surgeon Wickes leave of absence for 15 days amended so that leave shall be 4 days only.

GREENE, J. B., passed assistant surgeon, granted leave of absence for 23 days.

MATHEWSON, H. S., assistant surgeon, granted leave of absence for 1 month from September 5.

WALKLEY, W. S., acting assistant surgeon, granted leave of absence for 2 days.

RYDER, L. W., hospital steward, granted leave of absence for 15 days from August 1.

IRWIN, FAIRFAX, surgeon, to proceed to Saco, Maine, for special temporary duty.

CARTER, H. R., surgeon, to report at Washington, D. C., for temporary duty.

McINTOSH, W. P., surgeon, detailed as inspector of the Mobile (Ala.) quarantine station.

STIMPSON, W. G., passed assistant surgeon, to proceed to Cairo, Ill., as inspector.

GARDNER, C. H., passed assistant surgeon, granted extension of leave of absence for 9 days.

GOLDSBOROUGH, B. W., acting assistant surgeon, granted leave of absence for 2 weeks, to be taken during August.

WALKLEY, W. S., acting assistant surgeon, granted leave of absence for 2 days.

HERTY, F. J., hospital steward, relieved from duty at Vineyard Haven, Mass., and directed to proceed to San Juan, P. R., and report to Assistant Surgeon C. H. Lavinder for duty.

HOLSENDORF, B. E., hospital steward, to report at Washington, D. C., for special temporary duty.

HOLSENDORF, B. E., hospital steward, relieved from duty at San Juan, P. R., and directed to proceed to Havana, Cuba, and report to the chief quarantine officer of Cuba for duty.

ESCOBAR, BERNARDO, acting assistant surgeon, quarantine officer at Caibarien, Cuba, died July 28.

Changes in the Medical Corps of the U. S. Army for the week ended August 11, 1900 :

RICHARDS, First Lieutenant WILLIAM E., assistant surgeon, Mayaguez, P. R., will report for duty to the commanding officer of the troops en route to the United States, and upon the arrival there will report by letter to the Surgeon-General, U. S. Army, for further orders.

BENNETT, IRVIN E., acting assistant surgeon, Aguadilla, P. R., will report for duty to the commanding officer of the troops en route to the United States, and upon arrival there will report by letter to the Surgeon-General, U. S. Army, for further orders.

TANNER, W. T., acting assistant surgeon, Manati, P. R., will report for duty to the commanding officer of the troops en route to the United States, and upon arrival there will report by letter to the Surgeon-General of the U. S. Army, for further orders.

McCONATHY, HERBERT M., acting assistant surgeon, Adjuntas, P. R., will report for duty to the commanding officer of the troops en route to the United States, and upon arrival there will report by letter to the Surgeon-General, U. S. Army, for further orders.

MINOR, JOHN F., acting assistant surgeon, now at the U. S. General Hospital, Presidio, will proceed to Seattle, Wash., to report upon arrival there to the commanding officer, U. S. troops, on the transport "Packling," for temporary duty during the voyage of that vessel abroad.

DE LOFFRE, SAMUEL M., acting assistant surgeon, will proceed to Seattle, Wash., and report to the commanding officer, First Cavalry, for duty with that regiment en route to Manila, P. I.

WETHERILL, First Lieutenant HENRY E., assistant surgeon, will proceed to Seattle, Wash., and will report to the commanding officer, First Cavalry, for duty with the squadrons of that regiment en route for service abroad.

PINKSTON, OMAR W., acting assistant surgeon, now at the Army General Hospital, Presidio, will proceed to Seattle, Wash., and report on the transport "Athenian," for temporary duty during the voyage of that vessel abroad.

SMITH, BAT, acting assistant surgeon, is relieved from duty at the Yellow Fever Hospital, Santiago, Cuba, and will report to the commanding officer of the battalion of the Fifth Infantry for duty with that command en route to the United States.

HENDRICKSON, WILLIAM M., acting assistant surgeon, is relieved from duty at Fort Baker, and assigned to temporary duty at Fort McDowell, to relieve Acting Assistant Surgeon Robert E. Williams.

WILLIAMS, ROBERT E., acting assistant surgeon, will report for duty as transport-surgeon on the "Hancock."

WOODBURY, FRANK T., acting assistant surgeon, is relieved from temporary duty at the Army General Hospital, Presidio, and will report to the commanding officer, Battalion, Third Artillery, now at that post, for duty with that battalion during the voyage on the Army transport "Hancock," and for service abroad.

WAHL, HUGO A., acting assistant surgeon, is relieved from temporary duty at the Army General Hospital, Presidio, and will report to the commanding officer, Battalion, Third Artillery, now at that post, for duty with that battalion during the voyage on the Army transport "Hancock," and for service abroad.

SMITH, CHARLES F., acting assistant surgeon, will proceed to Holbrook, Ariz., and upon arrival there of troops from Fort Apache, will report to the commanding officer for duty with that command en route to the Philippine Islands.

WILCOX, Captain CHARLES, assistant surgeon, will upon arrival of the Sixth Cavalry, in San Francisco, Cal., en route to foreign service, report to the commanding officer thereof for duty therewith.

FULLER, First Lieutenant LEIGH H., assistant surgeon, will report upon arrival of the Third Battalion, Fifteenth Infantry, in San Francisco, Cal., en route for foreign service to the commanding officer thereof for duty therewith.

STREET, LIONEL A. B., acting assistant surgeon, is assigned to temporary duty with troops en route for foreign service on the Army transport "Meade."

LEMEN, HARRY R., acting assistant surgeon, is assigned to temporary duty with troops en route for foreign service on the Army transport "Meade."

SHOCKLEY, M. A., acting assistant surgeon, is hereby relieved from further duty at Cabana Barracks, Cuba, and will report to the chief sanitary officer of the city of Havana for temporary duty.

FORSYTHE, WYLIE H., acting assistant surgeon, is granted leave for 1 month, with permission to visit the United States.

CALDWELL, ROBERT E., acting assistant surgeon, now at San Francisco, Cal., will report for assignment to duty on the transport "Rosecrans," to relieve Acting Assistant Surgeon James H. Holloway, who will report for assignment to duty on the transport "Sheridan."

KNEEDLER, HARRY D., acting assistant surgeon, U. S. Army, will proceed from St. Louis, Mo., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

MARSDEN, ROBERT, hospital steward, Josiah Simpson General Hospital, near Fort Monroe, will be sent to the Army General Hospital, Washington Barracks, to join detachment now under orders to go to Fort McDowell.

TORNEY, Major GEORGE H., surgeon, will proceed to Battle Creek, Mich., and Richfield Springs, N. Y., on business pertaining to the medical department of the Army.

SIMS, GEORGE K., acting assistant surgeon, is relieved from further duty in the department of California, and will report to the commanding general, department of California, for assignment to duty with troops en route to the Philippine Islands.

EDMONDSON, JAMES J., acting assistant surgeon, upon being relieved by Acting Assistant Surgeon Robert H. Zauner, will proceed from Fort Du Pont to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

ZAUNER, ROBERT H., acting assistant surgeon, will proceed from Washington, D. C., to Fort Du Pont for duty, to relieve Acting Assistant Surgeon James J. Edmondson.

McKAY, JAMES G., acting assistant surgeon, is relieved from further duty in the division of Cuba, and upon the expiration of his present leave will proceed from Philadelphia, Pa., to Fort Sheridan for duty to accompany the Fifth Infantry, under orders for foreign service.

CLAYTON, First Lieutenant JERE B., assistant surgeon, is granted leave for 1 month from August 1.

GODFREY, Captain GUY C. M., assistant surgeon, is relieved from duty in the department of Western Cuba, and will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to Manila, P. I., where he will report to the commanding general, division of the Philippines, for further orders.

APPLE, W. EDSON, acting assistant surgeon, is granted leave for 20 days.

APPLE, W. EDSON, acting assistant surgeon, will upon the expiration of leave proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to China.

BRECHEMIN, Jr., LOUIS, acting assistant surgeon, will proceed from Philadelphia, Pa., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

MABRY, WILLIAM C., acting assistant surgeon, will proceed from Cleveland, Ohio, to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

McMILLAN, CLEMENS W., acting assistant surgeon, will proceed from St. Louis, Mo., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

NOBLE, ROBERT E., acting assistant surgeon, will proceed from New York City to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

OHLINGER, LORIN B., acting assistant surgeon, will proceed from Allegheny, Pa., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

O'NEIL, JOSEPH A., acting assistant surgeon, will proceed from New York City to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

PECK, LUKE B., acting assistant surgeon, will proceed from Brookline, Mass., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

RAFTER, JOHN A., acting assistant surgeon, will proceed from West Winfield, N. Y., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

SHOOK, J. RALPH, acting assistant surgeon, will proceed from Greencastle, Pa., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

STURTEVANT, CHARLES A., acting assistant surgeon, will proceed from West Somerville, Mass., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

WATSON, HENRY J., acting assistant surgeon, will proceed from Ottumwa, Ia., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

WILKLOW, GEORGE, acting assistant surgeon, will proceed from Ellenville, N. Y., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

ADAIR, GEORGE F., acting assistant surgeon, now at Fort Sheridan, will report to the commanding officer at that post for duty to accompany the Fifth Infantry, under orders for foreign service.

HAEMER, J. RANDOLPH, acting assistant surgeon, having reported to the Surgeon-General of the Army, will proceed to Fort Fremont, S. C., for duty to relieve Acting Assistant Surgeon Benj. B. Wariner, who will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

BAILEY, HOWARD H., acting assistant surgeon, will proceed from Washington, D. C., to San Francisco, Cal., and report to the

commanding general, department of California, for assignment to duty with troops destined for foreign service.

ROBERTS, WILLIAM, acting assistant surgeon, will proceed from Washington, D. C., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

The following named medical officers will accompany the First Infantry to the United States on the Government transport "Rawlins": With battalion from Pinar del Rio—Acting Assistant Surgeons J. F. PRESNELL and A. A. NOUËL; with battalion from Guanajay—First Lieutenant E. E. TRUBY and Acting Assistant Surgeon J. F. DUNSHIE.

Changes in the Medical Corps of the U. S. Navy, for the week ended August 11, 1900:

CRAWFORD, C. A., assistant surgeon, is detached from the "Eagle," and ordered to the "Chesapeake."

DELANCY, C. H., assistant surgeon, is detached from the "Constellation," August 13, and ordered to the "Bancroft," August 14.

BRAISTED, W. C., passed assistant surgeon, is detached from the "Massachusetts," and ordered to the "Topeka," August 15.

GARTON, W. M., assistant surgeon, is detached from the "New York," and ordered to temporary duty on the "Massachusetts."

STOUGHTON, JAMES, passed assistant surgeon, U. S. N., was drowned at Shanghai, China, August 5.

Pineapples Furnish a Savage Poison.—The juice of the green pineapple is accredited in Java, the Philippines, and throughout the far East generally with being a blood-poison of a most deadly nature. It is said to be the substance with which the Malays poison their kreeses and daggers, and to be also the "fingernail" poison formerly in use among aborigine Javanese women almost universally. These women cultivated a nail on each hand to a long, sharp point, and the least scratch from one of these was certain death.

Hospital Ship in Service at Taku.—Word has been received that the hospital ship *Relief* left Kobe, August 8, for Taku. The officials are satisfied that she has reached the Chinese port by this time. The *Relief* took the soldiers who were wounded in the engagement at Tien-Tsin and the soldiers who had succumbed to the rigor of the Chinese campaign prior to that event, to Nagasaki, where the United States maintains an excellent hospital. Similar disposition will be made of other sick and wounded soldiers in China, in order to relieve the field hospitals to be established in that country as much as possible.

Dr. Henry E. Menage, of New Orleans, who has been stationed at Manila for the past 18 months, says the American soldier in the Philippines is as healthy as any one possibly could be under similar conditions. If there is a great deal of sickness it is not due to lack of comforts or indifferent supplies. Malaria is always prevalent in the tropics, and it is this ill that has decimated the ranks. Some have dysentery, which results from the impure water they drink when in the field. They have an abundance of fresh meat, which arrives biweekly from Australia in refrigerator ships, and though they do not have all the comforts of home, they want for nothing.

The Board of Control of the Red Cross Association recently held a meeting, and work which the association would probably be called upon to do in case of declared war between China and the nations was discussed. If the conditions justify the Red Cross in taking up its legitimate work in China, it is very likely to do so in cooperation with the Red Cross of Japan. The only nations which have not acceded to the Geneva treaty of the Red Cross are China and Mexico, so that should the Red Cross undertake its work in a war between the nations and China it would have to do so, so far as China is concerned, by a special understanding with that country. This matter was placed in the hands of the president of the association, to take such steps as circumstances may warrant.

Parasite Causing Elephantiasis Found in Mosquitos.—Reports received from Nigeria, where the scientific expedition recently sent out by the Liverpool School of Tropical Medicine is operating, show that the parasite which causes elephantiasis has been discovered in mosquitos. The leaders of the expedition believe that the experiments which are now being carried on to stamp out malaria by preventing mosquito inoculation can be applied to elephantiasis, which is so prevalent among natives of tropical countries.

Foreign News and Notes.

GREAT BRITAIN.

Genius Defined.—Mr. Treves, in his lecture to medical students at the opening of the new clubrooms in the London Hospital, says the *London Spectator*, is reported to have said that genius, he took it, was some form of neurosis, an untabulated nervous disease. The few persons of genius he had known had been exceedingly impossible persons, and if there was one profession where genius was out of place it was the medical profession. The thing which in that stood above all else was hard work, and one very peculiar faculty—that of close observation.

House Refuse and Public Health.—At a recent meeting of the County Council of London, a report of the Public Health Committee was considered, and a by-law passed, stipulating that obnoxious matter must be removed in "suitable carriages or vessels, properly constructed, and furnished with a sufficient covering, so as to prevent any nuisance." It is also enjoined that such matter shall not be removed or carried by road in or through London, except during the following periods: "Between 5 and 10 o'clock, A.M., or during the period commencing 2 hours before sunset and ended 1 hour after sunset, in any day during the months of March, April, May, June, July, August, September, and October; between 6 and 11 o'clock, A.M., or during the period commencing 2 hours before sunset and ended 1 hour after sunset, in any day during the months of November, December, January, and February." This important by-law will come into operation when it has been confirmed by the Local Government Board.

The Supplementary Army Estimates.—The Army Medical Service formed the subject of a good deal of discussion on the occasion of the House going into Committee of Supply on the Supplementary Army Estimates, says the *Lancet*. The strength of the medical establishment was dangerously low at the outbreak of the present war in South Africa and it had to be reinforced by the employment of a large number of civil surgeons. Moreover, the occurrences in China, the West Coast of Africa and elsewhere, have vastly increased the demand for medical officers in the public services at present. The present secretary for war did much more than his predecessors had done to restore the popularity of the service, but whether it were owing to want of time or from other causes these measures have not so far been productive of the effect anticipated. As the matter stands the whole subject of the organization of the army medical services and the provision of an independent medical transport and a large medical reserve will have to be taken up and most carefully considered at the close of the present war in South Africa.

The Centenary Dinner of the Royal College of Surgeons was held in the hall of the Honorable Society of Lincoln's Inn, on the evening of July 26. Sir William MacCormac was in the chair and some 300 guests were present, including the Prince of Wales and the distinguished surgeons who received the honorary diplomas of the College in the afternoon. The president proposed the toast of the Queen and the Prince and Princess of Wales. The Prince in responding said he did so in an entirely new capacity, that of an Honorary Fellow of the Royal College of Surgeons of England. He was afraid, however, that he would not be allowed to practise the profession, and if he did he very much feared that he might commit murder, from the results of which even the Lord Chancellor would not be able to save him. He then referred to the great progress made in surgery and to the work done by the profession in the South African campaign. The toast of the Honorary Fellows of the College was proposed by Sir William MacCormac. This is the first time this toast has been proposed, for only recently was the necessary authority obtained to grant these honorary distinctions. The president said that on being asked what principle guided them in the selection of Lord Salisbury and Lord Rosebery as Honorary Fellows, he replied that Lord Salisbury was an eminent man of science and Lord Rosebery was eminent in everything else. All the other Honorary Fellows are surgeons. Lord Rosebery said in reply that he hoped no

one would entrust a surgical case to either himself or the Prime Minister, but that the latter was credited with the intention of performing on the illustrious mother of parliaments an operation which consisted in giving a new lease of life by first stopping that which now existed, and then flinging it into that exhilarating caldron which would return it to life. The toast of the guests was proposed by Mr. Thomas Bryant. He said we have been led to make this selection under the conviction that the Honorary Fellows of this College are men of equal caliber—for the three professing but not practising Fellows are men whom all the world delights to honor, while the remaining Honorary Fellows are the leading practising surgeons of the European and American States and the colonies of Great Britain. The Royal College of Surgeons of England, coupled with the name of the president, was proposed by Lord Salisbury, and Sir William MacCormac responded in an address full of sincerity and gratitude for the kind words spoken. The concluding entertainment of the centenary celebrations took the form of a *conversazione* given by the Lord Mayor of London in the Mansion House.

CONTINENTAL EUROPE.

Imports from Plague Infected Places.—The minister of the interior at Rome has issued an edict revoking the prohibition upon importation of salted hides, hoofs, and shoe leather from places infested with bubonic plague.

Condition of Campagna Peasants.—The Director of the Hygienic Institute of Rome, Professor Celli, has written a book in which he declares that the peasants of the Campagna, about 50,000 in number, are today in a more wretched condition than they were in the time of the ancient Romans. Then they were mostly slaves, but were well-housed and fed, while today they are on the verge of starvation, and there are only about 500 houses for 50,000 persons. In some cases as many as 150 persons of all ages and both sexes live in one large wigwam.

Sanitation at Rome.—Dr. Irving C. Rosse, an American physician who spent some time at Rome as sanitary inspector for the Government, not only discredits the mosquito theory of the origin of malaria, but gives the Eternal City a much better name for salubrity than it enjoys in common repute. He says that malarial fever is seldom seen except among the poorer classes. Americans and Englishmen, in spite of mosquitos and of habits which Italians regard as reckless, now reside there for years without an attack of malaria. He says with the exception of London it is the best drained, best watered, and the healthiest capital in Europe, and a European or native of New England runs greater risk of contracting malaria in Washington.

Army Life Good for Health.—Dr. Carles, a French physician who has given much time to the study of the subject, says that young men who spend a few years in the army have better health than those who remain at home. He says that military service makes men better able to ward off disease. Open-air life, regular hours, frequent exercise are in themselves factors to good health. The latest statistics of the French army show that men who have served for more than a year are far better fitted to ward off disease than those who have just entered the army. Many prominent army surgeons are interested in his statements and the statistics quoted in proof thereof, and are of the opinion that his views are applicable not only to France but to any other civilized country.

Boots and Aniline Poisoning.—It is a common practice to stain brown leather boots black, especially when they are getting old. M. Landouzy, at a meeting of the Académie de Médecine, reported 10 cases of children who, while in good health, were suddenly seized with serious symptoms, such as torpor, coldness, and blueness of the skin, a few hours after wearing yellow shoes recently dyed black. One child, aged 17 months, in the course of a hot day became dull, cyanotic, and asphyxiated, and remained so until the evening in spite of injections of ether and caffeine. In another family 6 children, during very hot weather, were observed by the mother to become blue and tumble down one after the other, and 3 became very ill. A chemical analysis showed that the dyes used consisted of 92% of aniline

and 8% of other coal-tar colors, while experiments proved that the aniline was the real cause of the symptoms, and could be induced in rabbits by merely painting the skin (from which all fur had been removed) with a 92% solution in distilled water, provided that the temperature was kept above 28° C. (82.4° F.). Below 50° F. the application had no effect.—[*Physician and Surgeon.*]

The First International Congress on Medical Ethics, or Deontology, Paris.—On the afternoon of July 25 the Congress divided into two sections, and it was decided that questions of a local character should be discussed in the first and more general questions in the second section. The afternoon in the second section was mainly devoted to the consideration of the many forms of competition from which medical men have to suffer. Dr. Dignat, of Paris, urged that nurses and others who applied water and electric cures were practising medicine, though they were not properly qualified. There was no denying that these agencies might do a great deal of good or, if wrongly applied, a great deal of harm. Then there were the prescribing druggist and the covering doctor. All these were the parasites of the medical profession. Under the supervision of medical men their work was sometimes legitimate and useful, but they had no right to go to families and propose to treat patients unless called in by a qualified medical attendant. Dr. Benedick (Vienna) had always found that the conviction of mesmerists only served to increase the number of their clients. In one case the public prosecutor who had secured a conviction subsequently went himself to consult the quack in question. In Austria also there were many eminent scientists who were not doctors of medicine, and in certain mountainous districts there were no medical men at all. But there were families who had inherited capacities which were probably in the origin based on a true knowledge of medicine. When there was no medical man available the sick could not be prevented from consulting such persons. Also, there were peasants who undoubtedly were wonderful bone-setters—one of them had been nominated honorary doctor by the University of Prague so great was his skill. It was wiser to show some toleration to those who outside the profession undoubtedly had rendered services. Dr. Dugron (Paris) said that many patients seen at the hospitals were suffering as the result of **incompetent massage**, and urged that medical students should be taught massage. Dr. C. Petit (Paris) raised the question of the sale of medicaments and poisons without prescription. If poison could not be obtained by itself it could always be bought in the form of a specialty or patent medicine. He thought that these specialties should only be sold when prescribed. Medical men alone could judge whether a special or patent drug was good, but the public were left to decide this matter for themselves on the reading of a pamphlet or advertisement.

On the morning of July 26 the paper on **Deontology**, mentioned in our last issue, was read. The discussion on this communication was opened by Dr. de Gouvêa (Rio Janeiro), who related that medical ethics were at a low ebb till the formation of a medical society in the capital. This produced such good results that similar organizations were created in other parts of Brazil. Dr. Thiéry (Paris) said there should be a book for students explaining the principles of deontology, and it was proposed that there should be an international committee to draw up such a code. The report by Dr. Henry Adler (Vienna) on the **Medical Chambers of Austria** was now read. Many medical congresses had been held before a definite project was approved, and it was in 1891 that a law instituting these Medical Chambers was passed. The law states that all qualified practitioners must be attached to the Medical Chambers, except in the case of a State functionary or an army surgeon, or when a medical man has formally retired from practice. Dr. Paul Schober read a paper on the **Medical Chambers in Germany**, stating that those in Prussia were the best organized. In the afternoon there was some discussion in the first section as to the **relations of medical men with life-insurance companies**, and it was urged that these should be treated as ordinary clients and no special terms made.

Medical Societies.—In the second section Dr. Manolescu, of Bucharest, related that a medical association of Roumanian doctors had been formed. It issued a monthly journal, held

an annual congress, and discussed both sanitary and medical questions. Dr. Cayla described the medical societies of the department of the Seine. Some were 20 and others were 50 years old, but it was only during the last 10 years that they had discussed economical questions. Mr. Adolphe Smith said that the description given corresponded with the general character of the numerous medical societies existing in England, several of which were over 100 years old. These societies were highly respectable and rather than admit the black sheep of the profession had in some instances formed medical unions outside of their own ranks, for it was most necessary to bring into line those who were otherwise likely to become "blacklegs." On July 27 Dr. Lande's paper on **Mutual assistance and insurance for medical men** was read. First he showed the expense in time and money of medical education, and then that the practitioner's income depended on his health, and was rarely sufficient to admit of his saving any considerable sum. Therefore the practitioner should insure his life early when the premiums to be paid would not be high. Dr. Lasale said it was a mistake to believe that all charlatans were outside the profession and illegal practitioners. There were two means of action—conscience and the law. Those who had a conscience had no need of the law; those who had no conscience must have the law. The profession should organize its own police which should warn the public against the charlatans who were within the ranks of the profession. He was in favor of discipline as well as of liberty. While they talked about liberty their difficulties and misery increased. Besides, if liberty was unnecessarily and vexatiously interfered with the profession could easily change those whom it had placed in command. In the afternoon the members all returned to the great amphitheater, where it was decided to meet in 3 years in Belgium.

MISCELLANY.

Dr. G. E. Morrison, the Peking correspondent of the *London Times*, is a physician, 36 years old, and an Australian by birth. He received his medical education in Melbourne and London.

Army Nursing Service.—The Government of India has decided that candidates to be trained as midwives and nurses of the Army Nursing Service should not be under 5 feet 3 inches in height.

Plague in Australia.—The steamer *Aorangi* brings news from Australia of the abatement of the plague because of the cold weather. At Sydney the Board of Health has recommended the issuing of clean bills of health to departing ships.

Obituary.—THOMAS WRIGHT, at Vanburg Park, Blackheath, July 20, aged 68.—HERBERT TAYLOR, of Wisbech, July 19, aged 65.—CHARLES JAMES HYSLOP WARDEN, at Highbury, July 18, aged 40.—WILLIAM URBAN BRICE, at Slough, July 25, aged 83.—ERNEST A. T. STEELE, of Plaistow, July 25, aged 34.

Yellow Fever in Africa.—The French coast in the west of Africa, Senegal, British Gambia, and as far down as Bathurst, has been declared under quarantine on account of yellow fever. The disease is said to be of a very malignant type, and that persons attacked do not, as a rule, survive more than 3 hours.

Infant Feeding.—A law has been passed in France prohibiting anyone from giving solid food of any kind to infants. Persons who give solid food to a child less than one year old, unless it be upon special prescription of a physician, may be adjudged guilty of an attempt to kill. The use of long rubber tubes with nursing bottles is also prohibited, because of the difficulty in keeping them sterilized.

Foreign University Intelligence.—Dr. R. Stern, of Breslau, has been promoted to an extraordinary professorship of internal medicine. Dr. C. Jung, professor of odontology at Heidelberg, has resigned and Karl Gegenbaur, professor of anatomy, is retiring. Dr. Oscar Eversbusch, of Erlangen, has been offered the professorship of ophthalmology at Munich as successor to Dr. von Rothmund, who is retiring. Dr. Ludwig Medicus, of Würzburg, has been appointed to the chair of pharmacy and pharmaceutical chemistry.

Society Report.

BRITISH MEDICAL ASSOCIATION.

Sixty-eighth Annual Meeting, Held at Ipswich, July 31, August 1, 2, and 3.

THE following brief summary will give some idea of the work done and the subjects discussed in the various sections at the sixty-eighth annual meeting of the British Medical Association.

Section of Medicine.

Dr. Judson Bury pointed out that different types of influenza could be recognized according to the particular organs on which the chief stress of the attack fell, but that in all the types the nervous system suffered severely. There were two main groups of nervous disorders associated with **influenza**; in one the nerve symptoms developed during the pyrexial stage of the disease, and in another during the nonfebrile stage. The first group contained the comatose and delirious cases, and the second the neurasthenic, mental, and paralytic cases. All depended on a general toxemia or on secondary structural lesions produced by the influence of the influenza bacillus either alone or in conjunction with streptococci. Cases were described of lesions of the brain, cord and peripheral nerves, in illustration of these propositions. Sir William Broadbent considered that most of the neurasthenic, neuralgic, and neuritic cases, like those of diphtheria, were due to toxins, but that the comatose cases were due directly to the bacilli, as in some of the malignant forms of malaria, where the meningeal capillaries were choked with the malaria parasites. Five cases of sudden coma due to influenza were described, some of which proved fatal in a few hours, and in one of which a temporary improvement, lasting a week, followed the hypodermic administration of quinin. Allusion was also made to a case with unilateral convulsions, to one with gradual hemiplegia accompanied with active muscular spasm, and to a third who died from paralysis of the respiratory muscles. Sir Peter Eade thought that the toxic influence of the influenza bacilli was exerted more on the sensory than on the motor mechanisms, and that the medulla oblongata had for it a special selective affinity. Professor Clifford Allbutt alluded to the difficulty of the diagnosis of influenza. Its sudden onset was almost pathognomonic. He thought the poisonous effect of the disease fell especially on the anterior part of the brain, and that prognosis of influenzal nervous disorders was not hopeful. Dr. Newton Pitt asked whether the meningitis was due to the influenza bacilli directly or to their breaking down the resistance of the tissues, and thus giving access to the pyogenic and other microorganisms. In one case he had found Fraenkel's pneumococcus, but not the influenza bacillus. He described some cases of postinfluenzal multiple neuritis, and said that the cardiac disturbance was more likely nervous than muscular.

Section of Surgery.

The subject of **Subphrenic abscess** was introduced by Mr. Rickman J. Godlee. Especial attention was drawn to the various causes of the condition, including gastric ulcer, appendicitis, and Mr. Godlee mentioned that in the last 5 years he had seen no fewer than 13 cases of actinomycosis, which was a more common condition than was generally supposed. The many and varying symptoms of subphrenic abscess and its treatment were fully discussed. It was agreed that the character of the aspirated pus did not enable a surgeon to decide whether it had been let out from above or below the diaphragm. Mr. Leonard Bidwell narrated a series of successful cases of pyloroplasty for nonmalignant conditions of the stomach, illustrating the slight risk of the operation. Professor Berg (Stockholm) had found retraction of the stricture recur in 50% of his cases of pyloroplasty, and had been compelled to do gastroenterostomy; he urged that at least three years must elapse before one could consider the cases cured. An interesting case of anastomosis between the gallbladder and colon (cholecystocolostomy), performed for obstructive jaundice due to syphilitic thickening around the common bile-duct, was brought forward by Mr. Betham Robinson. After the operation the patient had completely

recovered under potassium iodid. Mr. F. C. Wallis discussed the causes and treatment of nonmalignant stricture of the rectum, urging that septic infection of some kind was present as the cause in many cases, pointing out in confirmation of this view that synovitis of various joints sometimes occurred as a complication. He adduced 2 cases of extensive excision of the lower strictured part of the rectum; in both the mucous membrane was brought down and successfully united to the anal skin, although some 5 inches had been excised. The result in both cases had been excellent, although in one (in which no preliminary colotomy was done) the shock had been extreme. Mr. Treves stated his belief that many cases of **stricture of the rectum** and other parts of the gastrointestinal tract were due to congenital abnormality, whilst excision could only be carried out in a few cases of fibrous stricture of the rectum, but in these it might prove most valuable. In Mr. Wallis's cases control over the sphincter had been preserved. Mr. Stanley Boyd brought forward the latest results of cöphorectomy in cases of sirrhosis of the breast. From these apparently about 40% of the patients were benefited. He did not himself attach importance to thyroid feeding, but Dr. G. E. Herman urged that the combined treatment gave the best result. Mr. Boyd considered the operation practically useless after the menopause, and that it was still in the experimental stage.

Section of Obstetrics and Gynecology.

Dr. Berry Hart opened the discussion upon **Puerperal fever in relation to notification**. In spite of all our progress in antisepsis and the management of labor, the mortality from puerperal fever had not materially decreased. Dr. Hart discussed the advantages of notification, the difficulties of carrying it out, the way it should be done, and the measures which should follow it. The circumstances under which it should be recommended for any district, and the necessity that such district should be provided with isolation hospitals to which suitable cases could be removed. The President read a communication from the Local Government Board pointing out that "the object to be attained, in so far as preventive medicine was concerned, was to bring to the knowledge of the sanitary authority all those conditions which, supervening upon parturition, were communicable from one parturient woman to another," and also a statement from a medical officer of health that his experience of notification had been disappointing, the deaths from puerperal fever in one or two years having in his district exceeded the notifications, and that, except for disinfection of bedding at the end of a case, the intervention of the M. O. H. was seldom necessary. The sense of the meeting was that to make the notification a privileged communication between the medical attendant and the officer of health was impracticable, and at the close of the discussion it was resolved unanimously, on the motion of Dr. Boxall, seconded by Dr. Beverley, That it be a recommendation to the Council that in the opinion of the meeting it was desirable that notification of puerperal fever (septicemia) should be adopted generally.

Section of State Medicine.

Dr. Nathan Raw read his paper upon **tax-supported Sanatoriums for consumptives**. He described what had been done in Liverpool, and felt sure that in a very few years sanatoriums would have to be provided at the expense of the State, since no one with phthisis would be able to get employment. Dr. Houston next introduced a discussion upon "Can modern systems of sewage treatment be depended upon to remove the *Bacillus typhosus* and allied organisms?" He described a number of his own experiments and generally came to the conclusion that modern methods had not yet solved the problem of getting rid of the pathogenic bacteria.

Section of Physiology.

Professor Halliburton proceeded to open a debate on the **production of uric acid**. He dwelt on the physiologic side of the question, as it is necessary to know the normal history of uric acid before its abnormal behavior can be unraveled. He advocated an extension of Horbaczewski's views on the formation of the acid from nuclein; there are probably several factors concerned—namely, the nuclein and

purine compounds of the food, and that which results from the metabolism of the nuclei of leukocytes and other cells. He also pointed out that uric acid is only one of the so-called purine compounds, and that all of these substances must be considered in any wide survey of the subject. He drew attention to another error into which some investigators have fallen—namely, in regarding the uric acid in the urine as the amount which is produced in the body.

Section of Pathology.

A discussion on the **Pathological distribution of *Bacillus diphtheriae* and the bacteriological diagnosis of bacterial infections** was introduced by Dr. Andrewes, who referred to the impossibility of giving a certain diagnosis within 24 hours, as clinicians were apt to expect. He said that the question of the diagnosis of diphtheria had to be looked at (a) from the strictly scientific, and (b) from the clinical point of view. From the first standpoint it might be a week or more before a certain diagnosis could be given, but such a delay would render the bacteriological diagnosis valueless for the physician. From the clinical standpoint it was necessary, in his opinion, to have full information of the clinical aspects of the case before giving an opinion upon the bacteriological data, owing to the impossibility of giving a certain opinion in the case of an organism culturally and morphologically indistinguishable from the diphtheria bacillus without resorting to animal experiment. Professor Muir read a paper on a case of serious anemia and purpura associated with great deficiency in the red bone marrow. The case, that of a boy of 14, showed, clinically, an anemia reaching to 600,000 red blood-corpuscles per c.mm., together with severe hemorrhages, and death within 8 weeks of the onset of the disease. Pathologically, there was a complete absence of the usual vascularity found in cases of profound anemia; and on the contrary, the marrow of the femur and of the ribs simply consisted of fat. He discussed the question as to whether the medullary condition was the primary lesion.

Section of Ophthalmology.

The first discussion was opened by Mr. Richardson Cross on the **Treatment of chronic glaucoma**. He based his remarks upon 47 cases of the disease which had occurred during his private practice, and which had been very carefully tested. In his diagnosis he relied to a very great extent by the condition of the field. He discussed at length cases treated with myotics and also by operation, and showed many fields of vision, most of which demonstrated the fact that the fields improved after the tension was removed. He thought that sclerotomy was a most useful operation, and he preferred to do this operation with a keratome rather than with a Graefe's knife. He expressed himself strongly in favor of early operation.

Section of Diseases of Children.

Dr. Nestor Tirard read a paper on the **Nature and varieties of pneumonia**, in which he referred to the main types of the disease and their relation to one another. He discussed the questions of general infection and the employment of antipneumococcic serum, contagion, and the association of pneumonia with other infective diseases such as influenza. The various kinds of temperature seen in the disease were noted, and the duration and various initial symptoms, especially those associated with abnormal or deficient physical signs, were discussed. The bad prognosis in certain cases was alluded to and explained.

Section of Pharmacology and Therapeutics.

Dr. Walter G. Snith (Dublin) proceeded to open a discussion on the **Treatment of internal hemorrhage**. He observed that a few cases of hemorrhage from the lungs, bowels, or kidneys were in themselves fatal or imminently dangerous. Patients died after hemorrhage, but not often of it (S. West). Many cases of hemorrhage stopped naturally if only let alone. Hence drug treatment of hemorrhage was often superfluous and sometimes mischievous. The efficacy of local styptics was undoubted, and their *rationale* quite simple. Gallic acid was devoid of local styptic power, and tannic acid was excreted partly as alkali-tannate and partly as gallic acid, neither of which coagulated albumin nor con-

stricted bloodvessels. Hence tannic acid was useless as a remote hemostatic. The most rational treatment of, say, a serious case of hemoptysis, consisted simply in mental and bodily rest, administration of morphin, and free evacuation of the bowels.

Section of Laryngology and Otology.

Indications for the intranasal treatment of ear disease formed the subject of a discussion which was introduced by Dr. McBride, Mr. Cresswell Baber, and Dr. Dundas Grant in papers which will appear in the full report. The president remarked that with regard to nasal obstruction we were in need of a fixed standard. Was reduction of pressure the essential thing? When could improvement be promised to the patient, or even a stationary condition? Dr. Herbert Tilley said he had never seen any improvement of hearing in chronic nonsuppurative cases from the removal of nasal obstruction. He would not even promise arrest. In the cases of moist catarrh it was different. Dr. Horne thought age had a good deal to do with it. In children the nasopharynx was small, and removal of nasal obstruction gave brilliant results—much better than were obtained in adults in whom the nasopharynx was more roomy. Dr. Watson Williams regarded the catarrh as the essential thing rather than the obstruction. The influence of "negative pressure" was largely hypothetical. Mr. R. Lake thought all cases of chronic dry catarrh were nasal in origin, but the cases which could be benefited were those in which air-conduction was not very much shortened, and in which there was fair mobility of the malleus. Most good was done by the removal of the more posterior nasal obstructions, such as posterior hypertrophic rhinitis. He disbelieved in the "negative pressure" theory, and thought nasal obstruction acted by setting up mucous catarrh, causing constant hawking efforts to clear the nasopharynx. Dr. Holbrook Curtis (U.S.A.) claimed excellent results from intranasal operations both in catarrhal and sclerotic cases. Anemia was relieved and oxygenation increased. He objected to the term "negative pressure" as unscientific.

Section of Tropical Diseases.

Dr. Andrew Duncan read a paper on **The action and modes of employment of quinin in malaria.**—Mr. Caré believed quinin diminished the chance of infection in the simpler forms of fever, but was well nigh useless in the pernicious forms. M. Marand was of a similar opinion. The evidence of Russian and Austrian army surgeons found no advantage from quinin as a prophylactic. M. Pola experimented on 726 soldiers; of 500 who took quinin 18% were attacked, whilst of the remainder who did not take quinin 28% had malarial attacks. Of American physicians Dr. Bryan found quinin and cinchona to be true prophylactics. Dr. Duncan's own observations amongst Sikhs and Goorkhas was in favor of quinin as a prophylactic. On the West Coast of Africa, among 133 observations recorded, the drug was efficacious in 87.7%, but gave no result in 12.3%, showing a marked prophylactic power. No drug could be compared with quinin in efficiency, either as a prophylactic or as a curative agent. Injection of quinin by the rectum was recommended when exhibition by the mouth proved disappointing. Major W. I. Buchanan, I.M.S., communicated a favorable paper on the **Prophylactic issue of quinin—a synopsis of an experiment on a large scale of Indian jails.** He stated that he had never seen a case of hemoglobinuria, nor had he ever heard of a case since the administration of quinin was introduced into the prisons of India. Dr. Fielding Ould communicated a paper on **The administration of quinin, with special reference to the practice on the west coast of Africa.** He contended that so long as there was no gastric irritation administration by the mouth was most satisfactory. Rectal injections of quinin were highly efficacious; its subcutaneous injection was reliable. He deplored Koch's doctrine as to the dangers of quinin. A discussion on the three papers read then took place. Lieutenant-Colonel Maitland, read a paper on the **Etiology of filariasis**, in which he contended that the discovery of the filarial worm passing along the proboscis of the mosquito was not conclusive proof that the old idea of infection by water was wrong. He remarked upon the immunity of Europeans in India from filaria, and

ascribed it to the fact that they drank for the most part only boiled or filtered water. Captain S. P. James communicated a paper on the **Metamorphosis of filaria sanguinis hominis in mosquitos**, especially with reference to its metamorphosis in the *Anopheles Rossii* and other mosquitos of the *Anopheles* genus.

Section of Navy, Army, and Ambulance.

Surgeon Lieutenant-Colonel J. E. Squire read a paper on the **Augmentation of the Royal Army Medical Corps.** He urged that an advancing army should be relieved of its sick and wounded as rapidly as possible, and that a large medical *personnel* was therefore requisite. He considered untrained medical officers and nurses would prove a hindrance, and that a reserve should be arranged for, whose efficiency should be provided for by their being borne as supernumerary in the volunteer forces with a retaining fee for efficient, and with pay when voluntarily training subsequently. He deprecated civilians being incorporated with military units, though they should be under military control. Mr. Frederick Treves observed that transport for field hospitals had been questioned, but that all field hospitals have their own transport, and that transport is admirable. The present campaign has shown the value of a large mobile field hospital (taking 300 to 600 beds) to immediately follow the column. This hospital should have its own transport. This was so in Natal, and it made the efficiency of the hospital perfect. That the R. A. M. C. and the civil surgeons worked in perfect harmony throughout, a fact largely due to the unselfish attitude taken by the former officers. He considered the question of orderlies is a difficult one; that the present campaign showed that female nurses, keenly as their services were appreciated, could not work in field hospitals, but that in the base hospitals their number could be greatly increased with advantage. Surgeon-Captain James Cantlie in conclusion moved: That the Navy, Army, and Ambulance Section requests the Council of the British Medical Association to appoint a committee to draw up a scheme to be forwarded to Government, for the reorganization of the medical services of the auxiliary forces, on the basis of the system in the Royal Army Medical Corps, and for the purpose of bringing the medical services of the regular and auxiliary forces into unison.

Mortality from Snake-Bites in British India.—From the latest report on the destruction of wild animals and snakes in India it appears that during the last 10 years an average of 21,000 human beings have been killed annually by venomous snakes. With a view to mitigating this heavy mortality, the Government of India has for many years past been offering rewards or head-money for the slaughter of all known species of venomous snakes. Notwithstanding the payment of large sums annually for the destruction of these reptiles, the results have hitherto been most discouraging, and of late it has become a serious question whether any benefit is to be derived from the payment of these rewards. The mortality continues very heavy and snakes appear to be as numerous as ever. The natives have been suspected of breeding snakes for the sake of the rewards offered for them.

Propagation of Plague.—Recent investigations attribute an even closer connection between rats and the propagation of the plague in the East. In a Bombay cotton factory, where a number of dead rats were removed by coolies, about half the number developed plague inside of three days; while none of those who had not touched the rats contracted the disease. It is suggested that plague can also be communicated by the fleas natural to the rats. A perfectly healthy rat will harbor few fleas, as the animal is particularly expert in removing them, but when the rat is sick the fleas are abundant. After death the fleas leave the rat's body, and on reaching another rat or a human being, they may inoculate the bacilli they acquired by ingesting the blood of their former host. In an experiment in support of this theory, it was found that if sick and healthy rats, in separate cages, were enclosed in a glass jar, the healthy animals did not become infested when there were no fleas present.

The Latest Literature.

British Medical Journal.

July 28, 1900. [No. 2065.]

1. An Address of Welcome, Delivered by the President. SIR WILLIAM MACCORMAC.
2. The Physiological Action of Senecio Jacobœa. J. L. BUNCH.
3. Oral Sepsis as a Cause of Disease. WILLIAM HUNTER.
4. A Case of Aneurysm of the Abdominal Aorta Pointing Posteriorly, in which the Initial Symptoms were those of Chronic Colitis. A. ERNEST MAYLARD.
5. An Account of Some Researches into the Nature and Action of Snake Venom. CAPTAIN ROBERT HENRY ELLIOTT.
6. A Case Bearing upon the Pathology of Akromegaly. PERCY G. LODGE.
7. Case of Inversio Uteri. D. M. McVEAGH.
8. Dark Sclerotics and Fragilitas Ossium. ALFRED EDDOWES.
9. Hysteria in a Male. W. T. GREENE.
10. Fibromyoma of the Vagina. PAT. A. WEIR.
11. Case of Idiopathic Tetanus: Death in 36 Hours from Onset of Symptoms. A. E. BUCKELL.

2.—From a study of the **physiologic action of senecio Jacobœa** Bunch concludes: 1. That injection of small doses of an alcoholic extract of the entire plant into the circulation of the dog causes a rise of the general blood-pressure, with constriction of the peripheral vessels and of the vessels of the intestinal area. This effect is accompanied by a diminution in the magnitude of the contractions both of the auricle and of the ventricle. 2. That large doses (0.8 to 1.0 gm. for a dog weighing 7 k.) of the drug cause a fall of general blood-pressure with dilation of the intestinal vessels and inhibition of the contractions of the intestinal coats. 3. That after several injections of small doses or after one large dose of the alcoholic extract, further injections produce a fall of blood-pressure, with slowing of the heart, and this effect is repeated unless a considerable interval is allowed to elapse before any further injection of the drug, which then again causes some rise of general blood-pressure. 4. That the entire plant, therefore, contains two substances with distinct physiologic actions, which have not yet been isolated. 5. That watery extracts of the residue obtained by evaporating the alcoholic solution produce a fall of blood-pressure and cardiac inhibition, due to the action of the drug on the nerve-terminations in the heart and not to direct action on the muscular fibers of that organ. 6. That the substance that causes a rise of blood-pressure is not contained in such watery extracts or, if present, only in small quantities. [J.M.S.]

3.—Hunter again calls attention to the fact that the constant **swallowing of pus** is a most potent and prevalent cause of gastric trouble. The catarrh set up in this way is not simply irritant, but actually infective, and may lead to atrophy of the glands, chronic gastritis, and, in certain cases, to suppurative gastritis. The subject of **oral sepsis** should not be confined to any one pathologic condition of the mouth, such as pyorrhea alveolaris, but should include all forms of dental and oral trouble produced by septic infection. False tooth plates, crowns, and bridges give rise to cases of stomatitis or gingivitis by the retention of foul matters. The pus organisms of **dental caries**, like those of all necrosing bone, are particularly virulent. The matter is important not only in the production of gastritis but also in the pathogenesis of many local and general infections. Oral antisepsis may be obtained: 1. By the direct application to the diseased tooth or inflamed gum of 1 to 20 carbolic acid, repeated daily as long as the cause is present. 2. By the removal of all diseased and useless stumps. 3. By the scrupulous daily sterilizing by boiling of every tooth plate worn. 4. By the avoidance by dentists of too much conservative dentistry and the use of bridges that cannot be kept aseptic. [J.M.S.]

4.—Maylard describes the symptoms of a man of 35 who for 18 months had suffered from a troublesome bowel complaint. The trouble consisted of constipation, passages of mucus and flakes of lymph, and pain especially late in the

course of the disease. An enema was necessary to cause a movement. The pain was severe about the eleventh and twelfth ribs on the left side and in the axillary line; but its place of greatest intensity was in the epigastrium. The pain was always more severe when the patient was in the sitting posture. Flatulence was marked at times. It was very difficult to diagnosticate the condition, and it was thought he had membranous colitis and colostomy had been considered. Rather suddenly there appeared a pulsating tumor in the left lower dorsal region close to the spine. It was at once seen that this was an **aneurysm**, which by pressure upon the nerve-trunks had caused the diffuse pain and by pressure upon the bloodvessels supplying the intestines had caused a chronic congestion of those organs, and hence the bowel trouble. The aneurysmal tumor pointed backward, a very rare condition. No necropsy was permitted. [A.B.C.]

5.—From experiments on the mongoose Elliott gives the average dose of cobra **venom** that will kill one of these animals as 0.006 gm. per kilogram of body-weight. Some healthy and active animals, however, can bear a much larger dose; Calmette in his experiments obtained a somewhat smaller dose; but he experimented with animals obtained from Guadeloupe, which had been away from poisonous snakes for at least 25 years, and this leads to the conclusion that the immunity possessed by the mongoose is acquired, and that absence of poisonous snakes in a country reduces this immunity. Taking the rabbit as a unit of susceptibility to cobra venom, we find that the dog is 2 and the mongoose from 10 to 25 times as resistant. After watching a number of fights between the cobra and the mongoose the author concludes that during the open phase a mongoose is likely occasionally to receive incomplete bites in which only very small quantities of venom are injected into its body. When the mammal seizes the snake's head in its mouth and drives its bladed teeth through the poison sacs the escaping poison must often pass down its throat and be swallowed. In both of these ways it is likely that a gradual immunizing process takes place, a process that is kept up through successive generations so long as the animals are in constant contact with poisonous snakes. The snakemen of South India are certainly ignorant of any method of producing in themselves a highly-developed immunity. Some of them swallow venom and others rub it into their limbs, whereby it is possible that they obtain some degree of immunization. The snakemen confine themselves almost exclusively to the cobra and escape harm by their intimate knowledge of the methods of handling this snake. [J.M.S.]

6.—Lodge describes the case of a man of 22, who complained of stiffness of the right knee; at first it was during the day, but later became constant. The knee became much swollen, and the cutaneous veins were enlarged. The enlargement was due to increased size of the tibia in the popliteal region. A trephining of the tibia was done 6 months after the onset of the symptoms. There was no pus nor any sign of abscess. Soon he was seen by Teale, and that surgeon advised amputation because he believed the growth malignant, which by microscopic examination was proved to be correct. Amputation was done and the patient appeared to recover completely, but about 9 months later his hands began to enlarge. They became enormous in size, symmetric, and possessed very little mobility. His mind became clouded, and he died about 20 months after the onset of the disease. The author is of opinion that the etiology of this condition was similar to that of the **acute malignant** form of **akromegaly**. [A.B.C.]

7.—McVeagh was called by a midwife to see a patient who was suffering from some unusual accident, and upon his arrival found a case of **inversion of the uterus** with the placenta adherent all over the inverted surface. He attempted the reduction at first without removing the membranes, but finding it impossible to succeed in this way he separated the secundines completely (hemorrhage ceasing immediately), and after working for about three minutes was rewarded by its reduction with an unmistakable flap. The patient made an uneventful recovery. [W.K.]

8.—Eddowes records the case of a girl whose sclerotics were so transparent that the pigment of the choroid could be seen through them. This patient had had many fractures, one from very slight violence, and she said that her father's eyes were like her own, and that he had several times broken bones, one even by putting on his coat. The

author also knows of a boy whose sclerotics were very dark, and who in 2 years had 9 independent fractures. The author is of the opinion that the **transparency of the sclerotics** indicates a want of quantity or of quality of the fibrous tissues, which, in turn, is a factor in **fragilitas ossium**. [J.M.S.]

9.—Greene reports a case of **hysteric convulsions** occurring in the person of a man, 26 years of age. An ingrowing toe nail appeared to be the hysterogenic spot. [J.M.S.]

10.—Weir reports the case of a Rajputin who came under his care in a hospital in Sutna, complaining of what she described as a prolapsed womb. It proved to be a **fibromyoma** the size of a large cocoanut originating from the upper part of the anterior vaginal wall. On emerging from the vulva, which event was dated about a year before the patient consulted him, the tumor brought down with it the urethra, part of the bladder, and the anterior vaginal wall, and the os uteri could be felt behind the tumor just inside the vulvular opening. The tumor was readily enucleated, and healed rapidly. The patient was discharged cured on the eighth day after operation. [W.K.]

11.—Buckell reports a fatal case of **tetanus**. The patient was a boy of 12, and at autopsy no skin-wound could be found as an entrance-point for the organisms and no gross change of any of the viscera was observed, except congestion of both lungs. Twenty cubic centimeters antitetanic serum was administered without effect. [J.M.S.]

Lancet.

July 28, 1900. [No. 4013.]

1. Pancreatitis, with especial reference to Chronic Pancreatitis, its Simulation of Cancer of the Pancreas and its Treatment by Operation, with Illustrative Cases. A. W. MAYO ROBSON.
2. Hammer-toe and Hallux Valgus and Rigidus. WARRINGTON HAWARD.
3. The Present Position of Pharmacy. E. M. HOLMES.
4. Addison's Disease and Leukoderma. SIR SAMUEL WILKS.
5. Carbohydrates and Disease. ERIC PRITCHARD.
6. The War in South Africa: Jottings in Burghersdorp. HERBERT CAIGER.
7. Tachycardia following Enteric Fever. CHARLES BERLAND.
8. A Further Note on the Influence of the Temperature of Liquid Hydrogen on Bacteria. ALLAN MACFADYEN and SYDNEY ROWLAND.
9. A Case of Actinomycosis. EDWARD T. JONES and JOHN C. MACKAY.
10. Note on Thrombosis of Cerebral Veins occurring in a Case of Chlorosis. EDWARD F. M. NEAVE.
11. A Case of Abscess of the Parotid Gland presenting Unusual Symptoms. W. J. BEVERIDGE.
12. A Case of Congenital Hypertrophic Stenosis of the Pylorus. EDMUND COURTLEY.
13. A Case of Hydatid of the Liver and Suppurating Hydatid of the Left Lung. RUTHERFORD MORISON.

1.—Robson considers **pancreatitis**, particularly in its simulation of **carcinoma of the pancreas**, and details 7 cases illustrative of operative treatment. In the chronic interstitial variety he advocates operation at the earliest possible moment. For attacking the head of the pancreas or the pancreatic duct a vertical incision should be made through the right rectus and not in the middle line. When deep jaundice is present he gives calcium chlorid in 20 grain doses 3 times daily for 24 or 48 hours before operation and in the form of an enema for 24 hours afterward in 60 grain doses thrice daily. Of 17 patients upon whom he has operated and found chronic pancreatitis to be the obvious disease present, 16 have recovered, while in cancer of the pancreas in 16 patients operated upon, only 9 recovered from the operation, the ultimate duration of life thereafter being very brief, leading to the conclusion that when cancer of the pancreas is surely diagnosed operative treatment is either useless or harmful; when the diagnosis is doubtful, especially in young or middle-aged subjects, exploratory operation should be seriously considered, since much may be hoped from surgical treatment in inflammatory conditions. [M.B.T.]

2.—In treatment of **hammer-toe** Haward advocates

manipulation of muscles, friction, and tiptoe exercises. Attention should be given to general health. If the extensor tendons are persistently contracted they should be divided. In pronounced cases amputation at the metatarso-phalangeal joint by oval incision, leaving the scar on the plantar surface, is advised. In most cases Haward excises the head of the proximal phalanx; he turns back a semilunar flap from the dorsum of the toe, divides the lateral ligaments, thrusts the head of the bone out of the wound, and excises by bone forceps. The toe is then straightened, the skin united by sutures and the foot kept in a splint 3 weeks. Fibrous union occurs between the bones and the toe remains straight and gives no further trouble. [M.B.T.]

7.—Berland had 265 patients convalescing from enteric fever, and 82 patients convalescing from dysentery under his care as medical officer of an army hospital transport running between South Africa and Southampton. In 56% of the cases of **enteric fever** the pulse-rate was 80, in 25% it was 95, in 10% it was 100, in 5% it was 110, and in 4% it was between 120 and 140. The pulse-rate in 50 patients convalescing from dysentery was between 72 and 80. The author calls attention to the fact that the majority of enteric fever convalescents had been grievously debilitated by fatiguing marches and by poor and irregular feeding, so that the heart was in an irritable condition before the attack of enteric fever developed, and that disease, of course, did not tend to allay the cardiac condition. He assumes that the **tachycardia** was the inevitable sequel of such conditions. In the case of a soldier who had been on garrison duty, and a ship's fireman, patients who were not debilitated before the attacks of enteric fever that they had, the tachycardia was not observed. [J.M.S.]

8.—MacFadyen and Rowland exposed *Bacillus acidilactici*, *Bacillus typhosus*, *Bacillus diphtheriae*, *Proteus vulgaris*, *Bacillus anthracis*, *Bacillus coli communis*, *Staphylococcus pyogenes aureus*, *Spirillum cholerae*, *Bacillus phosphorescens*, *Bacillus pyocyaneus*, a sarcina, and a yeast growing in both cultures to a temperature of 252° C. for 10 hours. The cultures were sealed in thin glass tubes and introduced directly into liquid hydrogen contained in a vacuum jacketed vessel immersed in liquid air. At the end of the experiment the contents of the tubes were examined microscopically and by culture and there was no appreciable alteration in appearance or in the vigor or growth of the microorganisms. [J.M.S.]

9.—Jones relates a case of actinomycosis treated by potassium iodid in increased doses from 30 grains a day to 240 grains a day in 6 weeks. The patient had no unpleasant symptoms from the drug, but put on flesh; recovery resulted. [M.B.T.]

10.—Neave reports the case of a married woman, aged 31 years, who complained of breathlessness, palpitation, and weakness, and presented the majority of the typical features of **chlorosis**. The patient fainted more than once; she had a severe attack of vomiting with severe headache, she had a feeling of numbness in the left arm and leg, so that these members felt dead; she had great pain over the vertex of the skull and in the frontal region; her memory was confused, and she was slightly delirious. A diagnosis of **thrombosis** of one or other of the **cerebral veins** or sinuses in the region of the right motor was made after all forms of secondary thrombosis had been excluded. The patient recovered. [J.M.S.]

11.—Beveridge reports a case of **abscess of the parotid gland** spreading forward over the cheek and upward over the temporal region, thence downward and backward behind the ear, where it finally pointed, tilting the ear forward. On incision a considerable quantity of purulent matter was evacuated. The source of infection was doubtless through the tonsil, but in this case the pus worked its way forward, passed under the zygomatic arch backward beneath the temporal fascia, escaping under the lower border to reach the surface. [M.B.T.]

12.—Courtley reports the case of a female infant, aged 3 months, who died the day after admission to the hospital. The child had been sick ever since her birth, the principal symptoms being constant vomiting, constipation, and wasting. She weighed 6 pounds 3 ounces, had occasional slight convulsive movements, and had a temperature of 105° just before death. At the necropsy the stomach was found to be greatly dilated; its walls were thin, except in the pyloric

region, where they were thicker than usual. The pylorus formed a definite, elongated, cylindrical tumor, nearly an inch long, and firm and hard in consistency. On opening the duodenum the pylorus presented the same appearance as the os uteri when seen from the vagina. Occlusion of the orifice was completed by the folds of mucous membrane and the liquid stomach-contents could not be forced through it, although a small probe could be passed into the stomach. When the pylorus was laid open by a longitudinal incision the mucous membrane was seen in a thick, raised fold that bifurcated into the mucous membrane of the stomach. The wall was $\frac{3}{8}$ inch thick at the duodenal end, but thinner toward the gastric end. The increase in thickness was due to an hypertrophy of the circular layer of muscle. Remarks on the frequency of **congenital hypertrophic stenosis of the pylorus** and theories to account for its cause follow. Pylorotomy is the treatment that offers the best chance of success. [J.M.S.]

13.—Morrison reports the case of a patient admitted complaining of swelling of the right side. The first symptom noticed was pain below the right breast and at the top of the right shoulder, increased by deep breathing and swallowing. The pain on swallowing was so marked that the condition was attributed to indigestion. She continued about her housework for three years when she had severe pleuritic pain in the left side. After a violent fit of coughing, almost a gallon of mucopurulent material was expectorated. On percussion of the swelling in the right hypochondrium, which was particularly noticeable after this attack, it was possible to obtain a hydatid thrill; the liver-dulness was increased. A diagnosis of **hydatid of the liver** was made, and the contents of the cyst were evacuated. The physical signs of empyema having been found at the base of the left chest a week later, a collection of pus in the lung, with a number of hydatid cysts, was evacuated. She was discharged completely cured 2 months after the first operation. [M.B.T.]

New York Medical Journal.

August 11, 1900. [Vol. lxxii, No. 6.]

1. An Investigation into the Causes of So-called Uric Acid Lesions, and a Rational Therapeutics of the Uratic Diathesis. ALFRED CARENO CROFTAN.
2. The Etiology of Diphtheria and the Value of Antitoxin. A Further Criticism on Dr. Herman's Views. A. ROBIN.
3. The Spectacle and Eyeglass Habit. ALFRED W. HERZOG.
4. The Relation of Seminal Vesiculitis to Impotence. RAMON GUITERAS.
5. Obstetrical "Don't Fails." CHARLES I. PAGE.
6. The Diagnostic and Therapeutic Value of the Esophagus, Stomach and Colon. C. D. SPIVAK

1.—Uric acid is an insoluble, nontoxic substance and is incapable of producing the vast array of symptoms commonly attributed to its presence in the blood of uratic patients. On the other hand, the **alloxuric bases** are readily soluble in the tissue juices and are highly toxic, so that they can produce a series of functional disorders that are similar to, if not identical with, those observed in the "masked" forms of so-called uric-acid intoxication; they can also produce the anatomic kidney-changes that are identical with those found in gout. Although it has not been demonstrated experimentally that the alloxuric bases are responsible for the joint-lesions of gout, yet, by analogy, we are justified in assuming that they prepare a nidus in the joint-tissues suitable for the secondary deposit of urates. From a study of the histogenesis and chemic relations of uric acid and the alloxuric bases it is learned that the formation of uric acid is in reality a conservative and protective process of disintoxication. Whatever the primary or remote cause of the uratic diathesis, the nature of the taint is an excessive nuclein katabolism; that is, a tendency on the part of the uratic subject to disintegrate a quantity of nuclein in excess of the normal. At first, the normal oxidation processes are capable of converting almost all the nuclein into uric acid, which is duly excreted by the kidneys; at the same time, small quantities of the poisonous alloxuric bases are formed that enter the circulation and pass through the kidneys, there producing toxic influence and laying the founda-

tion for the anatomic changes in the kidney parenchyma. As the self-intoxication progresses in severity, the vital processes fall below par and therewith oxygenation is reduced. When this takes place even less of the nuclein that is being disintegrated can be converted into innocuous uric acid and more of the toxic alloxuric bases are formed in its stead. As the disease progresses in severity, whether in the natural course of the affliction or aided by indiscretion in the mode of life, the chronic intoxication goes on. It is during this period that the inflammatory and neurotic changes occur in the joints, the kidneys, and in other organs, preparing a field for the formation and deposit of urate concretions. The urate concretions then act as foreign bodies and set up tertiary inflammatory changes. In the last stages the oxygenation is reduced to the minimum, the formation of uric acid ceases altogether and only alloxuric bases are poured into the blood. Finally, the kidneys become incapable of excreting any solids and **acute alloxuremia**, "uremic poisoning," terminates the syndrome. In these lines there are 3 directions in which **therapeutic measures** should be instituted. 1. An attempt should be made to increase the elimination of the toxins as they are formed. 2. Nuclein katabolism should be reduced. 3. The oxygenating process should be increased. The articles of food that contain nucleins, nitrogenous extractives, and those that produce leukocytosis should be excluded from the diet of an uratic patient. All other articles of food should be permissible except those that by producing gastrointestinal irritation of any kind prevent the normal process of assimilation and engender lactic-acid fermentation. In order to raise the oxygenating process of the organism, iron, arsenic, and the usual tonics are indicated and the inhalation of oxygen gas may be used with excellent results. [J.M.S.]

2.—The paper is an argumentative one, designed to disprove criticisms made on a former article by the author that appeared in the *International Medical Magazine*. It presents the evidence for antitoxin in a satisfactory manner, although the sentences are at times quite personal. [J.M.S.]

4.—Guiéras finds that **atonic impotence** is in many cases due to **seminal vesiculitis**. In the treatment of the condition he uses internal remedies to neutralize a hyperacid urine, nightly rectal irrigation with normal salt-solution or strained flaxseed-tea at a temperature of 105° to 120°, and massage of the internal genitals every 5 days, followed immediately by an urethral irrigation whenever there is an associated chronic prostatitis or posterior urethritis. After the symptoms of inflammation and irritation have been relieved tonics and electricity may be employed. Outlines of 7 cases are given. [J.M.S.]

6.—Spivak describes a stomach-tube in which he made an additional opening just below the line for the teeth, so that the patient may, by shutting the mouth and blowing, distend his own stomach. He recapitulates the **diagnostic value** of this procedure, and also the use of **insufflation of the colon and esophagus**. [J.M.S.]

Medical Record.

August 11, 1900. [Vol. lviii, No. 6.]

1. American Medicine. JACOBI.
2. The Care of Patients during Surgical Operations; with Some Methods of Preventing Shock and Infection. FENTON B. TURCK.
3. After-Pains from Extraction of Teeth. CHARLES B. ISAACSON.

2.—After the usual cleansing for operation, Turck recommends applying a **sheet of thin rubber** which fits closely to the body and is held in place by straps and buckles. The usual laparotomy sheet may be used in addition. The rubber protective diminishes danger of infection from the skin, prevents contamination of the skin, and reduces the tendency to shock by protecting the exposed area and preventing loss of heat by evaporation. If the central opening in the sheet, over the site of operation, is cut in flaps these may be folded over the wound-margin and into the peritoneal cavity, excluding wound-margins, skin and peritoneum from the field of operation. For operations such as anastomosis of the viscera, etc., in which there may be possible contamination from the opening of a viscus or a pus-cavity, he advocates

the use of a square sheet of rubber dam with one or more small openings, reinforced by rubber bands forming a collar, the distance between the openings varying according to the operation. This **protective shield** is laid over the abdominal wound and the portions of the stomach or intestines to be incised, drawn through the opening. This portion of the viscera is thus excluded from the abdominal cavity, and the constriction band retards undue escape of contents, at the same time keeping the contaminated material on the outside. At the conclusion of operation the sheet is readily removed by dividing it with scissors. He claims for this procedure the following advantages: Exclusion of the abdominal cavity from the danger of infection by escape of visceral contents or through outside influences. Prevention of excessive escape of visceral contents. Partial or perfect hemostasis by pressure by the rubber collar. Reduction of trauma of the viscera; being covered they are less liable to injury. The "collar" holds them in position and there is no need of tugging and pulling. Minimizing of the tendency to shock by handling, exposure, evaporation, and loss of heat. In the application of heat to the viscera by hot sponges during celiotomies the heat is soon dissipated and the sponges cannot be changed frequently enough. Turck uses a small thin rubber hot-water bag, placed within a gauze pad. The temperature found most useful is about 48° C. Some advantages of the hot-water bags are: They are soft and yielding. They can be changed or removed through a small opening. It is difficult to explain the mode of action of the hot-water bags placed in the abdominal cavity and within the stomach. It is not altogether clear whether this is due simply to the effect of heat acting directly upon the tissues, producing chemical changes, or to the physiologic increase in the circulation, or through nerve-influence acting upon both tissue-cells and circulation. Experiments seem to indicate that molecular chemical changes are produced—that the "side chains" in the albumin molecule are altered. Heat applied to the external surface does not result in the same effect produced by heat applied internally. [M.B.T.]

3.—Isaacson considers that after-pains are due to spicules sequestrums, tissue, mucus, food, or something else retained in the socket following tooth-extraction, and that local treatment and removal of the offending body are essential to relief. [D.L.E.]

Medical News.

August 11, 1900. [Vol. lxxvii, No. 6.]

1. Vaccination Eruptions. JACOB SOBEL.
2. Chronic Enteritis and Tuberculous Enteritis Treated with Hypodermic Injections of Arsenic. LOUIS KOLIPINSKI.
3. Anastomosis of Ureters with Intestine. REUBEN PETERSON.
4. School Break-Down. J. HENRY BARTLETT.
5. The Automobile in Country Practice. A. D. HARD.
6. Results of 200 Operations on Insane Women. R. M. BUCKE.

1.—Sobel describes a number of cases in which more or less generalized **eruptions followed vaccination**. These usually appeared between the ninth and fourteenth days, but the extreme limits were 5 days and 5 weeks. He records the following types: Erythematous, urticarial, papular, vesicular, pustular, erythema multiform, morbiliform, bullous or pemphigoid, and scarlatiniform. The proportion of children in which these eruptions occur was about 14%, 80 out of a total of 583. He records several cases of autoinoculation, and one in which a mother inoculated herself on the eyelid from her child. The most difficult differential diagnoses were those between the morbiliform type and measles. In these cases the onset was sudden, the rash disappeared early without desquamation, and Koplik's spots were not observed. In some cases resembling German measles, a differential diagnosis could not be made. An eruption, resembling that of chickenpox, was also observed, and in 2 cases the disease appeared in other members of the family. In conclusion, he mentions a number of sequels, the most common being deep ulceration in 67 cases. [J.S.]

2.—Ko'ipinski gives a brief description of the symptoms of **chronic enteritis**, which consists of alvine evacuations, occurring 3 or 4 times a day, especially just upon rising. Often there is a strong desire immediately after meals. The prognosis of this condition is unfavorable, spontaneous cure

never occurring, and if too long neglected some malignant complication is likely to arise. He reports 8 cases, selected from his notes, in which improvement or alleviation occurred. [J.S.]

3.—Peterson reviews the literature bearing on the subject of **ureterointestinal anastomosis** and gives the results of his own experiments and his deductions. Of 28 cases of ureterointestinal implantation in man, collected from literature, there was a primary mortality of 32%, and of the 19 who recovered from the operation, 2 died of pyelonephritis and 2 of uremia. Renal infection was responsible for the 9 fatal cases. Of 36 cases of ureterotrigonointestinal anastomosis collected there were 5 primary deaths and 2 more within 15 months. The author performed bilateral ureterointestinal anastomosis on 28 dogs, and 23 died from general peritonitis, from extravasated urine, and kidney infection. The last dog was dead at the end of 13 months. Lateral ureterointestinal anastomosis was performed on 16 dogs, 12 of which died; and ureterotrigonointestinal anastomosis was done on 19 dogs, 16 dying. Twelve of these died from peritonitis caused by sloughing of the flap. The author's conclusions are as follows: The best technic is that requiring the least amount of suturing of the ureters themselves. All efforts to prevent ascending renal infection in animals or in man when the ureter has been implanted without its vesical orifice have proved futile. It is impossible to determine in advance the extent of the infection which will result from ureterointestinal anastomosis. Hence the operation is unjustifiable, either for the purpose of making the patient more comfortable, as in exstrophy of the bladder, vesicovaginal or ureterovaginal fistula, or for malignant disease of the bladder. The results of ureterointestinal anastomosis through the formation of vesicorectal fistulas have not been favorable up to the present time. The success of Franck's experimental work in vesicorectal anastomosis justifies the expectation that the future results of this operation will be more satisfactory. The primary mortality of ureterotrigonointestinal anastomosis is low for an operation of this magnitude. While it cannot be denied that ascending renal infection may occur after this operation, the infection as a rule is of such a type that the chances of the individual's overcoming it are good. [A.B.C.]

4.—Bartlett in answer to an article in a popular journal claims that **school break-down** is not particularly common in this country. Many scholars are of course obliged to leave school as the result of ill health, but some studies and observations made by himself lead him to conclude that developmental defects are the most common cause. [J.S.]

5.—Hard discusses the various types of **automobile** in reference to their value to the country physician. The electric automobile is safe, easily operated, and is always ready to run. The storage batteries are very heavy; it requires frequent recharging, and climbs hills poorly. The hydrocarbon or gasolin engine is easily charged, carries enough fuel for 75 miles, and is always ready for use. It is heavy, gives off disagreeable odors, and easily gets out of order. The steam carriage is perhaps the most desirable. It requires special mechanical knowledge, frequently gets out of order, requires expensive repairs, and the fuel is apt to cause unpleasant odors. It is light, climbs heavy grades, develops speed readily, and is very easily controlled. Moreover, it runs 75 miles without renewing the fuel, and the latter can readily be obtained at any store. [J.S.]

6.—Bucke says they examined 256 women at the London asylum and found disease of uterus, ovaries or the adnexa in 219 cases. **Operation** was performed on 200 of these, resulting in 4 deaths. Of the 196 who recovered 83 were **cured of their insanity**, 45 others were improved, and the remaining 68 are unimproved up to date. Among the 63 cases operated on for causes not gynecological there was but 1 recovery from insanity. He further says the meaning of these facts seems to be that the diseased conditions under consideration, diseases of ovaries and tubes, have the most influence upon the mental health of the patient; that is, the most influence in the causation of insanity; that disease of the body of the uterus and cervix comes next in importance as a cause of mental disturbance; that uterine tumors and tears of the perineum rank still lower, and that ordinary surgical diseases, such as hernia and tumors of the body at large, seem to have no influence at all as causes of such

disturbance. No case was operated upon for insanity itself, but only when operation was indicated without reference to the mental condition. [A.B.C.]

Boston Medical and Surgical Journal.

August 9, 1900. [Vol. cxliii, No. 6.]

1. Norfolk District Records and Reminiscences, 1850-1900. C. ELLERY STEDMAN.
2. The Progress of Medicine. HAROLD C. ERNST.
3. Acute Dilation of the Heart in Influenza of Children. F. FORCHHEIMER.

1.—Stedman contributes a collection of delightful personal reminiscences of the various prominent men connected with the Norfolk District Medical Society, whose characteristics have been described by a sympathetic and appreciative friend. [J.S.]

2.—Ernst, in an article on **Progress of Medicine**, first discusses the increase in the number of hospitals in the State of Massachusetts from the year 1850, when there were only 13, to the year 1900, when there are approximately 110. In addition, the improvement and enlargement of certain individual hospitals, such as the Massachusetts General, the Boston City Hospital, etc., have been very pronounced. He then mentions the changes that have taken place, in the Harvard Medical School, the Faculty increasing from 8 to 34 in the half century, and the students and instructors in proportion. Also, the changes in the requirements for graduation in medicine and the possibilities for the future. He then speaks of the modifications in medical theories that have been produced by the discovery of the relation of bacteria to disease, and gives some hygienic principles that he deduces from individual peculiarities of the different bacilli, particularly mentioning the bacillus of typhoid fever and the bacillus of tuberculosis. Finally, he mentions improvement in diagnostic methods that have resulted from the clinical application of bacteriology. He claims to have been the first to feed infants with sterilized milk. In conclusion, he touches upon the serum-treatment of infectious diseases. [J.S.]

3.—Forchheimer reports a number of cases which have the common feature of acute **dilation of the heart** in the course of influenza. The symptoms are those of myocardial insufficiency, increase in the area of dulness, and development of murmurs best heard at the base of the heart. All these symptoms disappear under appropriate treatment. The dyspnea in these cases is usually extreme. In one case that he describes, the patient suddenly became blue in the face, and 2 hours later was found cyanosed, breathing rapidly, with a very weak pulse. He recovered under rest and treatment, but had subsequent attacks. In another case there was tachycardia, prolonged for a number of days. The temperature was high, and the pulse immediately after the attacks of coughing would become very rapid and almost imperceptible. Forchheimer discusses the cause of this condition, and after mentioning the theories of nervous influence and pulmonary congestion, expresses himself in favor of the former. [J.S.]

Journal American Medical Association.

August 11, 1900. [Vol. xxxv, No. 6.]

1. Chairman's Address: Materia Medica, Pharmacy, and Therapeutics. LEON L. SOLOMON.
2. Address of Chairman: Section on Ophthalmology. H. V. WURDEMAN.
3. The Medical Profession. J. C. BIERWIRTH.
4. The Treatment of Acute Alcoholism by Large Doses of Digitalis. HENRY P. LOOMIS.
5. New Sources of Danger in the Use of Opium. T. D. CROTHERS.
6. Secondary Glaucoma. A Clinical and Pathologic Report of Three Cases, Representing Different Types of the Disease. W. CAMPBELL POSEY and EDWARD A. SHUMWAY.
7. The Therapeutic Properties of the Suprarenal Capsule. W. H. BATES.
8. Scrofulous Keratitis. Observations on Its Etiology and Its Treatment, Especially by Salicylate of Sodium. H. GRADLE.

9. Fracture and Dislocation of the Spine with Report of Case of Gunshot Wound of the Spine. S. P. KRAMER.
10. Angina Pectoris. AUGUSTUS A. ESHNER.

- 1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, 1298.
2. " " " " 1440.
4. " " " " 1290.
5. " " " " 1290.
8. " " " " 1440.

9.—A woman 6 months pregnant received a **gunshot wound** of the spine. She was shot in the abdomen with a 38 caliber revolver fired at close range; abortion followed the next day, and it was soon noticed that she had lost both sensation and motion in the lower extremities, and that there was retention of urine and feces. When seen 17 weeks after the injury she was becoming septicemic and the symptoms indicated that the bullet had pierced both walls of the stomach, had entered the spinal column and had either divided the cord or was interfering with its function by pressure. Five months after the injury laminectomy was performed, and on passing the finger along the anterior wall of the spinal column the conical point of the bullet could be felt projecting into the canal about one-third of its length; the other two-thirds was imbedded in the bed of the ninth dorsal vertebra. On each side of the bullet a spicule of bone projected into the canal. The dura and cord were held aside, the bullet extracted, the displaced pieces of bone removed; the theca was not sutured, but the muscles of the skin were drawn together by silkworm sutures and a strand of silkwormgut placed in the wound for drainage. Union was complete at the end of 18 days. One month after operation, the patient was placed in a permanent bath for treatment of bedsores, remaining 7 weeks, when she was greatly improved. Death resulted 9 months after the injury, probably from pyemia. Kramer deprecates the use of extension or counter-extension in cases of injury of the spine, advising operation as soon after injury as possible in order to avoid the occurrence of secondary conditions. In confirmation of his position he relates the case of a man whose spine was injured by a fall of 20 feet down a shaft. Laminectomy was performed 77 hours after the injury. The arches of the twelfth dorsal and first lumbar vertebrae were removed. Six days after operation he passed urine and feces voluntarily. Three weeks after operation he was discharged and returned to his home, a portion of the way by sea. This patient's condition is still very good and he has been able to support himself and family as a cigarmaker. [M.B.T.]

10.—Eshner relates a case of **true angina pectoris** in a young man under 30 years of age and unattended with organic disease of the heart or vessels. He concludes, however, that it is not impossible that as a result of attacks of rheumatism of which the patient gave a history, insidious changes had been set up in the myocardium or the coronary arteries. [M.B.T.]

American Gynecological and Obstetrical Journal.

March, 1900.

1. A New Method of Making Applications to the Vaginal Vault and a New Instrument to Facilitate Cleansing the Vagina in Leukorrhea. HOWARD A. KELLY.
2. When Shall the Uterus be Douched and How Shall it be Done? EDWARD P. DAVIS.
3. A Plea for a More Surgical Practice of Obstetrics. SAMUEL A. WEBER.
4. Remarks on Extrauterine Pregnancy. CHARLES P. NOBLE.
5. Detached or Parasitic Tumors of the Uterus and Ovary. HENRY C. COE.
6. Extirpation of the Uterus, Vagina and Rectum for Carcinoma. WILLIAM M. POLK.

1.—Kelly describes 2 **new instruments**, one for making applications to the vaginal vault, and the other to facilitate the cleansing of the vagina. The first is a little glass reservoir with a tube which is inserted in the vagina; pressure is applied by compression of a rubber bulb, and the liquid or viscid materials contained in the reservoir are transmitted to the upper part of the vagina, where they are retained by a cotton or cotton-and-wool pack previously placed therein. The second instrument is a coneshaped vessel of hard rubber which is attached to the tube of the douche-bag and inserted

far enough to completely plug the vagina, thus causing the distention of its walls upon the flowing in of the cleansing fluid. After about a minute the nozzle is withdrawn and the fluid allowed to escape. This is repeated until a pint or more of fluid has been used. [W.K.]

2.—Davis believes that the **uterus should be douched** when it is infected as shown by an abnormal lochial discharge, or a lack of the normal discharge with fever and rapid pulse. When the patient is profoundly depressed and has suffered from loss of blood, it is well to use normal salt-solution rather than one of the carbolic derivatives. Mercurial solutions should not be used within the uterus. For exploring the uterus it is well to use a douche curet. This is preferable in septic cases to a sharp-edged instrument, as it is best to interfere as little as possible with the zone of resistance in the uterine tissue and with the thrombi closing its sinuses. Intrauterine douching may also be used in cases of postpartum hemorrhage and is most successful when followed by an intrauterine tampon of iodoform or sterile gauze. The two in combination empty the womb and make it impossible for a large clot again to form, while stimulating the uterus to contraction. [W.K.]

3.—Weber pleads for a **greater attention to surgical detail** in obstetrical cases. He believes that all patients should be prepared as for a vaginal operation, the bedclothes and the patient's clothes freshly washed and put on clean for the confinement, the accoucheur and assistants in surgical attire and in a surgical state of cleanliness. When the child is about to be born, the patient should be put on a properly prepared table in the lithotomy position. Any necessary maneuver can be more dexterously performed on a table than in the bed. Forceps can be applied and used, and version and extraction more easily done. The perineum can be more readily protected, and after the birth of the child, hemorrhage, if any, can be more easily controlled. Besides, what is of greater importance, perfect aseptic and antiseptic work can be done only on the table. In every case an absolutely empty uterine cavity must be left. Large cervical tears should be sewed up immediately, small ones may be left in clean cases, but should be stitched where there is leukorrhea. The most careful search should be made for a laceration of the levator ani muscle or the floor of the pelvis. This is a most serious lesion if left untreated; for it can rarely be repaired later, as the torn fibers of the muscle retract and soon atrophy. Tears of the perineum should next be repaired. If the hand has been introduced into the uterus, if forceps have been used, if any suturing has been done, the whole genital canal should be copiously irrigated, with sterile water in the clean cases, and with lysol solution in the leukorrheal ones. The clean cases require no further local attention. The cases in which autoinfection is possible should have 2 copious antiseptic uterine irrigations daily for 3 or 4 days. [W.K.]

4.—Noble believes **ectopic pregnancy** to be a relatively common condition. He is of the opinion that tubal abortion as compared with tubal rupture represents fully 75% of the cases. The violence of the hemorrhage depends partly upon the extent of the rent and the size of the vessels involved, and also whether the rent is more or less perfectly plugged by the partial escape of the ovum. In a general way, however, it may be said that the nearer the rent is to the uterus, the greater will be the hemorrhage. The following are the rules he uses to guide him in dealing with this condition: For cases of tubal abortion or rupture with hemocele, when the patient is in good condition, a deliberate operation is done, the appendage involved is removed, the mass of clots is removed with the hand, semiorganized clots are picked away except those parts which may be intimately adherent to the bowel or mesentery; then the pelvis is carefully sponged out with salt solution, the abdomen is left full of the solution and the wound closed. Should the opposite appendage require removal, hysterectomy is preferred to bilateral salpingo-oophorectomy, because it leaves the peritoneum of the pelvis in a more healthy condition. When the hemocele from a ruptured tubal pregnancy has supplicated, vaginal incision and drainage is the operation of choice. When there is shock and acute anemia from hemorrhage, a too refined operation is dangerous; the involved appendage should be rapidly secured and tied off; large masses of clots removed by the hand, and the abdomen washed out with an old-fashioned Tait irrigation, which will

remove the blood and wash out the clots with far less traumatism to the intestines than any other method. The abdomen should be left filled with the salt-solution and rapidly closed. Noble reports two cases in which ectopic gestation occurred in each ovary successively. Both made uncomplicated recoveries. [W.K.]

5.—Coe cites the reported cases of **parasitic or migrant tumors of the uterus and ovary** and adds some new cases to the list, the most interesting being that of a woman of 35, married 6 years, had 2 children, born respectively 4 and 2 years ago. During her first pregnancy a tumor could be plainly felt in the right iliac region, which was thought to be the head of a twin. After delivery it was recognized to be a pedunculated fibroid attached to the fundus of the uterus. Throughout her second pregnancy and after delivery the tumor occupied the same position and had not increased in size. Attacks of localized peritonitis and other symptoms making operation advisable, the tumor was found seemingly imbedded in the wall of the bladder with no trace of a pedicle at any point on the surface of the tumor, or at any point on the uterus. An interesting complication was a tubal abortion causing a mass in the Douglas pouch, surrounded by old and recent blood clots. The patient was discharged cured on the twenty-third day. Another case occurred in his service at Bellevue Hospital, in which a solid tumor was found in the vesico-uterine pouch, which was entirely independent of either the uterus or adnexa. This tumor contained a cheesy mass, in the center of which tubercle-bacilli were found, although no evidence of tuberculous disease could be found in the tubes and ovaries, which were removed. Whether this growth was originally attached to the uterus or not could not be determined. He draws the following conclusions: Subperitoneal fibroids may become detached from the uterus and may receive their nourishment entirely through adhesions. Such transplantation with entire disappearance of the pedicle must be exceedingly rare. Although axial rotation is probably the first step in the process, it is fair to assume that vascular adhesions form before separation is complete. Clinically, these tumors may be mistaken for growths developing primarily in the organ to which they attach themselves, especially ovarian, renal and splenic. Transplantation of ovarian and parovarian tumors is less common and is more likely to be followed by degenerative processes. Chronic rather than acute axial rotation is the usual cause. The clinical diagnosis of this condition is practically impossible. The prognosis is better in cases of solid than in those of cystic tumors. [W.K.]

6.—Polk reports a case of **extirpation of the uterus, vagina, and rectum** for carcinoma. Obstinate vomiting came on and the patient died 82 hours after the operation. There was no peritonitis and no knuckle of intestine was involved, and Polk attributed death to the extensive area involved and the necessary irritation of important nerve-trunks, aided and abetted by the general condition of the patient which was mildly cachectic. [W.K.]

American Journal of the Medical Sciences.

April, 1900. [Vol. cxix, No. 4]

1. A Contribution to the Diagnosis of Diverticula in the Lower Part of the Esophagus. FRANZ A. R. JUNG.
2. The Clinical Aspect of Plague. FRANK G. CLEMON.
3. A Remarkable Case of Probable Thoracic Aneurysm Presenting Intermittently Through the Sternum. RICHARD C. CABOT.
4. An Experiment in the Transmission of Syphilis to Calves. MAZYCK P. RAVENEL.
5. Gumma of the Iris and Ciliary Body; Recovery with Normal Vision. CHARLES A. OLIVER.
6. The Value of Electrolytic Dilation of the Eustachian Tubes in Chronic Tubal Catarrh and Chronic Catarrhal Otitis Media. ARTHUR B. DUEL.
7. A Critical Summary of Recent Literature on the Localization, Diagnosis, Prognosis, and Treatment of Gonorrhea in Women. JOHN G. CLARK.

1.—Jung, in discussing **diverticulum of the esophagus**, mentions a method for differentiation between a diverticulum and dilation of the esophagus, which he considers an

addition to and an improvement upon Rumpel's method. Rumpel employs 2 tubes; one, with numerous perforations in its lower third, is passed directly into the stomach; the other into the esophagus above the cardia. Water, which is poured through the esophagus tube, will run down into the stomach through the perforated tube in case of a dilation. In the event of a diverticulum this will first be filled and only the overflow will run into the stomach. The contents of the diverticulum can be returned through the esophagus tube and accurately measured. The main condition of this test is that the perforated tube really enters the stomach. This, however, is often accomplished with great difficulty, especially in cases of large dilation. The author's method consists in introducing an ordinary stomach-tube, with about 10 small holes distributed over a length of about 30 cm. Into this tube a smaller one, which has only one hole at the end, is introduced. This double tube is capable of giving a double proof: (1) The stomach-contents may be aspirated by means of the inner tube and a test made for gastric juice; (2) the stomach can be filled and emptied at will. With these tubes still in position, the esophagus tube may be introduced, as in Rumpel's method, and the water-test be made. In case of dilation, the water will run through the perforation of the larger stomach-tube into the stomach, the inner tube being no obstacle, or it may be removed, the test for gastric juice having been made. In case of a diverticulum, a certain amount of water will remain in the pouch and can be returned through the esophagus tube. The author prefers a rather stiff stomach-tube and an inner tube 65 cm. long, on the order of a ureteral catheter. If the entrance to the stomach is difficult to find, the double tube, with the inner tube of soft metal, to which is given the curve of a Mercier's sound, is introduced. The author cites 2 cases in which his method was used. The first, a man of 64, who had always been healthy, but addicted to hasty eating, to the gulping down of large draughts of icewater, and intemperate smoking, complained of occasional intense cramps, pains in the region of the stomach, at which time a sense of suffocation supervened. This condition had continued for several years. For some time he has raised his food occasionally after eating, which diminished the sense of fulness in his stomach. He was not able to tell whether the food came from the esophagus or stomach, but always called it "vomiting." For 2 years he was almost unable to swallow, and lost flesh rapidly. A diagnosis of diverticulum of the esophagus was made which was confirmed by a skiagram. The treatment consisted of lavage of the esophagus, and semifluid diet, milk-toast being a favorite. The spasms were cut short by the use of small **seidlitz powders**. The patient was made comparatively comfortable; he gained much in weight and was able to attend to his duties as policeman. The second case was a woman whose condition was similar to the case above. She commenced to suffer from violent cramps in the region of the stomach; later there was raising of food without nausea, large quantities of slimy water being brought up. Difficulty in swallowing and choking sensations supervened. A diverticulum of the esophagus was found. The treatment was much the same as in the above case. The author calls attention to the fact that the painful spasms may be overcome by the use of small seidlitz powders or effervescing bromo-water. [A.B.C.]

2.—Clemow gives some **clinical aspects of plague**. He says there are four varieties: Bubonic, pneumonic, septicemic, and the abdominal or enteric variety. As 80 to 90% of all cases are bubonic he discusses this variety only. The peculiarity of the plague **temperature-chart** is that it has no characteristic curve and is marked'y irregular. It usually rises more or less rapidly to 103° or 104°. In some cases it rises just before death as high as 106° to 108°. The mortality among 300 patients in whom the temperature rose 104° was 86%; among 202 patients in whom the temperature did not rise to 104° the mortality was 73.7%. A high temperature is a distinctly unfavorable sign. In discussing the condition of the alimentary system he says the appearance of the **tongue** varies much. Usually the dorsum is loaded with a white or grayish-white fur, its surface is dry and sometimes remarkably smooth, the tip and edges are usually clean, pink, and free from fur. In many severe cases the coating is thin, brown and glazed in appearance. The appearance of the tongue may undergo a very rapid change. **Vomit-**

ing, while not a characteristic sign, usually occurs as an early symptom and is probably of cerebral origin. The **bowels** are usually, although not invariably, constipated. This is probably due to a diminished activity of the intestinal glands. All gland structures in plague appear to have their secretory functions much diminished. This is particularly marked in the sweat-glands, kidneys, liver, and the salivary glands. Diarrhea, however, is not rare. The liver is occasionally slightly enlarged. Some degree of icteric tingeing of the conjunctivæ is common. The **nervous system** is almost from the first more or less profoundly affected; in this respect as in others, plague bears a striking analogy to typhus fever. It would seem that the plague toxins circulating in the blood have a specially intense action upon the entire nervous system. It is indicated by early headache, and giddiness; by extreme physical prostration, especially in the later stages; by mental phenomena such as apathy, delirium which may be of any degree, drowsiness, or coma, which are very rarely absent; by convulsive and paralytic symptoms which occasionally occur; by the mental changes which are sometimes left as one of the most unfortunate sequels of plague; and by trophic manifestations which are common accompaniments of this disease. Physical prostration and weakness is usually very marked and present in almost every case. The voice becomes weak and the muscles flaccid, and patients who at first show little signs of weakness or depression often suddenly become profoundly depressed. Convulsions are frequently present; they may be unilateral or bilateral, tonic or clonic. A convulsion may resemble in every respect an epileptic fit. Such patients rarely survive. **Risus sardonicus** is common. Paralysis of muscular structures occurs; this appears to be, in part at least, the result of direct action of the circulating toxins upon the muscular fibers. The author has never seen paralysis of a group of muscles, paraplegia, hemiplegia, nor monoplegia, in this disease. This would indicate that the lesion is not in the cerebral cortex nor any part of the motor tracts. Some interference with speech is one of the commonest and most striking features of plague. Early in the disease, in the great majority of patients, slow, hesitating and peculiarly "thick" speech is characteristic. The reflexes in plague are almost invariably diminished or wholly lost. Nervous retention of urine is common. The organs of special sense, particularly the eye, are very apt to suffer. The degree of affection of the eyes may vary from a slight conjunctival injection to complete destruction of the eyeball. [A.B.C.]

3.—Cabot cites the case of a woman of 42 who sought treatment for what appeared to be an **aneurysm**. Over the region of the manubrium there was a pulsating tumor the size of a lemon, greenish black at the tip with a red areola around the black. A systolic murmur could be heard over the tumor. The author feared immediate rupture and the patient was hurried to the hospital ward. Rupture occurred 3 days later and instead of blood a puriform material escaped. It appeared that the swelling made its first appearance 7 years before, and in the course of a few months attained nearly its present size. The patient at that time was treated internally with potassium iodid and the tumor disappeared. The patient had a history of 7 miscarriages. There was no other suggestion of syphilis. The tumor had come and gone several times since its first appearance, generally yielding to potassium iodid treatment. There was no pain, dyspnea, dysphagia, cough, or other pressure symptoms. There was at this time in addition to the tumor already mentioned a second pulsating mass, larger, flatter, and less inflamed than the other. It was below the first named tumor and in the median line. A few days after the rupture of the higher mass, the lower one was opened without ether and purulent material likewise escaped. Within a month the tumors had almost entirely disappeared, but a sinus remained into which a probe could be passed entirely through the sternum and to some distance downward behind it. The sinus persisted and it was thought there was no aneurysm present. She complained 3 months after applying for treatment of a sound in the thorax like water dropping on a tin roof. The husband said that this sound could sometimes be heard at a distance of 12 feet. Her general health seemed good. At midnight she got up for a drink of water. The husband heard a scream and a gushing sound. She fell dead in a pool of blood. The aneurysm, for such it proved to be,

had ruptured. Whether the process going on in the sternum may have been partly gummatous and partly due to pressure of the aneurysm, and exactly what was the purulent material, the author does not know. He is of opinion that a changing condition in the clot inside the sac caused the varying conditions of the aneurysmal tumor. [A.B.C.]

4.—Ravenel, on account of the recent agitation against vaccination, attempted to produce **syphilis in calves by inoculation** from man. He gives a brief review of other experiments along this line. Two calves were selected, a heifer about 8 months old, and a bull about 14 months old, both in good condition, though the heifer was known to be tuberculous. The area selected was shaved, washed thoroughly, and rinsed with sterile water, after which the surface was scraped until a bloody serum began to exude. It was next scarified, and into this the syphilitic material was rubbed for not less than 5 minutes. A second scarification was then done. The heifer was inoculated in two places and the bull in one. The syphilitic material was obtained from a patient in the secondary stage. In neither animal did syphilis develop. The heifer was killed 54 days and the bull 103 days after inoculation. A microscopic examination of the central and peripheral nervous system was made in each case. In neither case was any evidence of syphilis found. [A.B.C.]

6.—Duel advocates **electrolysis** in the treatment of chronic tubal catarrh and chronic catarrhal otitis media. While it is possible that a chronic aural catarrh may begin in the tympanum, with no very marked evidence of nasopharyngeal or tubal catarrh, it is usually the case that the tubal catarrh precedes or accompanies the tympanic inflammation. **Chronic tubal catarrh** and **chronic otitis media** suggest only a difference in position of the inflammation and not in its character. Where the affection is confined to the tube the impairment of the hearing is functional, and is restored so soon as the normal patency of the tube is effected. Tubal obstruction is present early in a large percentage of all cases of chronic hypertrophic catarrhal otitis media. It is our duty whenever there is a stenosis of the eustachian tube to remove the obstruction as rapidly as possible. In every instance when the obstruction is due to an organized exudate the best method for its removal is by electrolysis, for the following reasons: It is more rapid, more efficient, and the results are more permanent. The electrolytic bougie may be easily passed through strictures which are so firmly organized that it is impossible to pass a cotton bougie. A stricture once removed by this method is permanently removed. The removal of obstructions in the tube is only a large factor in but not the whole treatment of these conditions. The prognosis depends largely on the amount of injury to the tympanic structure. The narrow tube should be opened in every instance. [A.B.C.]

7.—Clark says that **gonorrhea in women** almost always begins in the urethra. The extension of the inflammation upward is rapid. As a rule, the symptoms are slight and fleeting in character. He quotes Bumm as saying that within 6 to 10 weeks from the appearance of an acute attack the process has entirely healed itself. The tendency is to a complete healing, but there are cases which become chronic despite all treatment, and persist for years. The symptoms in such cases are usually obscure and easily overlooked, but yet sufficiently active to transmit the infection. Gonorrheal inflammation of the epidermal surfaces of the external genitals is always a secondary affection and is not specific in character, but is of an eczematous nature. Unless absolute cleanliness of the parts is maintained, superficial ulcers and even condylomas frequently form. These latter are often attributed by the inexperienced observer to syphilis. True gonorrheal inflammation of the vagina is of rare occurrence compared with that of the urethra and cervix; this is because its epithelium is stratified and it has no glands. Inflammation of the cervix in point of frequency is next to the urethra. Cervical gonorrhea is especially prone to become chronic. In many cases the affection is limited to the cervix, and does not tend to pass the internal os. When it does, however, a general fundal endometritis occurs. There is then constant danger of the disease passing into the fallopian tubes and forming an acute salpingitis which becomes more or less chronic, and finally terminates in pyosalpinx. The diagnosis of gonorrhea in women is much more difficult than in men, because of the leukorrheal discharge which is more

or less normal in women. The certain diagnosis depends very largely upon the demonstration of the gonococcus in the secretions. Great care should be exercised in securing pus for examination, that it may not be contaminated by other organisms. For clinical purposes methylene-blue solution is a practical and easily manipulated staining fluid. To make the diagnosis certain the gonococci must be found inside of the pus-cells. Although the results of gonorrheal infection in women is usually most serious, yet it must not be forgotten that a considerable proportion of cases run a simple, mild course. In women, so far as the question of prognosis is concerned, the localization of the pathologic process is the deciding feature. If the case is acute and limited to the urethra and cervix, prognosis is favorable. If the infection gains access to the uterus and becomes chronic, the prognosis as to complete cure is doubtful. Should the disease pass to the tubes the prognosis is still more unfavorable. Concerning the **treatment** of this infection there are two opposing views, one holding that absolutely nothing should be done in the way of local therapeutics with the view to the self-limitation and self-healing of this disease, while the other insists that active germicidal remedies are indicated from the very onset. The author is of opinion that cleanliness is the first desideratum, and in the majority of cases is the only measure upon which stress should be laid. After 4 to 6 weeks, when the subacute stage is reached, Bumm insists upon local applications; and according to this author the remedies which are based on bacteriologic experiment for their inhibiting effect are absolutely worthless in the treatment of subacute and chronic cases. The author strongly recommends ichthyol in the treatment of gonorrhea. Silver nitrate solution is also recommended. Absolute rest in bed during the acute infection is one of the chief points in treatment. Operation for pyosalpinx may become necessary, and when such is done the author believes in leaving the ovaries and uterus. [A.B.C.]

Archives of Pediatrics.

July, 1900. [Vol. xvii, No. 7.]

1. A Case of Rhachischisis. T. M. ROTCH.
2. A Fatal Post-Otitic Cerebral Abscess with Amnesic Aphasia. J. H. FRUITNIGHT.
3. The Treatment of Hydrocephalus by Craniectomy. EDWARD P. DAVIS
4. Intestinal Obstruction by Meckel's Diverticulum. IRVING M. SNOW.
5. Remarks Upon the Diplococci Resembling Gonococci. CHARLES A. ROSENWASSER.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V., p. 999.
2.—“ “ “ “ “ “ p. 999.
3.—“ “ “ “ “ “ p. 998.
4.—“ “ “ “ “ “ p. 997.
5.—Rosenwasser suggests that the condition in some cases of **vaginal discharge in children** is caused by an attenuated or not fully developed gonococcus that does not react to Grams' stain. The normal vagina with its bacterial flora, under certain conditions not yet understood, seems to be particularly susceptible, especially in hospital wards, to develop a discharge in which **diplococci** are found which, both in stain and cultural characteristics, cannot be differentiated from the gonococcus. The consensus of opinion seems to be that the cases are cases of true gonorrhea. The infection usually attacks the vagina because the mucous membrane of that canal is more susceptible than the conjunctiva, for example, the granular matter found in the pus in these cases may be the remains of the gonococcus. [J.M.S.]

Annals of Surgery.

July, 1900. [Vol. xxxii, No. 1.]

1. Perforating Ulcer of the Stomach. JOHN FINNEY.
2. Benign Obstruction of the Pylorus. FREDERICK KAMMERER.
3. The Surgical Treatment of Simple Dilation of the Stomach and of Gastropexia. B. FARQUHAR CURTIS.
4. Hour-Glass Stomach and its Surgical Treatment. FRANCIS SEDGWICK WATSON.

5. The Diagnosis of Cancer of the Stomach. JOHN C. HEMMETER.
6. Adhesions about the Stomach. ARTHUR TRACY CABOT.
7. Note on a Case of Syphilis Terminating in Death. ARTHUR SHILLITOE.

1 to 6.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, pp. 984, 985 and 986.

7.—The case of a boy of 17 is reported. He was admitted to the hospital with a very severe cachectic form of **syphilis** which he had contracted 4 months previously. He had been treated with mercurial pills and black wash. In spite of vigorous treatment his condition gradually became worse; large serpiginous ulcers formed and the patient became extremely emaciated; paraplegia developed, he had attacks of dyspnea with some cough, and he died after a succession of convulsive attacks. No necropsy was obtained, but the cause of death is attributed to cerebral syphilis. The case is reported as one of those unusual attacks of syphilis which proceed rapidly to a fatal termination in spite of the vigorous treatment. [M.B.T.]

The Journal of Mental and Nervous Diseases.

July, 1900. [Vol. 27, No. 7.]

1. A Case of Wernicke's Conduction Aphasia with Autopsy. HOWELL T. PERSHING.
2. A Clinical Study of Some Reflexes. JOSEPH FRAENKEL and JOSEPH COLLINS.
3. A Digest of Recent Work on Epilepsy. L. PIERCE CLARK.

1.—Pershing reports a case of **aphasia** that presented not only a curious symptomatology, but an unusual localization. The patient, a man of 45 years, had become unconscious while driving, and had fallen into the bed of a small stream where he lay for about 36 hours. There was hemiplegia of the right side. In about a week the patient returned to consciousness, but exhibited complete paraphasia, that is to say, his talk was a mere jargon. The paralysis disappeared. Some weeks later he apparently understood any question that was asked him and would make an energetic attempt to answer it, but his talk was never intelligible. He could write his own name, but nothing else. When he attempted to read aloud, he would pronounce a few of the words correctly and would approximate the pronunciation of some others, but the majority were not pronounced at all. Two months after his first attack he had a second, during which he died. A spot of softening was found in the left hemisphere just above the fissure of Sylvius, and 6 cm. back of the vertical branch. This was situated where, according to the latest anatomical authorities, it might interrupt communication between the first temporal and third frontal convolutions; that is, between the sensory and motor areas for voluntary speech. The author regards this as perhaps the most typical instance hitherto recorded of true conduction aphasia. It seems to substantiate very thoroughly the theoretical deductions of Wernicke in regard to this type. [J.S.]

2.—Fraenkel and Collins examined 290 cases with Musken's **tonometer**, an instrument that is said to measure the **tonicity** of the Achilles tendon. Sixteen measurements were made on each foot and the average of the 32 regarded as the mean of the muscular tone. In addition they determined the tension of the patellar tendon by palpation. The kneejerk under various conditions and positions, the Achilles jerk and plantar **reflexes** and finally the mechanical irritability of the quadriceps muscle. They divide their cases into 3 groups according as the muscle tone falls within the limits of—12, 12 to 17, and 17 to 27; characterized respectively as hypertonus, physiological tonus, and hypotonus. In the cases of hypotonus, the kneejerk was absent in 16—14 of tabes, 1 of Friedreich's ataxia, and 1 of peripheral neuritis, and it was diminished in 15 cases. In 20 cases it appeared to be normal. Among the hypertonic cases, 22 had absent or diminished reflexes. In all the others they were normal or exaggerated. Of these 22 cases, 7 were tabetic. In others, there were local reasons such as edema, tremor, clonus, or something of that kind which interfered with the estimation. In 2 cases it was impossible to explain why the condition occurred. In the group of physiological tonus, the kneejerks

were either slightly lessened or normal. The authors, therefore, conclude that tendon reflexes are complex phenomena; their existence depends upon the nutrition and reaction of the muscle, and upon the state of the reflex arc. The plantar reflex according to them is always present unless there is a manifest and adequate cause. It is diminished in neurasthenia. It is usually delayed in tabes, sometimes for as much as a minute, and may not be entirely absent when total anesthesia and total motor paralysis are present. Babinsky's reflex was studied with especial care and the order of events appears to be, first, slight contraction of the quadriceps, then flexion of the four toes, plantar flexion of the foot, and dorsi-flexion of the big toe with other movements in the limb. They confirm the results of Babinsky that his reflex is not found in normal individuals, and is only found when the pyramidal tracts are diseased. The kneejerk often presents curious abnormalities if it is too frequently tested in a short period of time. [J.S.]

Wiener klinische Wochenschrift.

May 3, 1900. [13. Jahrg., No. 18.]

1. My Results from Operation for Rectal Carcinoma. JULIUS HOCHENEGG.
2. The Technic of Wedge-Shaped Osteotomy of the Tibia. LEW LUKSCH.
3. The Effects of Hereditary Syphilis. E. FINGER.

1. Hochenegg reports 121 operations for **resection** of the **rectum** by the **sacral route**. He has also performed 50 other sacral operations, making a total of 171, with only 18 deaths. The patients usually recover, and are able to get about without pain or any unfavorable results. He prefers to operate without previous irrigation, as it is impossible to cleanse the rectum thoroughly, and thickened feces are less trouble during the operation than the fluid feces. He generally finds it necessary to open the peritoneum, but has had only 1 unfavorable result. In this case the peritoneal suture was ruptured by vomiting during recovery from the anesthetic. If the anal portion is diseased he sutures the intestine immediately below the sacrum. Incontinence of feces may be avoided by wearing a sponge held in place by a firm rubber band. This is as satisfactory as any method of preventing incontinence of feces. He has practised Gersung's method with unfavorable results in several cases. As to the permanent results of the operation he has been able to obtain reports of the later condition in 62 cases. Ten patients died and in 22 it was impossible to get information. Counting these patients as dead and estimating as cured patients which have remained well over 3 years he finds that the percentage of recoveries should be 25%. [M.B.T.]

2.—Lusk believes that a fault of the Meyer-Schede's method of performing **osteotomy** is that a wedge of bone is removed from the **tibia** alone. He advocates removal of a wedge of bone also from the **fibula**, taking a prism-shaped section from the tibia and a wedge-shaped piece from the fibula. This operation is indicated only in cases in which the bend is located below the knee and probably only in cases in which there is great deformity. [M.B.T.]

May 10, 1900. [13. Jahrg., No. 19.]

1. Endemic and Sporadic Cretinism and Its Treatment. WAGNER V. JAUREGG.
2. A Case of Cerebral Paralysis in a Child with Remittent Paralysis. EDUARD MENZ.
3. The Bacteria of the Urethra. SCHENK and AUSTERLITZ.

1.—A very masterful discussion of the subject of **cretinism** of the sporadic and the endemic type, which the author believes are both dependent upon morbid conditions or absence of the thyroid gland. He is also of the opinion that several other conditions affecting the skeletal growth, as, for example, chondrodystrophia, are dependent upon thyroid disease. The marked success of thyroid treatment in sporadic cretinism warrants its systematic employment in the endemic form. [D.R.]

2.—Menz reports a case of **infantile cerebral palsy** with **crossed abducens paralysis** in a girl of 10 years. The palsy occurred without any apparent cause when the child was 6 months old. Menz places the lesion in the pons. [D.R.]

May 17, 1900. [13. Jahrg., No. 20.]

1. Psychic Derangements of Defecation. A. PICK.
2. Resuscitation from Suffocation, Chloroform Poisoning and Electric Shock. J. PRUS.
3. The Technic of Alexander's Operation. GUIDO TÖRÖK.

1.—Pick reports a case in which in a neurasthenic individual **defecation** was interfered with in a manner analogous to a condition of urination called by Paget urinary stammering. It was impossible for the man to perform the act of defecation in the presence of any one else or even when he believed that some one was in an adjoining room. He was in the habit of reading combinations of lottery numbers in order to abstract his attention from the act of defecation. Micturition was similarly affected. [D.R.]

3.—Torox mentions some of the modifications of **Alexander's operation** and states that in all methods the subcutaneous joining or knotting together of both round ligaments above the symphysis, according to Gardener, promises the strongest guarantee against a return of the malposition. He describes in detail the operation as thus performed upon a bedridden patient, aged 19, with most favorable results, as she left the hospital well and able to resume her customary labor. The simple stitching of the round ligaments to the layers of the inguinal canal may be sufficient in many cases; but when the abdominal walls are flabby or relaxed, it forms a small security against relapse. Then Gardener's modification is to be preferred, since it furnishes a point of support for the united ligaments, and also the strain upon the ligaments is exerted not sidewise but lengthwise. This method, however, can only be used when the operator can freely prepare sufficiently long and strong pieces of ligament. Of course in all cases care must be taken so to close the inguinal incisions with the Bassini stitch as to effectually prevent any subsequent hernia. [W.K.]

May 24, 1900. [13. Jahrg., No. 21.]

1. The Present Position of the Wound-Question in War, and Its Correlation to Sanitary Service in the Field. J. HEBART.
2. So-called Syphilis Hereditaria Tarda among the Troops of the Vienna Garrison. F. SCHUSTER.
3. Resuscitation from Suffocation, Chloroform-Poisoning, and Electric Shock. J. PRUS.

1.—From a thorough study of **gunshot injuries**, Hebart draws the following conclusions: The new repeating rifles and new forms of artillery cause greater loss of life than the older weapons. The percentage of deaths is about 25; of severe injuries, about 20%; and of slight injuries, about 55%. The wound by the small-caliber bullets are more favorable than those inflicted by the older form of weapon, and less frequently call for extensive surgical intervention. Not only the first dressing, but the means of transportation are matters of importance in the result. Trained ambulance-men are needed, and sufficient medical aid to attend to severe emergencies. The preparation of first-aid packages and bandages are of considerable help. It is of decided advantage to have field hospitals located as near to the field of action as possible, as it saves carrying the patients so far. Inasmuch as the operative work is often necessary during the night, the method of lighting is of considerable importance. Magnesium torches and acetylene gaslights are suggested. Since the Franco-Prussian war the South-African campaign is the first in which there has been greater loss of life from wounds than from disease. This is partly due to the effectiveness of the small caliber bullets, and partly to the more efficient sanitary and administrative measures. [M.B.T.]

2.—Schuster, during 3 years, observed 54 cases of apparent **late hereditary syphilis** among recruits from Bosnia and Herzegovina. In none of the cases was it possible to prove the existence of a primary lesion. Nevertheless, the author is of opinion that the cases were not examples of syphilis hereditaria tarda, but of **acquired syphilis**, the primary lesion having been acquired early in life through accident. [D.R.]

3.—Prus has carried out an extensive series of experiments on animals to determine the best methods of **resuscitation** after apparent death from asphyxia, **chloroform poisoning**, and electric shock. He advises opening the thorax,

and practising direct massage of the heart, and performing tracheotomy with direct introduction of air into the lungs. He believes that resuscitation is possible by this method in patients who have been dead apparently for over an hour. He has practised this method once on a man who attempted suicide by hanging. On opening the pericardium, there was not the slightest trace of motion of the heart. Massage was begun at once, and tracheotomy was performed, and air introduced into the lung by a bellows. After 15 minutes, the first trace of rhythmic contraction of the heart was noticed, and continuing this method of treatment, recovery resulted. [M.R.T.]

May 31, 1900. [13. Jahrg., No. 22.]

1. The Knowledge of the Agglutinating Capacity of the Human Blood Serum. JULIUS DONATH.
2. Cholechootomy and Cholecystenteroanastomosis. FRITZ PENDL.

1.—Donath has investigated the **agglutinating action of human blood-serum on human blood-corpuscles**. He found that the serum from the majority of cases of chlorosis had an agglutinating action upon his own blood. Among secondary anemias 7 out of 20 had agglutinating action. One case of leukemia also agglutinated his blood very markedly; while the serum from a case of pernicious anemia did not. [D.R.]

2.—A man of 29 had been suffering for 7 weeks with attacks of severe abdominal pain with more or less fever, occasional chills and jaundice. The urine was dark colored and stools clay colored. For about 4 years he occasionally had attacks of abdominal pain and vomiting, the pain being especially severe under right border at the ribs. When transferred to the surgical department of the hospital it was possible to feel gallstones through the abdominal wall. An incision was made through the rectus muscle and on opening the abdomen a movable stone was found about 1 cm. above the opening of the common duct into the duodenum. There was also a stone just behind Vater's papilla; the stones were removed through a longitudinal incision. Another stone was removed from the hepatic duct, and in all 22 stones were removed from the ducts and gallbladder. A soft catheter was inserted into the common duct and carried out through the abdominal wound. The opening in the gallbladder was sutured to the parietal peritoneum. After biliary fistulas had existed for about 2 months an operation was undertaken to close them, after which the patient suffered from symptoms of recurrence of the attack. At another operation it was found that the intestinal end of the common duct had become a thick and impervious strand of connective tissue. **Cholecystenterostomy** was performed and 3 months after the operation the patient was in perfect health. In a second case a man of 54 had been suffering with symptoms of biliary obstruction. A tumor was felt in the region of the gallbladder. On operation the gallbladder and ducts were found entirely free from stones, but in the region of the duodenum there was a nodular slightly movable tumor the size of the fist which proved to be carcinoma of the pancreas. Cholecystenterostomy was performed with the aid of Murphy's button. An uneventful recovery followed, and the button was passed 14 days after the operation. All signs of biliary obstruction disappeared. [M.B.T.]

Berliner klinische Wochenschrift.

May 7, 1900. [37. Jahrg., No. 19.]

1. The Treatment of Infected Wounds with Hydrogen Dioxid. V. BRUNS.
2. The Secretion of Acids in the Stomach. S. TALMA.
3. Chronic Fibrinous Bronchitis. H. STRAUSS.
4. Resection of the Rectum. WILLIAM LEVY.
5. The Demonstration of Bone Structures by Röntgen Ray Pictures. JULIUS WOLFF.

1.—von Bruns recommends **hydrogen dioxid** in the treatment of infected wounds. The favorable results depend not upon the bactericidal effect, for a series of experiments proved that it is without any such action. It is probably due to the action of the oxygen on anaerobic bacteria to some extent and more upon the mechanical action of the foaming

of the dioxid, forcing out of the wounds, secretions, blood-clots and necrotic tissue and in this way cleansing it. He uses the dioxid in irrigation, with moist tampons. [M.B.T.]

2.—For the purpose of determining the acid secretion of the stomach Talma prefers **Liebig's meat extract**. He introduces, in the morning, into the empty stomach that has been thoroughly washed, an accurately neutralized solution of 2 grams of Liebig's meat extract in one liter of water, at the temperature of the body. The solution is introduced with the stomach-tube and is evacuated at the end of an hour. The acidity is readily determined, phenolphthalein being used as an indicator. The Liebig solution contains either very little or no albumin, therefore does not neutralize any of the acid, and the determinations are easy. [D.R.]

3.—Strauss reports a case of **chronic fibrinous bronchitis** in a man of 58. The disease resisted all treatment and subsided only after the patient had passed through an attack of influenza; but even after that the sputum still contained Charcot-Leyden crystals, but without the presence of fibrinous coagula which had been found in abundance during the attacks. The coagula gave the fibrin reaction. The Charcot-Leyden crystals also staining blue with the fibrin stain; and Strauss concludes that there is no reason to believe that the crystals are of a mucoid nature, but that the basal substance contains a body which takes the stains characteristic of albumins. In the coagula diplococci resembling the pneumococcus were found. The leukocytes present were of the mononuclear variety. There were in the patient at no time any attacks resembling bronchial asthma.

4.—Levy reports the case of a woman of 45, who had suffered for several months from the usual symptoms of **carcinoma of the lower bowel**. The operation of resection was undertaken by the method usually known as Schlangé's. A convex incision was made with its concavity toward the coccyx; the bone was exposed and the sacrum was divided at the level of the lower border of the fourth sacral foramen. The bone was drawn down with a sharp hook, the diseased intestine was isolated and resected and the ends were united by continuous suture in two stages. The sacral wound was then tamponed with iodoform gauze. A good recovery followed. Levy claims to have been the first to advise this method of operation. [M.B.T.]

May 14, 1900. [37. Jahrg., No. 20]

1. The Foundation Principles of Pathogenesis. FR. MARTIUS.
2. The Origin of Excretion of Oxalic Acid. E. SALKOWSKI.
3. The Value of Bronchoscopy in Carcinoma of the Lungs. GUSTAV KILLIAN.
4. The Reflexes of the Nasal Mucous Membrane in Relation to Anesthesia. FRANZ BRUCK.

1.—Martius emphasizes the constitutional element in disease. [D.R.]

2.—It has long been a question whether **oxalic acid** in the urine comes from metabolism or is merely that which has been introduced in the food. Salkowski is of the opinion that oxalic acid may, in man, be a metabolic product. Its source, however, is not the albumins; it is in some way connected with uric acid, and is, like the latter, probably a **derivative of nuclein**. Its seat of formation is in all probability the liver. The amount excreted varies with the individual. Persons who have a tendency to oxalic acid stone-formation should avoid food rich in nuclein and such foods as contain oxalic acid. [D.R.]

4.—Bruck calls attention to Rosenberg's studies of syncope during **chloroform-anesthesia**. These unfavorable results were supposed to be caused by reflex irritation of the heart and respiratory center in the medulla from irritation of the peripheral endings of the trigeminus in the nasal mucous membrane, and Rosenberg attempted to overcome this irritation by cocainization of the nasal mucous membrane. Bruck finds by experiment that complete cocainization of the entire mucous membrane of the nose is impossible and he states that if it is found after further experimentation that it is necessary to prevent this nasal reflex because of the danger to life in chloroform-anesthesia that it will be necessary to shut off the entire nasal cavity. [M.B.T.]

May 21, 1900. [37. Jahrg., No. 21.]

1. The Hetol Treatment. C. A. EWALD.

2. Hemolysin. P. EHRLICH and J. MORGENROTH.

3. Influenza and Chronic Heart-disease. SCHOTT.

4. Are Special Divisions for the Tuberculous Necessary in Hospitals. E. ARON.

1.—Hetol (zimmetsaures natron, sodium cinnamate) has been recommended by Landerer for the treatment of phthisis. It is given by intravenous injection, beginning with doses of 1 mgm. every other day, and gradually increasing the dose until 16 mgm. are given. Ewald has used it in a series of 25 cases, and has come to the conclusion that it has not the beneficial effects claimed for it by Landerer and others, but that as there are no deleterious effects, further tests with it are justifiable. [D.R.]

2.—The introduction of the red corpuscles of one species of animal into the body of an animal of another species produces in the latter a substance called **hemolysin**, capable of dissolving the red corpuscles of the animal species from which the blood was derived. This hemolytic action is exercised not only in the body, but also *in vitro*, and is connected with the existence in the hemolytic serum of two bodies; one, called the **immunkörper**, the other, the **competent or adiment**. The immunkörper has a specific affinity for the corpuscles of the other animal species and, in addition, for the adiment, a body of a ferment-like character normally present in the serum. By reason of these two affinities the immunkörper acts as an intermediate body and enables the complement to dissolve the red corpuscles. The formation of bodies analogous to the immunkörper is a widespread function, and occurs after the injection of leukocytes, ciliated epithelium, renal epithelium, spermatozoa, etc. The injection of any one of these into an animal of another species brings about the development in the serum of substances capable of dissolving the particular cells in question. These facts are satisfactorily explained by the **lateral chain theory** of Ehrlich. They are probably of great significance in pathology and have a bearing upon those changes which follow the absorption of cells in the body. If large hemorrhages are absorbed, if there is an acute atrophy of an organ, if lymphatic tumors melt down under arsenic, or if a goiter subsides, the conditions are given for the development of reactive substances in the individual's own body. It is important to determine whether the absorption of such material in the body itself is capable of producing reactive changes. It is *a priori* unreasonable to suppose that since the injection of blood-corpuscles from another species of animal produces a hemolysin, the injection of blood from the same animal or the absorption of blood from a cavity gives rise to a hemolytic body; if it did, the red corpuscles could be dissolved. In order to get an insight into these questions, the authors injected goats with the blood of other goats. One animal (goat A) received blood mixed from three other goats (1, 2 and 3). Its blood-serum very soon became strongly hemolytic for the blood of goats 1, 2, 4, 5, 6, and 9. Goats 3 and 8 showed a lesser sensitiveness to the serum, while goat 7 showed very little. If a drop of the blood of goat A was mixed with its own serum *in vitro*, no solution whatever occurred. The authors designate the hemolysin developed by the injection of blood from the same species of animal as **isolysin**; that produced by the injection of blood from another species, as **heterolysin**. The isolysin is not, however, an **autolysin**, *i. e.*, a lysin which dissolves the corpuscles of the animal in the serum of which it circulates. The fact that the isolysin is not an autolysin may be explained on the ground that the corpuscles of the same animal lack the lateral chain which binds the hemolytic immunkörper circulating in its own serum. These lateral binding chains Ehrlich calls **receptors**. The hemolysin of normal dogs' and goats' blood injected into other animals produces antihemolysin, *i. e.*, a substance which prevents the solving action. This was also found to occur when the isolysin from goat A was injected into other goats; the serum of such other goats became antihemolytic, and when mixed with the isolysin from goat A destroyed the solving action of the latter upon goats' blood. The isolysins produced in different goats by the injection of serum obtained from another goat, differed in their hemolytic properties, showing that the individual reaction of the animal played a part in the production of the isolysin. Thus, the isolysins developed in goats A, B, and C, by the injection into each of goat serum (from the same goat), dissolved not only goats'

blood-corpuscles, but also those of sheep. The isolysin of goat D, on the other hand, did not dissolve the corpuscles of sheep. The effects of the injection of blood-serum from the same species of animal will depend upon various factors. It must be assumed that the injected red corpuscles have several lateral chains capable of uniting with suitable receptors in the body. If these receptors do not exist in the body into which the corpuscles are injected, there is no reaction whatever; no hemolysins are formed. If the receptors exist a hemolysin will be produced, because the lateral chain in the red corpuscles unites with the receptor in the animal's body, and the latter is reproduced in excess, is thrown into the blood, and constitutes the isolysin. There is also a third possibility, viz., the production of antiautolysin, which need not be further discussed. One interesting conclusion drawn by the authors from these complicated facts is that it is wrong to infer because blood-serum, secretions, and excretion from the human body in disease are toxic for animals, that they are also toxic for the organism of the patient. If, for instance, the serum of a scarlet-fever patient is toxic for guinea-pigs, it may, nevertheless, be perfectly harmless for man, especially for the patient himself; and if the serum from an anemic patient dissolves the corpuscles of other individuals, it does not follow that this explains the production of the anemia. It is probable that the hemolysin is an isolysin and not an autolysin. [D.R.]

4.—Aron does not think that it is necessary to isolate **phthysical** patients in general hospitals in separate wards. In his opinion the danger of **transmission** to other patients is small, and the depressing influence of the association of patients with the same disease is very great. [We cannot agree with these views, and are decidedly of the opinion that phthysical patients should be separated from the others. We should consider the adoption of Aron's plan a backward step. D.R.]

May 28, 1900. [37. Jahrg., No. 22.]

1. The Insane Criminal. E. SIEMERLING.
2. Congenital Deficiency. O. HUEBNER.
3. Irritation Experiments on the Spinal Cord after Decapitation. A. HOCHÉ.
4. Observations on the Treatment of Gonorrhea. LEOPOLD CASPER.
5. Influenza and Chronic Heart Disease. SCHOTT.

1.—It has come to be recognized that there is no single act which in itself proves insanity on the part of the doer—that an expert investigation includes an examination of the entire individual in corporeal and psychical respects. The insane, experience has taught, violate the laws more frequently than healthy persons. Many of the insane are wrongly placed in prison because of the widespread belief that simulation is practised. This prejudice concerning simulation causes a failure to recognize the peculiarities of the mental disturbance. Moreover, simulation and insanity do not exclude each other. The study of **degeneration** and its relation to the psychoses has not as yet yielded very satisfactory results. The question of **caring for the insane criminal** is an important one. Three systems have been developed: a special institution, a special division of the prison, and the ordinary asylum or a special division of it. The erection of special divisions in large prisons is probably the best solution of the problem, so long, at least, as the insane criminal is serving his sentence. An important point demanding attention is the better education of prison physicians. Lombroso's studies are interesting, but they do not justify the identification of criminality and insanity. It is the duty of psychiatry to secure more clement consideration of the mentally deficient before the courts, so that the punishment may correspond to the defective mental development. [D.R.]

2.—Huebner reports a case of congenital absence of some of the nuclei of the ocular, facial, and hypoglossal nerves in a child of 1½ years. There was a bilateral external ophthalmoplegia and bilateral facial and hypoglossal paralysis. There was also a total absence of tear secretion. The child died of an intercurrent attack of measles with pleuropneumonia, and the autopsy showed absence of the left hypoglossal, left facial, and of both abducens nuclei, while the right hypoglossal and the right facial nuclei were far less rich in

cells than normal nuclei. The left posterior longitudinal bundle was also absent. Huebner believes that the condition (the so-called infantile Kernschwund of Möbius) is dependent rather upon **aphasia or hypoplasia** than upon inflammatory degenerative processes. [D.R.]

3.—The author has had the opportunity of examining the bodies of 2 persons that had been beheaded. He found that the spinal cord was irritable for several minutes after decapitation. He believes that the electric stimulus does not act directly upon the long motor pathways, but reflexly through the medium of the sensory fibers. [D.R.]

4.—The author pleads for a conservative treatment of **gonorrhea**. [D.R.]

5.—Schott points out the disastrous effects which the recent epidemic of influenza had upon the heart, especially in cases with previously existing cardiac disease. [D.R.]

June 4, 1900. [37. Jahrg., No. 23.]

1. Typhoid Fever. RUMPF.
2. The Value of Alcohol as a Disinfectant. SALZWEDEL and ELSNER.
3. Conception of the Term "Gastric Dilation" in the German Literature since 1875. ARTHUR HESSE.
4. Estimating the Strength of Heart Sounds as a Help in Diagnosis. HEIN. BOCK.
5. Influenza and Chronic Heart Disease. SCHOTT.

2.—Alcohol in proper dilution is a very efficient **disinfectant**, its disinfecting properties depending partly upon its desiccating action and partly upon a distinct toxic influence upon the bacteria. In efficiency it may be classed between corrosive sublimate and carbolic acid. The best solution for the disinfection of the hands is slightly acidulated 80% alcohol. [D.R.]

4.—Bock describes an instrument devised by himself and the late Oertel for the determination of the strength of the heart-sounds. [D.R.]

5.—Von Vogl in an appendix to Schott's article discusses **influenza** and its effect upon the **heart** in the army. He found, as did a number of observers in this country, that one of the marked symptoms during convalescence from influenza was bradycardia. [D.R.]

Münchener medicinische Wochenschrift.

June 12, 1900. [47. Jahrg., No. 24.]

1. The Present Position of our Knowledge of Tuberculosis, Especially Pulmonary Tuberculosis. A. TREUPEL.
2. A New Test for Urine and Sugar. EDLEFSEN.
3. The Therapy of Cholelithiasis. HEINRICH SCHEUER.
4. Ascending Traumatic Neuritis, without an External Wound. K. BRODMANN.
5. The Employment of Calcium Carbide in Gynecological Practice. W. GRUSDEW.
6. The Dangers of Vaginal Irrigation. A. THEILHABER.
7. The Individual Signs of Pregnancy, Including Remarks upon the Anatomical Condition of the External Orifice of the Urethra. O. NAEGELI.
8. The Operative Treatment of Ulcer of Stomach and Duodenum. F. KIEFER.

1.—An interesting resume, with a wealth of literary references, concerning the present status of our knowledge of tuberculosis—particularly **pulmonary tuberculosis**. One point of interest which might be quoted is the author's objection to respiratory gymnastics, especially deep inspiration, in recent cases of tuberculosis. [D.R.]

2.—Edlefsen speaks of a new test for sugar dependent upon the use of permanganate of potassium, but does not clearly describe it. [D.R.]

3.—Scheuer has analyzed the cases of **cholelithiasis** treated in the St. Hedwig Hospital at Berlin during 10 years. Of these cases 89 were treated in the medical and 43 in the surgical wards. He followed up the cases as well as he could, and was able to trace 57 of the medically treated. He found that after from 1 to 2 years 13 patients still suffered; after from 3 to 4 years, 5; and after from 5 to 8 years, 5. Twenty-two, or 41.5%, were cured, 4 had to be operated upon subsequently, and 4 died. The results of **surgical treatment**

were much more favorable. The mortality was 12.5% ; but when the cases in which death was due to causes independent of the operation were deducted, the remaining mortality was only 2%. In none of the cases was there a return of stone formation or of colic. Two cases suffered from cramps which were probably connected with disturbances in the celiac ganglia and the abdominal sympathetic. The operation practised was that of **einzeitige cholecystomy** (cholecystostomy at a single operation). Cholecystectomy was performed 5 times, and choledochotomy 7 times. [D.R.]

5.—Grusdew recommends the use of **calcium carbide** in the treatment of neglected and inoperable **cancer of the uterus** for its anesthetizing influence, for its remedial effect upon the offensive discharge, and especially for its efficacy in controlling hemorrhage. The calcium carbide may in the form of a powder be blown over the surface of the cancer, or pieces of it may be placed in the crater-like form of the cancer and covered with a tampon. The healthy portion of the vagina should be protected from the burning effect of the calcium by covering it with a tampon, dry or saturated with glycerin. Grusdew considers this method of treatment especially adapted to use in private practice and for ambulatory patients, where other methods are not so available. The erosion and ulceration cease to bleed after the application of the calcium carbide and soon heal, forming a layer of pavement cells. This palliative effect usually continues a week or more, when the application may be repeated. Whether there is any real check to the progress of the disease farther experience can alone determine. [W.K.]

6.—According to Theilhaber, the dangers attending **vaginal irrigation** are: 1. That in sensitive women the shock of a too cold or too hot fluid may cause faintness, shivering, or vomiting. 2. In acute inflammation of the peritoneum the distention of the vagina, especially in case of narrow vaginal ostium and high pressure of the fluid, may increase the peritonitis. 3. In rare cases the entrance of the fluid into an open vein, as has occurred in vaginal carcinoma. 4. The excessive distention of a relaxed uterus from the pressure of the fluid may cause vomiting and severe pain. 5. The passage of the fluid through the tubes into the abdominal cavity sometimes takes place with bad results. To avoid these dangers great care must be exercised, high pressure avoided, and the best instruments used, irrigators being preferred to balloon syringes. [W.K.]

7.—In addition to the customary **symptoms of pregnancy**, Naegeli mentions cases of women who experience symptoms peculiar to themselves, such as itching and burning, swelling of varicose veins, or local peritonitis; and concludes that these are ordinarily a recurrence of some form of disease accompanying former lying-in periods; the "place of least resistance" shows the indication of pregnancy. With some women phlebitis or thrombus of the veins of the lower extremities form a "pregnancy barometer" whose reliability and promptness leaves nothing to be desired. He also describes the peculiar form of the external orifice of the urethra, not as round or oval, but as closed with two-pointed flaps which form an angular orifice. The change in this may also be an indication of pregnancy. [W.K.]

8.—Kiefer reports 2 cases of **gastric ulcer**, the first occurring in a girl of 20, who had been troubled with gastric symptoms for about 5 years. Suddenly, while walking up stairs, she felt a sharp pain in the upper abdominal region; also in the shoulder and arm; and became markedly collapsed. Sixteen hours later, operation was performed and the perforation was found in the stomach near the entrance to the esophagus. A large ulcer was found in this position, and it was necessary to excise it to its whole extent before a secure suturing of the stomach-wall could be accomplished. The patient recovered without deleterious symptoms. Case 2, the patient was a woman of 34, who had suffered with stomach-troubles for 10 years. Diagnosis of ulcer ventriculi was made, and operation decided upon. Careful search showed the stomach to be normal and free from any inflammatory thickening. The ring of infiltration, however, was found on the descending part of the duodenum, and in separating the adhesion the ulcer was torn open. As the lumen of the duodenum was very large, the ulcer was excised, and the somewhat oblique defect closed by suture. The suture was reinforced by covering it with a portion of omentum. The patient made a good recovery. [G.B.W.]

June 19, 1900. [47. Jahrg., No. 25.]

1. The Knowledge of the Cause of Primary Iritis, on the Ground of Statistic Collection. MICHEL.
2. Acute Osteomyelitis. E. KOCH.
3. Operative Treatment of Inversio Uteri and Observations on its Etiology and Significance. W. THORN.
4. Retroflexion of the Gravid Uterus with Incarceration. KARL REINECKE.
5. Idiopathic Osteopsathyrosis. LUDWIG LANGE.
6. A New Obstetric Hook-Forceps. R. HANSEN.
7. Ascending Traumatic Neuritis Without External Wound. K. BRODMANN.

1.—von Michel has investigated 84 cases of **primary iritis**. He found it more frequent in the female than in the male sex and more commonly unilateral than bilateral. The average age was 40.3 years. Tuberculosis was the cause in 31 cases (38.8%), chronic nephritis in 29 (34.5%), disease of the circulatory apparatus in 13 (15.4%), syphilis in 5 (5.9%), and various other affections in 6 (7.1%). From this study he concludes that general diseases play an important part in the production of primary iritis and that this should always be kept in mind in dealing with such cases. [D.R.]

2.—A case of **acute osteomyelitis** of the sternum in a man of 30, without any definite cause. This particular affection generally attacks the body rather than the manubrium of the sternum and may lead to necrosis of the posterior surface with purulent mediastinitis, to total necrosis of the bone, or to necrosis of the anterior portion without mediastinitis. The involvement of the mediastinum and the adjacent serous membranes makes the disease very grave. There were 5 deaths in 8 cases. The treatment consists in early surgical interference—either trephining of the sternum or removal of the entire diseased bone. [D.R.]

3.—Thorn reports a case of **inversion of the uterus**, which occurred nearly 5 months after labor. The patient was confined in the clinic on September 4, 1899, and at the time of her confinement the middle of the fundus was so hollowed that a bicornate uterus was diagnosed. There was nothing abnormal in the puerperium, however, save some urine-retention. In the latter part of November she suffered from thrombosis of the right and, a few days later, of the left femoral vein. She recovered sufficiently to attend to her household duties, but on the 26th of January a severe hemorrhage came on, and on examination 2 days later, the uterus was found to be totally inverted. The colpeurynter failing to cause reposition, she was brought to the hospital for operation. A bow-shaped incision was made in the anterior wall of the vagina, the bladder pushed away from the cervix, and the anterior wall of the uterus was incised in the manner of Karer. Strong traction was then made on the anterior lip, but without result. As this measure failed, Douglas's pouch was opened and, after breaking up a bridge-like division seemingly adherent to the fundus, the uterus was turned up with difficulty and sutured in place. These sutures were secured with some trouble because of the decaying tissue of the uterine wall. The patient recovered rapidly, leaving her bed on the ninth day, menstruating normally on the twelfth, and leaving the hospital on the fifteenth. Five months later the uterus was absolutely normal in form and position and the patient entirely well. [W.K.]

4.—In the opinion of Reinecke retroflexion of the gravid uterus generally results from a malposition preceding pregnancy. In the majority of cases the pregnant uterus erects itself, since as the anterior uterine wall is distended it draws upward the whole uterine body. Whether any deviation of position will be spontaneously corrected or not seems to depend upon the form of the sacral bones, and of the promontory, also upon the texture of the uterine walls, the firmness of texture being unfavorable to reposition and leading to retroversion rather than retroflexion. The second in frequency of the results of this complication is abortion, which is most liable to occur in the fourth month when the small pelvis has become full and it presses upon the further growing uterus, disturbs the circulation in its walls, provokes labor-pains and perhaps causes expulsion of the fetus. When the abortion occurs earlier it usually is due to some mechanical condition, as injury to the ovum or hemorrhage in the decidua, etc. When there occurs spontaneously neither correction of the malposition nor abortion, then as pregnancy advances the woman endures all the troublesome symptoms of the incar-

cerated uterus, pressure in the pelvis, pain in the sacral region, obstruction of the bowels and retention of urine from pressure on the bladder, and the train of distressing and perhaps disastrous consequences. The diagnosis of retroflexion of the gravid uterus is not generally difficult; and the first step in its treatment is the emptying of the bladder followed by reposition of the uterus. If after reposition an examination shows a return of the retroflexion a pessary may be worn until the fifth month of pregnancy. If, however, a reposition is impossible, then the proper treatment is an emptying of the uterus. [W.K.]

5.—Lange reports a case of **idiopathic osteopsathyrosis** in a boy of about 6 years. He was perfectly healthy up to the age of 22 months, and then upon very slight cause broke the left femur. Subsequently he had a number of other fractures, altogether 22. They healed very promptly, although with marked deformity in the lower extremities. The tibiae were curved and flattened. The author reviews the literature of the subject. The cause of the disease is unknown. It is possible that it may be connected with disturbances of the trophic nerves. Treatment has been of very little use. In one case thyroiodin seemed to be of value. [D.R.]

6.—Hansen recommends a new instrument for assisting in the delivery of breech-presentations. It consists of an instrument with hooked ends to catch in the curve of the groin and draw down the fetus by rotary traction. [W.K.]

June 26, 1900 [47. Jahrg., No. 26]

1. A Case of Apparent Foot-and-Mouth Disease in Man. SCHULTZE.
2. The Working of Digitoxin in its Resemblance to Digitalis Leaves. E. ZELTNER.
3. Agglutinating Capacity of the Blood from a Healthy Child of a Typhoid-Sick Mother. M. ZÄNGERLE.
4. Multiple Neuritis. HENRICI.
5. Reports from the Municipal Diphtheria-Testing Station of Chemnitz. SCHOEDEL.
6. A Case of Infantile Cerebral Paralysis Complicated by Oculomotor Paralysis. K. KISSLING.
7. A Case of Perithelioma of the Carotid Gland. HEINLETH.

1.—A little girl, 2½ years old, had a violent stomatitis, the mucous membrane of the mouth being covered with a dirty exudate. In addition there were pemphigus-like eruptions on the fingers and toes and here and there a furuncle. Schultze made a diagnosis of **foot-and-mouth disease**, although no source of infection could be demonstrated, nor was it possible to reproduce the disease by inoculation into animals. The child recovered, but had some scars at the commissures of the mouth as a result of the affection. [D.R.]

2.—A clinical comparative study of Merck's crystallized **digitoxin** and **digitalis leaves**. The author's conclusions are that digitoxin in promptness, energy, and duration of action, is equal and sometimes superior to the mother plant. Its administration by the mouth is less prompt than its subcutaneous or rectal introduction. The dose employed was one tablet of ¼ mgm. ($\frac{1}{250}$ of a grain) 3 times a day. [D.R.]

3.—The blood of an **infant** born of a mother suffering from typhoid fever gave the **Widal reaction**.

4.—Henrici reports a case of arsenical **neuritis**, 3 cases of alcoholic, and one of multiple neuritis of infectious origin—perhaps due to pneumonia. [D.R.]

5.—In a fatal case of faucial **diphtheria** the author found an exudate on the mucous membrane of the stomach in which bacteria could be demonstrated microscopically as well as culturally. Gastric symptoms had been absent during life, but diarrhea had existed. This case led him to examine the mucosa of the stomach and intestines, as well as the feces, for diphtheria-bacilli in cases of diphtheria. In two instances in which the stomach presented nothing abnormal, full virulent bacilli were found on the mucous membrane; also in the intestines, in one of two cases examined. In 8 specimens of feces of diphtheria-patients diphtheria-bacilli were found once by means of Neisser's stain. Ordinarily it is probable that the hydrochloric acid of the stomach is capable of destroying the swallowed bacilli and thus of preventing diphtheria of the stomach. When the acid content is diminished an inflammation of the stomach

is possible. Diphtheric enteritis is very rare, but follicular enteritis is common in diphtheria; and Schoedel believes that this latter is perhaps the result of a specific bacterial or bacteriochemic irritation produced by the presence of diphtheria bacilli in the intestinal contents. Through the activity of the lymphatic elements diphtheric processes of greater intensity are prevented. In the second part of the paper the author gives his experience with Joos' serum agar. This is an alkaline mixture of blood-serum, bouillon, and agar. His conclusions are that for purposes of rapid diagnosis Löffler's serum is the best; for laboratory experiments (the securing of pure cultures, propagation, and biologic studies) Joos' serum-agar is valuable. [D.R.]

6.—A case of **infantile cerebral palsy with complicated oculomotor paralysis** in a girl of 17. The father was tuberculous at the time of the conception of the child. The disease began about the third year with involuntary movements. The eyes presented bilateral nystagmus and paralysis of the right internal rectus; the left eyeball could scarcely be raised or lowered; the pupils were unequal. There was a left sided hemiplegia, including left sided facial palsy. Contractures were not marked. There was no aphasia, nor epilepsy, but intellection was impaired. There were marked athetoid or choreic movements, as the author calls them. He places the lesion in the right cerebral peduncle and assumes, in addition, a slight involvement of the oculomotor fibers on the other side. A discussion of the symptomatology of infantile cerebral palsy accompanies the report. [D.R.]

7.—To the 6 cases of **tumor of the carotid gland** von Heinleth adds another which he observed in a woman of 60 years. The tumor seemed to follow a difficult tooth-extraction with fracture of the alveolar process and a consequent inflammation dating back to 1859. A small tumor developed on the left side of the neck and later two other small tumors appeared above the first, which, however, subsequently again disappeared. On examination in 1896 the author found a moderate-sized goiter and an isolated tumor the size of an apple directly behind the left angle of the jaw. The sternocleidomastoid was stretched over it. The tumor was scarcely movable, hard, and rounded. Slight pulsation was visible. There were no auscultatory signs and the pulsation was due to transmission from the underlying carotid. At operation the tumor was found to lie in the fork of the internal carotid. It was removed by careful dissection with very little hemorrhage; and measured 8 x 5 x 3.6 cm., and had a circumference of 21 cm. The carotids were exposed for a length of 11 cm. after the extirpation of the growth. On section the tumor resembled in appearance a colloid growth. Microscopically it consisted of connective tissue stroma extending in from the capsule, and containing an abundance of vessels and nerves. The trabeculae divided the tumor into lobules, the interior of which was traversed entirely by winding and anastomosing capillaries. Between the capillaries were nests of perithelial cells and on that account the tumor was diagnosed as a perithelioma. The author gives extracts of all of the cases hitherto reported. The tumors seem to begin at the end of puberty and to grow very slowly. They occur with about equal frequency in both sexes. The subjective symptoms are vague. Objectively the symptoms differ from those produced by aberrant goiters, metastatic tumors of lymph-glands, and aneurysms. The position is characteristic—at the bifurcation of the carotid. This produces two symptoms: a certain immobility and pulsation. In only one of the 7 cases, viz., that of the author, was the carotid preserved. In the others either the external or the common carotid and some of the branches had to be sacrificed. Paltauf has pointed out that the passage of a small vessel from the bifurcation of the carotid directly into the tumor is characteristic of origin from the carotid gland. Such a vessel was not present in the author's case, but he still believes that the microscopic features warrant the conclusion that he has drawn. [D.R.]

Centralblatt für Gynäkologie.

June 2, 1900.

1. The Application of Bruns' Airol Ointment to Laparotomy Wounds. OSCAR FRANKL.

2. The Disinfection of the Hands in the Practice of Midwifery. R. KOSSMANN and G. ZANDER.

3. Operative Treatment of Tubal Pregnancy. JUNG.

1.—Frankl describes various forms of stitch-abscesses which sometimes follow **laparotomy** despite all precautionary measures. Even when absolutely sterile metallic sutures are used suppuration occasionally occurs. He holds that the glands of the skin may contain cocci which the most careful disinfection with corrosive sublimate will not render innocuous. Each stitch injures a series of fat glands the serum from which furnishes a medium in which the pyogenic work of the cocci at once begins. By the pressure of the sutures the skin becomes moistened with secondary serum, and also the cocci by this pressure are forced into the deeper tissues and suppuration follows. Bruns claims that the use of his **airol ointment** over the incision makes it impossible that any such infection should occur. Frankl remarks that the bactericidal power of the ointment must be very energetic to reach the deeper tissues and that its eminent antiseptic power can only be proved by experiments and that experiments have value only as the culture material used is similar to that in the human organism. He describes in detail the tests made and reaches the conclusion that although Bruns' ointment has some value, since airol undoubtedly has great antiseptic power; yet, in his opinion, based upon practical experience, airol powder and gauze are to be preferred, as the gauze absorbs the secretions better than the ointment. [w.k.]

2.—Kossmann and Zander report in detail the result of many experiments made to test the relative efficiency of 20% solution of **chinocol** and 3% solution of **carbolic acid** in sterilizing the hands. While admitting that the absolute sterility of human hands is unattainable, their researches show the superior efficiency of the chinocol solution in destroying germs; then it has the additional advantage of not being poisonous and not causing any inflammation of the skin. For these reasons they consider it the best disinfecting agent for common use in obstetric practice. [w.k.]

3.—Jung gives the history of 2 cases of **tubal pregnancy**, successfully operated upon, emphasizing two points, the removal of the product of conception per vaginam, and the preservation of the tube in a condition to perform its normal function. He says that today operative gynecology demands the use of the vaginal way whenever it is practicable; only its impossibility permits the use of laparotomy. The technic is more difficult, it demands more experience and greater patience since it must be performed in the dark; but it is better for the patient and less dangerous, and she is saved from the abdominal cicatrix. Hence the physician must not shrink from the greater difficulties, but learn to overcome them. Yet there are limits to the vaginal operation, such as size of the tumor or greatness of the adhesions, etc. No fixed rules can be given, each case must be governed by the judgment of the operator. In cases involving great injury to the tube, it should be resected; but in rupture with small opening, peel out the ovum or fetus and suture up the slit in the tubal wall. [w.k.]

June 9, 1900.

1. Remarks upon the Article by Frankl in the Preceding Number. WALTER STOECKEL.

2. A Simple, Selfretaining Speculum. STEINSCHNEIDER.

1.—Stoeckel remarks that there has been in the Bonn clinic no cause for dissatisfaction in the use of the **airol ointment** upon laparotomy or other wounds; yet **powder** is preferable to the ointment since it is a much better absorbent of the secretions. He, however, apparently prefers **kaolin**, its great advantages being its nonpoisonous, non-irritating, and odorless qualities, also its great capacity for absorbing moisture, its fineness of grain and great volume of pores. The kaolin should be sterilized by being placed 24 hours in a temperature of 130° C. The dryness of the suture is the first basic condition of primary healing and this is best obtained by the use of kaolin. This elimination of all moisture is also a great preventive of secondary infection. Kaolin powder though can not be used to the best advantage in perineal or other incisions where it cannot be kept in place with bandages. Stoeckel, however, makes the remark that in his clinic the best healing of incisions was obtained with purely antiseptic bandages. [w.k.]

2.—Steinschneider describes the construction of a speculum which he designates as the "**Regenschirm**" or **umbrella speculum**. It is made of wire 2 mm. in thickness and 16 cm. in length, bent in 4 loops and when complete is about 25 mm. in diameter. Its advantages are that it is easily introduced into the vagina, is selfretained, and makes visible not only the vaginal portio, but also the vaginal walls. It is light, simple in structure, and easily sterilized. [w.k.]

June 16, 1900.

1. Cervical Distention and Rupture. HAMMERSCHLAG.

2. The Treatment of Eclampsia. POPESCU.

1.—Hammerschlag reports a case of **distention and rupture of the cervix** occurring in an octipara, aged 37, whose previous deliveries had all been spontaneous and rapid. The assistant physician had diagnosed the case as one of breech presentation; but when the hospital physician arrived the child was found to be in the abdominal cavity with its head in the pelvic passage. Cranial perforation was performed on the already dead child, and the mother removed to the hospital to be delivered by laparotomy. She died, however, a few minutes after her arrival, but a subsequent section showed that the cervix had been distended to a very great length, about 16 cm., and then ruptured. The author has found in all the literature accessible to him no similar case of rupture of the cervix. [w.k.]

2.—After quoting statistics from Zweifel, Olshausen, and others, showing that there is a considerable percentage (from 15% to 35%) of cases of **eclampsia** in which the convulsive attacks do not cease after the emptying of the uterus, Popescu discusses the medical procedure adopted to complete a cure. He refers to varying opinions as to the use of chloroform, morphin, and chloral with their uncertain and sometimes dangerous consequences, and then relates his own experience with a comparatively new preparation which he calls "**bromidia**," and a tablespoonful of which contains about 3 gm. of pure chloral and kali bromati and 2½ cg. extract hyoscyam. and extr. cannab. ind. A tablespoonful is to be applied as a clyisma by a balloon syringe; or a smaller dose, a teaspoonful, might be used when morphin had been previously administered. Popescu reports 2 cases in which he used bromidia with excellent results. The first was a primipara in whom the eclamptic attacks, beginning before delivery, continued after with increasing frequency and violence until it became necessary to fasten her on the bed with bandages. Repeated doses of morphin and chloroform had been given and he had given up the case as lost, when, remembering having once used bromidia, he now applied 20 cc. as a clyisma with a balloon syringe No. 2. The patient had no subsequent attack, but lay in a heavy sleep or stupor for 2 days, only arousing sufficiently to urinate spontaneously or take a swallow of water. On the third day consciousness returned and she began to take nourishment. In the second case the attack was less severe, the dose was smaller, and the patient's consciousness returned the next morning. Eclampsia is a disease of such gravity, and the influence of bromidia upon it is so obvious, the author thinks the preparation is worthy of consideration as a welcome contribution to its medical treatment. [w.k.]

Ovarian Pregnancy.—Catharine van Tussembroek (*St. Louis Courier of Medicine* July, 1900), presents a careful analysis of a specimen in a case of ruptured ovarian pregnancy, bearing upon this much disputed question. She details a number of changes in the physiologic growth and development of the ovum and proves that pregnancy may occur in a graafian follicle as a result of the rupture of a follicle without the discharge of the ovum. The opening of the follicle permits the entrance of the spermatozoa to the ovum and following such fertilization the opening closes or remains patent. She failed to find with the most careful search, any formation in the wall of the follicle resembling decidual tissue, and concludes from this that this tissue is not essential to the implantation and growth of ovum. She claims also that the syncytium is entirely of fetal origin and not a product of the maternal epithelial tissue. She favors the conclusion that many so-called tuboovarian pregnancies are of ovarian origin. [M.B.T.]

Practical Therapeutics.

Under the charge of

A. A. STEVENS, A.M., M.D.

Lumbago.—According to Nestor Tirard (*Medical Treatment of Diseases and Symptoms*) the following mixture is often useful in some forms of lumbago:

R.—Sodium salicylate..... 10 grains.
Potassium iodid 5 grains.
Fluid extract of sarsaparilla..... 2 drams.
Water to make $\frac{1}{2}$ ounce.

To be taken in water thrice daily, after meals.

Sanatorium Treatment of Phthisis.—Muthu (*Treatment*, June, 1900) director of Inglewood Sanatorium, Isle of Wight, writes that many patients put on weight almost the first week. The average gain is from 6 to 8 pounds in 4 weeks. The best results are obtained if patients are treated in the early stage and the treatment is continued for at least 6 months. This new treatment does not suit all patients. Patients in the advanced stages have no chance of complete recovery. Consumptives with bronchial catarrh and incessant cough do not get on very well in the open air. Patients with a temperature below 100° F. do not run any risk in being exposed to fresh air. But if the temperature is above 100° F. or the evening temperature high and persistent, the open-air treatment should be modified.

Above all, the secret of success of the open-air treatment depends upon the strong personality of the medical attendant. Indeed, the man at the helm is such an important factor as to become quite indispensable to the treatment. The success depends upon the ability of the doctor to discriminate and to shape his treatment according to the physical and mental wants of each individual case; the patient must not be made to feel that he is merely an inmate of an institution the régime and regulations of which he has rigidly to observe, but, rather, that he is a well-liked guest, who, while conforming to certain rules of the house for the benefit of his health, is at liberty otherwise to enjoy life in his own fashion.

Vomiting of Pregnancy.—Neall (*Lancet*, February 3, 1900) has found the following combination useful:

R.—Potassium bromid 2 drams.
Solution of strychnin..... $\frac{1}{2}$ dram.
Chloroform water to make 3 ounces.
One-twelfth part to be taken in water 3 or 4 times a day.

Hypnotic Action of Apomorphin Without Nausea.—Douglas (*Merck's Archives*, June, 1900) states that apomorphin acts as a prompt and well-nigh infallible hypnotic, if injected subcutaneously in doses of about $\frac{1}{30}$ of a grain. Although this is about the average dose, yet for some patients this is too large, as it produces nausea, while in others a larger amount will cause no disagreeable symptoms. The dose should be so adjusted as to be large enough to produce sleep and small enough to avoid nausea. The sleep from this remedy is refreshing and restful. As its action is prompt, it is advisable to administer it when the patient is in bed or quite ready for bed. If a delirious patient refuses to go to bed, this hypnotic will cause him to voluntarily lie down in a few minutes, and sleep will follow. Its direct hypnotic action appears to last from 1 to 2 hours, but in many cases the patient will sleep all night, if promptly put to sleep by this remedy on going to bed. During the last 4 years Douglas has given apomorphin in private and sanatorium practice to 300 patients, during that time he has found but 2 or 3 individuals on whom it had but a slight hypnotic effect. The advantages of apomorphin as a hypnotic are: safety; promptness—producing sleep in less than half an hour, and frequently in 10 minutes; certainty of action in most cases, even in the wildest delirium; refreshing and natural character of sleep, and no danger of habit.

Rectal Injections of Codliver Oil in Tuberculosis.—Zauner (*Therapeutische Monatshefte*, June, 1900) has obtained good results from the rectal injection of digested codliver oil. The injections did not exceed 4 ounces and

were given once daily, an hour after a natural movement or after the bowel had been cleansed by a simple enema. The fluid was warmed and injected slowly, the patient being in the knee-elbow posture. The emulsion of oil should be alkaline or at least not acid. The following formula is recommended:

R.—Pancreatin..... 2 parts.
Inspissated ox-gall..... $\frac{1}{2}$ part.
Sodium chlorid $\frac{3}{5}$ part.
Water..... 20 parts.
Codliver oil..... 100 parts.

Digest for 2 hours.

Repeated Lumbar Punctures and Hot Baths in the Treatment of Cerebrospinal Fever.—The Paris correspondent of the *Therapeutic Gazette*, July, 1900, writes that Netter at a recent meeting of the Medical Society of the Hospitals called attention to the value of hot baths and repeated lumbar punctures in the treatment of suppurative cerebrospinal meningitis. Netter had observed 7 cases since May, 1899, and on the spinal column being tapped in the lumbar region, there was drawn off a yellowish liquid, which on being allowed to stand gave a yellowish deposit of pus containing the *Diplococcus meningitidis* of Weichselbaum. Sometimes a second puncture was made, and sometimes 8 to 10. The purulence and virulence seemed to diminish each time. A complete recovery was obtained in 5 cases; a sixth case presented subsequent ankylosis of two articulations which had been already affected during the disease. As for the seventh case, the symptoms observed showed that the ear, and more especially the labyrinth, was affected, and it was impossible as yet to be sure of the ultimate result. Excellent results were obtained from the use of hot baths. These were given at a temperature of 100° to 104° F. for a period of 20 minutes to half an hour, and administered night and day every 3 or 4 hours. This treatment should be applied as well to the serous as to the suppurative forms. The patient should, in case of need, be given injections of serum.

Acute Rheumatism.—Sansom (*Lancet*, April 21, 1900) recommends the following combination:

R.—Sodium salicylate..... 20 grains.
Aromatic spirit of ammonia..... 20 minims.
Camphor water..... 1 ounce.

To be taken every 2 hours until 6 doses have been taken or until temperature has fallen, and pain has ceased, subsequently to be taken every 6 or 8 hours. He finds that sodium salicylate is not incompatible with free ammonia or aromatic spirit of ammonia, and that the above mixture shows no decomposition and is readily taken by patients.

Creolin in Eczema.—Walsh (*The Therapist*, March 15, 1900) states that in eczema and other acute inflammatory conditions, creolin may be used as an extremely weak lotion, half a dram to the pint of warm water, sponged over the parts two or three times daily, and followed by a dusting powder of zinc oxid or calamin, 2 drams to the ounce of starch. To this it will be well to add a mild antiseptic, as salicylic acid (10 grains to the ounce), or eucrophen (30 grains to 1 ounce). As the inflammatory condition subsides, an ointment of creolin may be applied in a strength gradually increased from 10 to 30 minims to an ounce of vaselin. The chief point to remember in using creolin for acute conditions is to apply it well diluted and to combine it with soothing remedies, such as calamin. When the eczema becomes chronic or the disease is a scaly one, such as psoriasis, then creolin becomes a valuable remedy. Unna calls the tar compounds "reducing" agents, because they absorb oxygen and lead to the formation of healthy epithelium. Creolin may be rubbed into dry patches of the kind mentioned in a strength of $\frac{1}{2}$ to 1 dram to the ounce of vaselin. It may be advantageously combined with salicylic acid, especially when there is much scaling. In both sub-acute and chronic conditions it is well to add a mild mercurial preparation, as in the following formula:—

R.—Creolin..... 30 grains.
Ammoniated mercury..... 10 grains.
Vaselin..... 1 ounce.
Make into an ointment.

Original Articles.

MILITARY SURGERY.

By W. C. BORDEN ("EDRO"), M.D.*

Captain Medical Department U. S. Army; Professor of Surgical Pathology and Military Surgery, Georgetown University, Washington, D. C.

(Continued from page 252.)

At mid range lateral impingement of the bullet generally produces oblique fractures with little comminution, as shown in Figure 9.

Even at long range the small-caliber bullet usually produces complete fracture of the shaft with some comminution; though this is not always the case, as British surgeons in South Africa report some cases in which the Mauser has even made clean-cut perforations of this part of the bone.

EFFECT OF THE SMALL-CALIBER BULLET ON THE EPIPHYSES OF BONES AND ON SPONGY BONES GENERALLY.

In the extremities of long bones, the effect is quite different from that in the shaft. The lateral energy is not so well transmitted, and even at short range extensive comminution is rare. The almost clean perforation made by a Krag-Jorgensen bullet at extremely short range is shown in Figure 10.

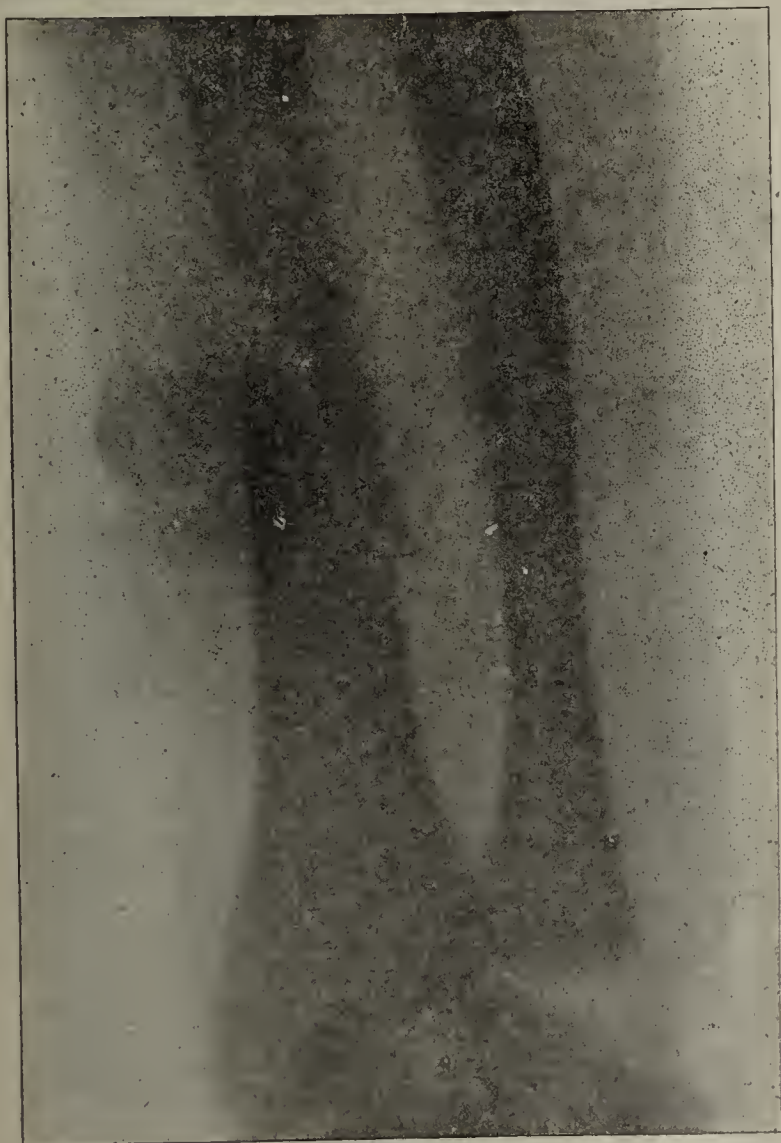


FIG. 9.—Radiograph showing oblique fracture of humerus from lateral impact of bullet; mid range.

As the shattering effect of the small-caliber bullet upon the articular ends of long bones is usually not great even at short range; at median and long range, clean perforation, guttering, or fracture without comminution is the rule in those parts of the bone.



FIG. 10.—Radiograph showing perforation of upper end of tibia by a Krag-Jorgensen bullet; range 10 feet. Girard¹⁸ reports a like effect in the lower end of the tibia at short range, and several cases of perforation of the epiphyses occurring in the Spanish-American War have come under my observation.

The spongy bones of the tarsus and metatarsus and other parts are seldom badly shattered at any range, and perforation without fragmentation is the rule. The bones of the face are almost as invariably perforated as cleanly as are the soft tissue, La Garde¹⁹ having made special note of this as a result of his experience in the Spanish-American War.

Before discussing the wounds of regions, the effect of deformed and deforming small-caliber bullets and lodged missiles and wounds by shell, shrapnel, revolver, saber, and bayonet have to be considered.

WOUNDS BY DEFORMED AND DEFORMING BULLETS.—As before noted, the compound bullet frequently ricochets with great force and though very resistant to deforming violence is often deformed by ricochet impact. (Figs. 1; Nos. 3, 4, 5, and 6.) When deformed it no longer produces typical wounds, but may produce extensive laceration both of the skin and subcutaneous tissues. (Fig. 11).

Wounds so made have undoubtedly often been attributed to the intentional use of deforming missiles of the dum dum type. These deformed bullets often make wounds so large that they may be thought to have been made by fragments of shell, and even when traveling with low velocity may shatter the shaft of a bone as badly as would the same bullet at short range when undeformed. (Fig. 12.)

* The paper signed "Edro" was awarded the Sander prize (a gold medal) for the best paper on military surgery, submitted for competition at the annual meeting of the Association of Military Surgeons of the United States, held in New York City, May 31 to June 2, 1900. The committee of award consisted of Brig.-Gen. J. D. Griffith, Surg.-Gen. N. G. Mo., Medical Director Geo. W. Woods, U. S. Navy; and Major A. C. Girard, Surgeon U. S. Army, and all papers were submitted to the committee with their *nommes de plume* only.

Aside from the extensive traumatisms produced by deformed bullets, the gravity of the wounds made by them is greatly increased from the fact that the bullets are usually infected from striking the ground or surrounding objects at ricochet impact; and from their irregular shape are very apt to carry dirt or pieces of

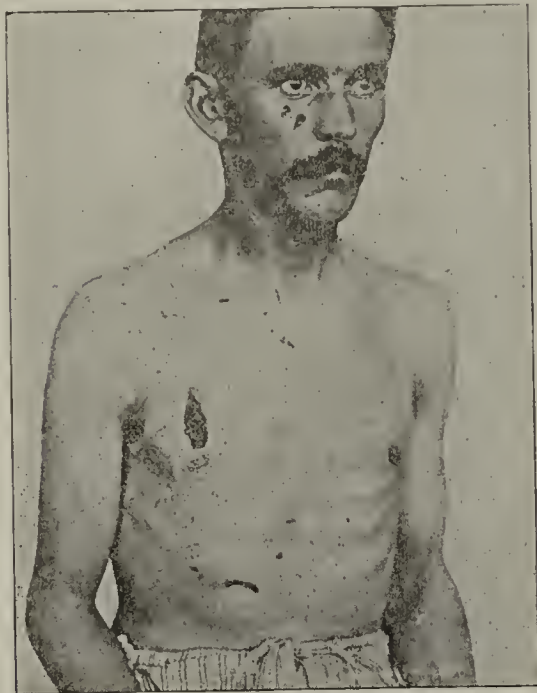


FIG. 11.—Wound by ricochet Mauser. Photograph by Acting Assistant Surgeon Edward J. Meyer, U. S. Pot. A. G. R., 7th U. S. Inf., was bending over rock on which bullet struck and ricocheted making large lacerated wound and fracturing seventh rib. Internal and external hemorrhage from lung. Air escaped through wound. Patient fainted, on recovery stuffed first-aid dressing and handkerchief into wound. Recovery complete at the end of two months.

clothing into the wound, while the latter is usually so large and ragged that it is easily infected. Similar properties are possessed and similar effects are produced by deforming bullets of the dum dum type.

It follows that the treatment of wounds made by deformed or deforming bullets cannot be along the same lines as that adopted in wounds made by undeformed bullets. The ragged nature and infection of the wounds will frequently necessitate active operative treatment—the removal of bone-fragments and contused and lacerated tissues and treatment by open antiseptic methods. Also amputation of extremities may occasionally be demanded on account of the excessive traumatisms produced, especially if accompanied by infection.

WOUNDS BY SHRAPNEL.—The shrapnel bullet now used is a soft lead bullet measuring 1.25 cm. in diameter and weighing a little over 11 grams (Figures 1: 8). The velocity of these bullets is low, being only that of the bursting charge of the shrapnel, and the bullet, therefore, belongs to the large-caliber, low-velocity type. Theoretically wounds produced by these missiles in the soft tissues should differ materially in their character, course of healing, and aseptic quality from those produced by the small-caliber bullet. Practically this is by no means always the case, as in the experience of the writer, of the seven shrapnel wounds seen by him in the Spanish-American war, but three suppurated and in these cases suppuration was the result of the removal of the bullet in the field. In the other 4 cases the wounds of entrance were so like those made by the small-caliber bullet and irritative symptoms were so lacking that, until the Röntgen-ray was used, the wounds were thought to have been made by small-caliber bullets. This is a strong argument for modern methods. Had these large lead bullets been probed for under septic conditions in the field, instead of being left undisturbed

under the impression that they were Mauser bullets, a very different result would probably have been chronicled.

From their low velocity, shrapnel bullets are usually deflected from their course by bones and rarely fracture them. This, however, does not always occur, as a case of clean perforation of the lower end of the femur without fracture, which came under the writer's observation, proved to have been done by one of these missiles—but such cases are undoubtedly rare. Neither is the destructive effect of these missiles upon organs always as great as might be expected from their size, as Treves¹⁶ reports the case of an officer in whom, although a shrapnel bullet passed through both liver and kidney, beyond a little collapse, some temporary tympanites and hematuria, no trouble of any kind appeared.

It therefore appears that wounds made by this missile should be treated along the same lines of those made by the compound bullet.

REVOLVER BULLET WOUNDS.—A small-caliber revolver has recently been adopted in most armies. With this weapon, wounds similar to those made by the small-caliber rifle may be expected, but from the shorter range of the arm and from its being carried only by cavalry, wounds from it will be comparatively few in number. Wounds by the old, large-caliber revolver will be still less frequent and will usually only occur as a result of accident, or homicidal or suicidal intent. The wounds made by this weapon closely resemble those made by the shrapnel ball.

LODGED MISSILES.

RIFLE BULLETS.—The penetrating power of a missile, depends upon its velocity, weight, sectional density and form. All these factors are such in the missile projected by the modern rifle as to give it great penetrating power. This is so great, compared to that of the old

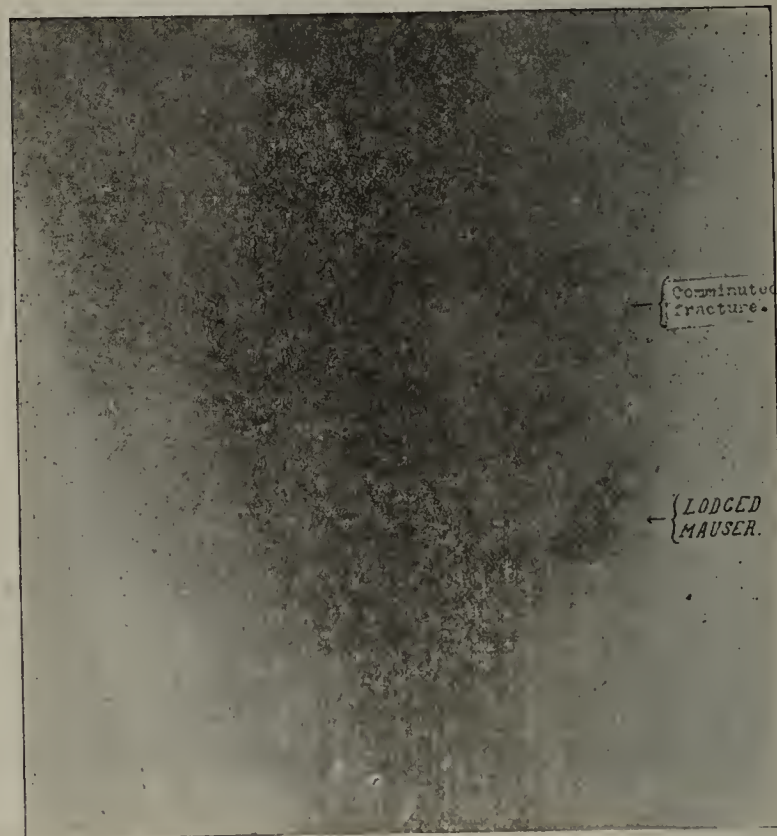


FIG. 12.—Radiograph showing comminuted fracture of femur by lodged, deformed, Mauser bullet. The wound was infected, 11 fragments of bone were removed and recovery with a shortened but useful limb resulted.

lead bullet, that while the Springfield lead bullet, caliber 0.45, at three feet from the muzzle will penetrate about three inches of oak, and that with marked deformation,

the new bullet will penetrate about 19 inches of the same wood and remain undeformed (Figure 13).

From its great penetrating power, experimenters argued that lodged missiles would be very infrequent in wars where the small-caliber rifle is used. There are, however, two main factors which determine lodgments



FIG. 13.—Relative perforating power of the small-caliber rifle bullet in hard oak at three feet from the muzzle.—(La Garde.)

of the ball: (a) low velocity either from long range or ricochet impact, and (b) deformation of the bullet.

The frequency of lodged Mauser bullets in the Santiago campaign has been commented upon by all surgeons who saw the wounded. In 198 Mauser wounds seen by me, there were 21 lodged bullets. On the other hand, in the Anglo-Boer War, reports up to the present (April 1, 1900) show an extreme rarity of lodged balls in the British wounded, though the Boers are using the same arm as did the Spanish. It was thought that the ammunition used by the Spaniards in Cuba was defective; but La Garde, in testing it to determine this point, found no defective shells. Lodgment of the missiles, therefore, must rest mainly upon the conditions under which the engagements are carried on. In my cases, with few exceptions, all lodged missiles which were removed, were found deformed, indicating that their velocity had been lowered by coming in contact with some obstacle before entering the body (ricochet). In several cases the deformity was so great as to cause surprise that the bullet could have retained sufficient velocity to produce a penetrating wound, and especially to shatter a bone as it did in some instances (Figure 12.)

In a number of cases I have seen the lodged bullets were found butt end foremost, showing that the missiles had impinged against some obstacle and turned end for end before entering the part (Figure 14).

It would appear therefore, that conditions of terrain and the manner in which the fighting is carried on will largely influence the percentage of lodged bullets. In wooded districts and at long range conditions under which much of the fighting was done at Santiago—many lodged missiles may be expected from low velocity due to long range or to impingement of the bullets against trees. Also, when men are in intrenchments or lying prone, bullets may strike the ground or trench before inflicting a wound. On the other hand, in an attacking force in the open—a condition which appears to largely obtain with the British in the Boer-War—the percentage of lodged missiles will be small.

With shrapnel, lodgment of the bullet is very common and fragments of shell and secondary missiles are also frequently lodged.

TREATMENT OF LODGED BULLETS.—It is well known that lodged missiles often become encysted in the tissues and cause no trouble. In other cases they produce trouble by inducing suppuration or cause pain or neuritis by pressure upon a nerve, or interfere with motion by implicating a joint. Also, knowledge of their presence sometimes gives rise to mental disquiet-

tude even though the bullet is doing no harm. In consequence, the questions for the military surgeon to determine are: (a) whether or not to operate for the removal of the foreign body, and (b) when the operation should be done. In reply to the first question, the answer is, *that a lodged missile should always be removed when it is producing distressing or dangerous symptoms, if its removal is possible and does not endanger life or necessitate operative traumatism which will produce effects more serious than will arise from allowing the missile to remain in situ.* It would be manifestly improper to allow a missile which is doing harm to remain in the tissues, provided it could be removed with safety to the patient; and equally, it would be unsurgical to remove, or attempt to remove, a missile when the operation would be more immediately dangerous or entail greater future dangers or discomforts to the patient than would the presence of the foreign body. In reply to the second question: as to *when* a lodged missile should be removed, the answer is that *a lodged missile should never be removed in the field or in the field hospital unless aseptic technic is available or the danger arising from its presence is greater than that likely to result from the infection which will occur as a result of operating under septic conditions.*

If lodged missiles are removed on the field or at the field hospital, infection nearly always occurs from the almost absolute impossibility of doing aseptic work under the conditions which obtain at the front. If infection occurs, recovery of the patient is delayed and even if no other serious results supervene, the functions of the wounded part are apt to be impaired in consequence of the cicatricial formations which result. Probably no single measure has done so much to in-

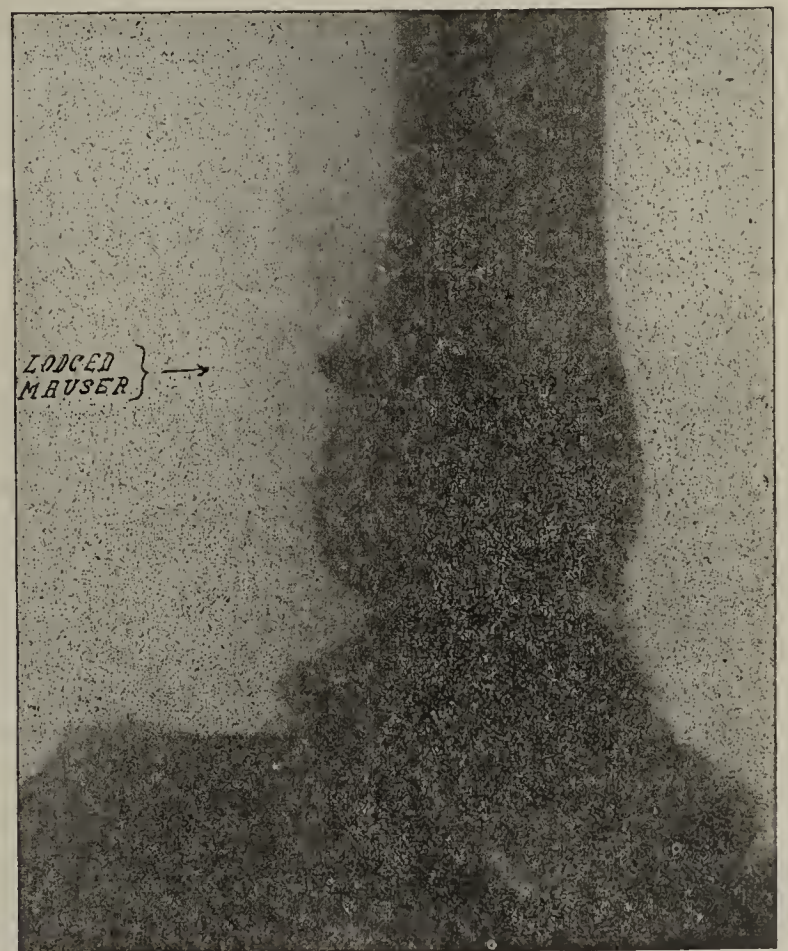


FIG. 14.—Radiograph of Mauser bullet imbedded butt-end foremost in the lower end of the tibia. There was no splintering of the bone, and the bullet was so firmly fixed that much force had to be used to dislodge it.

crease the gravity of gunshot wounds as the search for and removal of bullets, as was formerly the routine practice in military surgery.

The *probing of bullet wounds* should be entirely abandoned except in cases of urgent necessity. Recent experience has shown that most bullet wounds, even those made by large lead bullets, will generally heal without inflammation or suppuration if left alone. When it is necessary to search for a bullet, the operation should be conducted under conditions of rigid asepsis. But even then, it must be remembered that inflammation may be set up. La Garde and others have shown that while bullets in original packages are usually sterile, this is not the case after they have been handled and carried in the cartridge belt, and that firing infected bullets does not sterilize them. Also Habart, Delorne, and Taulhauber have shown that wounds made by the small-caliber bullet are seldom found free from minute particles of woolen, cotton, or linen fiber carried in from the clothing. All bullet wounds, therefore, may be considered as infected, but not to an extent sufficient to cause inflammation—the natural resistance of the tissues being usually sufficient to overcome the infection present in these cases. If, however, tissue resistance is lowered or recuperative work is interfered with by additional traumatism either by probes, instruments, or the finger, though these be sterile, inflammation may be set up in wounds which would otherwise go on to uninterrupted healing. For this reason it is usually better to remove a lodged missile through a new opening made directly over it, unless it lies directly in the entrance wound. It is here that the great benefits arise from the use of the Röntgen-ray, in that it makes possible the localization and removal of lodged missiles without interfering with the original wound.

When a probe has to be used, it should be remembered that, unlike the lead bullet, the steel jacket of the new bullet leaves no stain on the porcelain tip of a Nelaton's probe and that it is, therefore, frequently difficult with a probe to distinguish the bullet from the fragments of bone among which it may be lying. This has been remarked upon by Treves,¹⁰ who points out the advantage of the *telephonic probe* and states that he has used it to advantage in such cases with the wounded of the Anglo-Boer War.

The Röntgen-ray in the Localization of Lodged Missiles.—Immediately upon the discovery of Röntgen radiation, its application to the localization of lodged missiles was recognized and it was used by the British in the Terah and Soudan expeditions. Surgeon-General Sternberg supplied several of the larger military posts in the United States with apparatus, and, upon the outbreak of the Spanish-American War, the principal general hospitals and the hospital ships were furnished with these appliances. Their use has proved so valuable that the British are now using several in the Anglo-Boer war. The use of these apparatus has demonstrated that they are an indispensable diagnostic resource to the military surgeon. (Senn.) By their use, lodged missiles may be located without subjecting the patient to inconvenience, or to danger of infection from probing the wound. In fact, the Röntgen-ray has largely supplanted the probe and should entirely do so except in those rare instances where immediate localization of the bullet is demanded and the Röntgen-ray is not available.

The apparatus for the production of the Röntgen-ray are of two main types, the coil and the static. Both types have been used with success, but are totally unlike in construction.

A *coil machine* was used by the British in the Terah

and Soudan campaigns, and several were in use in the United States army during the war with Spain. In this apparatus, the primary electrical current is supplied either from primary batteries, accumulators, a dynamo, or from a local electrical installation. With the coil apparatus, either a primary battery must be used or the current from a dynamo must be available. The latter is rarely to be had at military hospitals other than those near large cities, but is always available on hospital ships. When a dynamo current can be had, a good coil machine is probably to be preferred to any other kind. In the absence of this source of electrical supply, apparatus operated by batteries gives excellent results. Battery apparatus have the advantage of being fairly portable and of being capable of installation at any hospital. The best type is that operated by the Edison-Lalande cells, as this battery gives the steadiest output of any primary battery now made.

In the *static machine*, the necessary current is produced directly by the revolution of large circular glass plates. This apparatus has the advantage of requiring no electrical plant or battery. It can be operated by hand, but the work is very tiring and motor power should be used. It gives excellent results, but from its size and weight it is adapted only to permanent hospitals.

The experience of the writer with different types of machines, leads him to the conclusion that the coil type operated by a dynamo is best for hospital-ships and for hospitals where a dynamo current is available, and that for base and general hospitals with no such current, a coil machine operated by Edison-Lalande cells will give the best results with least trouble and expense.

But even the most portable of these apparatus are bulky, heavy, somewhat difficult to transport, and their use requires considerable experience, and at field hospitals necessitates expenditure of time when surgeons are most busy with work incident to active operations. These disadvantages should not be considered were the benefits to be derived from the employment of these apparatus in field hospitals at all in proportion to the difficulties incident to their transportation and use. This, however, is not the case, for the benefits derived from using them at advance hospitals are confined to few, if any, cases, and the time, work, and transportation required for them can be better employed in other ways. This leads to the formation of the opinion that *Röntgen-ray apparatus should not be used at the front or at field hospitals*. This conclusion, in addition to the above reasons, is based upon the following: (a) Lodged missiles only in *extremely* rare cases require immediate removal; (b) that Röntgen-ray apparatus in the field are an additional incentive to surgeons to operate under conditions not adequately aseptic.

The necessity for noninterference with gunshot wounds at the front or in the field hospital has already been considered. This sentiment has been emphasized by no less an authority than von Bergmann; and Kuttner, as a result of his experience in the Greek War, states that their application in the field is very limited and that while they are of great importance for surgical aid in war, they should be installed in fixed hospitals only. In fixed hospitals and on hospital ships they can be properly operated and managed, and cases requiring their use can be transported to these hospitals and Röntgen-ray observation can there be followed, when necessary, by proper aseptic or antiseptic operative treatment.

This plan of locating and using Röntgen-ray apparatus

was exclusively followed in the Spanish-American War and with the best possible results.

Shell Wounds.—Treves, speaking of the British wounded of Spion Kop, says the shell wounds were the most terrible and the most difficult to treat.¹⁰

Shell wounds differ entirely in character from bullet wounds, and the mistake must not be made of supposing that they can be treated in the same manner. They are made by irregular fragments of metal, are lacerated and unlike bullet wounds are always infected, and if a bone is fractured the comminution is often very great. (Figure 15)

The infection present in these wounds necessitates that they be treated on lines of antiseptics rather than asepsis and consequently the same conservatism cannot be practised as with aseptic bullet wounds. Shell wounds in many ways resemble railroad traumatism and have to be treated on the lines of general surgical



FIG. 15.—Showing extensive comminution of lower end of humerus and upper part of ulna. A fragment of shell carried away all the soft parts at the back of the elbow and amputation was necessary.

principles. The amount of injury to the soft parts and bone have to be considered in connection with the infection, and active interference rather than conservatism has to be practised. The thorough employment of antiseptics, with removal of all bone fragments and careful treatment of the lacerated soft parts, will usually be necessary. Amputation will often be required in these cases, much more frequently, certainly, than in bullet traumatism.

The risks of conservatism in shell wounds involving bones are always great; for as these wounds are always infected the surgeon will have to decide in each case whether the benefits which may be obtained by conservative treatment overbalance the danger to the patient from osteomyelitis, septicemia, prolonged suppuration, and, in bad cases, recovery with a limb at best function-

ally defective from deep cicatricial formation. It is in this class of wounds that antiseptic methods and operative interferences will come most into play as savers of life or limb.

Saber, Bayonet, and Lance Wounds.—Wounds by these weapons furnish the smallest number of traumatism received in war. In the Civil War, among the Federal troops but $\frac{3.7}{100}$ of 1% of all wounds were due to these weapons. In the Franco-Prussian War, among the German troops $1\frac{3}{10}$ %, and in the Russian-Turkish War, $\frac{9.9}{100}$ of 1% were wounded by these weapons.²⁰

Unlike the wounds produced by bullets, these traumatism present no peculiarities which differ from traumatism frequently received in civil life. Their main characteristics resemble those of wounds inflicted by shells and may be considered in the same class, in that they are generally more or less lacerated, or involve a considerable extent of skin surface and are usually if not invariably infected. For this reason they are to be treated on general surgical principles, and especially by recourse to antiseptic methods.

WOUNDS OF REGIONS.

Aside from the character of wounds, the region of the body in which a wound occurs is an important element in considering its gravity and the prognosis of the case. This is due to the structural peculiarities of different parts of the body and to the presence in certain regions of important or vital structures or organs, injury to which may render a wound of grave importance. For this reason, consideration of the frequency with which different regions of the body are subjected to the traumatism of war and the comparative mortality of the wounds in each region, is of importance to the military surgeon. In Table 5, statistics relative to these points are given for two wars—the American Civil and the Spanish-American War. Statistics from the Anglo-Boer War will be of great interest as giving more complete conclusions, relative to the effect of modern weapons, than can be arrived at from the statistics of the Spanish-American War, where the wounded were much fewer in number.

WOUNDS OF THE HEAD.

Flesh wounds of the head may be considered of minor importance, as they rarely lead to fatal results. Of the 40 flesh wounds of the head reported in the Spanish-American War, none were fatal; and even in the Civil War, before the adoption of antiseptic methods, but 162 cases were fatal out of 3,496 flesh wounds of this part of the body.

Wounds of the skull or its contents cause a large percentage of deaths upon the battlefield; for in 64 killed in the Santiago campaign, where cause of death was reported, 26 were killed by gunshot of the head. These wounds also cause high mortality of the wounded (Table V). These immediately or remotely fatal results arise mainly from injury to the intracranial structures. The cranial contents are injured: (a) By direct effect of the missile; (b) by secondary injury from injury of the skull. Direct injury to the structures within the skull is due to direct destructive effect of the missile upon the structures through which it passes; and, in the case of bullets at high velocity, to this effect combined with lateral transmission of its energy (explosive effect). Thus the missile may cause death by striking some vital part of the brain or by severing a bloodvessel. The small-caliber bullet, when at high velocity, un-

doubtedly produces an explosive effect on the skull and brain. This is due to two factors: (a) explosive effect on the skull bones due to the fact that their compact structure readily transmits the energy of the bullet; and (b) from the same effect on the brain, which being a fluid-saturated organ also readily transmits the energy of the bullet, as was pointed out in the discussion of explosive effects. In consequence, there results, at short ranges, a more or less complete disruption of the brain and extensive fragmentation of the skull. The transmission of bullet-energy by the cranial bones is of great importance, for it frequently causes extensive fractures of the inner table of the skull, where the bullet

well, and that such operations have been numerous.¹⁰ In perforating wounds of the skull, the more obliquely the bullet enters, the greater will be the damage to the inner table, and even when the entrance and exit wounds are at right angles to the plane of the skull, the inner table is always more or less broken up at the aperture of entrance (Dent). In a certain number of cases, however, the small-caliber bullet penetrates or perforates the skull and the brain with little traumatic disturbance and with astonishing immunity to the person wounded. Numerous instances of perforation of the brain have been noted by observers during the Anglo-Boer War and the Spanish-

TABLE V.—NUMBER, REGIONAL DISTRIBUTION AND MORTALITY OF GUNSHOT WOUNDS IN THE WOUNDED WHO CAME UNDER TREATMENT IN THE AMERICAN CIVIL WAR AND SPANISH-AMERICAN WAR.

SEAT AND CHARACTER OF INJURY.		TOTAL NO. OF CASES.	PERCENT. OF FREQUENCY.	RECOVERIES.	DEATHS.	UNDETERMINED RESULTS.	PERCENT. OF MORTALITY.
Civil War.	Head:						
	Flesh wounds.	7739	3.14 } 4.9	6573	2676	2840	28.93
Spanish-American War.	Fractures.	4350					
	Flesh wounds.	40	2.86 } 5.07	51	18	2	26.1
	Fractures.	31					
Civil War.	Face:						
	Flesh wounds.	4914	1.99 } 3.82	7406	462	1548	5.87
Spanish-American War.	Fractures.	4502					
	Flesh wounds.	43	3.07 } 4.21	54	4	1	6.89
	Fractures.	16					
Civil War.	Neck:						
	Flesh wounds.	4895	1.99	3496	618	781	15.02
Spanish-American War.	Flesh wounds.	35	2.50	26	7	0	21.2
Civil War.	Injuries of spine.	642	0.26	279	349	14	55.59
	Injuries of spine.	8	0.57	3	5	0	62.50
Civil War.	Chest:						
	Nonpenetrating.	11995	4.87 } 8.23	13921	5373	970	27.85
Spanish-American War.	Penetrating.	8269					
	Nonpenetrating.	61	4.86 } 8.15	99	13	2	11.6
	Penetrating.	53					
Civil War.	Abdomen:						
	Nonpenetrating.	4748	1.93 } 3.43	3455	3293	1690	48.80
Spanish-American War.	Penetrating.	3690					
	Nonpenetrating.	20	1.43 } 4.57	35	29	0	45.31
	Penetrating.	44					
Civil War.	Perineum and genital:						
	Injuries of pelvis.	1494	0.60 } 1.27	2194	930	36	29.77
Spanish-American War.	Flesh wounds of genitourinary organs.	1665					
	Perineum and genital.	7	0.50	7	0	0	00 0
Civil War.	Back:						
	Flesh wounds of back.	12681	5.15	10883	800	998	6.85
Spanish-American War.	Flesh wounds of back and hips.	108	7.72	106	2	0	1.9
Civil War.	Upper extremities:						
	Flesh wounds.	54801	22.29 } 35.68	80090	5608	2095	6.54
Spanish-American.	Fractures.	32992					
	Flesh wounds.	289	20.96 } 30.66	426	1	2	0.20
	Fractures.	140					
Civil War.	Lower extremities:						
	Flesh wounds.	59139	24.06 } 35.13	73665	11813	935	13.82
Spanish-American War.	Fractures.	27274					
	Flesh wounds.	354	25.30 } 36.02	499	8	6	1.60
	Fractures.	150					

has "guttered" or grazed the outer table only. Particular attention is called to this by Dent,¹⁷ who remarks upon the number of British wounded in the Boer War, in whom the outer table was simply grazed or "guttered" and yet the inner table was extensively fractured or splintered. He strongly recommends that every case where the skull is "guttered" or even slightly grazed be trephined, for the reason that injury to the brain is almost sure to have occurred, and states that when this is done the extent of underlying damage has usually excited astonishment. Further, he states that this course of treatment has been followed by excellent results. Treves, in speaking of his experience in the same war, states that, generally speaking, operations upon the skull for gunshot wounds have done exceptionally

American War. These perforations were not confined to any particular line, but on the contrary were in almost every direction, and yet recovery followed in many instances. Traumatism of this character are undoubtedly produced by the small-caliber bullet only when at low velocity. They correspond to the perforations made in compact bone, or fluid-saturated organs by that bullet under similar conditions. The tolerance of the brain to the injuries inflicted in this way and even to lodged bullets is sometimes remarkable. This is instanced in a case reported by Girard and published by Forwood.¹ (Fig. 16.) These wounds of the brain and similar ones of the abdomen have produced the greatest surprise and have been the most commented upon by military surgeons.

They really, however, furnish only a small minority of cases and their remarkable character, rather than their frequency or importance as factors in accounting for a lowered mortality of the wounded, is the reason for the great interest they have excited,

It has been shown by Table II, that the mortality of the wounded has been greatly decreased in recent wars.

Large-caliber rifle used :

Civil War.

Federal troops, of the wounded, 6.7 recoveries to 1 death.

Franco-Prussian War.

German troops, of the wounded, 8 recoveries to 1 death.

Small-caliber rifle used :

Spanish-American War.

American troops, of the wounded, 14.1 recoveries to 1 death.

Anglo-Boer War.

British troops, or the wounded, 19 recoveries to 1 death.

(Up to January 27, 1900.)

The question arises as to whether the decreased mortality of the wounded in war since the adoption of the small-caliber rifle is in any part due to a decreased mortality among those of the wounded who have sustained injuries involving the skull or brain. Statistics

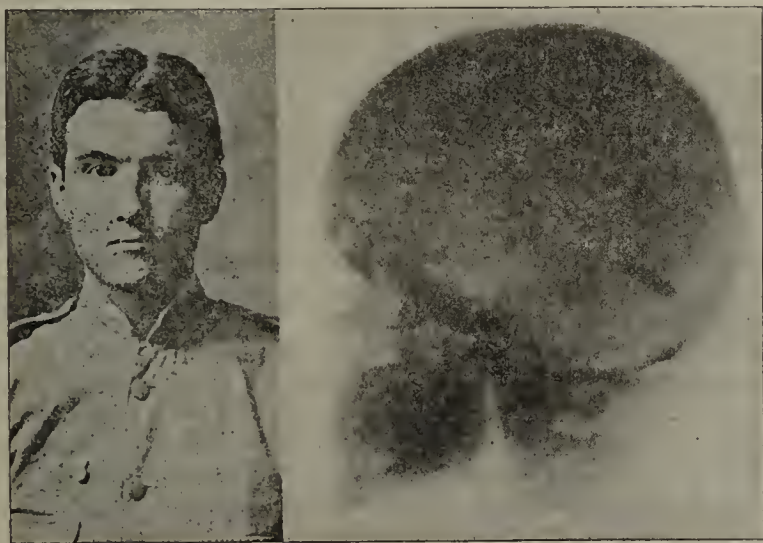


FIG. 16.—Photograph and radiograph of Private J. G., 1st Neb. Vol. Mauser bullet entered above left eye and lodged in brain to left of median line. Recovery with no paralysis. Photograph taken 15 months after receipt of injury

on this point from the Anglo-Boer War are not available, but the statistics of the *Spanish-American War* show practically as high a mortality of the wounded who received skull or brain injuries as has occurred since the *Crimean War*. (Table VI.)

TABLE VI.—NUMBER OF CASES OF WOUNDS OF THE HEAD INVOLVING THE SKULL OR ITS CONTENTS, AND THE MORTALITY IN THIS CLASS OF WOUNDS.

	NUMBER.	DIED.	PER-CENTAGE OF DEATHS.
Crimean War—English	230	170	73.9
Crimean War—French	440	546	73.8
Italian War—French	258	119	46.1
Civil War—Union forces	4,022	2,459	61.2
Franco-Prussian War—Prussian troops .	1,527	783	51.3
Spanish-American War—American troops.	31	18	58.4
Average mortality	..	..	60.7

From this it may be stated that notwithstanding the advantages of modern surgery the greater destructive effect of the small-caliber rifle has maintained the gravity and fatality of wounds of the skull and brain. It

may be that full statistics of the Anglo-Boer War will modify this statement to some extent, but the statistics show that the occasional occurrences of recovery after gunshot wound of the skull or brain should not blind the military surgeon to the extreme gravity of these cases.

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¹⁸ Girard, A. C.: *Annual Report Surgeon-General, U. S. Army, 1897.*

¹⁹ La Garde: *Boston Medical and Surgical Journal, 1899.*

²⁰ Coustan: *Chirurgie de Guerre, Paris, 1897.*

(To be concluded.)

THE SCOPE AND AIM OF THE WORK OF THE SECTION OF TROPICAL DISEASES.¹

By COLONEL KENNETH MACLEOD, M.D. (RET. I.M.S.)

President of the Section.

THE war in South Africa has stimulated into vivid reality the unity and solidarity of the British Empire. The imperial idea implies not only a community of interest—social, commercial, and political—between the mother country and her colonies and dependencies, but also a community of suffering; and as tropical conditions and tropical diseases prevail in Great Britain to such a large extent, the study of these as they affect both the governing and the governed has come to be recognized as a matter of vital and cardinal necessity.

A knowledge of the pathology and pathogenesis of disease must obviously precede and guide preventive and curative effort; and it cannot be too loudly proclaimed that this knowledge can only be obtained by systematic scientific research. The days of casual and statistical observations and dissertations have gone, and it is now universally understood that nothing will avail for the solution of pathologic problems except the undistracted work of trained agents provided with ample opportunities, facilities, and appliances. The recent history of malariology, to employ a new and expressive term, is a signal illustration of the dependence of sanitary and therapeutic endeavor on pathologic discovery. Laveran in 1880 furnished the key to the morbid processes which in malarious disease take place within the body by the discovery of the plasmodium malariae. Manson and Ross pioneered the brilliant investigations which have revealed one, if not the one, means by which this organism leaves the infected subject, lives and breeds in outer nature, thus compassing the communication of what must now be admitted to be an infective disease. It is interesting to observe how this knowledge is being at the present time turned to practical account, and how it explains and gives precision to methods of prevention and cure which had previously been resorted to empirically. Koch, in the Dutch Indies and German New Guinea, has been attacking the plasmodium within the human host, and claims, by destroying it in that phase or stage of its existence, not only to cure the individual, but to reduce greatly, or altogether abolish, the prevalence of malarious disease in the community. Sambon and Low, in Italy, are addressing themselves to the extrasomatic life of the parasite, and endeavoring by special contrivances and precautions to cut the morbid circuit outside the body. The results of the proceedings of Drs. Sambon and Low will be eagerly watched, as they will contribute an important aid to the solution of the question whether the *Anopheles* is the only medium of malarious infection, and if so, whether this occurs invariably by inoculation.

The South African war has forced into prominent and painful attention two diseases which, although they cannot be called tropical diseases, manifest themselves with special severity as regards incidence and fatality under tropical conditions—namely, enteric fever and dysentery. The theater of the war—the uplands of South Africa—cannot be classed, either as regards position or physical characters, as tropical. Malarious disease, the special and predominant product and index of tropical countries, is conspicuous by its absence among the causes of disability and death occurring in the British Army of South Africa. But the meteorologic con-

¹ An address delivered at the annual meeting of the British Medical Association at Ipswich, July-August, 1900. From advance sheets by courtesy of the *British Medical Journal*.

ditions which obtained during the early months of the campaign were most aptly described by the term "tropical." Sunstroke and sun fever were very common. I have endeavored to ascertain whether these cases were all or mostly cases of heat shock, and whether any considerable number of them presented the phenomena of heat fever—so-called "siriasis"—and, if so, whether these occurred in epidemics or appeared to be communicable. I regret to say that I have not succeeded in obtaining any information on these points. The cases which I have met with at Netley have presented a similar history and similar sequelæ to those received from India. Perhaps, when the medical history of the campaign comes to be compiled, some facts bearing on these questions may be forthcoming. I allude to the matter here and now in the hope of eliciting information.

That enteric fever existed in South Africa and was apt to prevail in South African towns and cantonments during the summer months was well known, and its appearance among the troops engaged in this war was fully anticipated; but the excessive prevalence of the disease in a country and climate with a reputation for exceptional healthiness has come as an unpleasant surprise. No doubt the circumstances and exigencies of warfare are mainly responsible for the heavy tribute of sickness and death which enteric fever has levied. War shares with famine the malignant power of enhancing the susceptibility to whatever infection happens to be present at the place and time.

Enteric fever has been in grim evidence during recent wars on the Indian Frontier and in the Egyptian Soudan; but malaria, cholera, yellow fever, and dysentery have on other occasions been stimulated into disastrous activity by war. So with famine: malarious disease, smallpox, diarrhea, dysentery, and relapsing fever have attended or followed it, and at the present time cholera and plague are raging among the famine stricken in India. The infection of enteric fever seems to be ubiquitous, portable, and peculiarly facile, and subtle; and perhaps the most urgent question of the hour is how to mitigate its prevalence in the British army, in which in times of peace it causes one-third of the mortality.

It is important to note that a very marked contrast exists between the ordinary incidence and mortality of the disease in temperate and tropical or subtropical countries—in England and Canada on the one hand, and in India and Egypt on the other. A similar contrast appears in the French army stationed in France and in Northern Africa. How much of this great excess is due to tropical conditions, topical and climatic, and how much to remediable sanitary defects it is not easy to say.

But, side by side with the excessive suffering of the army in India we are confronted with the remarkable fact of the immunity of the native population. Whether a similar immunity exists among indigenous races and habitual residence in South Africa is an interesting question. Evidence seems to indicate that it is so. The native immunity in India, though not absolute, is undoubted; its cause has not been satisfactorily ascertained. It has been attributed to habituation to minute dosage of the contagium, to protection conferred by attack during infancy and childhood, and to racial resistance acquired in the course of generations through both these influences. Some experiments by Freyer and others indicate that natives give positive reactions to Widal's test; but more extended and exact investigations on this point are desirable. It is quite certain that the immunity of natives is not due to superior sanitary conditions. Whether a similar immunity—temporary or permanent—can be engendered in European subjects by a process of inoculation such as has been devised by Professor Wright, of Netley, and practised on a large scale among soldiers proceeding to the seat of war, is a question, the reply to which is awaited with eager anxiety. Some figures obtained from Ladysmith have been published by Professor Wright, which seem to show that some immunity is conferred by these inoculations, but though encouraging, they are by no means demonstrative. Similar procedures for creating an immunity against cholera and plague initiated by Professor Haffkine, have in India been attended with satisfactory results. But although a certain measure of preventive success has been obtained by these inoculations, the employment of them appears at present to be practicable and useful only as an emergent expedient in the presence of a serious outbreak; and the prevention of cholera, plague, and enteric

fever on a large scale must apparently be essayed on other lines and by other methods.

Dysentery has been very rife in the South African army, but the disease has exhibited mostly a mild type and been amenable to treatment. In some camps it has presented the aspect of an epidemic or infectious disease; but whether the infectiousness is apparent or real—due to common exposure to certain noxious conditions or to communication from man to man of some specific contagium—it is impossible in the absence of knowledge regarding the nature of the contagium or contagia of dysentery to say. The dysentery of war and famine is believed to be infectious, but notwithstanding much able and laborious research we have yet much to learn concerning the pathology and causation of dysentery. Imperfect conservancy, foul water, alternations of temperature, exposure, fatigue, and bad food, which are undoubtedly adjuvants if not factors of dysentery, have been in baneful operation in this war, and a new disease resembling dysentery has been described under the name of "dust colic." This seems to be a mucoenteritis caused by the swallowing with water and food of irritating particles of grit blown about by dust storms. The presence of the grit in the evacuations does not seem to have been sought for or found.

The persistence of plague in India and the appearance of the disease for the first time south of the equator—in Mauritius, South Africa, South America, and Australia—are events deserving of special notice. The disease has, during its present prevalence, confined itself mostly to warm and hot countries, and, though not exclusively a tropical disease, nor likely in the tropics to be at its worst when conditions are most typically tropical, it appears to find in tropical countries and circumstances the most favoring environment. It is curious to remark that, while in India natives appear to be readily susceptible to the infection of plague, Europeans, though not absolutely insusceptible, exhibit a comparative immunity—the reverse of what happens as regards enteric fever. This immunity is doubtless what I venture to call a sanitary immunity, due to a purer, personal, domestic, and social life, and perhaps to circumstances and habits rendering admission of infection less easy. This kind of immunity is also observable in some places—in Calcutta, for example—as regards cholera. How far an immunity of this sort is capable of being achieved as regards the infection of enteric fever, it is not easy to say. Certainly, it has not been accomplished as yet in India or Egypt. The Bermudas used to render the highest ratios of enteric prevalence and mortality, but within recent years considerable reduction of these rates has occurred through sanitary reforms in the matter, specially of water conservancy and sewage disposal. Similar causes have reduced the burden of enteric suffering in the French army of Algeria, and the power of sanitation has also obtained signal illustration in the banishment of beri-beri from the Japanese navy. Great Britain appears also to have acquired an immunity against cholera through sanitary reform and effort. These experiences are full of encouragement and hope.

Our concern is not only with exclusively tropical diseases, many of them strangely named, and imperfectly investigated and understood, which may be encountered and contracted in hot places where Europeans are compelled to reside for purposes of protection, administration, or commerce, and are not, as a rule, met with outside of the tropics. More important are those diseases, originally or essentially tropical, which may be disseminated by intercourse with the tropics, and may prevail for a time in extra-tropical localities in which they are not habitually present. And, finally, there are the diseases which are not specially tropical, but which are liable to be aggravated in prevalence or severity by tropical conditions. These three classes represent a wide field of research, and in addition interesting questions arise, as regards diseases which, common elsewhere, are rare or unknown in tropical countries.

The field of study thus presented has its scientific and humanitarian aspects, and its cultivation has become an essential part of the business of imperial administration. It embraces not only acute infections and the sequels or constitutional capacities resulting therefrom, but includes also those conditions affecting health and life which are vaguely designated as climatic, remediable only by adaptation, or which arise from sanitary defects or neglects capable of more easy amelioration. Hygienic improvements, personal, domestic, and social, have undoubtedly raised the standard of health

and the value of life in the tropics, and residence and service in hot countries offer fewer and less formidable risks than they did in times past. But behind the question of individual impunity looms the question of colonization or the continued vigor and vitality of the race when transplanted from temperate to torrid zones. The solution of these weighty problems constitutes the reason and purpose of our distinct sectional existence.

INTERRELATION OF PATHOLOGY AND BACTERIOLOGY.¹

By E. E. KLEIN, M.D., F.R.S.

Lecturer on General Anatomy and Physiology, Medical School,
St. Bartholomew's Hospital; President of the Section.

PATHOLOGY, in its analysis of the nature of the tissue changes, has been influenced, it is admitted, to a not inconsiderable degree by the progress made in bacteriology within the last two or three decades. Pathology, no less than, and in no way different from, other biological sciences, intent on answering the "what," as also the "why," asks not merely what is the intimate nature of a particular change and aberration of a tissue or organ from its normal or physiological state, but also, and in a higher degree, why this change, and what its cause? Why a particular alteration in one, another in another instance? Microscopic and experimental analysis have both been active in discovering some fundamental facts, but have left numerous gaps in this study, and it is by the aid of bacteriology—since it became, thanks to the foundations laid by Koch, an exact science—that these gaps are being closed up, or at any rate that the manner and method are indicated by which these gaps may, and probably will, be filled up.

1. *Inflammation*.—For more than a century inflammation, by the aid of the improved microscope, and by experimental work which had occupied a host of active minds and of great experimentalists, was being analyzed in all its elements: the part that the vascular system, that the tissues, that the nervous mechanism play in establishing the peculiar alterations constituting the phenomena of inflammation, suppuration, and their sequels; thereby an enormous number of facts were brought to light, by which the understanding of these particular aberrations from and return to the normal conditions became clearer, or were believed to have become well understood. It is now admitted, however, that with the exception of traumatic, thermic, and chemical agencies, the chief, if not the sole, cause of the changes of the vascular apparatus and the surrounding tissues constituting inflammation, inclusive, of course, of suppuration, are microorganisms, which, either by their chemical activity—producing substances which exert a toxic action on the vascular system or the tissues, or both—or by the toxic nature of the protoplasm of the microbes themselves, lead to the abnormal interaction between the vessels and the tissues, manifesting itself in the exudation of fluid and formed elements of the blood and the progressive or retrogressive changes of the tissue elements themselves.

It is one of the best-proved acquisitions in bacteriology that many microbes, either when growing and multiplying outside or within the tissues, produce toxins which in the tissues set up the phenomena of inflammation either locally or generally. This applies not only to those microbes which are specially and in the narrower sense connected with suppuration and abscess—for example, various species of pyogenic staphylococci, streptococci, and bacilli, but also to other specific pathogenic microbes like the diphtheria-bacillus, the tubercle-bacillus, tetanus-bacillus, typhoid bacillus. Koch's tuberculin, the diphtheria-toxin, the toxins of many other microbes produced in the test-tube, and then injected into the tissues produce typical inflammation. The same has been shown of the dead protoplasm of many microbes—for example, tubercle-bacillus, cholera vibrio, *Bacillus pestis*, and others, as also of some ordinary saprophytes, namely, that the dead bodies of these microbes contain pyrogenic and pyogenic substances capable of producing typical inflammation.

Another set of phenomena of which an explanation is supplied by bacteriology is one well known in the study of inflammation, that is the greater or lesser number of leukocytes in some inflammatory foci. It is well known that while some inflammations are characterized by copious transudations with few leukocytes, others on the other hand are associated with copious accumulation of leukocytes, as in suppuration. The phenomenon of chemotaxis seems to offer a good explanation for these differences, that is to say, while some microbes or their toxins powerfully attract leukocytes from the blood and connective tissues, others have no such effect or possess even the reverse, namely, negative chemotaxis. In a similar manner Pfeiffer first classified the effects of chemical substances on lower organisms.

2. *Necrosis*.—The most valuable and earliest observations were those of Roux and Yersin, showing that the toxin produced by the diphtheria-bacilli has a powerful necrotic action on the tissues. The further demonstration of the actual presence of the toxin in the diphtheric membrane supplied at once the simplest and most feasible explanation of the necrotic condition of the mucous membrane in diphtheria, namely, the multiplication of the diphtheria-bacilli at a particular locality—be it the fauces or larynx, or trachea or bronchi, or any other membrane—causes the production of the toxin, which in its turn causes the inflammation and further the necrosis of the membrane. But this action, namely, localized inflammations leading to gradually progressive necrosis of the tissue elements, is not peculiar to the diphtheria-bacilli and their toxins, for it is almost a common character of many if not most pathogenic microbes; it is observed in connection with almost all hitherto known pathogenic bacteria, tubercle, glanders, leprosy, pseudo-tubercle, pathogenic cocci, and bacilli of various kinds. It is this progressive necrosis of the tissue following the typical symptoms of inflammation: congestion, stasis, diapedesis, and emigration of leukocytes which is observed, granted the necessary number and virulence, as the effect of the action of many pathogenic microbes, inasmuch as at a particular locality—primary as well as secondary foci—so long as their multiplication proceeds and their toxins are being produced in increasing amounts the necrosis of the tissue spreads into larger and larger areas. In nonmicrobic inflammations, on the other hand, this necrosis is local and circumscribed, being due to the direct action of the noxious agent—thermic, chemical, or traumatic—and its action is limited to the part actually attacked or its immediate surrounding. The necrosis itself appears in both series, however, of the same essential character, namely, coagulation of the protoplasm of the tissue cells, inclusive of the vessels themselves, and a gradual disintegration and destruction of the cells as also of the intercellular ground substance. These phenomena have been well observed in the case of a number of pathogenic microbes. Another not less important set of appearances associated with the necrotic change caused by bacteria is the secondary leukocytosis and suppuration; and for this the chemotactic action that the necrosed tissue exerts on leukocytes, attracting these for one reason or another, probably as scavengers and removers, offers a ready explanation.

3. *Specificity of Cell Secretions*.—Until recent years it was generally considered that a specificity of cell secretions is one of the fundamental phenomena of the physiologic or normal tissues. Behring, Kitasato, Brieger, Roux, Ehrlich, and many others have, however, shown that under the activity of many pathogenic bacteria and their toxins in an affected body a curious and important series of secretions on the part of the cells of the tissues takes place which is as specific as those others associated with the normal life, I mean, the production of specific antitoxins and the production of specific agglutinins. It was further shown that not only under the stimulation of the cells by bacteria and their toxins are those specific antitoxins secreted, but that organic substances like abrin, ricin, venom, are capable of stimulating the cells to a like production of specific antitoxin. Moreover, quite recently a further highly interesting series of facts has been brought to light, namely, that particular tissue taken from one animal body and introduced into another causes a specific reaction, showing itself in this that the living cells of the latter produce under the particular stimulation substances specifically acting on the particular tissue that has caused the stimulation. Illustrations:

a. Injection of ciliated epithelium of the trachea of the ox

¹ Introductory remarks made at the opening of the Section of Pathology, at the annual meeting of the British Medical Association at Ipswich, July-August, 1900. From advance sheets by courtesy of the *British Medical Journal*.

into the peritoneal cavity of guineapigs produces a definite change, inasmuch as in a second injection of similar epithelium the ciliary movement is stopped and the cells destroyed in a markedly shorter space of time than in a normal animal; the same action takes place *in vitro*: here the same difference between normal serum and specific serum is demonstrable.

b. Metchnikoff shows that rat's spleen injected into guineapigs produces serum which is capable of agglutinating and dissolving leukocytes of the rat.

c. Funck shows that repeated intraperitoneal injections of rabbit's spleen into guineapigs in ascending doses produces a serum which *in vitro* has specific cell-destroying—cytolytic—action on both lymphocytes and polynuclear leukocytes of the rabbit, whereas red bone marrow of rabbit produces when administered in the same way a serum which has a greater action on polynuclear leukocytes than on lymphocytes.

From these experiments it is clear that by certain pathological processes the tissue cells are capable of being so altered that their secretions assume a specific action not possessed by them before.

THE TEACHING OF PHARMACOLOGY.¹

By WALTER G. SMITH, M.D.

President of the Section.

THREE lines of inquiry which have been followed in the past and must be pursued in the future, namely:

1. Experiments on lower animals.
2. Statistical observations of the results of treatment, and
3. Individual observations at the bedside.

TEACHING OF MATERIA MEDICA.

The rise and growth of the science of pharmacology, which was founded by Bichat and Magendie early in the century, has made it plain that all correct appreciation of the mode of action of drugs must be based upon physiology and pathology. The new departure has gradually leavened our conceptions of therapeutics, and renders the teaching of this branch alike more intelligible to the student and more satisfactory to the teacher. Comparing the teaching of materia medica and therapeutics thirty years ago with the present time, three features stand out prominently:

1. The retrogression of descriptive materia medica in its restricted meaning.
2. The establishment of special courses in practical pharmacy at the medical schools, conducted in suitable laboratories.
3. The development of pharmacology in its present acceptance—that is, the scientific investigation of the modes of action of drugs.

I protest against undue neglect of what may be termed old-fashioned materia medica—that is, description of the *essential* properties and chemical nature of drugs, so far as these elucidate the action of the remedy or its relations to prescribing. A modern course of lectures on materia medica should most certainly be founded on the bed-rock of pharmacology, that is, physiology; but there is still room—nay, I think, necessity—for practical demonstration of the physico-chemical properties of drugs, and we need not even be ashamed of inculcating the utility of some familiarity at least with the pages of the *British Pharmacopeia*, which it is the fashion of some to despise or decry.

With a little thought and trouble numerous simple experiments, chiefly chemical, can be shown in illustration of the more important physiologic and therapeutic properties of drugs. General principles can be laid down, alliances pointed out, and broad features sketched, which connect together large numbers of drugs, into the individual details of which it would be wearisome and a waste of time to enter.

Take, for example, antipyretics and their mode of action; or the local action of astringents and caustics, experimentally illustrated by the reactions of various acids, and metallic salts upon solution of albumen. Or, again, the group of "aromatic compounds," where it is possible to give a brief but comprehensive survey of the general chemical and physiological relations of the subdivisions of this great group—namely, hydrocarbons, phenolic compounds, acids, and nitrogen derivatives (alkaloids, etc.). And in this aromatic group, which includes the antipyretic drugs, there is abundant opportunity for drawing attention to many interesting points in illustration of the connection between physiological action and chemical constitution.

PHYSIOLOGICAL ACTION AND CHEMICAL CONSTITUTION.

Since the properties and motions of molecules which determine physical properties depend upon the motions and properties of atoms which determine chemical reactions, the same common laws must govern both physical and chemical phenomena. And no one can doubt that the properties of the most complex compounds depend upon, and are intimately correlated with, the properties and configurations of the atoms and molecules of which the aggregates are built up. Bit by bit—here a little, there a little—we are gathering the kind of material which can best help us to gain insight into the principles of therapeutics. The problems of therapeutics, and for that matter of all biology, are, at the root of things, essentially chemical or physico-chemical, in so far as we are at all able to interpret them or refer them to general laws. Different effects produced upon the senses of smell, taste, and sight are coincident with differences of arrangement in the molecules of the respective compounds which are built around a common nucleus.

Innumerable difficulties still await an answer, for example, Why should saccharin, which is an "ortho" compound be so sweet, while the "para" compound is devoid of sweetness? Still we can assert that great progress has been made in expressing the laws of mixture, combination, solution, dissociation, and chemical transformation on a generalized basis, and chemistry and chemical physics are gradually being brought under the sway of dynamical laws.

PHYSICAL CHEMISTRY AND THERAPEUTICS.

We have to take into account not only the number and kind of atoms in the molecule, and their interior arrangement and grouping (constitution), but certain physical properties of compounds previously inexplicable have found their explanation in another development of chemical theory which has proved extraordinarily fertile. The doctrine of the spatial configuration of the molecule has done much to elucidate the difficult problems of isomerism in organic chemistry, and we cannot doubt that it will shed light upon chemical transformations occurring in the organism.

A PROTEST.

The flood-tide of discovery of new synthetic chemical remedies has, together with a few treasures which have risen on its crest, also washed on shore much rubbish of a pseudoscientific sort. Are we not daily worried with samples, and with advertisements and circulars from eagerly competing firms, announcing new drugs or novel combinations, which I fancy, are used chiefly by those who do not know how to employ the old ones? Scarcely are they advertised once before they are elbowed away by importunate newcomers. The advertisement is headed with an enigmatical name, standing over an appalling chemical formula, and probably ornamented with a structural or graphic diagram. All this is backed up by a plausible show of original experimental work, and ends with a "full literature." And not only are we plagued with innumerable circulars which choke our waste-paper baskets, but we are tormented during our consulting hours at home by the visits of smooth-tongued touting agents of many of the large firms.

This most objectionable practice is on the increase. It should, in my opinion, be stamped out by the medical profession, and I avail myself of this public opportunity to protest against it.

¹ An address delivered to the Section of Pharmacology and Therapeutics, at the annual meeting of the British Medical Association at Ipswich, July-August, 1900. From advance sheets by courtesy of the *British Medical Journal*.

SOME PROBLEMS IN RURAL SANITATION.¹

By JOHN C. THRESH, M.D., D.Sc., Etc.

Medical Officer of Health, Essex County Council; Lecturer on Public Health, London Hospital Medical College; President of the Section.

THE growth of large manufacturing centers with the influx of rural laborers into towns, and the general neglect of purely agricultural pursuits, must in this country produce some marked effect. That this effect will neither conduce to increased health nor longevity can scarcely be denied; hence it is a result which we must deplore. The country has already reached a condition in which the population far exceeds that which can be fed by its produce, and the condition is being aggravated year by year by the increasing population and continuous neglect of agriculture, and I am afraid will continue until we receive a rude awakening, an awakening which in all probability will stagger humanity.

Our purely rural population is slowly decreasing, our urban population is rapidly increasing; therefore year by year the feeding problem becomes more serious. This is a fact so well recognized that its very familiarity is producing contempt. It is well, however, that we should from time to time be reminded of the fate upon which we appear to be almost blindly rushing. Sanitary improvements, unfortunately, tend only to aggravate the evil and hasten on the day of reckoning. So much attention has been devoted to urban sanitation that the town dweller enjoys now many advantages not possessed by those who remain in the country, advantages which tend to prolong life, increase health, and, generally speaking, make life better worth living. For example, in most of our towns every house is efficiently drained and abundantly supplied with pure water, rendering it possible, with the minimum of trouble, to keep a house and its surroundings sweet and clean, and therefore healthy. In our villages and rural districts nuisances from the improper disposal of filth abound on every side, and the water-supplies too often are unsatisfactory in quality as well as in quantity.

Land is going out of cultivation and decreasing in value, yet it is often impossible to obtain a small quantity to effect sanitary improvements. Let a plot be required in order to provide cottages with ground upon which to dispose of the slops and house refuse, or for the erection of better houses for the laborer, or for the erection of an isolation hospital, and it is often almost impossible to obtain it. Landowners refuse to sell small areas for such purposes, yet, in my county at least, farms are sold at ridiculously low prices, and the speculator who purchases, recognizing the demand for small plots, promptly cuts up the farms and sells the land at an enormous profit. The dog-in-the-manger policy so common among landowners and their agents I cannot account for, but it is a fact which is well recognized and deplored.

How to bring back people to the land is one of the greatest problems of the age. It is far too large a subject for me to dwell upon, but I am convinced that one of the chief requirements for restoring prosperity to our rural districts is increased facilities for acquiring small areas of land for sanitary improvements. Some years ago one of my sanitary authorities succeeded in acquiring a small amount of land behind a group of rural cottages which had no gardens. A portion was allotted to each cottage, the conveniences, which had been near the back doors, were removed to a safe distance, and there was sufficient ground to permit of the slops, house refuse, etc., being disposed of without causing any nuisance, and the old defective drains with their accompanying ditch nuisances were abolished. Twice since the same authority has made repeated efforts to carry out similar improvements in other places, but the necessary land could not be obtained. With a sufficiency of land adjoining or near each house, the necessity for sewers in most of our rural districts would be avoided.

In compact villages, urban in character, drains and sewers will, I am afraid, still remain a necessity. The expense of such drains and sewers would in most cases be willingly borne, but the cost of obtaining sufficient land upon which to dispose of the sewage is one of the most frequent excuses for

not carrying out such improvements. Land not worth £5 per acre suddenly acquires a value of £100 or more per acre, and this, together with the trouble and worry consequent upon the adoption of any scheme of sewage disposal prevents the adoption of such schemes. If the numerous experiments now being made on bacteriologic lines result in the discovery of some simple process requiring but little land for disposing of sewage, a great advance will be rendered possible in rural sanitation.

The supply of water to our cottages is even a greater difficulty. Sanitary authorities are not only averse to the expenditure necessary to provide a public supply, but too often also averse to causing landlords to provide such a supply when it can be done at what is defined by Act of Parliament as a reasonable rate. The effect of such a policy has been well exemplified recently in a rural district in which I am interested. A group of cottages derived water from a brook, one of the tributaries of which, at a higher point, received a certain proportion of the slops from the drains of a village. A case of typhoid fever occurred in the village, and about a month later an outbreak of typhoid occurred in the group of cottages and resulted in several deaths. Some five years before I had endeavored to get a proper water-supply for these cottages, but an influential member of the council opposed this as being unnecessary. Notwithstanding my predictions of future trouble, the resolution to call upon the owner to provide a proper supply was lost. I only hope the lesson taught by this epidemic will not soon be forgotten. The cost to which the sanitary authority and others have been put is far greater than would have been required to provide a supply of good water. The multiplication of dairy farms also is increasing the necessity for an abundant supply of pure water in rural districts. Another very important requirement, I might also say the vitally important requirement, is decent cottages for our rural laborers. The effect of the present defective accommodation upon the mental, physical and moral well-being of the inhabitants is too well known to need repetition. The housing problem is of importance not only to the rural laborer but to the whole country, and should be treated as a national problem.

WORK OF THE SURGICAL SECTION.¹

By HOWARD MARSH, F.R.C.S.

Surgeon and Lecturer on Surgery, St. Bartholomew's Hospital;
President of the Section.

ON some previous occasions so many papers have been accepted for reading that many valuable contributions could only be hurried through in abstract, and no discussion was possible. This was unsatisfactory to all concerned. On the present occasion the object has been to cut the garment according to the cloth; in other words, to adjust the number of papers to the time that is available, so that each may have a fair hearing, and be fully discussed. I anticipate that all who are present will regard this as the proper method. Two set discussions have been arranged on subjects, both of which I feel certain members will regard as well worth of their attention; subdiaphragmatic abscess is no doubt a somewhat rare condition, yet it may occur in the practice of anyone. It is highly dangerous to life, and both in regard to diagnosis and treatment it presents difficulties of a very grave and embarrassing order. As the subject will be introduced by Mr. Godlee, and discussed by those whose names are a guarantee of their knowledge and sound judgment, I am sure that valuable information will be forthcoming.

The subject of fractures belongs to a different order. It is so old and familiar that it may appear at first sight too hackneyed and barren to be worthy of your notice. On second thoughts, however, I believe that it will be felt that the opposite is really the case. Long a mere matter of routine the treatment of fractures has lately felt the influence of modern advance in other departments of surgery. The Röntgen process secures an accuracy of diagnosis which formerly was often impossible. The aseptic method makes

¹ Introductory remarks delivered at the opening of the Section of State Medicine, at the annual meeting of the British Medical Association at Ipswich, July-August, 1900. From advance sheets by courtesy of the *British Medical Journal*.

¹ An address delivered at the annual meeting of the British Medical Association at Ipswich, July-August, 1900. From advance sheets by courtesy of the *British Medical Journal*.

operative interference safe, so that when necessary it can be adopted without hesitation, and it has become obvious that to secure the best results treatment must be applied not only to the fractured bone itself, but to the neighboring joint and the muscles and other structures of the limb.

THE TREATMENT OF WOUNDED AT SEA.¹

By INSPECTOR-GENERAL BELGRAVE NINNIS, M.D., R.N.

THE great war—now we trust nearly at an end—has directed special attention to its three subdivisions, namely, medicine and surgery, in relation to the services, and ambulance in connection with both, and likewise with civil life, particularly in large towns. A goodly supply of papers on these and kindred subjects will claim your attention, but I notice with regret the absence of one on a subject which I consider would be well worth the trouble of writing—namely, on the means at the disposal of the naval medical officer for the treatment of the injured on board a man-of-war, more especially during an action.

Experience of the medical press, extending over a somewhat lengthened period, has left the impression on my mind that there is a belief amongst our brethren in civil life that the naval medical officers, taken as a class, are either behind the times, professionally, or are credited (from lack of zeal) with neglecting to avail themselves of modern discoveries, both in medicine and surgery, and that this due in great measure to absence for lengthened periods from the schools. It is true that, from the very nature of his calling, the naval medical officer is away at times for a period of 3 or 4 years; but, on the other hand, it should be borne in mind that there are sick in other countries besides Great Britain, and studying familiar diseases under different climatic conditions, or cholera, yellow fever, plague, and other diseases in countries where they are endemic, with the methods of treatment adopted by those who have lived the whole of their professional life in their midst, modifications in some ordinary operations and substitution of new ones amongst the profession abroad is surely worth something. Operations at foreign hospitals can always be attended, and practitioners and hospital surgeons are, in my experience, ever willing to answer questions, and to show you their cases where possible. I have not said anything about his own patients, which, if his ship is a large one, supply him with a heterogeneous practice, in addition to a capital operation occasionally.

The essentials of a fighting ship may be said to comprise the largest percentage of armament, offensive and defensive, combined with capability of rapid motion and a steady platform. So far as our present knowledge goes, these conditions can only be obtained at the expense of space; or, in other words, the more effective a fighting machine the ship is, the less space is available for quarters and accommodation for the sick. Necessary as light and fresh air are to all of us, in the case of the sick on board ship, it will easily be understood that this necessity is more urgent. But light and fresh air can only be obtained in sufficient quantity above the water line, and to place the sick quarters above the water-line, amidst the hurly-burly of a sea-fight, traversed by projectiles and wrecked by exploding shells, is of course out of the question, even supposing that sufficient space could be spared. The alternative is treating the sick and injured below, which means a limited amount of fresh air, and that almost invariably supplied by mechanical means, artificial light, rapidly deteriorating atmosphere, and the by no means unlikely intrusion of a torpedo, or of the ram of a neighboring ship.

It will doubtless be said that this condition exists only during war time, and that, under ordinary circumstances, plenty of space could be found on deck. Sufficient accommodation is, as a matter of fact, already set apart for the treatment of the sick, with ample light and fresh air, cots, and other fittings of recent and constantly improving designs, and in some cases electric light; but it must be remembered that for the reasons previously mentioned these peace arrange-

ments must be vacated in war time. As permanent quarters for the sick on board a fighting ship, situated in such a position as to be freely supplied with fresh air and light, are practically an impossibility, it follows that the fitting up of apparatus, and the means of utilizing modern inventions are likewise practically impossible, and therefore the naval medical officer cannot avail himself of their use.

In fact, the naval medical officer is not to be judged by the ordinary standard. He works under great disadvantages. Take an ordinary operation. A moving patient on a moving table, a moving operator standing on a floor changing its slope laterally and fore and aft, assistants automatically altering their positions in relation to the patient, in retaining the upright position or their equilibrium; tracheotomy by the light of a candle or lamp, the patient being in a cot, or possibly in a hammock; hernia to be operated on, possibly during bad weather, for it is the nature of things that on board ship accidents should most frequently occur when there is most motion, and the decks are wet and slippery; fractures to be retained in position under the same adverse circumstances. As for lack of zeal, a collection of the novel splints and appliances to be found on board ships on return from out-of-the-way foreign stations would testify not only to the zeal of the naval medical officer, but also to his resourcefulness, for, be it remembered, he cannot send into the next street for a second opinion, nor to the instrument maker for special appliances. It is, I believe, intended in the future to supplement fleets and squadrons in war time with hospital cruisers, not merely transports for the injured, but veritable floating hospitals with steam power and fittings and appliances up-to-date. During an action these ships would keep out of range, but sufficiently close to collect the wounded when the fight was over, and sailing under the regulations of the Geneva Convention would be free from molestation or capture.

Paralysis of Children.—Virgil P. Gibney (*St. Louis Courier of Medicine*, May, 1900) advocates rest and quiet for the muscles and joints in the early stage of paralysis in children instead of the attempts at massage and use of the parts that have been so common. Brisk counter-irritation to the spinal column in conjunction with absolute rest of the lower extremities he finds of excellent effect. The time for electricity and massage is later. He personally believes that it is better to protect the joints from strain during the first year because lax joints will become less lax and laxity of those tissues will not recur; rest encourages the nutrition of the parts, the circulation is improved and the little strength remaining in the paralyzed or partially paralyzed groups of muscles is not overtaxed. In his opinion in all such cases the surgical problem is not how the tissue is repaired, but how the greatest amount of relief may be afforded. Relieve deformity by traction if possible, but if not, then section, subcutaneous or open, should be a favorable resort; he advocates reinforcing palsied muscles by causing a portion of a healthy muscle to assume its function. Quite recently he grafted into the posterior tibial one-half the tendo-achillis and one-half the common extensor, shortening the tendo-achillis at the same time. This boy will be able to walk and with scarcely a trace of deformity. [M.B.T.]

The Treatment of Appendicitis.—J. J. Buchanan (*Pennsylvania Medical Journal*, July, 1900) strongly insists that, after the purge given on the first access of symptoms, no effort be made to empty the bowels except by enemata. He is confident that many cases of ulcerative and gangrenous appendicitis, which, if left to nature, would be walled off by protective adhesions of omentum and intestine and thus become abscess cases, are converted into cases of general peritonitis by the rupture of the delicate adhesions and the actual distribution of septic fluids through the active peristalsis set up by the persistent exhibition of saline purgatives. He lays it down as a rule that every patient, not the subject of other organic disease, who has had a single well-marked attack of appendicitis, should have the appendix removed. To his mind, the important point in operating on all abscess cases, is never to open the general peritoneal cavity and the abscess simultaneously; when one is opened, the other should always be closed and protected. [M.B.T.]

¹ An address delivered at the opening of the Section of the Navy, Army, and Ambulance, at the annual meeting of the British Medical Association at Ipswich, July-August, 1900. From advance sheets by courtesy of the *British Medical Journal*.

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Collaborators

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M. B. TINKER, M.D.
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A Step Forward.—The Board of Health of the city of Trenton, N. J., has demonstrated its appreciation of modern sanitary requirements by the proposition to include pulmonary tuberculosis among the notifiable diseases; for how can a preventable disease be stamped out unless health-authorities with ample powers and intelligent direction are informed of its existence and the places where it thrives? Good will be accomplished also by the action of the same Board in making spitting on the street and in the public places a punishable offence. The way to eradicate tuberculosis is to prevent it, and light is now penetrating into dark places.

The Honorary Fellows of the Royal College of Surgeons.—We have already called attention in our news columns to the recent centenary meeting of the Royal College of Surgeons, England, and to the award of the honorary diploma of fellowship to Dr. W. W. Keen, of Jefferson Medical College of Philadelphia; Dr. Robert F. Weir, of Columbia University, New York; Dr. J. Collins Warren, of Harvard University, Boston; and Dr. William S. Halsted, of Johns Hopkins University, Baltimore. The Canadian Surgeons honored were Sir W. H. Hingston, Dr. T. G. Roddick, of Montreal, and Dr. J. H. Cameron, of Toronto. Honorary degrees were also awarded to eminent medical men from nearly all civilized lands, including Germany, France Austria, Italy, Russia, Sweden, Norway, Denmark, Spain, and to many eminent British surgeons both at home and in the colonies.

The American profession rejoice in these honors so worthily bestowed and accept this as an additional evidence of the friendly feeling which has so long existed between the profession in England and America. The presence of the Prince of Wales, of Lord Salisbury, and Lord Rosebery at the exercises and the banquet indicates that the world of politics and society is beginning to recognize the services of the medical and surgical profession, and in this all medical men rejoice. We have previously criticised the action of institutions and bodies of learned men in conferring honorary degrees upon those who have no real claim to them from any special knowledge of the subject which the degree was originally supposed to imply, and we cannot help feeling that when the honorary fellowship of the Royal College of Surgeons is conferred upon men however eminent, who have no

knowledge of the subject of surgery, that it loses a little of its special value. Honorary degrees are becoming entirely too cheap and it is often impossible to tell from a man's numerous titles whether he is really a learned man, a gentleman and eminent scientist, or an eminent quack and Christian scientist.

Excessive Damages.—In the Court of Common Pleas of this city, Judge Pennypacker recently set aside a verdict for \$47,000, which had been rendered in favor of the plaintiff in the case of Waters vs. The Atlantic Refining Co., and ordered a new trial. The plaintiff, a boy aged 13 years, was an employe of the company, and while at his work lost his eye-sight by accidentally splashing some acid into his eyes. The learned judge, in his decision, held that the earning capacity of the plaintiff had not been satisfactorily demonstrated to the jury, and therefore that the jury had been left to find this very large verdict without information as to facts which should be of fundamental importance in enabling it to arrive at a just conclusion. In another case the Supreme Court of this State, according to Judge Pennypacker, had reversed a judgment for similar reasons, holding that it was the duty of the plaintiff to show his earning power and to give such evidence of his business habits and past earnings as would afford a proper basis for a verdict. It is an error, according to the court, to leave the damages to be determined by the uncontrolled discretion of the jury. This verdict for \$47,000 in favor of young Waters is the largest ever rendered in the Philadelphia courts in a suit for personal injuries.

This question is, of course, a purely legal one, yet it has interest for those physicians who are called upon to give advice and expert testimony in such cases. It is a frequent experience with such physicians that litigants in these damage suits entertain extravagant ideas of the amounts to which they are entitled, and that they are not satisfied unless their expert witnesses share these ideas with them. It is, of course, not the province of experts to attempt to fix the value of personal injuries, but it is difficult for litigants to see this point, and they are likely to expect physicians to bear witness to the alleged justice of altogether unreasonable claims. This is not a little embarrassing at times and, moreover, prevents experts from giving advice that would tend to effect a fair settlement outside of the courts. This de-

cision of Judge Pennypacker will remind litigants that they have to deal not only with juries, but also with the judges.

The Dangers of Trailing Skirts.—*The Springfield Republican* is authority for the statement that Dr. Casagrandi has recently read a paper on this subject before a medical association at Rome. Dr. Casagrandi stated that he had employed a number of women, wearing long skirts, to walk for one hour through the streets of the city and, after their promenade was over, he had taken their skirts and submitted them to a careful bacteriologic examination. He found on each skirt large colonies of noxious germs, including those of influenza, tuberculosis, typhoid fever and tetanus. Numerous other bacilli were also well represented on each skirt. Dr. Casagrandi maintained that in view of these facts, women, and especially mothers, should at once stop wearing long skirts, and the other members of the congress unhesitatingly expressed the same opinion and passed a resolution to this effect.

That women should willingly subject themselves to the filth, say nothing of the possible dangers of trailing skirts, has long been a wonder to sensible people who are acquainted with bacteriology. For street wear they certainly cannot be considered in any sense either cleanly or hygienic. However, we cannot expect reform in this matter without those who set the fashions can be influenced, for women are bound to be in the fashion regardless of any ordinary considerations. There is some encouragement in the fact that at present bicycle skirts and golf skirts are in vogue, and we hope they will become still more popular, for while we are not aware that any previous scientific investigations have been undertaken in this line any well-informed medical man could have readily predicted the results of such investigation.

Reform in the Milk-Supply of Large Cities.—The question of milk-supply of large cities is of great importance, particularly during the hot season. The large mortality among infants and children during summer months is dependent to a very considerable degree on the milk-supply, and any effort to procure a safer food for the public, and particularly for young children, deserves the attention of the medical profession and of all interested in sanitary matters. Dr. Nietner discusses this question at some length in the *Berliner klinische Wochenschrift* for April 16, 1900, and especially calls attention to the efforts which have been made for the improvement of the milk-supply of Berlin by W. Helm, one of the city sanitary engineers. He advises the adoption of a method which it is stated has been used for some time in Copenhagen. The milk is collected at the source of supply and pasteurized before shipment; immediately after it is cooled nearly to the freezing-point. By this method the milk remains entirely fresh and

has the taste of fresh milk and the cream rises in exactly the same way as with ordinary milk. The milk which is thus prepared is put in cans sterilized by steam and is kept in a cooler until ready for shipment. In summer a certain amount of frozen milk is added, the amount of this milk-ice depending upon the distance which it is to be transported and the temperature at the time of shipment. This keeps the milk cool until it reaches its destination. It is stated that this method is applicable in all towns which serve as milk-supplies of large cities when the daily shipment amounts to 7,000 liters, and the cost is only one-half pfennig (about an eighth of a cent) per liter. Nietner believes that in future milk will not be shipped directly from the producer by the railroad to the milk dealer, as is now the case, but will be sent to a central pasteurizing and cooling plant, where its quality will also be tested. Under the present method of shipment much of the milk while not sour is considerably influenced by bacteria before it reaches the consumer. By the method just described milk can be preserved for any length of time. These establishments for pasteurizing milk have lately been introduced in many of the suburban towns in the vicinity of Berlin, and others are in process of construction. Nietner states that from personal visits he found everything with regard to appearance, smell, and taste quite ideal. The method has attracted attention not only in several parts of Germany, but also in Austria, Switzerland, Russia, and Holland, and in these places plants are in process of construction.

This method of securing an absolutely trustworthy milk-supply for large cities is worthy of introduction into American cities. At present it is impossible to obtain milk suitable for the use of sick people and particularly sick children without great trouble and expense, and it has been repeatedly shown that epidemics of various diseases frequently arise from an improper milk-supply. We hope that this method will come to the attention of all interested in the sanitary improvement of our cities and towns.

Experimental Studies of Intestinal Functions; Penetration of Bacteria; Electric Stimulation.—

It has been generally supposed that the intestine, like the skin, is not permeable by bacteria; but later researches by different observers have shown that the fluid of hernial sacs in 33.9% of cases contains germs, and this discovery led to the idea that bacteria were capable of passing through the living intestinal wall. The inexactness of the researches, however, left some doubt regarding this most important question, and we are indebted to Buchbinder (*Deut. Zt. f. Chir.*, 55. Band, p. 458 to 556) for an elaborate series of experiments on the lower animals by methods of research which seem scarcely to admit of error, as they allow direct inspection of the intestine during the experiment. His method consists in bringing a portion of the intestine

outside of the abdominal wall and by means of a steam spray, keeping it moist and warm; and he definitely demonstrated that as long as the walls of the intestine were intact it was impossible for the bacteria to pass from the lumen to the serous surface of the gut, and further that when gangrene had set in the bacteria "grew through," as it were, rather than passed through as the result of a transudation. Also by this method of experimenting, the demonstration of the mechanism of the strangulation of a hernia was well shown through having the intestine so easily inspected. Another discovery of almost equal importance with that regarding the penetration of bacteria was the effect of electrical stimulation on the intestine. It was shown that the effect of the faradic current on the living intestine of animals, in the production of the so-called "ascending contraction," could be reproduced in man. That is, when a faradic current is applied to the living and normal intestine for about two minutes, a ring of contraction is produced which extends *upwards* for two centimeters and the intestine returns to its normal state as soon as the current is discontinued. By this simple procedure the surgeon has a safe method of determining the direction of the gut when peristalsis is not present. Again it was demonstrated that the intestinal wall when deprived of its vitality does not give this characteristic reaction. Indeed, in every case in which electrical stimulus failed to cause the contraction, gangrene invariably followed. Therefore, in cases of strangulated hernia, after the constriction has been relieved for several minutes, and the intestine does not respond to the application of the faradic current, it should be regarded as having permanently lost its vitality and should be treated in accordance therewith.

These results obtained by Buchbinder after a great deal of labor and thought are most interesting and of great practical importance. They touch questions which the busy surgeon is frequently called upon to solve and which have not been altogether easily settled. We trust that further investigation may prove that his conclusions are correct.

Burial Alive.—The periodical agitation of this subject is to be expected. It appeals to the morbid imaginations of those persons who cannot find things shocking enough above ground. The highly neurotic individuals who lie awake at night in dread of being buried alive, have now come forward once more, and are demanding a charter for a society the object of which is to make sure that they are properly despatched before they are entombed. This betokens a bad state of nerves, and one that must make life little less worth living than actually being buried alive. To live in constant apprehension of what may never occur is a well-recognized symptom of neurasthenia.

The proposed society—which most appropriately is to be located in New York—will demand that a series of

highly sensational tests be made in the case of every corpse. These tests include two or more incisions in an artery; exposure of the palm of the hand to the flame of a candle; holding of a mirror or crystal to the mouth for a sign of respiration; the use of a hot iron on the flesh without production of a blister; mortuary chapels for retaining the body until signs of decomposition occur. The last test seems to exclude the necessity for all the others, and is so simple and practically so almost universally observed already, that there does not seem to be much necessity for getting a charter or a patent-right for it. We would suggest as a valuable test the use of a clinical thermometer.

The estimable gentlemen who are back of this scheme publish an apocryphal list of premature burials. Some of these tales are a few centuries old, and smell more of the cloister than they do of the tomb. We have no knowledge of a well-authenticated case of live burial, and believe that the probability of such an occurrence is infinitesimal. Even putting aside the objections of the so-called dead person, there would be the physicians and other attendants to be deceived before such a burial were possible. Moreover, there is no trance-like state known to science that thus simulates death. We commend all timid neurasthenics to soothe their nerves, and if they need a positive guarantee that they will not be buried alive, let them direct their bodies to be cremated. This is both sure prevention and good hygiene.

Recent Work on Epilepsy.—Dr. L. Pierce Clark, first assistant physician to the Craig Colony for Epileptics, at Sonyea, N. Y., has just completed, in the *Journal of Nervous and Mental Diseases* (June and July, 1900), a valuable digest of recent works on epilepsy. The literary field thus surveyed is very extensive, and much that is interesting and instructive is portrayed, but the amount of new truth brought to light is rather meager and is a melancholy reminder of how little we yet know, or seem likely soon to know, of the real mysteries of the sacred disease. Dr. Clark's opinion that the epileptic is foredoomed to die of *status epilepticus* will at least convey a novel idea to many observers. It seems to us a somewhat extreme statement. In his conclusions Dr. Clark says that the etiology and pathology of epilepsy seem as far as ever from being solved. The study should be along lines of physiological chemistry and physiological psychology. Thorough investigation must be made also of the predisposition in order that the immense number of alleged excitants can be classified and their values as causes determined.

The manifestations of epilepsy, Dr. Clark finds, are daily becoming more numerous, but this, we judge, is simply due to more active clinical study of the disease. This variety of clinical manifestations does not in itself throw any new light on the nature of the disease. The essential phenomenon or pathognomonic sign of epilepsy is still somewhat of a will-o'-the-wisp. It is not

"loss of consciousness," because this is not constant, although some disturbance of consciousness is probably always present; hence, after all, the affection of this state is perhaps the best criterion. Dr. Clark holds, with the majority of neurologists, that the sensory and motor symptoms can not well be separated. Studies of "signal" symptoms, *i. e.*, the primary muscles attacked and the order of invasion of muscular groups, have not helped to solve the problem of epilepsy as much as was once hoped; but here, it seems to us, Dr. Clark would have done well to point out that these signal symptoms are of immense practical value in brain surgery. Psychical equivalents and pure psychical epilepsy are so loosely studied as yet that their true nature is not fully understood. The possibilities for the careful study of temporary epileptic delirium and the light it would throw upon the insanities, were never greater than today. The grouping of epileptics in colonies offers unrivalled opportunity for the study of the disease.

Organic Hysteria.—Of all the purely functional disorders which result from trauma it must be conceded that hysteric affections are probably the commonest and the most puzzling. That they are frequently disguised under assumed names in our courts is a matter of common observation. The prejudice against the term "hysteria" is not confined to the medical profession, but is entertained widely by all persons, and especially by the ignorant classes, from whom largely our juries are recruited. To concede to such a jury that a claimant is hysteric is believed practically to give away the case. That there is good reason for this belief is obvious. Recently, in a Camden court, a man secured a verdict for \$5,000 for a typical hysteric paralysis of an arm caused by a shock of electricity from a low-hanging arc lamp, but the lawyer in the case had evidently succeeded in convincing the jury that the muscles and nerves had been destroyed by the mysterious current. Soon after, in a Philadelphia court, a woman with an almost identical paralysis caused by a blow from a falling sign, failed to receive damages because apparently it was successfully demonstrated to the jury that the affection was merely hysteria. These two cases illustrate the subject perfectly. They prove that there is something in a name when damages are concerned. They also show that the attitude of both the medical profession and the courts toward such cases is illogical and unscientific.

The question arises, what is a functional disorder? and why is not such a disorder in some cases as much entitled to consideration as the more imposing "organic" affections? Will anyone in the present era of cytology presume to claim that a so-called functional nervous disorder is without a basis of minute organic changes in the neurons? Why not abandon the misleading phraseology which assumes a paradox, *i. e.*, that a function can be disturbed without a change in its

organic basis; and boldly state, as a sound pathologic doctrine, that a neurosis is an organic fact. We have long thought that the more permanent stigmata of the grand neuroses should be grouped under some such designation as "organic hysteria." This is logical and consistent with what we have a right to believe occurs in the neurons in all the grave traumatic neuroses. A muscle that is paralyzed for many weeks, or contracted, or the seat of tremor, is a disabled muscle; and all it needs to dignify it in the sight of men and courts is an acknowledgment of the fact that its disability is not dependent on a caprice, or whim, or volition of the patient, but on some minute change in the cytoplasm of nerve-cells that is as real, though perhaps not as permanent, as the changes wrought by a poison or a process of degeneration. Surely pathology, of all the sciences, should no longer acknowledge the trammels of mere scholastic distinctions.

The Coroner as a Diagnostician.—The coroner of the city of Philadelphia is not an ordinary politician. What he knows about medicine is probably not in the books. Only the other day he undertook to decide that in the case of a child, who had been bitten by a dog, death was due not to hydrophobia, as the attending physician thought, but to the effects of the heat, and an automatic jury brought in a verdict accordingly. The municipal government of Philadelphia is well known to be unique, and although the coroner is a county officer, city and county are conterminous.

The Executive Committee of the Board of Trustees of the Philadelphia Medical Publishing Company adopted at its last meeting the following resolution on the death of DR. J. H. W. CHESTNUT, a member of the Board:

"In the death of Dr. J. H. W. Chestnut the Board of Trustees of the Philadelphia Medical Publishing Company has lost a faithful member, whose wisdom and good judgment were a source of strength, and whose high professional character contributed largely to the esteem in which THE PHILADELPHIA MEDICAL JOURNAL is held by the medical profession."

Surgical Use of Suprarenal Extract.—J. W. Murphy (*Lancet-Clinic*, April 7, 1900) says he has employed suprarenal extract in more than 100 cases, covering most of the minor surgical operations about the eye, ear, nose, and throat. The field of operation is first sprayed with a 2% solution of cocain, then mopped with a 10% solution of suprarenal extract, then packed for 10 minutes with pledgets of cotton saturated with a 5% solution of cocain, and one pledget saturated with a suprarenal extract solution. When removed, the tissues are blanched and anesthetized. A painless and bloodless operation can then be performed, the anesthetic effect of the cocain lasting longer than without the suprarenal extract. In cases of hay fever, Murphy has employed a solution of suprarenal extract, by means of an atomizer, to the engorged mucous membrane with success. He has also employed a 2% solution of cocain, together with a 2% solution of suprarenal extract, after the Schleich method of infiltration-anesthesia, for the removal of sebaceous cysts, etc., and found that it rendered the operation both painless and bloodless. [M.B.T.]

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Smallpox at Erie.—At Erie, Pa., 7 cases of smallpox are reported and many persons have been exposed. The disease was brought from Cleveland, O.

Typhoid Fever in McKeesport.—During the first 9 days of August, 17 cases of typhoid fever were reported in McKeesport, Pa. The water-supply is thought to be at fault, and a special appropriation has been passed by the city councils for the cleaning of the water reservoir.

Polluted Water Causes Illness.—Diphtheria is prevalent in a suburb of Altoona, Pa., and 13 of the employes in the Pennsylvania Railroad shops, in the same city, recently became ill with nausea and cramps, and had to be taken home. Impure drinking water is supposed to be the cause.

Bathing in Reservoir.—Italians have been using the reservoir of the new Water Company at Chester, Pa., as a swimming pool. When it is considered that the water from the reservoir is used for drinking purposes by residents of the city and some adjacent towns, the enormity of the offence is apparent. The bathing has been done at night, and until recently was not discovered.

Formaldehyd in Milk.—Under the name of "Preservative," "Freezine," "Conerine" and "Milk Sweet" solutions of formaldehyd are being sold to milkmen in many parts of the United States. Chief Byrne, of Philadelphia, during the month of July secured 18 samples of formaldehyd adulteration and the parties will be dealt with according to law. The Act of 1895 reads as follows: "That the sale, or offering for sale, of milk for human consumption in this Commonwealth to which has been added boracic acid salt, boracic acid, salicylic acid, salicylate of soda, or any other acid, drug, compound or substance, shall be a misdemeanor and punishable by fine of not more than \$100 or an imprisonment not exceeding three months, or both or either, at the discretion of the Court."

Vital Statistics of Philadelphia for the week ended August 18, 1900:

Disease.	Cases.	Deaths.
Total mortality		550
Inflammation of appendix 2, bladder 4, brain 12, bronchi 4, kidneys 18, heart 4, liver 1, lungs 16, peritoneum 8, pleura 1, stomach and bowels 24, uterus 1, tonsils 1		96
Inanition 24, marasmus 27, debility 6 . . .		57
Sunstroke		56
Tuberculosis of lungs		54
Cholera infantum 42, morbus 2		44
Heart—disease of 36, neuralgia of 1		37
Bright's disease 13, uremia 13, diabetes 3 . .		29
Convulsions 19, puerperal 1		20
Apoplexy 10, paralysis 7		17
Brain—abscess of 1, congestion of 2, disease of 6, dropsy of 1, softening of 4		14
Casualties		13
Carcinoma of—breast 1, mouth 1, pharynx 1, stomach 4, tongue 1, uterus 2, sarcoma of lungs 1, tumor of brain 1		12
Drowned		13
Diarrhea 5, dysentery 5		10
Diphtheria	64	10
Old age		8
Typhoid fever	77	8
Cirrhosis of liver		5
Septicemia		4
Cyanosis		3
Burns and scalds		3
Epilepsy		3
Malarial fever		3
Teething		3
Arterial sclerosis		3
Scarlet fever	22	1
Abortion 1, alcoholism 2, asthma 1, atheroma 1, dropsy 2, erysipelas 2, senile gangrene 1, hemorrhage from stomach 1, from uterus 1, jaundice 1, measles 2, intussusception of bowels 2, obstruction of bowels 1, opium poisoning 1, surgical shock 1, suicide by shooting 2, syphilis 1, tabes mesenterica 1, tetanus 1, whooping-cough 2.		

The Contagious Diseases Hospital in Pittsburg.—Much opposition is being manifested by those residing in the vicinity of the municipal hospital of Pittsburg to the plan of the city director of public health, who proposes to locate the hospital for contagious diseases on land adjoining that occupied by the municipal hospital. *The Pittsburg Dispatch*, in an intelligent and well-considered editorial, points out the groundlessness of the alarm felt by those who object to having the hospital located in proximity to their homes. —[*New York Medical Journal*.]

NEW YORK.

The New York Health Board recently issued a peremptory order compelling the Street-Cleaning Department to cease using the dump at the foot of East Forty-third Street for garbage.

Poisoned by Passaic River Water.—Two women are said to have been poisoned by washing their hands in the Passaic River. The water is very foul and for years has not been used by the people of Newark, N. J., for drinking.

Claims for Tuberculous Cattle.—Claims against the city of New York for the destruction of cattle affected with tuberculosis or other disease have been audited to the amount of \$1,369 50 by the Health Board, the claims covering four years, 1896–1899. In all 61 cows were destroyed at an average cost of \$21.45 each.

Diphtheria Patient on Train.—Charles Radigan, suffering from diphtheria, came to Middleton, N. Y., recently from Livingston Manor on a crowded passenger train. He was quarantined as soon as his condition became known, but the authorities are apprehensive of serious consequences from the spread of the disease.

A Novel Suit Against the State.—A claim for \$30,000 has been filed against the State of New York by a militiaman of Poughkeepsie for the loss of a foot in consequence of injuries received while participating in a sham battle when he was on duty at the State Camp of Military Instruction at Peekskill, in 1899. He fell into a hole and the injuries were so severe as to call for amputation.

College of Medicine, Syracuse University.—The first class to complete the now required regular 4 years' course in the College of Medicine, Syracuse University, was graduated in June of this year. Of those who remained in the class at the beginning of the last session all were graduated. Recent reports from the Regents of the State of New York show that all who were graduated by the College passed the State examination. Of the graduates 22% have secured by competitive examination positions as internes in hospitals situated in New York, Boston, Providence, Detroit and Syracuse. Syracuse University should be congratulated. Its medical department with the motto "Standard of requirement high" is doing good and praiseworthy work in the interest of better medical education.

NEW ENGLAND.

A "new disease" is reported at New Bedford, Mass., which resembles smallpox and chickenpox, but is said by experts to be neither. It is highly contagious, although none of the patients has been dangerously ill and those first attacked have completely recovered. The patients will be quarantined.

No Brandy Drops for Children.—A crusade has been started in North Adams by the Massachusetts State Board of Health against the sale of brandy drops to children under 15 years of age. The candy secured contained over 1% of alcohol. The 5 dealers pleaded guilty and the cases were placed on file on payment of costs. Joseph Rudnick was fined \$10 for selling adulterated coffee.

Boston's Fountains.—Boston will keep its 30 iced-water fountains in operation for 50 days, a municipal appropriation of \$3,000 having been made for the purpose. Each fountain requires 600 pounds of ice a day. The water commissioner is about to experiment with a quadruple system of pipes reaching 100 feet under ground, which will

give the water a circulation of 400 feet before it is drawn at the faucet, at a temperature, it is expected, of 50 degrees, and that it is cool enough without the use of ice.

Infants Poisoned by Milk.—Dr. Lindsley, secretary of the Connecticut State Board of Health, in his monthly report says that most of the 400 babies that died in Connecticut in July were victims of poisoned milk or other unsuitable food. He says: The hasty inference that heat has been the chief or only cause of disease and death among infants is a fallacy. It is true there is some proportional relation between excessive high temperature and infantile mortality, but the parallel between high temperature and high mortality of infants, among different surroundings and conditions, in the same community, is too often wanting to prove that heat alone, unaided by other influences, is the sole and direct cause.

CHICAGO AND WESTERN STATES.

St. Anthony's Hospital.—The Sisters of St. Francis are building a \$20,000 addition to St. Anthony's Hospital, Denver.

Smallpox in Washington.—Near Goldendale, Wash., 18 cases of smallpox are reported and 25 cases are reported in Skamania County.

New Hospital at Red Bud.—The St. Clement Hospital at Red Bud, Ill., is now completed and ready for the reception of patients.

Milk Dealers Arrested.—Of the 13 milk dealers in Flint, Mich., 9 are in trouble with the State for using chemical preservatives in milk.

Rush Medical College.—It is reported that Dr. Edwin Klebs has resigned the professorship of pathology in Rush Medical College, Chicago.

Berkeley Hospital Corps.—Several hundred ladies of Berkeley, Cal., have joined the Berkeley Hospital Association as an auxiliary committee.

Physician for Governor.—Dr. Gilbert Shepherd, of La Crosse, Wis., is named as one of the possible candidates for the governorship on the Prohibition ticket.

Horses With Glanders.—Horses and mules in South Chicago are said to be affected by glanders. One horse has been killed and several others are said to be afflicted.

New Hospital for St. Louis.—A bill appropriating \$258,000 from the special fund for the erection of a new City Hospital in St. Louis was passed unanimously in the House of Delegates, signed by the Mayor, and in 10 days will become a law.

Medical Defence.—A movement has been set on foot by the members of the Ramsay County Medical Society, Minn., to establish a defence union on the English model. A committee was appointed to investigate the system, and report the result of the inquiry at the next meeting of the State Medical Society.

Increase of Typhoid.—There have been 282 cases of typhoid fever, with 54 deaths in St. Louis since March 1 of this year, against 119 cases and 27 deaths for the same period last year. Some physicians attribute the condition to disease germs in the water, due to the influx into the Mississippi River of Chicago sewage.

Swindled Country Stores.—William Schmidt, of Nashville, Ill., has a novel swindling scheme. His plan was to call upon the proprietors of country stores, ask if they sold patent medicines, and then demand to see their permit from the board of pharmacy, the law providing that all such stores secure a license to sell patent medicines. Schmidt represented that he was an agent of the board of pharmacy, and threatened to arrest the storekeepers unless they paid him a fee of \$10. He represented that it was cheaper to pay him than to be arrested and taken to Springfield for trial. Requests for permits have been coming to the board of pharmacy in great quantities from the sections visited by Schmidt.

Cigarets Forbidden.—The Rock Island Railroad Company has followed the example of the Union Pacific by placing a ban on cigarettes. Notice has been served on the employes of the company in the Armourdale, Kas., yards that those who are addicted to the use of cigarettes must give them up or lose their positions.

A memorial tablet was dedicated at Mackinac Island, July 10, to Dr. William Beaumont. The inscription on the stone reads: "Near this spot Dr. William Beaumont, U. S. A., made those experiments upon Alexis St. Martin which brought fame to himself and honor to American medicine. Erected by the Medical Society of the Upper Peninsula of Michigan, July 10, 1900."

Construction of School Houses Regulated.—The State Board of Health of Indiana recently sent out instructions to secretaries of county boards of health calling their attention to an order regulating the construction of schoolhouses. The floor must be three feet above the ground, and there must be solid foundations. The rules refer particularly to one-room schoolhouses.

Sues Insurance Company.—Dr. Robert Kitto, of Racine, Wis., has begun suit to recover \$4,000 from the Frankfort Insurance Company of Germany. By accident a piece of glass entered his eye and the member was so badly injured that it had to be removed. He carried accident insurances of \$50,000. On account of the accident he was entitled to \$17,000 of this amount.

Tuberculous Foreigner Denied Landing.—Secretary Gage of the Treasury, and Commissioner Powderly of the Immigration Bureau, have decided that tuberculosis of the lungs is a contagious disease and that aliens afflicted with it shall not be allowed to land in the United States. The decision was made in the case of the Rev. Tanijoio Kasahara, who arrived at San Francisco on the *America Maru* in the latter part of July.

Scramble for Bodies.—A recent death in the county hospital at Chicago revealed the fact that considerable competition had been going on among neighboring undertakers for the possession of bodies. When a death occurs the employes of the hospital inform the undertakers, who telegraph at once to the relatives and use the reply in obtaining the body. It is said that in some cases the friends receive as many as a dozen telegrams asking what shall be done with the body.

Smallpox Among Indians.—Smallpox has broken out among the Turtle Mountain Indians in North Dakota. There are 24 cases in the hospital and others quarantined at home. Commissioner of Indian Affairs Jones has wired the agency authorities to take all steps necessary, including the employment of a trained nurse. The department also has shipped vaccine virus to the reservation. About 1,000 or 1,200 Indians are on the Turtle Mountain Reservation, which is close to the Canada boundary line and often visited by the Canadian Creek Indians.

Christian Scientists Convicted.—Some months ago 2 lady Christian Scientists of Milwaukee, Wis., were indicted for practising medicine without a diploma. A fatal case of diphtheria offered grounds for the complaint. The defendants were convicted and fined. We believe this is the first case against Christian Scientists successfully fought in the courts. More recently F. X. Schaffer, a graduate for the defunct Independent Medical College of Chicago, was also convicted by the same tribunal of being improperly qualified to practise medicine. This case was made interesting by the defendant's introducing as evidence of previous preparation in the study of medicine certain letters purporting to be from and signed by the dean (Zumm) of the University of Prague, and testifying to his having studied there. It was proved that these letters were forgeries, and that the Prague University letter-heads, as well as the University seal, were made in Milwaukee.

SOUTHERN STATES.

A Pasteur Institute and Laboratory has been established in Atlanta with the approval of the Medical Association of Georgia.

The Delaware Hospital fund has reached \$19,000, and the buildings will soon be begun at Wilmington.

Appointed Surgeon.—Dr. Charles C. Marburg has been appointed a member of the police and fire surgeons of the District of Columbia, in place of Dr. J. Ramsey Nevitt promoted to coroner.

Officials Bathe in Reservoir.—Alderman Allen, Policeman Cunningham, and others of the party recently indicted for bathing in the reservoir at Charlotte, N. C., whence the water-supply of the city is drawn, were bound over under a heavy bond to appear at the next term of the Criminal Court on the charge of defiling the city's drinking water.

Fumigated Vessels for Chagres Fever.—Officials thoroughly disinfected the Norwegian bark *Kotka*, which is at Cape Charles quarantine, having been towed in with 6 cases of chagres fever aboard. The *Kotka* left Brunswick, Ga., August 3, for Liverpool, and the fever developed after leaving Brunswick. The bark is reported to have been at South American ports.

A Menace to Health.—Dr. John S. Fulton, of the Maryland State Board of Health, is making efforts to put an end to the hauling of night soil from Baltimore and distributing it over the surrounding country. Although it is a violation of the law, it has become so general as to threaten to pollute the streams from which the water-supply of Highlandtown and Canton is taken. The law provides that it be drawn to the city scows.

New Orleans Death-Rate.—Only 83 deaths were reported in New Orleans last week. This is said to be the lowest figure known there. The total includes 5 deaths from accident or suicide, leaving the mortality from disease only 11.96 per 1,000, which would give an average duration of life of 34 years. The summer is the healthiest season in New Orleans, its death-rate falling to half what it is during the worst part of the winter. Cholera infantum, the scourge of some Northern cities, claimed only 2 deaths for the whole week.

Abating Smoke Nuisance.—To comply with the smoke law is no easy matter. It prohibits the emission of "dense black or gray smoke" without regard to the duration of the same. No smoke-consuming device has yet been made which will prevent the issuance of smoke during the time the furnace door is open and for a few seconds after it has been closed. The health-officer of the District of Columbia has been making inquiry as to this nuisance. Hard coal has been tried and many devices which have proven ineffective have been abandoned.

Kentucky Whisky.—The statistical report of the whisky made in Kentucky for the fiscal year ended June 30 has just been issued and shows the production to have been 21,789,722 gallons, against 19,788,788 gallons of the previous year. During last season the smallest amount of whisky made in any one month was made in September, 1899, when the production only reached 50,699 gallons. The largest amount made during the year was made in April, the production being 3,837,232. The statistics further show that 20,219,739 gallons were withdrawn during the fiscal year just ended, as against 17,997,698 for the last fiscal year. On June 30 there was in bond in Kentucky 82,604,906 gallons of whisky and during the month of June 50,252 gallons were exported from the State.

CANADA.

Typhoid in Winnipeg.—An epidemic of typhoid fever threatens Winnipeg. There are nearly 100 cases at present and others reported daily. The disease is also raging in many parts of the province, and every day cases are brought to Winnipeg general hospital.

MISCELLANY.

Hospital Corps in China.—There are in China on en route to that country 8 hospital stewards, 21 acting hospital stewards and 293 privates, and with the Fourteenth U. S. Infantry, grade not known, 21, in all 348.

No Lodge-Doctors for Victoria.—Victoria, B. C., physicians have passed a resolution, refusing to act as "lodge-doctors."

Plague in South America.—Several new cases of plague are reported in Rio Janeiro, while the government of Paraguay has announced that plague has disappeared from the Republic.

The "Solace" Sails.—The *Solace* bringing home the sick and wounded from China, sailed August 13 from Yokohama for Guam, which will be her first stopping place on her homeward trip.

Economy.—A scheme is on foot to convert the mud at the bottom of the Thames river into fuel. This affords a new encouragement with reference to drinking water at certain seasons. Perhaps the thrifty householder can save it up and burn it.

Death-Rate.—Many cities in the United States do not calculate the death-rate on the same basis. Minneapolis and some other cities do not include stillbirths, premature births, or deaths by violence, while Boston and New Orleans count everything except stillbirths.

Bubonic Plague Serum.—Haffkine serum is said to have a bad effect upon the faculties for a few hours after inoculation, and there is considerable pain, but the stupor soon passes off and in 8 or 9 hours there is nothing to remind one that he has taken the newly discovered plague-preventive.

Sickness in Alaska.—The Treasury Department has received the following telegram from Lieutenant Jarvis, of the Revenue Cutter Service: Report current in States of sickness at Nome unfounded. No typhoid fever, 12 cases of measles, 18 cases pneumonia, and 6 cases smallpox in isolation. All convalescent.

Health of Troops in Philippines.—General MacArthur has cabled the War Department a brief statement concerning the health of the troops in the Philippines. The number of sick in the hospitals is 3,868, and in quarters, 1,261; making a total of 5,129 sick soldiers; or 8.47% of the entire army in the archipelago.

For Service in China.—Either America is a very healthful country or else the crop of young surgeons contains a large amount of highly developed patriotism. Several weeks ago the Surgeon-General of the army called for 100 contract surgeons for service in China. Up to the present time over 1000 applications have been received, of which the first 100 have been appointed.

Remarkable Mortality at Ponce.—The Marine-Hospital Service official at Ponce, Cuba, in a report just received says that in Ponce City and surrounding country for the 2 weeks ended July 28 the enormous death-rate has slightly increased. There were 216 deaths, against 70 births during this same period. An investigation into the remarkable mortality is being conducted by the Superior Board of Health.

Hospital Corps for China.—Hospital Steward Richard H. McComyn, at Fort Porter, N. Y., has been ordered to conduct a detachment of hospital corps privates from Jefferson barracks, Missouri, to Fort McDowell, California, to accompany Maj. John V. R. Hoff, surgeon, on his journey to China. Major Hoff will be the chief surgeon of the staff of General Chaffee and will have charge of the establishment of field hospitals for the army.

Obituary.—J. H. W. CHESTNUT, of Philadelphia, at Alaska, August 5, aged 45.—THOMAS J. THORPE, of St. Louis, August 12.—J. W. BLACK, of Kennett, Mo., August 13.—THEODORE C. LAVERTY, of Middletown, Pa., August 14, aged 69.—EDWIN EVANS, of Rome, N. Y., August 16, aged 56.—SOLOMON A. VON GUMP, of Vienna, Mo., August 15, aged 42.—E. W. OLIVER, SR., of Mulberry Grove, Ill., August 15.—CARL M. KELLEY, of Matamoras, Pa., August 11, aged 38.—SAMUEL H. GISH, Janesville, Wis., August 2, aged 79.—LAWRENCE E. ELROD, of Longmont, Colo., August 17.—FRANKLIN BOOTH, of Elmhurst, N. Y., August 19.—CHARLES W. PARSONS, of Louisville, Ky., August 18.

Bubonic Plague Bacilli.—W. H. Hill, bacteriologist to the Board of Health of Boston, completed an examination of 2 cultures received from Johns Hopkins University, sent from the University of California, and which were taken from a Chinaman supposed to have bubonic plague. Dr. Hill developed the cultures and inoculated a white rat. The rat died in 3 days. Afterward the bacilli were taken from the tissue, and the results obtained were typical of bubonic plague. Dr. Hill has forwarded to the University of California his opinion that the bacilli are those of bubonic plague.

Sick Soldiers from Manila.—News has been received that the transport *Thomas* will bring 216 sick and 4 insane soldiers from the Philippines. Major Harvey, who has been for some time surgeon-in-chief at the post hospital, will soon leave to take the post of commanding officer of the general hospital now being established by the Government at Nagasaki, Japan. He will be succeeded at the post hospital by Colonel Benjamin F. Pope. The record of the plague in Manila for the 2 weeks ended July 7, as just reported to the Marine-Hospital Service, is 7 new cases, and 5 deaths. Of the new cases, 4 were Filipinos and 3 Chinese.

Lax Quarantine Laws.—After 10 days without a case of plague instead of 31, as was Honolulu's rule, the port of Sydney, Australia, was declared free from this disease, and though other cases arose afterward Sydney is still officially clean. It is stated at Sydney that international law allows the declaring of the port clean in such a case, as the disease is not "epidemic." According to this construction Honolulu suffered several months of needless quarantine, as the plague there was sporadic during most of the time while it was declared to exist. Quarantine in Honolulu was not raised till there had not been a case for 30 days.

Lepers in Philippines.—Surgeon-General Sternberg has received a report from the President of the Board of Health in Manila, stating that the Board of Health is considering a plan to segregate all the lepers on one island, where hospitals and other suitable buildings will be erected for their care. The report states that leprosy was introduced in the Philippines in 1633, when the Emperor of Japan sent 150 lepers to the islands. Since then the number has increased until the estimate is that there are 30,000 lepers in the archipelago, largely in the Visayas. In a recent inspection of Manila, 100 lepers were found concealed in various houses, while many others escaped to the country.

Quarantine Service in Philippines.—The Chief Quarantine Officer for the Philippine Islands reports on an inspection of Philippine ports of entry with reference to quarantine service. He recommends that a small station with barrack accommodations for 100 people be equipped at Iloilo; also recommends a small floating and disinfecting plant and limited barrack accommodations at Cebu. Assistant Surgeon L. D. Fricks has been detailed as Quarantine Officer at Iloilo and Assistant Surgeon H. A. Stansfield to take charge at Cebu. During the week ended June 23 only 2 cases of plague occurred in Manila, 1 Chinese and 1 Filipino, and neither had resulted in death.

Home for Soldiers at Manila.—Encouraged by the wife of Governor Stanley and other ladies of Kansas, a proposition has been made to establish at Manila a home for the soldiers of the United States, somewhat after the fashion of the Christian associations and similar efforts in this country to counteract degenerating influences, the home to be called the Clara Barton Home, and to be established under the sponsorship of the National Red Cross Society, though it is also proposed not to involve that society financially, but to obtain contributions for the support of the home from those States from which have been recruited volunteer regiments now in the Philippines.—[*Medical News.*]

Sanitary Conditions Improved.—United States Minister Merry at San Jose, Costa Rica, has submitted an interesting report upon sanitary conditions at the port of Limon, to the Department of State. He says that the sanitary conditions at the port of Limon have been much improved, doubtless on account of the \$8,000 expended there by the government of Costa Rica in public improvements. No tropical port with a banana-producing country in its contiguous interior can be entirely free from malaria, but the

fact that Limon has been, thus far during the present year, practically free of yellow fever is suggestive of encouraging results in combating that disease by sanitary improvements, and indicates that this may now claim to be one of the healthiest banana ports in Central America.

Large Order for Quinin.—Recently the U. S. Government has ordered an immense quantity of quinin to be made into pills and tablets and shipped to the Government stores, ready for requisitions from China or the Philippines. Hundreds of pounds of this drug are required to meet the demands made by sickness in the army. During the Civil War quinin cost the Government between \$2 and \$3 an ounce, and it became one of the most costly essentials for carrying on the war. Grown almost exclusively in Ecuador, Peru, and Bolivia, the cost of transporting the bark across the mountains from the interior of Ecuador, Peru, and Bolivia to the seaport towns was enormous. Since then cinchona has been obtained in large quantities from Java. The present price of quinin is about 37 cents an ounce, and it is obtainable in much larger quantities than during the Civil War.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended August 17, 1900:

SMALLPOX—UNITED STATES.				CASES.	DEATHS.
KANSAS:	Wichita	Aug. 4-11	1		
LOUISIANA:	New Orleans . .	Aug. 4-11	16		2
MINNESOTA:	Minneapolis . .	July 14-Aug. 4 . .	22		
"	Winona	July 28-Aug. 4 . .	2		
NEW YORK:	New York	Aug. 4-11	1		1
OHIO:	Cleveland	Aug. 4-11	1		
"	Portsmouth . .	Aug. 4-11	4		
UTAH:	Salt Lake City .	July 28-Aug. 11 .	11		2
SMALLPOX—FOREIGN.					
BELGIUM:	Antwerp	July 21-28	2		
BRAZIL:	Rio de Janeiro .	June 22-29			7
ENGLAND:	Liverpool	July 21-28	1		
"	London	July 21-28	11		
GERMANY:	Frankfort on the				
"	Main	July 14-21			2
MEXICO:	City of Mexico .	June 17-Aug. 5 . .	52		51
"	Vera Cruz	July 28-Aug. 4 . .			6
NETHERLANDS:	Rotterdam	July 21-28	1		
RUSSIA:	Moscow	July 14-21	3		
"	Odessa	July 21-28	1		1
"	St. Petersburg .	July 14-21	69		15
"	Warsaw	July 14-21			4
STRAITS					
SETTLEMENTS:	Singapore	June 23-30			2
SWITZERLAND:	Geneva	July 7-14	1		
YELLOW FEVER.					
BRAZIL:	Rio de Janeiro .	June 22-29			4
COLOMBIA:	Barranquilla . .	July 22-29	2		
"	Bocas del Toro .	July 26	2		
"	Panama	July 30-Aug. 6 . .	5		2
CUBA:	Cienfuegos	Aug. 14	1		American
"					from Matanzas
"	Havana	July 22-28			9
"	Matanzas	July 23-29	1		death reported
"					July 5.
MEXICO:	Merida	July 14-21	5		2
"	Vera Cruz	July 28-Aug. 4 . .	19		6
CHOLERA.					
INDIA:	Madras	June 23-29			1
JAPAN:	Yokohama	July 12			1 suspect.
PLAGUE.					
BRAZIL:	Rio de Janeiro .	June 2-29	40		24
EGYPT:	Port Said	April 20-July 18 .	92		38
JAPAN:	Osaka	July 5-16	1		
"	Shidzuoka Ken .	July 5-16	1		
PHILIPPINES:	Manila	June 23-July 7 . .	7		5
SYRIA:	Beirut	July 14-21	4		
TURKEY:	Trebizonde				1 suspect.

Increase of Disease.—The health reports of Honolulu for the months of June and July show an alarming increase in the death-rate, especially among native Hawaiians and Japanese of the island of Oahu. In June the number of deaths per thousand was 45, in July 49. The increase for the past few years, as shown by tables just compiled, has aroused

a good deal of discussion. In 1896 the July deaths numbered 48. Since then the figures have jumped to 59, 75, 93, and this year 114. Tuberculosis heads the list of diseases, and there is agitation for strict measures to quarantine patients. The Board of Health is discussing a quarantine against tuberculosis, as many people come here from other places to enjoy the mild climate, and it is believed that they are a source of danger to the population. Typhoid fever has also claimed a good many victims lately, a slight epidemic having developed in one district of Honolulu.

Yellow Fever in Havana.—August opened with 35 cases of yellow fever in Havana. There are 59 cases in the city at present, 4 of the victims being Americans. There were 30 deaths from the fever during July, and there have been 11 thus far in August. Yellow fever cases this year have been principally confined to the locality just west of Central Park, known as the new city. Scarcely any cases have appeared in what has heretofore been known as the "yellow belt," in the vicinity of the arsenal and the wharves. This is accounted for by some observers by the fact that a great amount of sanitary work was done in the old part of the city last year, and electrical disinfectants have been continually used there. Confidence is expressed by the authorities that there will be no general fever epidemic, as immunes are widely scattered. The condition is regarded as normal compared with other years, when immigration reached the present figures. The cases are largely confined to Spaniards and Canary Islanders, many of whom have come to Havana in the last 6 months. It is expected the cases will average one a day during August. This is usually the worst month for yellow fever. Men of the sanitary and street cleaning departments are actively at work in the infected district. All suspected cases are sent immediately to hospitals.

Foreign News and Notes.

GREAT BRITAIN.

Plague Case in the Thames.—The British steamer *Clan Mac Arthur*, which sailed from Calcutta via Port Said, for London, has been quarantined in the Thames owing to a death from bubonic plague having occurred on board the vessel.

An Asiatic Woman an M.D.—The first Eastern woman admitted to the licenses of the Royal College of Physicians and Surgeons, Ireland, received her diploma recently. It is said that she made a most brilliant examination for her final, having been the only candidate who passed with honors.

The Owens College.—The council has appointed F. A. Southam professor of clinical surgery in place of W. Whitehead, resigned, and G. A. Wright professor of systematic surgery in place of the late Prof. T. Jones. These appointments are subject to the confirmation of the Court of Governors which will meet in October.

Carbolic Acid, a Poison at Last.—The Privy Council have at last consented to place carbolic acid among the poisons included in Schedule A of the Pharmacy Act. In future, therefore, all liquid preparations of the acid and its homologs, containing more than 3% thereof, with the exception of duly-labeled preparations in closed vessels for agricultural and horticultural purposes, will have to be sold in accordance with the regulations governing the sale of poisons.

Asylum Reports.—The average number of patients during the year 1899 in Saint Andrew's Hospital for Mental Diseases, Northampton, was 377, comprising 186 males and 191 females. The admissions numbered 103, 35 males and 68 females. Of these 19 were readmissions. The number of admissions has continued to increase steadily for the year 1899, as compared with 86 for the previous year and 73 for the year 1897. During the year 36 patients were discharged as recovered—14 males and 22 females—a total of 95% of the average number resident. The deaths during the year amounted to 22—17 males and 5 females—a total of 58% as calculated on the same basis. The number of patients on the books of the West Sussex County Asylum, Chichester,

at the beginning of the year 1899 was 466. The average number resident during the year was 478 patients, 217 males and 261 females. During the year 100 cases were admitted—39 males and 61 females. Of these 5 were cases of readmission.

Typhoid Fever in Belfast.—The death-rate from typhoid fever in Belfast is 4.46 per 10,000, while in Manchester it is 1.17 and 2.16 in Birmingham. As to the causes reference has been made to the water-supply, sewerage, houses with bad privy and ashpit arrangements, presence of polluted old streams, and arrangements have been made to combat these causes. An examination of the water failed to show any recent increase in contamination and that showed the present outbreak must be due to other causes.

University of St. Andrew's.—The Marquis of Bute's offer of £20,000 for the establishment of a Chair of Anatomy in the University of St. Andrew's, though welcome enough to the recipients, has excited feelings of a very different order in the medical dovecot of Dundee, where the gift is regarded "as another evidence of the donor's inveterate hostility to the young medical school" there. It is urged that both schools cannot be a success, and evidently the Dundee people are apprehensive lest this £20,000 should prove the means of their undoing in matters educational.—*Medical Press.*

The Royal Institute of Public Health.—The annual congress of the Royal Institute of Public Health was held recently at Aberdeen. Lord Aberdeen in his presidential address reviewed the progress of sanitation, especially as represented by legislation upon the subject. It is exactly 100 years since the first enactments were passed which could be described as the direct ancestry of modern sanitary legislation. The earlier Factory Acts, designed especially for the protection of the children might come under this category. Another kind of legislation which advanced concurrently took its origin in the necessity which had to be faced in crowded communities for an organized supply of water as distinguished from independent and casual pumps and wells. So, too, with sewerage. Prof. J. W. Simpson, of London, presided over the Preventive Medicine and Vital Statistics Section, and in his address said that such advance had been made in preventive medicine that the soldier who went to India today was 5 times less liable to die than his predecessor who was there when Queen Victoria began to reign. He strongly advocated the formation of a special sanitary service in connection with troops going on foreign service, pointing out that more deaths occurred from disease in a campaign of any magnitude than from wounds. In the section devoted to bacteriology and pathology, Professor Hamilton, of Aberdeen University, spoke of recent developments in bacteriology, dealing specially with the evil done owing to the failure to properly clean railway carriages, tramway cars, and other public vehicles. Dr. Farquharson, president of the Municipal and Parliamentary Hygiene Section, dealt with the good work being accomplished in public-health matters by parish councils, which should have more extended powers. The port sanitary authorities, presided over by Alderman Fraser, of Hull, resolved to urge the Local Government Board to supply as early as possible any information as to the existence of infectious or contagious diseases at the various foreign ports, and a deputation was appointed to wait upon the President of the Local Government Board and lay the matter before him. In the Preventive Medicine Section, Dr. Hope (Liverpool) opened a discussion on "Municipal Laboratories as Part of Public Health Organization," and resolutions on the subject were adopted. Dr. Dean, of the Jenner Institute, London, read a paper in the Bacteriology Section on "Toxins and Antitoxins." Dr. Browning (Weymouth) drew attention to the danger arising from sacramental cups at communion, many people taking wine from the same vessel, and he suggested that the clergy should be approached and asked to alter the present system. In the Municipal and Parliamentary Hygiene Section the Earl of Aberdeen read a paper by the Countess of Aberdeen on "Women as Members of Sanitary Authorities."

CONTINENTAL EUROPE.

German Universities.—The number of students at the German universities is larger by 5,000 than it was 10 years ago.

Smallpox and Flies.—A French physician, Dr. Hervieux, has made investigations which indicate that flies spread smallpox.

The Congress of Spanish Surgeons, which was to have been held in September of the present year, has been postponed until 1901.

The Centigrade Thermometer will alone, in the future, receive official recognition in Germany, and Réaumur thermometers will no longer be tested by the government department.

New Hospital in Athens.—A hospital of 12 buildings, 4 of which are isolated for contagious diseases, has been erected at Athens. It is for children and is called "Saint Sophia" in honor of Princess Sophia of Greece.

A Medical Discovery.—The *Pall Mall Gazette* publishes a dispatch from Rome, which declares that an important medical discovery, the cause of Bright's disease, has been made by Dr. Ovid Brown, formerly of New York, and now of Rome.

Marseilles Medical Strike.—All the surgeons and students at the Marseilles hospitals have gone on strike on account of the suspension of one of their colleagues and a dispute with Dr. Isoard in regard to the management of the hospitals.

The Blind in Russia.—It is stated in the *Medical News* that there are more than twice as many blind persons in Russia as in the whole of the rest of Europe. They number 190,000, which is equivalent to 2 in every 1,000 of the population. In France and England the proportion is not quite 1 to 1,000.

To Protect Cattle Against Texas Fever.—A discovery of much interest has been communicated to the Academy of Medicine by M. Linnière, of Paris, one of the leading scientists on veterinary subjects, who claims to be able to preserve animals from Texas fever, the worst form of parasitic maladies. M. Linnière has succeeded in cultivating the parasite producing the disease in serum from animals which have been previously attacked, thus attenuating its virulence, and in obtaining a vaccine virus with which to inoculate and protect cattle against the fever.

Permission Given to Establish an American Hospital in Japan.—The Department of State has been informed by Minister Buck, at Tokyo, that the Japanese Government has given permission to the United States Government to establish a United States hospital on Japanese territory wherever the United States Government may select a site.

Paris Water from the Swiss Lakes.—The scarcity of water in Paris during the drought has raised the question of providing for an additional supply from the Swiss Lakes. Lake Lemane, 250 miles from Paris, and Lake Neuchâtel have been spoken of. At the close of the Revolution the Parisians got all their water from 83 public fountains, and it was only 40 years ago that an efficient service of water was distributed in the capital.

Institution for the Study of Tropical Diseases.—The first German institution for the study of naval and tropical diseases will be opened at Hamburg, October 1, at the cost of the Hamburg Senate and with the support of the Colonial Department of the Foreign Office. It will be a hospital for seamen and residents from the tropics suffering from internal diseases, and for the study of naval hygiene and the training of naval doctors.

Antirabic Inoculation in Greece.—The number of patients who underwent the treatment for hydrophobia at the Pasteur Institute of Athens from the foundation of the institute in 1894 to the end of 1898 was, according to the *British Medical Journal*, 1,300. Of these 1,200, or 92.8%, had been bitten by rabid dogs, 58 by cats similarly afflicted, 7 by asses and mules, 4 by pigs, 2 by cows, 2 by wolves, and 1 by a horse. In 18 cases the disease was transmitted by human saliva, and in 1 by the bite of a man suffering from hydrophobia.—[*Boston Medical and Surgical Journal*]

New Process of Embalming.—Dr. Variot, of Paris, has discovered a process for embalming bodies which it is thought will prove a great success. He not only embalms, but metallizes the bodies by the Ruolt process, just as it is done with a fork or a spoon. In this manner they can be preserved indefinitely, and in such perfection that the most imperceptible wrinkles and lines are reproduced, and the embalmed body has the appearance of a metal statue.

To Revitalize Air.—Interesting demonstrations of the properties of sodium dioxid were given recently before the French Academy of Science. Sodium dioxid is found to possess the property of renewing the oxygen in air that has been breathed and in absorbing carbonic acid gas given off. Thus, with an apparatus containing the sodium, shown by Desgrey and Balthouard at the Academy, a diver can remain under water and walk about without having the air renewed by the pumping apparatus at present employed. By means of the new apparatus miners will be able to penetrate into poisonous gases and foul air, and firemen into smoke, without fear of asphyxia. It will also render practicable submarine boats. Ample proofs of all that is claimed for it were given at the Academy. Two men put on diving dress from which all air was excluded and remained inclosed 2 hours.

The Fourth International Dermatological Congress, under the presidency of Dr. Besnier, and most successful in every way, has just ended. The next congress will be held in Berlin with Prof. Lesser as its president. Dr. J. Nevins Hyde, of Chicago, Dr. Henry W. Stelwagon, of Philadelphia, and Dr. J. Caspar Gilchrist, of Baltimore, who were present and read papers, extended to the members, in the name of the American Dermatological Association, a cordial invitation to hold the next meeting in the United States. It seems, however, that Berlin had a claim for the Congress this year (1900), Paris having already had one previously; but at the last Congress, held in London, the French representative requested as a special favor, owing to this being exposition year, that it be held there. This was conceded, with the distinct understanding that Berlin should have the next. The American representatives above, learning these facts, graciously stood aside, and gave their support to Berlin. In return for this courtesy the moral word of the Congress was voluntarily given that the Congress following that of Berlin would be held in New York.

MISCELLANY.

Rains in India.—The following dispatch has been received from the Viceroy of India: "The favorable conditions continue. Rain is falling generally throughout the country. The total number supported in all the famine-stricken provinces is still large, owing to the backwardness of the crops, the restricted demands for labor in the fields, and high prices. About 6,149,000 persons are receiving relief."

Obituary.—PROF. A. BORN, of Breslau, aged 50.—DR. MOUSSIER, surgeon to the Nantes hospitals.—DR. SUTUGUIN, of St. Petersburg Medical Academy.—HERMANN DOHNBERG, of St. Petersburg, has been assassinated.—DR. KRISTELLER, of Berlin.—ROBERT JOHN SPITTA, of London, August 2, aged 81.—WILLIAM JOHNSTON STUART, of London, August 3, aged 81.—HENRY BURFORD NORMAN, of Chesham, Bucks, July 26, aged 81.—WILLIAM CHARNLEY, of Shrewsbury, August 2, aged 55.—SIR WILLIAM STOKES, of Durban, August 19, aged 61.

The Society of Red Cross Dogs, founded in 1893, is under the patronage of crowned heads and army surgeons. There are about 300 members enrolled, and the entire system of training and supplying these animals is undertaken gratuitously by the society, the annual subscription amounting to a trifle under a dollar. The kennels and training establishment are situated in a small Rhenish Prussian town, Lecheich, where about 20 dogs are kept at a time. When 5 months old the training begins, and continues until the animal is absolutely under control, from scouting in the open field and taking messages to the more difficult task of searching for the wounded and attending to their needs in the thickly girt forest.

Society Report.

THIRTEENTH INTERNATIONAL MEDICAL CONGRESS, Paris, August 2-9, 1900.

It has taken less than two years to complete the preparation and organization of this international rendezvous, and that it has proved a success is evidenced by the fact that some 6,000 have been in attendance, of whom nearly two-thirds were from countries outside of France. The streets adjoining the Ecole de Médecine lost their wonted appearance at this time of the year of peaceful tranquility; numbers of practitioners from all parts of the world hurried along, anxious to take part in the scientific labors of the sectional meetings and in the varied and magnificent fêtes, which, given in what is *par excellence* the City of Fêtes, caused visitors to bear away an ineffaceable memory of the realization of a delightful dream. Of all the International Congresses which have taken place, or will take place during the Exposition, the Medical Congress was certainly the most distinguished and the most interesting. It will also prove to be undoubtedly the most important of all medical medical meetings which have been held up to now. The most renowned *savants* have willingly devoted a portion of their time to the Congress: Drs. Osler and Keen in America, Sir William MacCormac in England, Virchow at Berlin, Professor Pachoutine at St. Petersburg, Golgi in Italy, Zambacho Pascha in Turkey, and many others have been its initiators. In France the indefatigable Dr. Chauffard, the general secretary of the Executive Committee, has given himself up entirely to it.

The arrangements of the Congress were made by the Government Department, with the following executive committee: President, M. Lannelongue; secretary-general, M. Chauffard; treasurer, M. Duflocq; members, MM. Bouchard, Bonilly, Brouardel, Dieu, Gariel, LeDentu, Malassez, Nocard, Raymond, Rendu, Roux; secretaries, MM. de Massary and Leon Weber. The president of the Congress, M. Ochilon Marc Lannelongue, is professor of surgical pathology in the faculty of medicine of Paris, and surgeon to the Hôpital des Enfants Malades, and was enrolled an honorary fellow of the Royal College of Surgeons of England at the recent centenary.

It had been feared that the assassination of King Humbert would mean the abandonment of the official receptions and this proved true in a great measure, sadly clouding over the more cheerful side of the gathering.

One of the most noteworthy of the smaller gatherings was the banquet tendered Lord Lister by Prof. Richet and the Scientia Society, at which addresses lauding the achievements of the guest were made by all the leading French scientists. The reply by Lord Lister was particularly happy. He said he had accepted the invitation to the banquet because he interpreted it as an expression of the respect of French scientists for the noble science of surgery and for the Royal Society of which he was president. He also thought that such a fête given by such eminent Frenchmen to an English scientist was a striking illustration of the happy fact that though there were misunderstandings, science knew nothing of them. Scientists had learned to respect each other—better still, to love each other—whatever might be their nationality. He had often stated, and he was pleased to repeat it, how much he was indebted to Pasteur. He had ever loved physiology and surgery, but he had lamented the disastrous results that followed even the best and most skillful operations. He saw that the chief evil was due to changes that occurred after the operation, and to a cause arising not from within but from without the patient's body. He did what he could to guard against this, but all efforts were useless till Pasteur threw a powerful light on the subject. Pasteur had suggested a possible course which he, the speaker, had done his best to follow. That was all. If the results had been so beneficent as generously described by the various speakers that night it had been to a great measure due to accident.

The opening general meeting of the Congress took place, Thursday, August 2, with the official ceremony in the vast Salle des Fêtes in the Exhibition. Owing to the assassination of the King of Italy, the President of the French Repub-

lic was not present, but he was represented by the Minister of Justice.

President Lannelongue read the opening address, welcoming the members of the Congress. In terminating, he said: In wishing you welcome, I offer you my warmest congratulations. I most heartily thank the committees of all the foreign countries who have helped in the organization of this vast undertaking; the entire press for its active and disinterested aid; the Executive Committee, who have never failed to respond to my call, and have given the best of their advice; the University of Paris and the members of the Government of the Republic, who have understood from the first the importance of our task, and have rendered its realization easier. As to myself, my heart is filled with the keenest emotions I have ever felt in my life. I can find, in conclusion, no better words than those addressed to you by Bouillaud, the first and one of the most illustrious presidents of this Congress: "Thanks to you, my whole life has just received its crowning award. I hold you in the depth of my heart, and you will continue to live there till its last beat." I will only add: Now to work, time is pressing; never since the beginning has there been promise of a richer or more plentiful harvest. May we know how to profit by it, and gather in the fruitful grain, which future generations will cause to bear more fruit.

The Minister of Justice, in the name of the Government, then welcomed the members of the Congress. M. Chauffard, the General Secretary, now read his report, describing the complex work of organization. As a result, 190 delegates, representing the governments of 34 foreign States, were present on the platform; 250 universities, academies, or learned societies have sent delegates, and over 6,000 members of the Congress have come to Paris. The program of the Congress includes 260 reports, and more than 1,200 communications.

After the termination of the Secretary's report, the official delegates of the foreign nations came forward to offer their good wishes to France, and hopes for the success of the Congress. Professor von Bergmann led the lengthy procession. Sir William MacCormac, Bart., K.C.V.O., represented Great Britain. Professor Baccelli was absent owing to the mourning of the Italian nation. M. Mandizabal, the delegate of Mexico, made a long spirited speech, which was greatly applauded. The delegate of Venezuela closed the series.

This terminated the official portion of the program, and a very small crowd gathered round the foot of the platform when PROFESSOR VIRCHOW rose to give his address on **Traumatism and infection**. The venerated professor, who was in the best of health and spirits, spoke in German. After a historical review of the subject, Professor Virchow expressed the opinion that the present attention to bacteria has withdrawn us too much from other causes of pathological processes. Injuries of bones take place without abrasion of the skin, yet osteomyelitis ensues. Brain abscess results from head trauma. Some surgeons claim that microbes enter even through the slight lacerations of skin. This, however, is mere theory. We know that cells may degenerate without any microbial influence. Trauma may kill them. We know from dead parasites, such as trichina within the body, what happens to dead cells. The changes occurring in extrauterine fetuses also make this clear. Let us, then, not attribute too much importance to microbes, but let us study carefully the cellular changes as they occur. With the address of Professor Virchow, which was received with great applause, the proceedings terminated, the discourse of Professor Pavlov, which was included in the original program of proceedings, being postponed to the first general meeting.

The work in the 26 sections began generally at 9 A.M. on Friday morning, with the exception, however, of the sections of neurology and dermatology with syphilography. These sections are perhaps the largest attended. The section of neurology is at the same time the second International Neurological Congress, and is a question which will be decided before the end of the present Congress whether the International Neurological Congress as such shall cease to exist, or whether it will arrange its meetings at a different time to the International Medical Congresses. These two sections, owing to the great number of communications promised and the number of subjects for discussion, met on

Thursday morning at 9 A.M. and held morning and afternoon sittings every day.

RECEPTIONS AND SOIRÉES.

The President of the Congress and Madame Lannelongue gave a reception by invitation to the delegates and Presidents of Sections on Friday evening, August 3. The program included minuets and ballets by dancers from the Opera, while a Hungarian band played at intervals in the refreshment room.

The Committee of Organization gave a *soirée* in the Palace of the Senate and in the Luxembourg Gardens on Monday, August 6, at 9 P.M. The program included dancing and an entertainment in the Salle des Fêtes of the Palace. M. Mounet-Sully, of the Comédie Française, and Madame Sarah Bernhardt recited poetry, while the musical talent was supplied by M. Renaud and Madame Litvinne of the Opera, and M. Fugère of the Opéra Comique. As all the members of the Congress with their wives and families had been invited, the number of guest must have exceeded 15,000. Owing presumably to faulty organization the enjoyment of some hundreds was spoilt, as the sole entrance into the Palace, a door five feet wide, also served as the popular means of exit, so many guests never succeeded in reaching the door of entrance even, but after a struggle of half an hour or so gave up the attempt and left.

Dinners and *soirées* were given by the Presidents of all the Sections, and these smaller *fêtes* were a very enjoyable feature of the meeting to the fortunate guests.

Up to August 5, 6,170 members had registered their names, the nationalities being represented as follows: France, 2,293; Russia, 805; Germany, 572; the United States, 412; Italy, 324; Great Britain, 222; Spain, 219; Belgium, 147; Austria, 141; Argentine Republic, 108; Swiss, 101.

Owing to the initiative and energy of Dr. Blondel and the French Medical Press Association, a reception room and a work room have been placed at the disposal of the French and foreign press reporters. Here members of the press find the daily program and printed summaries of all the communications made in the various sections, and are able to write their articles and post them on the premises. Members of the French Press Association in rotation are always in attendance to give information and advice. It is interesting to note that this is the first occasion at an International Medical Congress when such facilities have been given to medical journalists and correspondents.

A general assembly of the Congress was held August 6 in the new hall of the Sorbonne. The paper of Prof. Pavlov, who was absent through illness, was read, dealing with experimental therapy and conveying a special tribute to Claude Bernard. SIR J. BURDON SANDERSON then read a paper on **Some modern pathological problems.**

PROFESSOR JACOBI from the United States followed and gave a very interesting account of the growth of the medical profession in America, of its medical education from its crudest beginning to the present day, and of the American medical press. This was all quite new to the greater part of the audience and was consequently welcome and entertaining. These three papers were lengthy and sufficed to fill up the afternoon.

Medicine.

Dr. P. LE GENDRE (of the Hôpital Tenon, Paris), read a paper on **Pathogenesis of gout.** All theories of gout were open to chemical, physiological, or pathological objections; the most plausible of them could only account for a fit of the gout and could not explain the permanent derangement of the cellular nutrition which was transmissible by heredity and formed the connecting link between successive gouty attacks in the individual and also between gouty manifestations in father and son. Clinical statistics had proved (1) that gout occurred with exceptional frequency in persons whose progenitors or descendants suffered from diseases of the class known as arthritic or from diabetes or obesity, and (2) that gout was often associated in the same individual with one or other of these maladies. If gout was clinically of the same nature as diabetes it was very probable that in the gouty there was an impairment of metabolism as regards nitrogenous matter, an inability of the tissues to effect the complete destruction of albumin. Among the consequences of the incomplete destruction of waste products

must be reckoned the loading of the organism (a) with certain acids (oxalic, acetic, lactic, etc.) which might diminish the solubility of uric acid, although it might not be necessarily in excess in the blood, and (b) with certain organic bodies the toxic action of which might contribute to produce the phenomena of gout. Clinical statistics showed that simple albuminuria and interstitial nephritis were frequent in gouty subjects. Acquired gout was brought on by excess in food which was either nitrogenous or rich in oxalic acid, or by overfree use of certain fermented beverages; it might also be due to want of bodily exercise, to overfatigue of the nervous system, or to leadpoisoning. Gout was hereditary because the defects of the cells of the progenitor were continued to those of the offspring through the ovule or the spermatozoa.

Dr. WILHELM EBSTEIN (Göttingen) said that **gout** was more or less chronic, and **depended on a hereditary diathesis** which was almost always congenital, and to which the name of uric acid diathesis had been given. The close relations which existed between uric acid and the nucleins rendered it probable that in the uric-acid diathesis there was an abnormal state of the cellular nuclei or of the protoplasm of the individual in question. The individual predisposition, which could be followed through whole families and successive generations, was a very important feature of the uric-acid diathesis. A variety of conditions seemed to contribute to the development of the uric-acid diathesis and to its transformation into actual gout, some of them being as follows: (1) all the circumstances being equal gout manifested itself earlier and with more severity when the uric-acid diathesis was well marked than when it was not; (2) personal habits, such as idleness and luxurious living, or the combination of these two in a high degree, or the abuse of alcohol, favored the development of gout, and temporary variations might very often be attributed to those conditions; (3) certain acute and chronic toxic influences in presence of the uric-acid diathesis favored the development of gout, among which some bacterial toxins were of great importance, and the relations of gout to rheumatism, syphilis, lead-poisoning, and influenza, must be kept in mind; and (4) neither contagion nor climate had any influence as regards gout. It was probable that it was only the uric acid formed at the expense of the nuclein substances of the human body, and not that formed at the expense of the nucleins of the food, which had an influence on the pathogenesis of gout. It was not yet proved that in gout uric acid was formed in excess; Dr. Ebstein considered that an increased formation of it was not indispensable, but was nevertheless very probable. In order to understand the pathogenesis of the different symptoms of gout it was necessary to presume the existence of primary articular gout and primary renal gout. The former was the commonest variety of gout, and did not prevent the patients from attaining an advanced age. Primary articular gout developed itself at first under the influence of retained uric acid, this retention being localized because it affected only a single part or some parts of the human body. In primary renal gout there was from the outset a generalized retention of uric acid which affected all parts of the body, and was always caused by primary structural disease of the kidneys.

Sir DYCE DUCKWORTH (London) concluded as follows: 1. Gout is a morbid condition dependent on an inherent vice of nutrition which was manifested by an imperfect metabolism in various organs or parts of the body, presumably in the kidneys and probably in the liver. 2. This trophic disorder or inadequacy (*ralentissement de nutrition*) led to the formation of uric acid, probably in excess, and to the periodic retention of it in the blood (**gouty urichemia**). 3. Histology threw no light upon the intimate nature of this defect which thus related to cellular potentiality, possibly under neurotrophic influence, and not, so far as was known, to structural alteration. 4. This textural disability or a tendency to it might be primarily acquired and also transmitted as a fault, thereby inducing from time to time urichemia with gouty manifestations in the descendants. 5. In most instances under conditions which provoked it, and in some cases independently of these, attacks of gout might grow up and come to a crisis. Such crises were attended by an alteration in the solubility of the uric salt in the blood whereby irritating crystals of sodium biurate were produced and precipitated in various parts of the body. 6. A paroxysm of gout, the sites of its occurrence, and its metastases, were determined

by nervous influences, probably dominated from the bulbar center, and the local attacks alighted either in the joints or in textures which had been weakened or rendered vulnerable by impaired nutrition owing to past injury or overuse. 7. This central neurosis was an essential and transmissible feature in the pathogeny of gout and pertained to the arthritic diathesis generally. 8. The urichemia of gout was peculiar and unlike that which was induced by other morbid conditions, but the occurrence of urichemia in the gouty was by itself inadequate to induce attacks of gout. 9. Uratic deposits in any part of the body might be removed in course of time, but were apt to be permanent in the least vascular tissues. 10. Uratic deposits might occur to an enormous extent in gouty persons without the occurrence of any pain or paroxysms. 11. The clinical features of gout indicated that both *hemic* changes (due to inherent morbid tissue metabolism) and a *neurotrophic disturbance* acted as pathogenic factors, and consequently gout was to be regarded as a neurohumoral malady.

DR. CH. ACHARD and DR. S. LAACHE read papers upon **Diagnosis of renal insufficiency**. Dr. Achard dealt chiefly (1) with the results of cryoscopy applied to the urine and blood-serum, an index of the permeability of the kidney being thereby obtained, and (2) with the conclusions to be drawn from the elimination of a foreign body (usually methylene-blue) in the urine. Dr. Laache said that treatment ought to be prophylactic by preference, but if that was impossible the well-known methods of treatment in kidney disease ought to be followed. Special attention must be given to the state of the heart.

DR. ALBERT MATHIEU (of the Hôpital Andral, Paris), DR. F. BOAS (Berlin), and DR. JULIUS MANNABERG (Vienna) read papers upon **Mucomembranous colitis**. Dr. Mathieu said that constipation, often spasmodic, was the rule in mucomembranous colitis. Diarrhea, which was always of short duration, was the result of an attack of catarrhal colitis. There was always in mucomembranous colitis a secretional irritation of the mucous membrane. The disease only showed itself in its full intensity in persons predisposed by previous neuropathic tendency. Nervous derangement produced hyperesthesia of the walls of the large intestine and interfered with its motility. In treatment, castor oil, copious enemas, and belladonna were useful. Drastic purgative, astringent injections, and massage should be avoided.

Dr. Boas said that the only positive diagnostic symptom was the existence of the characteristic mucous masses; other symptoms, such as tenderness of the colon, coloptosis, movable kidney, and intestinal atony, went no further than supporting the diagnosis. It was absolutely necessary to decide whether the mucomembranous colitis was idiopathic or a complication. Differential diagnosis was required only as between mucomembranous colitis and colitis mucosa. By frequent observations and the systematic employment of intestinal injections a decision would be almost always possible. The clinical history of mucomembranous colitis was exactly parallel to that of habitual constipation, and methods of treatment which were suitable for the one were also suitable for the other.

Dr. Mannaberg said that a distinction must be drawn between enteritis membranacea and colitis mucosa. By the former name was understood a subacute or chronic catarrhal affection of the large intestine accompanied by evacuations particularly rich in mucus. Colitis mucosa was the name of a morbid condition characterized by paroxysmal attacks of colitis followed by the evacuation of masses of mucus. The former variety was, in fact, only a catarrh of the large intestine, accompanied by an abundant evacuation of mucus; it had in a general way the same pathogenesis as catarrh of the large intestine. Colitis mucosa had, on the contrary, a special pathogenesis. In the great majority of cases its basis was a general neuropathy (hysteria or neurasthenia) and there was a tendency to consider it as a neurosis. The paroxysms might be induced by certain factors of occasional occurrence, the principal of which were diseases of the genital organs (both in the male and the female), mental disorders, constipation, irritating rectal injections, and organic diseases of the intestine. The pathologic anatomy of enteritis membranacea was the same as that of enteritis in general.

PROFESSOR BASCH (Vienna) read a paper upon **Pulmonary edema**. He said that the primary pathogenic condition of pulmonary edema was the stoppage of the

capillary circulation in the alveoli from the increased blood-pressure in the left auricle. The second was that there was a free supply of blood from the right side of the heart coming through the pulmonary arteries. The mechanical consequences of these two conditions were the enlargement of the pulmonary alveoli and the increase of the resistance of the alveolar walls. The enlargement was produced by the lengthening of the capillary vessels and the increase of resistance by the high tension of the blood in the capillary network. To these two consecutive processes might be added exudation into the alveoli, a natural consequence of the impeded circulation in the lungs. The enlargement of the alveoli and the increase of resistance in their walls created a mechanical obstacle to respiration and a consequent impairment of the aeration of the blood, giving rise to the sensation of dyspnea, which was only the expression of the disproportion between the respiratory effort and its effect. This morbid sensation was aggravated proportionately to the increase of carbonic acid which accumulated in the blood through the interference with its aeration. It overstimulated the respiratory centers and threw the respiratory muscles into forced action. The difficulty became greater when intraalveolar exudation was added to the preceding conditions of enlargement of the alveoli and increase of resistance in the lungs. Mere exudation without concomitant enlargement did not interfere with respiration so much as was believed. Persistent dyspnea increased the carbonic acid in the blood, and death of the heart from general asphyxia was the result. Cardiac dyspnea, cardiac asthma, and pulmonary edema had their starting point in muscular insufficiency of the left auricle, and not only in primary insufficiency which was characterized by low arterial pressure, but also in secondary insufficiency which was characterized by increase of the arterial pressure.

PROFESSOR MASIES (L'ège) said that edema was an abnormal accumulation of lymph, and that acute pulmonary edema was only a particular variety of it presenting two peculiar characters depending on the activity of the pathogenic process and on its special situation; these were (1) the accumulation of fluid in the lymphatic tissue combined with the more important symptom that fluid collected in the alveolar cavities either by rupture of their walls or by exudation through them; and (2) the suddenness with which the phenomena appeared. The theories of the pathogenesis of this edema regarded in a general way were three in number: (1) the purely mechanical theory which attributed the edema to a great increase in the lateral pressure in the capillary vessels and which ought to be rejected; (2) the opinion of Hamburger and Heidenhain which considered that lymph was secreted by the endothelial cells of the capillary wall and that edema was an exaggeration of this function; and (3) the theory of Starling, Winter, and Théaulon, which ascribed the genesis of edema to modifications of the osmotic relations between the liquids on each side of the vascular wall and to variations in the permeability of this wall. Two prominent facts had here to be considered. In the first place, an active, simple, noninflammatory hyperemia of the vessels without obstacle to the flow of liquid was by itself incapable of producing edema. In the second place, lesions of the capillary walls, involving an increase in their permeability, were an important factor in edema. Clinically pulmonary edema occurred in three forms: 1. *Inflammatory edema*, which was probably a reflex vasodilation, developed under the influence of some causal factor and followed by a direct lesion of the walls by microbes living in the interior of the normal pulmonary parenchyma. 2. *Edema of stasis*, which was by far the most frequent and was met with in diseases of the heart, especially in commencing stenosis, in diseases of the vessels such as aortitis or arteriosclerosis, and in diseases of the kidney such as primary sclerosis. Much experimental work had been done on this subject, but the conclusions were often contradictory. The fact which appeared best established was that edema might be produced under the influence of an increase of pressure in the pulmonary arteries arising from an increased activity of the right ventricle concomitant with a stasis due to inaction of the left heart. 3. *Toxic edema*, which was hardly known except in experimental research, examples being the edema produced by muscarin and by iodine.

M. TEISSIER (Paris) said that acute edema or serous apo-

plexy of the lung must be distinguished from the varieties of pulmonary edema, the evolution of which was generally slow or chronic, and which had a mechanical or passive origin. The special nature and different origin of acute edema were indicated by its sudden onset and by the absence of fibrin in the effused fluid. Clinically it was distinguished by premonitory sensations of tickling in the throat or painful intrathoracic tension and by intense dyspnea, accompanied by continuous spasmodic cough and soon followed by frothy-red expectoration, with abundant fine rales to be heard over the edematous region. For its production either infection or the previous action of a toxic agent was necessary. Among infective conditions, acute articular rheumatism, influenza, puerperal septicemia, typhoid fever, and pneumonia held the first place. The requisite toxic action was exercised chiefly by Bright's disease and by alcoholism. This preponderating influence of infections and of toxic influences was proved by experiments on the artificial production of pulmonary edema by means of muscarin, prussic acid, salicylate of methyl, nitrite of amyl, and even by the injection of salt-solution. Heart-disease was another important factor. Acute edema of the lung was distinguished from passive and chronic edema not only by its pathogenesis and symptoms, but by the fact that these two varieties of pulmonary edema have a totally different prognosis, acute edema being often extremely dangerous and capable of causing the death of the patient in a few hours. With regard to treatment, experience had shown the undeniable value of blood-letting. Atropin had given only negative or untrustworthy results. Morphia was dangerous and ought not to be employed.

PROFESSOR DIEULAFOY (Paris) made a report upon **gastric ulcer**. He did not take into consideration all the symptoms and all the complications of gastric ulcerations, but selected a few types, including (1) erosion, which was the smallest of the ulcerations but might nevertheless lead to copious hemorrhage; (2) lesions of the mucous membrane somewhat larger than erosion, and for which he proposed the name "exulceratio simplex"; (3) simple ulcer (*ulcus simplex*), the most formidable complications of which were hemorrhage and perforation; and (4) specific ulcerations of the stomach due to tubercle and syphilis.

PROFESSOR A. JACOBI (New York) read a paper on the **Artificial feeding of infants**. Results of the analyses of human milk were contradictory, no two were alike. Alterations in different periods of lactation which were asserted by some were denied by others; those caused by menstruation, sickness, or ingesta were either well understood or dimly appreciated, but rarely measurable. The nature of its proteid, whether uniform or compound, was not sufficiently known. Whether there was an essential quality that was beyond the domain of chemistry was not known. That was why so many and so different ironclad rules had been established for the selection of substitutes and why the uncertainty had rendered experimentation with commercial substitutes by chemists, and even by respectable clinicians, so common. If human milk were a uniform body the demand for an exactly equivalent substitute would be justified. Nature, however, was more liberal in allowing latitude than a chemist. Heat both improved and injured milk. When milk was exposed to from 68° to 70° C. for 10 or 15 minutes the *Bacterium coli* and the *Bacillus lactis aerogenes* were destroyed; after long exposure this heating killed pathogenic germs; at 80° C. it coagulated albumin and changed the taste and odor of the milk; even at 70° C. it changed casein so as to impair its value for dairy purposes. In boiling, a part of the albumin was deposited, the lecithin was destroyed, and the fat was altered both chemically and physically. Serious changes appeared to take place through long boiling, both in casein and in nuclein. High temperatures continued for hours were required to destroy some of the long-lived spores; their injuriousness, however, was not entirely clear. Boiled, pasteurized, or sterilized cow's milk was never woman's milk; it was not a curative agent; it afforded, however, the great advantage of destroying fermenting and pathogenic germs; that was why it was indispensable in large cities and during the prevalence of certain epidemics, and wherever fresh and unpolluted milk was not accessible. When employed as exclusive infant food cow's milk watered or not was liable to cause constipation, or diarrhea, rickets, and scurvy.

The mineral constituents of cow's milk and human milk

were different. The addition of chlorid of sodium to artificial foods was required both for physiological and chemical reasons. Home made artificial foods were preferable to the proprietary foods of the market for many reasons. The separation of the component parts of cow's milk by mechanical means and the recomposition of the same was a procedure of doubtful value. The experience of the physician and of the well-directed public at large was equivalent at least to laboratory and library theories based on facts that were *sub judice*.

DR. O. HEUBNER (Berlin) said that a scientific set of rules could not be drawn up for the artificial feeding of children, except by a study of the healthy infant born at full time. As rules for feeding a healthy workman could not be laid down by the study of a diet of an invalid, so a normal infant could not be fed by studying the difficulties or successes obtained in feeding unhealthy children. This, however, was what medical men very generally did, because they were so constantly brought into relation with invalid children. The common sense of nurses, however, had always understood that nothing could replace the milk of the mother so well as the milk of some animal. The milk of the various domestic animals, especially that of the cow and of the goat, did not differ more from the milk of a woman than the various sorts of meat differed the one from the other, such for instance, as pork and beef, which the healthy child, like the adult, could eat alternately. The intestine of the healthy infant was capable of digesting the milk of the cow just as well as the milk of a woman. The labor of digestion, however, was greater in the former case than in the latter, for large proteid molecules required a greater digestive effort than the small hydrocarbon molecules, and cow's milk was very rich in the former, while the milk of a woman was rich in the latter. Other difficulties of artificial feeding arose from infection or decomposition to which the milk of an animal was always exposed before the child got it. As regards this danger, the sterilizing of milk was one of the most important advances made during this century.

DR. MONTI (Vienna) read a paper upon the **Scientific principles involved in preparing from the milk of an animal an equivalent diet to the milk of a woman**. He pointed out that the acidity of cow's milk could be reduced to that of the milk of a woman by the addition of carbonate of potassium. Coagulation should be arranged so as to take place in the same manner in the milk of the cow as in the milk of a woman. To do this, equal quantities of cow's milk and of buttermilk should be mixed together and a little carbonate of potassium added. The proportions of casein, of fat, and of sugar could all be arranged to be in the proper proportion by the use of a mixture of milk and buttermilk.

DR. AXEL JOHANNESSEN (Christiania) read a paper upon the **Sterilization of milk and mode of use**. He pointed out that to sterilize milk completely by boiling at the ordinary atmospheric pressure it would be necessary to cook it for several hours; but sterilization could be carried quite far enough by other methods, of which the best and simplest was pasteurization at 70° C. Great care should be taken to look after the milk-supply so that the supply of raw milk should be as free from germs as possible. The milk after pasteurization should be cooled down to about 17° C. and used within 12 hours.

PROF. A. BAGINSKY (Berlin) read a paper upon the **Gastro-intestinal affections of children from the point of view of pathological anatomy**. These he divided into: I.—Functional troubles comprising acute dyspepsia, not marked by any important anatomical changes. II.—1. Anatomical alterations: (a) lesions of a catarrhal nature, such as subacute dyspepsia, accompanied by cellular infiltration of the mucous membrane; (b) infantile cholera with destruction of the intestinal epithelium over a large surface; (c) chronic gastrointestinal catarrh; and (d) intestinal atrophy. All these latter processes—namely, from a to d—were accompanied by vomiting, diarrhea, and colic. Assimilation was impaired, and the functions of the liver and pancreas were disturbed. 2. Anatomical lesions localized in the follicles. These might be divided into (a) simple follicular enteritis accompanied by a moderate degree of fever, a slight pain, and the secretion of blood; and (b) severe infectious follicular enteritis. In this there was destruction of the mucous membrane and the formation of abscesses. III.—Both functional

troubles and the more severe morbid processes were due to infection or intoxication produced from within. Such were the action of the normal microbes of the intestine, the virulence of which was exalted under particular circumstances. They could also be produced from without by the influence of toxins derived from the food, or by microbes introduced with the food which became virulent in the intestine, or finally some poison might be contained in the food. IV.—Those morbid processes, which were most often developed during the heat of the summer, were caused by the common saprophytes or their toxins, but these microbes were not specific. Septicemia arising from the intestine was very rare. Cases had been reported where the infection had been localized in the kidney, and where the infarct had gone on to suppuration or necrosis.

DR. MARFAN (Paris) read a paper upon the **Causes of gastroenteritis in infants**. He said that dyspeptic gastroenteritis arose mainly from improper feeding, that infectious gastroenteritis was principally caused by germs in the milk of the cow being conveyed into the digestive tract. Toxic gastroenteritis resulted from the introduction of some chemical poison into the digestive tract. Poisoning by drugs was not uncommon, but the usual source of poisoning was milk, due to its containing toxins which had been produced by the action of germs before sterilization. Other kinds of gastroenteritis were consecutive to various maladies, such as, for instance, measles, influenza, or diphtheria. Infantile cholera or summer diarrhea seemed to be due to a combination of circumstances—namely, some alterations in the digestive secretions set up by the hot weather which brought about a kind of self-poisoning, the increased growth of microbes in the milk of the cow under the influence of high temperature, and, finally, the formation of microbes of toxins before sterilization.

PROF. D'ESPINE (Geneva) read a paper upon **Prophylaxis in infantile tuberculosis**. He said: 1. Infantile tuberculosis was a parasitic affection acquired by contagion in the child in the same way as in the adult. There were, however, exceptional cases in which the affection was congenital, being acquired by way of the placenta. 2. The source of the contagion in the immense majority of cases was from the sputum of tuberculous adults. 3. Another source of contagion was by way of the milk of cows, or very occasionally of goats, which were suffering from tuberculosis of the mammary gland. This mode of infection played a more important part in the infant than in the older child. 4. In infants up to the age of 2 years kissing by their mothers or nurses who were affected with phthisis appeared to be the usual mode of transmission. Sometimes contagion was carried directly by aspiration into the bronchi of saliva which contained bacilli. 5. In the child of between 2 and 6 years of age tuberculosis was very frequent and, as a rule, commenced in the bronchial glands. The greater frequency of tuberculosis between the ages of 2 and 6 years was explained by the habit which children had of putting everything in their mouths and of sucking their fingers. 6. From the age of 6 years up to that of puberty the frequency of tuberculosis commenced. There was a very real danger of contagion owing to the circumstances of school life, but in D'Espine's opinion this danger had been exaggerated. 7. The infection of tuberculosis occurring through the skin was very exceptional. 8. Hereditary predisposition played an important part in the production of tuberculosis in the child. It was therefore necessary that prophylactic measures should be specially applied to the children of tuberculous parents. Measures of prophylaxis might be divided into two classes—namely, those which went to diminish the danger of contagion and those which raised the resistance of the child to the infective organism. In the first class measures directed towards giving the child a supply of healthy milk might be included. Precautions must be taken that the nurse under whose care the child was placed should be free from tuberculosis. If the mother was phthisical the infant must be suckled by a healthy nurse. If the child came of a tuberculous family the general prophylactic measures recommended by the Academy of Medicine must be attended to. In schools no phthisical person should be allowed to be either a master or a mistress. Measures for raising the resistance of the children were as follows: The building of homes in the country to which poor and weakly children could be sent. Holiday camps should be provided for scholars, and any predisposition to tuberculosis in its

earliest manifestations should be fought against by sending children either to some mountain station or to the sea.

DR. HUTINEL (Paris) read a paper on **Heredity in tuberculosis**. Tuberculous heredity might show itself in three ways—by a transmission of the germ itself, by transmission of the predisposition, or in various nutritive trouble. 1. (a) Transmission of the germ at the time of conception was at present nothing more than a hypothesis; and (b) it was possible, however, that the fetus could be infected before birth through the placenta. 2. Heteromorphic heredity. 3. Hereditary predisposition. 4. Prophylaxis. From the point of view of prophylaxis the part played by the medical attendant was very important. He should pay special attention to—1. The protection of tuberculous children against infection by bacilli. 2. In tuberculous children one great danger to be guarded against was the existence of latent centers of tuberculosis which were capable of giving rise to autoinfection. 3. In phthisical children all troubles incident to growth should be carefully attended to where there was any suspicion of a predisposition to tuberculosis.

Surgery.

PROFESSOR CECCHERELLI (Parma), in speaking of **pancreatic surgery**, arranged his conclusions under 24 headings, of which the following were the principal: (a) Emaciation, presence of fat in the feces, sugar in the urine, bronzed skin, jaundice, and pain, were met with in the majority of pancreatic affections. (b) Complete extirpation of the pancreas was difficult on account of its deep situation and its intimate connection with important viscera rich in vessels and nerves. (c) Surgical intervention was more justifiable at the small end of the pancreas than at the head. (d) Extirpation should not be attempted in cases of tuberculous or syphilitic lesions. In partial extirpation one of the two canals must be left. (e) Pancreatic tumors were generally either blood-cysts following injuries or retention-cysts. In the latter case surgical intervention was useful, but should be limited to excision of the cyst. It was necessary to keep in mind the question of opening Wirsung's canal and the probable discharge of pancreatic juice into the abdominal cavity. (f) Pancreatic calculi might be extracted. (g) Necrosed fragments of the pancreas might be removed. (h) In suppurative or gangrenous pancreatitis the rule was to do nothing during the acute stage. For the treatment of abscess or gangrene of the pancreas three routes were available—the lumbar extra-peritoneal, the transpleural, and the median supraumbilical. (i) In hernia of the pancreas caused by injuries reduction and even fixation might be performed. (j) In contusions and wounds of the pancreas, if there were hemorrhage it might be arrested either by sutures or by tying the bleeding vessels. Clots of blood in the abdominal cavity should at the same time be removed. (k) Experimental pathology justified the fixation of movable pancreas. (l) If from any cause the duct between the pancreas and the duodenum became closed a new passage might be made for the pancreatic juice, or a pancreatic fistula might be established. (m) Stitches through the pancreatic parenchyma did no harm, and were tolerated as in the kidneys, the liver, and the spleen. (n) In suturing the pancreatic duct the stitches should not pass into the interior of the duct, as concretions were liable to be formed on them. (o) Regeneration of the pancreas had been observed. (p) After complete extirpation of the pancreas great development of the glands of Galeati had been observed, and especially a karyokinetic increase in the epithelia, leading to the supposition that the missing gland might be thereby replaced. (q) The thermocautery or galvanocautery ought not to be used in extirpation of the pancreas.

MR. MAYO ROBSON (Leeds) commenced his report on the same subject by stating that he was convinced that pancreatic affections were much more common than was usually thought. He based his remarks on his personal experience, he having operated on 40 cases of pancreatic disease and having seen a considerably larger number of cases in which operation was either not consented to or not thought advisable. Under "anatomical considerations" he dwelt on the importance of posterior drainage, where practicable, in acute and in suppurative pancreatitis. For reaching the main pancreatic duct he had found it practicable to incise the second part of the duodenum and lay open the termination duct from the papilla. In over 50 cases which he had

seen he had found cancer usually to occur after 40 years of age, and he believed that the cases occurring earlier in life were in many instances chronic interstitial pancreatitis, which might resemble cancer not only in the symptoms but in the naked-eye appearance after death.

He believed **chronic interstitial pancreatitis** was often mistaken for cancer of the head of the pancreas, and which he believed had not received much attention either from clinical observers or from pathologists, certainly not as much as it deserved. His experience in this class of cases had resulted from his having operated on a considerable number of cases of jaundice depending on obstruction in the common duct, the obstructive jaundice, wasting, paroxysmal attacks of pain and ague-like seizures having given rise to the suspicion of gallstones and the absence of relief by medical treatment having rendered surgical treatment necessary. He argued that its recognition was of vital importance since it was a disease not only capable of relief but of absolute cure by surgical treatment.

DR. G. MANOURY (Chartres) said that in order to lessen the chances of **erroneously interpreting the appearances shown by radiography** it would be desirable to mark certain data on the photographic plates, especially the point where a perpendicular drawn from the focus to the plate met the latter. Radiography had rendered great service in the diagnosis of fractures by revealing the number of the fragments, their form, their position, the overlapping of their ends (which when the photograph was well taken corresponded with sufficient exactness to the shortening of the limb), their displacement in different directions, and the position of splinters. For the purpose of gaining an accurate knowledge of the nature of a fracture it was necessary to take radiographs of it at different angles, usually a front view and a side view. It was possible for a fracture to be unrecognized, even though the bone was examined in various directions; this, however, was very rare. Radiography was useful in all fractures. Among those in which it was most valuable the following might be mentioned: fractures of the upper extremity of the humerus, which so often produced stiffness and ankylosis attributed to periarthrititis; fractures of the lower end of the radius, which frequently accompanied lesions of the carpus; fractures of the leg, especially those involving the articulation of the tibia and the tarsus, in which last radiography was the only means of obtaining exact information as to the relations of the astragalus, tibia, and fibula, a matter of great importance in the prognosis and treatment of these fractures; fractures of the astragalus, which were some years ago erroneously considered to be very rare; and, finally, fractures of the metatarsal bones, the anatomical lesion of a condition well known to military surgeons, the cause of which had for a long time been discussed without its real nature being suspected. The formation of callus might be studied by means of radiography. At the end of 12 days there appeared at the ends of the bones a slightly shaded area which became gradually darker. In certain cases, especially in oblique fractures of the tibia, the callus might remain invisible for a long time, even after consolidation appeared to be complete. Radiography was as useful in the treatment of fractures as in their diagnosis, facilitating reduction, and enabling the position of the ends to be inspected, and, if necessary, corrected, during the process of consolidation. Radiography also showed in what fractures wiring was required, examples of which were to be found in fractures of the elbow and ankle. Radiography had not done so much for dislocations as for fractures, but a certain number of unrecognized dislocations had been diagnosed by this means. Unfortunately, it gave no information as to the most frequent causes of irreducibility.

PROF. E. VON BERGMANN (Berlin) said that the **knowledge of fractures** had during the last ten years made two important advances—firstly, the operative treatment of certain simple fractures by the exact apposition of the fragments, and secondly the recognition of the seat of fracture and of the pathological anatomy of the osseous lesions by means of radioscopy and radiography. Without doubt there were manifest local causes which hindered the consolidation of fractured surfaces. It was known, for instance, that the interposition of muscular fibers prevented the formation of callus in cases of fractured femur. Unfortunately, it was not possible by means of the Röntgen-rays to make sufficiently sure of this to warrant the making of an incision.

DR. OSCAR BLOCH (Copenhagen) argued that from a practical point of view **every wound** without exception ought to be **considered to be infected** and that infection and its complications were due to the retention of secretions containing microbes. Antisepsis and drainage ought therefore to be the rule, and in order to avoid reinfection the wound ought to be dressed rationally. Carbolic acid was, he said, the best antiseptic, and the best applications were sterilized gauze dressings containing aqueous solutions of carbolic acid, and cotton-wool. He had little confidence in internal antiseptic treatment, in febrifuge treatment, or in serum treatment, including the use of antistreptococcus serum.

DR. FELIX LEJARS (Paris) said that every accidental wound ought to be treated as an infected wound, even though no indications of such infection might be presented. The treatment ought to consist in careful cleansing at as early a period as possible, assisted if need be by excision, care being taken not to impair the vitality of the cells which form the natural defence of the living tissues and which have to be assisted in their protective actions. Sterilized water, artificial serum, and sterilized or boiled compresses fulfilled all requirements under this head. Antiseptic solutions were injurious when concentrated, and when diluted to such an extent that they did not interfere with the protective cells their action was in reality only a mechanical and cleansing one. Suppurating wounds should be exposed to the air, cleansed, drained, and dressed with some absorbent material. In cases of infected wounds, whether suppurating or not, specific serum treatment was indicated, but their resources in this respect were unfortunately very limited; antitetanic serum was only a prophylactic; antistreptococcic serum had been employed chiefly in puerperal infection and erysipelas. In some foul and gangrenous wounds oxygenated water was useful. In certain cases artificial serum treatment aided the natural resisting power of the organism, increased the blood-pressure, and promoted diuresis.

DR. ROUX (Lausanne) said that **intestinal anastomosis by lateral apposition** was the most practicable of these procedures. Anastomosis was preferred in cases of numerous adhesions, of inoperable tumors, and of certain inaccessible inflammatory conditions, such as tubercle and actinomycosis. It was a preliminary operation in cases of operable tumors occurring in very feeble patients and in cases of pyostercoral fistula it was often quite successful. Gastroenterostomy, on account of its being less dangerous, preceded pylorotomy if the state of the patient rendered it desirable. In nonmalignant disease of the pylorus and stomach, for which an easy evacuation of the gastric contents was required, gastroenterostomy was preferable to pylorotomy and pyloroplasty. It was much superior to gastrotroplication and gastropexy.

DR. SOULIGOUX (Paris), said that in the treatment of cancer and stricture of the bowel **intestinal anastomosis** was most usually the principal operation, or it might be a complementary operation. In cases of acute or even of chronic obstruction of the bowel the formation of an artificial anus was to be preferred. When there was retardation of the onward movement of the feces without obstruction, if there was a movable tumor which could be easily removed, enterectomy ought to be performed, but this operation ought to conclude with an anastomosis either latero-lateral or termino-lateral. If the tumor was adherent anastomosis was the only available operation. For cicatricial stenosis of the pylorus, or of the first portion of the duodenum, or for hour-glass contraction of the stomach, gastroenterectomy was the best operation.

PROFESSOR HOFFA (Würzburg) read a paper upon **Cutting operations in congenital dislocation of the hip**. He pointed out that in cases of this deformity the operation without the cutting was the one to be preferred. The cutting operation which was the best for children of from 3 years up to 8 was that in which a new cavity was made for the head of the femur by the operation after the manner invented by Hoffa and Lorenz. The best time for it was between the ages of 3 and 8 years. That surgeon would succeed best who was able to carry out complete asepsis. The wound need not be stitched. The after-treatment was of the greatest importance as the muscles were thereby strengthened. Ankylosis did not occur except when the wound suppurated and when the operation was done at too advanced an age.

DR. ADOLPH LORENZ (Vienna) then read a paper upon the

Bloodless treatment of congenital diseases of the hip-joint. This treatment, he said, was to be preferred to the operative, for the latter was not without its dangers (2% to 10% mortality, according to different statistics). The ankyloses and contractures, which frequently followed, required a tedious after-treatment. The injury to, or the extirpation of, the Y-shaped cartilage of the acetabulum might result in subsequent deformity of the pelvis, on account of disturbances in development. Among the bloodless methods the treatment by means of portable apparatus could be said to be without limit; but, as a rule, without result, in spite of this fact. The gradual reduction of the head of the femur by means of bed extension was only successful in very young children. The treatment was tedious and the confinement of active children in extension beds was detrimental to their general health. The bloodless reduction under narcosis overcame all the difficulties. Under the proper age-limits it was entirely without danger. These limits were, for unilateral dislocations, the ninth or tenth year; for double dislocations, the seventh or eighth year.

DR. KIRMISSON (Paris) read a paper on the same subject. The principal point upon which he insisted was that the displacement should be reduced by means of an extension apparatus, and that the position thus obtained should be maintained by the use of an apparatus which should keep the limb in the same position as those employed in the treatment of ordinary disease.

DR. ROUX (Lausanne) read a paper on the **Therapeutic indications in appendicitis.** Purgatives should be absolutely forbidden throughout the whole course of the disease. Even during convalescence they should be replaced by enema. The patient should not be moved if it could possibly be helped. Opium might be given or an injection of morphia. Ice might be applied to the seat of the disease; only caution must be used and warm applications should succeed the cold. As to the indications for operation, if the diagnosis was certain and if it was made within the first 24 or 36 hours, which very rarely happened, an operation at this stage was no more dangerous than an operation done *à froid*. After 36 hours—and this time had generally elapsed before any medical man and especially the surgeon had been called in—the operation of Dieulafoy might be carried out. Just as an operation would be quite justified if performed early, so it was uncertain in its results and often dangerous if performed during the intermediate period. But if the fever and the pain and the rapidity of the pulse persisted operation was justifiable. It was also justifiable when the fever became hectic and it was undoubtedly indicated if the patient had attacks of shivering or if the pulse kept very rapid while the temperature fell. By the surgeon attending to these rules it was possible that he might let a few patients die who were suffering from the septicemic form, but he would avoid killing a great number of others.

DR. JALQUIER (Paris) said that every appendix which was diseased should be excised and the operation should be practised *à froid*—that was to say, when the general phenomena of infection had disappeared and when the local lesions had lost their activity. Too much hurry in operating exposed the patient to the risk of disturbing the favorable course of the disease, for the acute stage of appendicitis generally terminated by a localization of the lesion and by its resolution when it was treated from the beginning by rest, careful diet, ice, and opium. Too hasty intervention was liable to give rise to another danger—that was to say, it was quite possible to operate upon the patient who had not got appendicitis but some of the diseases which simulated it. The only reason for intervention during the acute stage was to empty the abscess of its septic contents, and to drain it very freely. In cases of very chronic appendicitis giving rise to frequent acute crises resection of the appendix was in most cases sufficient to effect a cure. In some cases, however, it would be found necessary not only to remove the appendix but to divide various bands, to free coils of intestine, or to resect portions of omentum which had become chronically inflamed.

DR. KÜSTER (Marburg) said that **renal retentions** could be divided into two groups: (a) Primary retention—i.e., cystic or sacculated kidney; and (b) secondary retention—i.e., suppurating kidney, of which he should say no more, as that condition almost invariably called for a radical operation. The term "sacculated hernia" was applied to all

the instances of primary retention produced by any obstacle to the flow of urine, whatever be the contents of the sacs. As a general rule these obstacles were situated in the ureter and almost invariably in its upper third. Renal retention due to some obstacle in the renal pelvis should be treated by a conservative operation—i.e., the affected kidney should be preserved even if the other kidney was healthy. Conservative operations might be divided into four groups: (a) Fixation of a displaced kidney (nephropexy of Guyon). This simple operation must be combined with others, such as detachment of the ureter. (b) Formation of an anastomosis between (1) one part of the ureter and another, (2) the renal pelvis and the ureter, and (3) the renal pelvis and the bladder. All these operations should have for their end the avoidance of dead spaces, which were conducive to the formation of urinary calculi. Without this precaution the procedure was harmful. (c) Plastic operations with or without resection of the ureter. 1. Pyeloptychy (Israel). 2. Excision of valvular formations in the ureter and transverse suture (Fenger). 3. Resection of a kink in the ureter. Oblique resection was preferable to transverse, which might only lead to the formation of a fresh stenosis. 4. Ureteropyelostomy (Trendelenburg and Küster). (d) Partial resection of the kidney. 1. Resection of the pelvis with suture (Albarran). 2. Wedge-shaped section of the renal substance in cases of hydronephrosis occurring in a horse-shoe kidney.

DR. CHRISTIAN FENGER (Chicago) said **remittent or commencing retention of urine** was a condition in which they should always consider the possibility of saving kidney-tissue by reestablishment of the free passage of the urine. The obstruction might be located in the calyces, in a branch of the ureter, in the bottom of the pelvis, or origin of the ureter, or in the ureter. Obstruction in the first two places caused a local or partial cystonephrosis and demanded for the relief of the condition bisection of the kidney from its convex surface and division of the partition walls. Stenosis at the exit of the ureter (valve-formation, oblique implantation from unilateral dilation) required operations which varied in accordance with the absence or presence of stricture at the upper end of the ureter. If there was no stricture at the upper end of the ureter the valve-formation might be overcome by a transpelvic operation (Fenger, Mynster, Trendelenburg, Küster), or by extrapelvic operation, which he preferred. If there was a stricture of the ureter at its exit from the pelvis, as might be expected in infected cases, they might resort to extrapelvic plastic operation (Fenger), or to resection of the strictured end of the ureter, implantation of its upper divided end into the pelvis (Küster). If the stenosis or obstruction was located in the ureter it must be dealt with according to the laws laid down for surgery of the ureter—namely, resection and reimplantation, or Dr. Fenger's plastic operation. Were the results of these, so to speak, tentative conservative operations permanent, or did relapse eventually occur? In five of his cases no relapse occurred. The conditions were as follows: 1. Valve-formation; transpelvic operation; no relapse six years later. 2. Stricture at the upper end of the ureter; extrapelvic operation; no relapse six years later. 3. Valve-formation of lower branch of the ureter; extrapelvic operation; bisection of kidney, division of partition walls; no relapse after three years. 4. Excision of valve in the ureter by Dr. Fenger's plastic operation; no relapse after three years. 5. Stone in upper end of the ureter removed by Dr. Fenger. One year later a plastic operation on the ureter was performed by another surgeon. Six months later complete occlusion of the ureter at the site of the second operation was relieved by Dr. Fenger's plastic operation; no relapse after one year. In two cases relapses occurred under the following conditions: 1. Valve-formation without stricture, intrapelvic operation, relapse of stenosis, occlusion of pelvic orifice; nephrectomy one year later. 2. Patient operated on by another surgeon, later by Dr. Fenger; operation was incomplete, failed, and nephrectomy was finally necessary.

PROF. A. VON FRISCH (Vienna) read a paper upon **The remote effects of operative treatment in hypertrophy of the prostate.** He said that of all the various operations for hypertrophy of the prostate only those which had for their object the complete removal of that portion of the prostate which prevented the free flow of urine offered any chance of lasting success. Such were subpubic and

perineal prostatectomy, lateral prostatectomy, and Bottini's operation. The effects of all these were the more lasting in proportion as the passage was freed and remained free from cicatrization. Operations done under the eye evidently answered best to these conditions, and such were the different prostatectomies. But they were always serious undertakings on account of the age and general feebleness of the patients in whom they were required. Bottini's operation was less dangerous, but not so free from risk as some would have them believe. Both classes of operation gave good and lasting results, even when the bladder was dilated and its muscular wall was apparently partly paralyzed; a good result will follow if the obstruction be completely removed. However, no precise line of conduct could be laid down so as to assure success. The lasting effect of all these operations might be discounted by the formation of the new scar tissue or by a new hypertrophy of the gland.

DR. F. LEGUEU (Paris) said that there were three classes of operations: (1) operations on the testicles; (2) cystotomy; and (3) prostatectomy. 1. Of these, operations on the testicles sought to bring about atrophy of the prostate. In lieu of castration, which was considered by some to be too severe, division of the vas deferens or section of the vessels and nerves of the cord had been proposed. But all these were inferior in value to castration. As regards the remote results of double castration they were not so good as the early observations which did not take a long enough space of time into consideration would have had them believe. The prostate certainly shrunk, but the patient improved to a far greater degree than could be accounted for by the diminution observed. The attacks of pain were less frequent and the contractility of the bladder improved so that the residual urine was less in quantity. But, after all, there was only amelioration and not permanent cure, and comparing the results of castration with those of other methods it was doubtful whether the advantages of it were worth the sacrifice. 2. Cystotomy sought to make a meatus above the pubes. It doomed the patient, however, to incontinence of urine and the bladder could never empty itself completely. 3. Direct interference with the prostate appeared to be more and more the operation for the condition of hypertrophy. Bottini's operation could not yet be fairly judged from the point of remote results. Besides, it was done in the dark and patients often relapsed owing to the new passage closing up again. Partial prostatectomy gave excellent results in partial hypertrophy, but was of no use where the prostate was uniformly enlarged. Total prostatectomy could give very good results, and apparently if undertaken by the perineal route at an early enough date before grave complications had set in seemed to be the operation of election for hypertrophy.

Obstetrics and Gynecology.

DR. DOLÉRIS (Paris) read a paper on the **Etiology and nature of puerperal septicemia**. The ordinary pathogenic germs found in puerperal septicemia were the streptococcus, staphylococcus, gonococcus, and Bacillus coli communis. Researches had shown that amongst the pathogenic organisms certain anaerobic forms, such as the Bacillus putridus, must be included. A further conclusion was that some saprophytic anaerobic organisms could develop and act as true pathogenic germs, notably in cases of placental retention. The association of different species led more certainly to infection. The septicemic condition caused death from toxic poisoning, which produced either nervous inhibition or intestinal paralysis. The staphylococcus might cause death by visceral metastasis. The theory of autogenesis had recently received a new interpretation, according to which the pathogenic organisms existing in the pathological vaginal secretions should not be considered as saprophytic, and since autogenetic infection could not be distinguished from that due to saprophytic organisms this amounts to denying its existence.

DRS. MENGE and KRÖNIG (Leipsic) understood **puerperal fever** as a malady of the puerperium in which pathogenic organisms infected the body as a whole. Fever might be entirely absent. They were unable to distinguish between the organisms which acted purely by their toxic properties and those which penetrated the tissues, nor could they distinguish with certainty between a fever due to one or the other.

The organisms causing puerperal fever were: Streptococcus pyogenes puerperalis, staphylococcus, gonococcus, Bacillus coli communis, Bacillus diphtheriae, Diplococcus pneumoniae, and certain imperfectly known organisms developing in the absence of oxygen, since they found them in puerperal lesions. The infection could be either autogenetic or heterogenetic. Gonorrheal puerperal fever should be regarded as due to the spread of an infectious process already existing in the body, not as an example of autogenesis. As the various organisms mentioned did not exist as saprophytes in the vaginal secretions of pregnant women an autogenetic infection by these organisms could not have as its seat of origin the vaginal secretion. Infection with anaerobic bacteria could not be denied since they were unable to distinguish with certainty between the anaerobic organisms causing puerperal fever and the anaerobic saprophytic organisms present in the vaginal secretion of pregnant women. Clinically they regarded as rare and of favorable prognosis an infection due to pathogenic organisms of saprophytic character derived from the skin of the external genitalia. The possibility of a puerperal infection being caused by organisms present as saprophytes in the cervical canal, the cavity of the uterus, or the tubes could be rejected since these cavities never contained such organisms. With regard to heterogenetic infection the number of germs undoubtedly present was a matter of importance. The difficulty in attempting to determine the varying degrees of virulence of different organisms was very great. They could only say that when an organism had lived a saprophytic existence for some time that its virulence was greatly diminished. Insufficient hemostasis and marked lesions of the genital tract played an important part as predisposing factors. The primary seat of infection was most commonly the placental site or the endometrium; much less commonly the cervix, vagina, or perineum. The streptococcus had a great tendency to spread beyond the primary seat of infection either by the lymphatics or bloodvessels, while the staphylococcus often remained limited to the endometrium.

DR. RIBEMONT-DESSAIGNES (Paris) read a paper on **The treatment of the apparent death of the newly-born**. As a result, he said, of numerous causes which might occur during its birth the child might when born, present the appearance of apparent death. Two varieties of asphyxia occurred, the blue and the white, while at times cases were met with in which both forms were present at the same time. Since in practice asphyxia was most commonly due to obstruction of the air-passages by mucus or amniotic fluid charged with meconium it was necessary to (1) free the air-passages, and (2) to facilitate the entrance of air into the lungs. As the mucus frequently only occupied the throat it was often sufficient to clear it out by means of the finger wrapped in a handkerchief. Cutaneous friction with or without alcohol, ether, brandy, eau de cologne, warm baths, mustard baths, hot or cold baths were often sufficient to excite respiratory movements. Rhythmical traction on the tongue might set up respiratory reflex. If these procedures failed it was necessary to commence artificial respiration. Of the various methods available insufflation was the only one that fulfilled the two conditions necessary, viz., to clear the air-passages and to facilitate the entrance of air. And, further, the insufflation should be instrumental. The apparatus employed should admit of aspiration of the foreign matters present, and it should not carry into the lungs a quantity of air greater than their capacity. To fulfil these conditions the instrument must be constructed upon anatomic principles. The insufflator formed upon the model introduced by him in 1877 fulfilled the necessary conditions. (1) Its introduction was easy owing to its curve and the shape of its end; (2) its curve assured its remaining in the air-passages; (3) it prevented the reflux of air from the larynx; (4) it readily permitted of the aspiration of the fluid and mucus filling the bronchial canals; (5) it was easy to determine whether it was in its right position or not; and (6) the bulb attached permitted only of a quantity of air entering sufficient to distend the lungs without over-distending them.

DR. RICHELLOT (Paris) read a paper upon **The treatment of cancer of the uterus**. Total extirpation of the uterus by the vagina was, he said, a rational method, because it enabled them to deal completely with the disease and to get entirely beyond its limits. It was a relatively benign operation, the mortality of the reporter amounting to about 6%.

It was a most efficacious operation. Ott had had cures extending over 12, 11, 10, 8, and 6 years; Landau after 9½, 8, 7, 6, 5, and 4 years; LeDentu and Pozzi after 6 years; Quénu, Terrier and Hartmann, and Routier after 5 years. The speaker had had cases alive 12½, 12, 10, 9, 8, 6, 4, and 3 years after operation. Making all allowances he was able to show at least 18 per 100 who had been definitely cured. The improvement that had occurred in technic had led to a revival of the operation of abdominal hysterectomy. Equally to be condemned were those surgeons who advocated extensive operations of this kind both for cases of cancer where the disease had spread beyond the uterus and those who recommended them in cases where the disease was still limited to that organ, with the proviso that in either case such an operation enabled them either to remove all the affected tissue or to make sure of being well beyond the limits of the disease. No true comparison could be made between cancer of the breast and cancer of the uterus and it was impossible even by such an operation as abdominal hysterectomy to make sure of removing all the affected tissues. Cancer was primarily local and secondarily infective. A microbic origin for the disease was as yet unproved. Personally he was led to consider cancer as a trophic lesion independent of external causes. One proof amongst others was heredity and another the relation between cancer and arthritic troubles. A hundred times he had seen cancer and arthritic troubles transmitted, coinciding or alternating in such a fashion as to convince him as to the pathologic family in which they should be placed. It should, undoubtedly, be the aim to operate at a time when no cancerous cell had progressed beyond the limits of the uterus. If they succeeded in doing this and in removing all the morbid growth then they might well speak of a definite cure, and they might even neglect the predisposition of the organism to reproduce another cancer. The proper treatment of cancer at the present day was to anticipate its spread and not to attempt to overtake such spread once it had begun. And, indeed, the organism itself came to their assistance. Intervention was not always without avail even when it appeared to be a little late. Such cases were difficult to recognize. It was justifiable, however, to adopt the abdominal operation in the presence of a limited spread of the cancer to the vaginal wall, rendering a vaginal operation impossible, but not indicating any real diffusion of the cancer. The operation was also justifiable in the presence of a tumor of slow growth the course of which they had been able to follow for some time. In such cases he had adopted abdominal hysterectomy without regarding it as a sovereign remedy and duly recognizing its limitations. He had endeavored to show that vaginal hysterectomy was capable of obtaining definite cures and that abdominal hysterectomy was a useful recourse in a small number of cases, but that applied to cancers which had already become diffused it was an imprudence, and to cancers still very limited an illusion. That was to say, he differed from those who saw in the first an operation always incomplete, merely palliative, and in the second, the only operation which removed all, the only operation which was logical and rational. He would say that that operation was truly curative which preceded the cancerous infiltration—that which pretended to pursue it was really merely palliative.

DR. DMITRI DE OTT (St. Petersburg) came to the following conclusions on the same subject: 1. Surgical treatment was the only successful method of combating cancer of the uterus. 2. The peculiar functions and structure of the uterus required a special study of the cancers that attacked it. Conclusions drawn from cancer in other parts of the body were only applicable in certain special cases. 3. Total extirpation of the uterus should be practised in all cases of cancer of any part of the organ, since the procedure gave the greatest amount of success. Removal of the ovaries and appendages should only be practised under special conditions. Removal of the retroperitoneal glands could only be carried out by the abdominal route. This method should not be practised as a rule since it was much more dangerous and the results were not sufficiently good. Total extirpation by the vagina was to be preferred to all other methods. Morcellement in the cases where the uterus was of large size or the case complicated by the presence of fibroids was a method of great value. In cases of pregnancy complicating cancer of the uterus vaginal extirpation should still be carried out. The

operation could be practised up to the seventh month and after opening the culdesacs and ligaturing the uterine arteries the size of the organ could be readily reduced by the removal of the ovum. If the pregnancy was still further advanced and the child viable the latter might be delivered by abdominal section and the uterus, if practicable, removed by the vagina. It was best not to close the peritoneal opening but to lightly plug it with iodoform gauze. The ultimate results of operation undertaken for cancer of the body were much better than those undertaken for cancer of the cervix. Total extirpation should be practised even in advanced cases, since it tended to alleviate the condition of the patient, and especially in view of the difficulty of making an exact diagnosis of the extent of the disease. The mortality of the operation should not exceed 2% and the proportion cured with no sign of recurrence after 6 years was 10%, extirpation having been practised even in the most advanced cases.

DR. S. POZZI (Paris) read a paper introducing **Cervical metritis**. His conclusions are as follow: 1. Acute or chronic inflammation of the cervix could exist for a long time isolated and without invading the body of the uterus. 2. At times the acute lesions of the cervical mucous membrane readily invaded the mucous membrane of the body, and the chronic lesions of the cervical parenchyma of inflammatory origin (sclerotic or sclerocystic degeneration, partial or total) in a short time produced some effect upon the nutrition and the anatomic condition of the body of the uterus. 3. The operation of trachelorrhaphy was inferior to biconical resection of the cervix and should be abandoned. 4. A large number of acute, subacute, or chronic inflammations of the cervical mucous membrane in nullipara were due to insufficiency of size of the external os uteri and the difficulty of drainage that resulted. The most important part of the treatment consisted in restoring by operation to a sufficient extent the patency of the external os.

DR. DOEDERLEIN (Tübingen) followed, saying that at the present day the causes of inflammatory diseases of the cervical canal and of the cavity of the body of the uterus were to be found in a microbic infection. Modern bacteriologic researches had shown that the external os uteri formed a boundary between a lower part of the genital tract containing microorganisms and an upper containing none. The alkaline cervical mucus proved destructive to organisms introduced from without and so formed a protection not only to the cervix but to the body of the uterus, the tubes, and the peritoneal cavity. Among pathogenic organisms the only two that played any important part in the production of cervical metritis were the gonococcus and the tubercle-bacillus. Gonorrheal infection of the cervix was very common, the means of defence of the cervix being unavailing against the gonococcus, but tuberculous infection limited to the part was very rare. Tuberculous, syphilitic, and diphtheric lesions of the cervix were quite different from so-called cervical metritis.

Cancer of the Rectum in the Female.—Wallace K. Oakes (*Journal of Medicine and Science*, April, 1900) reports a case of cancer of the rectum in a woman 46 years old, and describes an operation which he thinks indicated in cases in which the patient is a female, and the cancerous growth is above the sphincter and below the sigmoid. In this case the growth was 2½ inches up in the bowel, and completely encircled the rectal canal. The sphincter was dilated and the rectum attacked by cutting directly through the vaginal floor, beginning 2 inches above the vaginal outlet. The incision was carried through the perineal tissues and into the rectum, the latter being laid open from this point and through the sphincter. The rectal tube was dissected away from the surrounding tissues, the section containing the cancerous growth excised, the upper segment pulled down and sutured to the lower segment containing the sphincter. The rectal, perineal, and vaginal tissues were then approximated by sutures. The patient has recovered, having complete control of the sphincter. There is as yet no sign of recurrence, although but a few months have elapsed since the operation. A woman with a cancerous rectum was treated similarly, in 1892, by Oakes; she lived for one year, and then died of cancer of the stomach. There was no sign of recurrence in the rectum. [M.B.T.]

The Latest Literature.

British Medical Journal.

August 4, 1900. [No. 2066.]

1. Some Incidents in the Evolution of the Modern Physician. WILLIAM ALFRED ELLISTON.
2. Medicine as a Science and Medicine as an Art. PHILIP H. PYE-SMITH.
3. The Surgeon in the Nineteenth Century. FREDERICK TREVES.
4. Introductory Remarks. HOWARD MARSH.
5. Some Problems in Rural Sanitation. JOHN C. THRESH.
6. Bacteriology in Relation to Pathology. E. E. KLEIN.
7. The Teaching of Pharmacology. WALTER G. SMITH.
8. The Scope and Aim of the Section's Work. COLONEL KENNETH.
9. The Treatment of Wounds at Sea. BELGRAVE NINNIS.

1.—See PHILADELPHIA MEDICAL JOURNAL, August 11, 1900.

2.—Pye-Smith thinks if **medical science** without art is inefficient, **medical art** without science is not only unprogressive, but almost inevitably becomes quackery. As soon as we treat our patients by rule of thumb, by tradition, by dogmas, or by metaphysical axioms, we do injury to ourselves as well as to them. Our profession has often suffered from lack of the scientific, inquiring, skeptical spirit, and has often been led too easily by authority, by tradition, and by fashion. The reckless abuse of venesection in the last century and the former half of this led to almost complete disuse of a valuable means of treatment; the misuse of mercury in the treatment of syphilis led to denial of its unquestionable efficacy. Have we not seen the value of stimulants in a contest with fever lead to their indiscriminate use in almost every ailment? Has not the immense value of careful and thorough nursing sometimes ended in its exaltation to an independent place, as if good nursing was anything more than an intelligent carrying-out of the physician's directions? Have not the remarkable powers of electrical stimuli led to a blind, unscientific, and mischievous employment of this remedy, as if it had some mystic efficacy apart from its demonstrable physiological effects? May we not say the same of hydropathy, of massage, of hypnotism? That important and constantly growing branch of medicine, which deals with the **prevention rather than the cure** of disease, depends no less upon science, for tracking the dependence of one event upon another is the essence of inductive science. All efficient measures for the preservation of health, whether by individuals or communities, rest upon exact knowledge of the natural course of diseases. In fact, disease may be defined as the reaction of the human organism under conditions which make for its destruction. How closely natural science is related to preventive medicine is shown by the history of Jenner, who was a naturalist, and Pasteur, who was a chemist. How dependent we are upon science is well illustrated by the history of myxedema. Contrary to popular belief, he holds that modern life is easier, safer, and smoother than it was 100 years ago, that our young men and maidens are healthier, stronger, better grown, less emotional, less hysterical, and sounder in mind and body than their great-grandparents, and he holds that the duty of a physician is not to flatter the selfishness of **neurotic patients**, but to inspire fortitude, and to prescribe regular and steady work as the best cure for a thousand nervous ailments. There is one aspect of scientific medicine so important that it must not be wholly omitted; the necessity of **experiments** for the progress of pathology, and through it for the prevention and cure of disease. It requires no argument to convince anyone who is the least acquainted with the principles of inductive science that experiment is no less necessary than observation. The foolish cry against hospitals as places where they experiment on patients is meaningless just because it is true. Every prescription we give either to rich or poor is an experiment, and should be watched with critical and scientific eyes. And is it not a mistake for so many of us to prescribe the **made-up drugs** offered us by wholesale manufacturers instead of our own combinations? It leads our patients to ascribe their recovery not to our skill, but to this or that pill or tablet. It would be an excellent task for this great Association

to set some of our skilled analytical chemists to strip the veil from mysterious remedies and tell us the exact composition of the many patent medicines, some of which are inert, and some injurious. [A B C.]

3.—See PHILADELPHIA MEDICAL JOURNAL, August 4, 1900.

4, 5, 6, 7, 8, 9.—See PHILADELPHIA MEDICAL JOURNAL, August 18, 1900.

Lancet.

August 4, 1900. [No. 4014.]

1. Medicine as a Science and Medicine as an Art. PHILIP HENRY PYE-SMITH.
2. The Surgeon in the Nineteenth Century. FREDERICK TREVES.
3. A Case of Meningomyelitis with Bacteriologic Examination of the Spinal Cord. GEORGE R. MURRAY.
4. A Blood Reaction in Diabetes Mellitus: its Cause and Diagnostic Value. R. T. WILLIAMSON.
5. The Etiology of Scurvy. W. E. HOME.
6. On the Limitation of Physical Methods in the Investigation of the Physiologic and Psychic Phenomena of Sight. F. W. EDRIDGE-GREEN.
7. Some Remarks upon the Technic of Operations designed to Cure Radically Oblique Inguinal Hernia. FREDK. D. BIRD.
8. Imperial British Pharmacopeia: Notes on some Indian Drugs. WILLIAM MAIR.
9. A Note on the Safest Method of Removal of the Appendix. A. A. WARDEN.
10. Notes of Two Cases of Pernicious Anemia treated with Hommel's Hematogen. HERBERT MEGGITT.
11. A Case of Sudden Death shortly after Operation. BOLTON TOMSON.
12. A Case of Cerebellar Tumor in which the Respiration was Entirely Suspended for Four Hours before Cessation of the Circulation. R. T. FISON and L. S. LUCKHAM.

2.—See PHILADELPHIA MEDICAL JOURNAL, August 11, Vol. VI, p. 183.

3.—Murray and Hardcastle report the case of a single man of 29, who complained of loss of power and sensation in both lower limbs. There was a history of exhaustion and wetting while passing water-buckets at a fire in the country, which was followed by lumbar pain and cold and numbness in the legs. The condition grew worse and was accompanied by retention of urine and loss of control of the rectum. On admission to the hospital the patient complained of girdle-pain, loss of motion, and sensation below the umbilicus, and preservation of these functions above that point. The reflexes were abnormal; there was a bedsore over the sacrum; the urine was acid, had a foul smell, and contained blood and pus; and the temperature was 103.4°. The condition became progressively worse and the patient finally died, 7½ weeks after the commencement of his illness. Permission for a necropsy could be obtained only on condition that the vertebral canal alone be opened. The surface of the dura mater was covered with lymph, and bacteriologic examination was made of the exudate as well as of the pia mater, and of the substance of the cord on a level with the fourth or fifth thoracic nerves and at the lumbar enlargement. A short, oval, motile bacillus was obtained from the cultures and was found in stained specimens of the cord. The organism stained readily by the anilin dyes with a polar staining; it was stained by Gram if care was used; it produced a rapid general infection in the guineapig and a local infection in the rabbit; it grew readily on the ordinary media, both in the hot and the cold incubations; and it liquefied gelatin. The value of the bacteriologic examination is lessened by the fact that the bedsore communicated with the vertebral canal, but the authors believe the organisms did not come from that lesion. This case is valuable as evidence that **acute meningomyelitis** is an infective disease. [J.M.S.]

4.—Williamson describes anew his **reaction of diabetic blood**. Forty cmm. of water are placed in the bottom of a small, narrow test-tube. To this are added 20 cmm. of blood, 1 cc. of a watery solution of methylene-blue (1:6000) and 40 cmm. of liquor potassæ. The test-tube is then placed in boiling water for 4 minutes, at the end of which time, if

the blood is diabetic, the blue color of the mixture will have disappeared and a dirty yellow color will have taken its place. The reaction has been obtained in all of 43 cases of diabetes. The author's experiments indicate that the reaction is due to the excess of glucose contained in the blood. The reaction is of value when, as in diabetic coma, urine cannot be obtained, or when a patient has died of diabetic coma and the bladder is empty so that the urine cannot be examined. The reaction can be obtained even when the body has been long dead. [J.M.S.]

5.—Home believes that **scurvy** is essentially an infection of the mouth with microorganisms out of decayed food, antagonized by lime-juice and fresh vegetables which act as antiseptics. This infection of the mouth is most apt to occur in times of hardship when cleanliness is least within reach. [J.M.S.]

7.—Bird makes several suggestions with regard to the technic of operations for the **radical cure** of oblique inguinal **hernia**. He believes that incision far down toward the pubes is unnecessary, and advises a skin incision fully an inch above Poupart's ligament. He considers the deep layer of the superficial fascia a tissue of considerable value. There is no occasion to strip it from the aponeurosis, but it may be dissected back with the aponeurosis and used as an accessory layer of moderate but undoubted restraining power. The external ring can be separated with less damage than to divide the fibers. If we divide the ring, Bird believes that no suture can make it so strong as before. The division of the aponeurosis he makes one or two inches beyond the internal ring. Any cutting of the fibers of the internal oblique is considered a mischievous procedure. He advises elimination of the sac from above with preservation of the nerves. Not all hernias are susceptible to treatment in this way, but the results are practically perfect when such an operation is possible. [M.B.T.]

8.—The paper treats of several drugs in use in India that may subsequently be found of use in England. [J.M.S.]

9.—Warden mentions 3 methods of **treating the stump of the appendix** which he designates as follows: the continental method, used by most Paris surgeons, cauterizing the stump and leaving it open in the abdomen; the English method, turning back a collar of peritoneum and stitching it over the ligated stump; and Doyen's method of ligature, removal with the thermocautery and invagination and the application of purse-string suture. The last he considers the best method, and he believes that it originated with Doyen. [Warden has probably overlooked the fact that practically the same method which he describes as Doyen's has been in use in America since 1891, when it was introduced by Dabarn. The method has been used and described by several American surgeons since that time. [M.B.T.]

10.—Meggitt reports 2 cases of **pernicious anemia** that were treated with Hommel's hematogen with good results. The first patient was a man of 35, and the second was a woman of 38. [The cases are incomplete, as a complete record of the histologic examination of the blood is not presented, without which the diagnosis of pernicious anemia should not be positively made. J.M.S.]

11.—A case of sudden death, probably from heart paralysis, is reported following an operation for adenoids and enlarged tonsils with chloroform-anesthesia. [M.B.T.]

12.—A boy entered the hospital with symptoms of tumor of the brain. An **operation** was begun, but not completed on account of cessation of respiration. The patient was kept alive by **artificial respiration** for 4 hours. The necropsy showed a **tumor** of the left lobe of the **cerebellum** which was thought to be tuberculous. [M.B.T.]

New York Medical Journal.

August 18, 1900. [Vol. lxxii, No. 7.]

1. Congenital Dislocation of the Shoulder, with Report of a Case. JOHN LINCOLN PORTER.
2. A Study of the Action of Gelsemium Upon the Nuclei of the Motor Cerebral Nerves. R. H. WHITEHEAD.
3. The Treatment of the Morphin Habit—Can it be Cured? JAMES H. MCBRIDE.
4. Enterocolitis. WILLIAM E. FITCH.
5. On the Use of Suprarenal Extract in Diseases of the Nose and Throat. SEYMOUR OPPENHEIMER.

6. Some Observations Upon the Ocular Symptoms in Locomotor Ataxia. PAUL TURNER VAUGHAN.

7. A New Hypnotic. WARREN B. HILL.

1.—Porter says that **congenital dislocations of the shoulder** are very rare. A large majority of those which do occur are due to traumatism at birth. One must differentiate between these traumatic cases and those due to imperfect development. This is necessary because of the great difference in the treatment and prognosis. He quotes Scudder as saying that a point to remember in differential diagnosis between these two classes is that if the condition is due to imperfect development at the articular surfaces there will be also a difference of development between all the bones of that extremity and the normal one. The various "obstetrical paralyses" due to injury of the cervical nerves at birth may be confounded with congenital dislocation. After a careful study the author draws the following conclusions: 1. It is of fundamental importance to discriminate between traumatic and developmental cases. 2. The pathology of the congenital cases is not sufficiently known to indicate the most promising line of treatment. 3. Sufficient operations have not been done to establish a successful method of operative treatment or add much to our pathological knowledge. 4. In cases determined to be developmental by the history and measurements, remembering the probable deficiency of development of the one, or both articular surfaces, an early operation, before the humeral head has formed a new articular facet under the spine and has itself become deformed, offers the best results. [A.B.C.]

2.—Whitehead, after a study of the action of **gelsemium on the nuclei of the motor cerebral nerves**, concludes that toxic doses of this drug produce chromatolysis of the cells constituting those nuclei and that the changes are not specific, but are similar to the changes caused in motor nerve-cells by various other noxious agencies. [J.M.S.]

3.—In the **treatment of the morphin habit** the patient should be kept in bed, or at least in the recumbent posture, during the rapid reduction of the drug. When a patient is taking large doses of morphin the greater part of the dose can be left off at once with little discomfort, because the system makes no use of much of the dose taken and will, therefore, not miss it. The patient should be allowed to recover from one reduction before a second is made. The last reductions should be quite small and if much suffering or depression is caused by a reduction it is sometimes better to return to the former dose until the patient has recovered from the shock. A patient should not know the details of his treatment. During the period of reduction the feeling of uneasiness and pain in the limbs may be relieved by frequent hot baths and massage, which should be given at least once a day. Bromids are the best drugs to quiet the nervous system, but bromism should never be produced. Quinin, coca, nux vomica, or strychnin are the best tonics. Sleeplessness may be combated by chloralamid, trional, or hyoscyamus. The quitting of the taking of the drug is but part of the cure, the moral, the physical, and the mental condition of the victim must be built up. The majority of morphin habitues are men lacking in self-control. [J.M.S.]

4.—In the treatment of **enterocolitis** Fitch recommends calomel for unloading the bowel. He gives one grain of the drug every hour for 3 doses to a child 2 years old. He recommends tannopin for its action as an intestinal antiseptic, which he uses both by the mouth and as a rectal injection. The histories of 5 cases are given. [It would seem as though calomel, since it is a drug that is not readily absorbed, is recommended in too large a dose. Powders containing $\frac{1}{10}$ grain of calomel repeated every hour until 10 are taken will be found to do the work just as well as those containing the larger dose. J.M.S.]

5.—Oppenheimer says **suprarenal extract** has 2 distinct actions on the mucosa of the respiratory tract; it blanches the tissue, and at the same time constricts it. The blanching effect is not so great in the larynx and pharynx as in the nasal cavities. The drug acts only on mucous surfaces, and its influence is absolutely local, no tissues are affected except those in contact with the drug. In epistaxis, due to minor traumatism, visceral changes, such as the heart, lungs, or liver, or the result of local affections of the nares, immediate benefit is observed on spraying the interior of the nose. The local application in hay fever often does much

good, but he thinks it does no good when given internally. It dissipates swelling following operations in the nasal cavities. It is of value in secondary bleeding, and in local congestions, either acute or chronic. It is especially useful in all operations in the upper respiratory tract. The spray alone is often not sufficient. The author's mode of application is as follows: The parts to be operated upon are covered with a pledget of cotton saturated with the adrenal, which is allowed to remain for 5 minutes. This is removed, and a solution of cocain or eucain of whatever strength desired is applied in the same manner for a similar length of time. This is also removed and a fresh piece of cotton with the adrenal solution is again pressed against the tissues for another 5 minutes, and when this is removed it will be found that the parts are perfectly bloodless and totally anesthetic. The operation can then be readily performed. The duration of its effect depends much upon the method of application. The majority of cases will show some anemia of the mucosa from 1 to 5 hours after the application of the drug. It has no anesthetic influence, but it tends to prolong the anesthesia of cocain when combined with that drug. This is accomplished by preventing hemorrhage and the consequent loss of the cocain from the tissues. The drug has no effect upon the blood; it is nonirritating; it can safely be placed in the hands of the patient; and it may be repeatedly used in the same individual without losing its effect. It is contraindicated in anemic processes and in conditions in which the mucous membrane possesses a low degree of vitality. [A.B.C.]

6.—Vaughan has treated 18 cases of **tabes dorsalis** in the past year, in which **eye-symptoms** were observed. Ten of these were private patients, and a careful record was kept of them. Of these 10, 40% had paralysis of the eye-muscles, 60% had inequality in the size of the pupils, 40% had reflex rigidity of the pupils, and 50% had atrophy of the optic nerve. Six of the 10 cases had a combination of eye-symptoms. Nine of the 10 cases had been infected with syphilis. One patient had symptoms of bulbar paralysis combined with paralysis of the ocular muscles. The most constant pupillary change was the Argyll Robertson pupil. All the cases began with disturbance of the color-sense, and contraction of the visual field. The author agrees with Peterson, who remarks that "while syphilis is an antecedent in three-fourths of tabetic cases, the syphilitic resemble the non-syphilitic cases as regards the histological characters of the lesions, and specific treatment has no effect whatever upon the cases with syphilitic history; hence the malady is not a syphilitic disease, not a direct sequel of syphilis, but that the venereal disorder prepares the constitution like a cachexia for the development of the degenerative process. [A.B.C.]

7.—Hill believes that **chloreton** is the **ideal hypnotic**. It produces sleep as nearly as possible as it is produced by the fatigue of muscular action, it produces the least amount of irritation to the alimentary canal, and it does not depress the circulatory system or the glandular secretions. It is useful in cases in which morphin has lost its action, and it is an ideal remedy in delirium tremens. It is a local anesthetic, and as such is useful in removal of the tonsils, in anesthetizing the mucous membrane of the nose, in anesthetizing the urethra, and in relieving pain after strong injections for cystitis. It is useful as a local anesthetic in dental operations, and in minor surgery. It is also an antiseptic. The dose is from 15 to 20 grains, and it may be repeated often enough to produce the desired effect. [J.M.S.]

Medical Record.

August 18, 1900. [Vol. 58, No. 7.]

1. Extrabuccal Feeding. C. A. EWALD.
2. Migrated Ovarian and Parovarian Tumors. GEORGE M. EDEBOHLS.
3. Posterior Colpoceliotomy for Lesions of the Adnexa and Uterus; Its Indication and Technic. CHARLES GREENE CUMSTON.
4. Hematomyelia, with Report of Three Cases. W. F. BECKER.

1.—Ewald discusses the 3 forms of feeding that may be employed when the introduction of food through the esophagus is impossible. These are nutritive enemas, subcutaneous or intravenous injections of foodstuffs, and feed-

ing after gastrostomy. He does not believe that any of these methods are capable of supporting life, but under favorable conditions, it is possible by them to maintain a nutritive balance of metabolism. In **rectal feeding** it must be remembered that the secretion of the large intestine is probably devoid of all peptonizing power, but is, nevertheless, capable of digesting moderate amounts of albumen as a result of the admixture of pancreatic secretion. It is therefore necessary to use some predigested mixture, such as the Leube-Rosenthal pancreatic meat enemas, and experiments have shown that when these are employed, almost the entire amount of nitrogen is absorbed. Pepton may also be used, but under certain circumstances even small quantities will produce marked evidence of irritation. Ewald and Eichhorst have shown that native albumen in the form of egg emulsion is readily absorbed even after preliminary peptonization, and this seems to be particularly useful in enemas. In addition to albumen and milk, it is necessary to supply some carbohydrates and the best of these is probably grape-sugar. As much as 95% of this is absorbed from solutions not too concentrated. Starch decoctions may also be employed with benefit. Fat may also be added and is particularly valuable in economizing calories. It is necessary, however, to mix it with pancreatic bile-substance in order to obtain any satisfactory degree of absorption. Ewald suggests the following as perhaps the most valuable nutritive enemas: Two table-spoonsful of wheat, stirred into 150 cc. of lukewarm water or milk. To this two eggs and a pinch of salt are added, and then the whole is mixed with from 50 to 100 cc. of a 15% to 20% solution of glucose. To this a small amount of alcohol, specially in the form of claret, may be added. When nutritive enemas fail to fulfil all the requirements of the case, **subcutaneous or intravenous injections** may be employed. For this purpose neither albumen nor carbohydrates can be used, but fat can be given with very satisfactory results. The best oils for this purpose are ordinarily butter and olive oil. From 100 to 150 cc. may be injected at a time through a hollow needle with a small lumen. Injection should be made very slowly, as much as 1 to 2 hours being required for the quantity stated. There is more or less pain produced, which may last for a long time even if massage is also employed. Unfortunately in these injections, no water can be employed, and this is often more important than food. **Feeding through a gastric fistula** if it has been produced for nonmalignant stricture, may cause no alteration in nutrition. In malignant cases it may be necessary to use predigested foods. [J.S.]

2.—Edebohls designates as **migrated ovarian and parovarian tumors** such growths as have by torsion and tension of the pedicle become entirely detached from their former connection with the broad ligament, and either lie free in the abdominal cavity, or have formed new attachments to other organs or tissues. He reports 4 cases: 1. A gangrenous monocyst removed from the omentum, the growth having all the characteristics of a parovarian cyst, though no trace was left of its former attachment. 2. Large, strangulated, left parovarian cyst free in the abdominal cavity, its pedicle having been completely severed by torsion, and the left ovarian ligament and tube pulled out of the uterine cornu. 3. A self-amputated, left ovarian cyst which, in twisting itself free, carried with it the greater part of the left tube. The contents had escaped and been absorbed with a part of the cyst wall, the remainder becoming adherent to the back of the uterus and left broad ligament, thus maintaining its vitality. 4. Dermoid cyst of the right ovary which had probably become completely detached at the time of a peritonitic attack some years previous to the operation at which time it was found engrafted upon and completely wrapped in the omentum from which it drew its sustenance. Recovery followed operation in all these cases. [W.K.]

3.—Cumston advocates **posterior colpoceliotomy** for lesions of the adnexa and uterus. After quoting the statistics of Schauta and Teplor, he answers the various objections. To the objection that it is a slow method, he replies that though in a small proportion of cases it takes some time to draw the adnexa down and form a proper pedicle, the operation may be performed in from 20 to 30 minutes. To the assertion that clamps placed on the pedicle act as a serious hindrance, he says that unless adhesions are extensive, clamps should not be applied until the pedicle has been formed and ovary and tubes are ready to be removed, and

then ordinarily 1 pair is sufficient; rarely are more than 2 needed. He advises the use of an exaggerated Trendelenburg position as giving the best field of vision and one which is quite sufficient. If there is really lack of space to perfect the operation, a very rare occurrence, 2 lateral incisions in the perineum should be made as in obstetrical practice to permit the passage of the head. The vagina can be rendered quite as sterile as the abdominal wall and the antisepsis of the whole operation just as perfect. The danger of ventral hernia is avoided, and persistent fistula is less likely to result, and, if it occurs, is far less annoying to the patient. Anterior colpotomy is useful in certain cases, as tumors situated on the anterior wall of the uterus; also the 2 ways may be combined. The lesions which may best be removed by posterior vaginal incision are: Inflammatory affections of the adnexa with prolapsus in the culdesac of Douglas; cysts of the adnexa of small dimensions; neoplasms which are situated high up in the pelvis, but which are movable and can be drawn down; large cystic tumors, provided that they are not adherent, and that by digital examination through the vagina the finger can readily reach the lower pole of the neoplasm; solid neoplasms of the rectouterine culdesac which do not exceed the breadth of the posterior vaginal culdesac; extrauterine pregnancy. Contraindications are, extensive adhesions, a very high position of the adnexa or of the uterus with the impossibility of drawing them down within reach, and the malformation of a very tight vagina. Under these conditions the abdominal incision should be chosen. [W.K.]

4.—Becker records 3 cases of **hematomyelia**. After a preliminary discussion of the symptoms of this disease and of spinal localization, he describes the first case, that of a woman of 30, who suddenly felt faint and sank to the floor. There was immediate paralysis of the legs that soon became complete and was flaccid in character. She developed bedsores and cystitis, and although subsequently able to move the foot slightly, she finally died of exhaustion. The woman was slightly anemic. The most probable cause was an abortifacient whose nature was unknown. The second patient, a man of 38, alcoholic and syphilitic, fell and was found to be paralyzed on the left side. Later the right side also became paralyzed. In the course of 38 hours the patient died of paralysis of the respiratory muscles. At the autopsy a small amount of blood was found extending from the middle of the fourth to the middle of the sixth cervical segments. It occupied chiefly the ventral horns of the gray matter and was greatest on the left side. The third patient, a young woman, without any previous medical history, suddenly had pain in the back and found her legs extremely weak. In the course of an hour they became completely immovable. Paralysis of the bladder and rectum occurred. Next day there was some improvement, and in the course of 4 months only stiffness of the movements, increase of the knee-jerks, particularly of the right side, and some atrophy of the right leg. The electrical reactions were diminished, quantitatively, but there was no degeneration. In the course of time she became perfectly well. There was practically no disturbance of sensation in this case. It is difficult to understand the nature of the lesion because the gray matter appears to have been only slightly involved. [J.S.]

Medical News.

August 18, 1900. [Vol. lxxvii, No. 7.]

1. The Treatment of Acute Alcoholism by Large Doses of Digitalis. HENRY P. LOOMIS.
2. Subsequent Histories of Patients Apparently Cured Under Administration of Antitubercle Serum as an Auxiliary to Climatic Treatment. J. EDWARD STUBBERT.
3. Acute Anterior Poliomyelitis. E. D. BONDURANT.
4. The Treatment of Wounded at Sea. BELGRAVE NINNIS.
5. Some Problems in Rural Sanitation. JOHN C. THRESH.
6. Modern Pathology. E. E. KLEIN.
7. Tropical Diseases. Colonel KENNETH MACLEOD.
8. A Case of Double Vagina and Double Uterus: Four Pregnancies. HERMAN E. PEARSE.

1.—Loomis, following the suggestion of Fothergill, has treated 10 cases of **acute alcoholic delirium** with large doses of **tincture of digitalis**. A half ounce of this was

given every 4 hours for 3 doses. If the patient became quiet, the remedy was stopped even before the third dose. If not, a second series of doses was given 6 hours apart. There was no marked effect upon the pulse; the chief action apparently being narcotic. The results were that in 3 cases the patients recovered promptly, in 2 cases death occurred, 1 apparently the result of alcoholism, in the other the presence of petechial hemorrhages beneath the endothelium led to suspicion of infection. As a result of the study of all the cases which are reported at the end of the paper, Loomis concludes that the indiscriminate use of these large doses of digitalis is dangerous. They should be restricted to robust patients without complications. When no narcotic effect is produced by 3 preliminary doses the drug should be discontinued. It appears to be of least value in chronic alcoholism, in old patients, and in anemic patients; one good effect was the rapid convalescence that always ensued.

2.—Stubbert, in 1898, reported 36 cases of incipient tuberculosis of the lung that he had treated with **antitubercle serum as an auxiliary to climate**. He also reported 42 cases of advanced phthisis that improved and 4 far advanced cases with improvement. Of the 14 incipient cases apparently cured, he has been able to obtain the following subsequent results: 9 of these patients are still apparently perfectly well, they have no cough, no physical signs in the lungs and they are able to attend to their various occupations. In addition he reports 1 case from the moderately advanced group in which improvement has also occurred. He also reports 13 new cases which have only been out of the institution for a year. These all show persistent improvement and one of them is particularly interesting on account of the presence of tubercular keratiritis which has shown a moderate amount of retrogression. He gives the following summary of all his figures: Of the patients out of the institution for 3 years 11% have remained cured; out for 2 years 14%; and out for 1 year 69%. He believes that antitubercle serum produces some immunity and that it is a valuable auxiliary to climatic influences.

3.—Bondurant discusses **anterior poliomyelitis**, which he regards as an infectious disease, although he is inclined to suspect that it may be produced by a number of microorganisms. He calls attention to numerous epidemics that have occurred, particularly one in the State of Alabama that he had the opportunity of studying himself. In this instance there were 15 cases occurring during the summer months confined to an area of about 12 miles in diameter. He gives a brief account of the symptomatology and calls attention to a few interesting points in differential diagnosis. He believes that the treatment should be limited to preventing contractures and deformities. He speaks of the excellent results reported by Sinkler after the administration of salicylates. [J.S.]

4, 5, 6, 7.—See PHILADELPHIA MEDICAL JOURNAL, Vol. VI, No. 7.

8.—Pearse reports a case of **double vagina and uterus** which was of interest from the fact that for 16 years the woman, in ignorance of this deformity, had fulfilled the duties of wife and mother, bearing 4 children at term in comparative safety. When continued ill health after the fourth confinement led to an examination, the septa, both vaginal and uterine, had been almost obliterated by lacerations resulting from successive acts of parturition, and only remnants of the former condition could be found. [W.K.]

Boston Medical and Surgical Journal.

August 16, 1900. [Vol. cxliii, No. 7.]

1. Surgical Pain. G. RYDER.
2. The Psychic Factor in Disease. ROBERT W. GREENLEAF.
3. A Brief Report of a Case of Cerebral Abscess of Otitic Origin; Operation; Death. GEORGE L. RICHARDS.
4. Purgation with Opium. J. W. WAINWRIGHT.
5. A Case of Volvulus Complicated by Peritonitis; Operation; Recovery. W. P. GIDDINGS.

1.—Ryder believes that many lives might be saved by a thorough knowledge of the **value of painful symptoms**, particularly in cases of acute abdominal disease. He calls attention to 3 great characteristics of inflammatory pain: that pain is elicited by pressure and is greatest as a rule at

the seat of inflammation; that movement even in the maintenance of the function of the part causes pain, and that the pain is accompanied by the disturbance of normal function. He discusses the various varieties and the characteristics of the pain of appendicitis, intestinal perforation, pelvic pain and the pain of various forms of intestinal obstruction. [M.B.T.]

2.—Greenleaf reports a number of interesting cases in which mental impression played a large part either in the disease or in its cure. He believes some cases of illness are merely neuroses and that some neuroses may be produced in association with organic disease. Moreover, **psychic causes may predispose to organic conditions**. He therefore insists that it is important to pay attention to these features of diseased states, and that in particular the nurse should be able to enter into psychic relation with her patient. Apparently he does not employ hypnotism, but believes in quiet admonition and careful study of the character of the patient. [J.S.]

3.—A man of 28 had had a discharge from the right ear 2 years previously and had been free from any trouble until 10 days before entering the hospital when he was taken with severe pain in the right ear and a slight discharge. Local treatment was given in the office and the patient was allowed to go to his home, but was found in a dazed condition and brought to the hospital. The right pupil was much dilated, the left was normal and the entire left side was paralyzed. The mastoid operation was performed, but the pathologic conditions found were not considered sufficient to account for the patient's condition, and the skull was trephined an inch above and behind the auditory meatus. A **brain abscess** containing 2 ounces of foul-smelling pus was found about a fourth inch beneath the cortex. This was evacuated, the cavity was washed with sterile water and a drainage-tube was inserted. Symptoms of bronchopneumonia developed after the operation. The patient grew rapidly worse and died on the third day after operation. A necropsy was not allowed. [M.B.T.]

4.—Wainwright reports the case of a boy of 5 who in order to escape detection swallowed suddenly a quantity of cheese. From that time he had **intestinal obstruction**, and it was believed the cheese had lodged at the ileocecal valve. After various laxatives and purgatives had failed, an operation was considered, but a consultant suggested the **employment of opium**. This apparently relaxed the spasm and caused free purgation. [J.S.]

5.—A boy of 15 while playing "snap the whip" was thrown for some distance and was afterwards taken with pain in his abdomen. His physician diagnosed intestinal obstruction, which was not relieved by high enemas and saline cathartics. Symptoms of peritonitis developed. On opening the abdomen bloody fluid escaped and a **volvulus** was found and untwisted a little below and to the left of the umbilicus. Rapid, uneventful recovery followed. [M.B.T.]

Journal of the American Medical Association.

August 18, 1900. [Vol. xxxv, No. 7.]

1. The Surgical Treatment of Conical Cornea. ROBERT SATTLER.
2. The Treatment of Keratoconus with Galvanocautery. HERMAN KNAPP.
3. Therapeutics of Travel and Change of Scene in Nervous and Mental Diseases. RICHARD DEWEY.
4. Morphinism from the Standpoint of the General Practitioner. T. J. HAPPEL.
5. Medicolegal Relations of Opium Inebriety and the Necessity for Legal Recognition. T. D. CROTHERS.
6. Treatment of Morphinism. The Necessity of a More Universal Knowledge Thereof; Report of Cases. A. J. PRESSEY.
7. Syphilitic Locofoliosis Alveolaris; Pyorrhea Alveolaris. G. LENOX CURTIS.
8. Neurotic Affection of Interstitial Gingivitis. J. G. KIERNAN.
9. Interstitial Gingivitis from Indigestion Autointoxication. EUGENE S. TALBOT.
10. The Therapeutic Uses of the Thymus Gland. SOLOMON SOLIS COHEN.

11. Medicine and Medical Men in the United States. A. JACOBI.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1440.

2.—Knapp finds the use of the galvanocautery much superior to silver nitrate in treating **keratoconus**. He gives the following rules as to the manner of application: Never cauterize too deeply, and if the result of the first operation is imperfect, apply the convex disc electrode again to the place in which you want the subsequent cicatricial contraction to have the greatest effect. Spare, if in any way possible, at least half of the pupillary area. If we operate early, even in restricting as we should our interference to the progressive cases, we have to deal with a clear cornea, the reaction will be least, and the visual result as well as the operative effect greatest. We should not operate when the least septic condition is present in the conjunctiva or in the lids and surroundings of the eye, in particular in the lacrimal sac. [M.B.T.]

3, 4, 5.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1287.

10.—Cohen's experience with **thymus extract** does not agree with that of Cunningham and Svehla, who found that the thymus extracts depressed blood-pressure by a vasodilating influence. According to his clinical experience, the blood-pressure is raised and vasodilation corrected by the administration of the thymus gland. In the group of cases to which Cohen has called professional attention, under the name of vasomotor ataxia, 2 subclasses may be made; the one exhibiting greater tendency to undue relaxation of the vessels, and finding its extreme type in Graves' disease; the other exhibiting a more marked tendency toward undue contraction of the vessels, and finding its extreme type in Raynaud's disease. Between these extremes exist all varieties, often with commingling of diverse tendencies toward vascular instability. He believes in a physiologic antagonism between the thyroid and the thymus—at least so far as vascular constriction and dilation are concerned. While he has observed some gratifying recoveries following the use of thymus substance, with and without the adrenal substance, and in urticaria and asthma, and for the correction of the neurovascular disturbances of the menopause, he also records many failures. Whether the cause of the failure lies in the theory of therapy, in the diagnosis, or in further and undiscovered idiosyncrasies of the patient, it is impossible to say. [M.B.T.]

Centralblatt für Gynäkologie.

June 30, 1900.

1. A Case of Self-Expelling Large Fibroma. OTTO v. WEISS.
2. Total Vaginal Extirpation of a Ruptured Uterus During Labor. A. J. IWANOW.

1.—Weiss describes the condition of a woman brought into the hospital on a stretcher, who on examination showed a large cavity in the posterior vaginal vault covered with necrotic shreds of a tumor which had supplicated and been spontaneously expelled. A microscopic examination of the remaining fragments proved it to be a **true fibromyoma**. The history of the case indicated the presence of the tumor upon the posterior wall of the cervix previous to the birth of the last child, which had been a normal delivery. But the pressure at that time upon the tumor between the uterus and the pelvic wall had so injured its tissues as to cause necrosis and the exfoliation of the tumor, which began not long after, causing a very offensive discharge. The remnants of the tumor being removed by the physician, the patient rapidly recovered. [W.K.]

2.—Iwanow says that only 8 cases of **vaginal extirpation of the uterus** during delivery have been reported, 2 by Winter and 1 each by Chrobak, Neugebauer, Solowij, and Mertens and 2 by himself. This does not include those in which the uterus was removed by vaginal cesarean section for uterine cancer. Iwanow's first case was reported in the *Centralblatt*, No. 2, 1899. His second case, now reported, also had a favorable result, and confirms his preference for the vaginal method. The ease and rapidity of the operation, known to all who have used it, are its best recommendation. Another advantage is, there is much less danger of infection of the patient. He also lays much weight upon the drainage of the abdominal cavity through the vagina. [W.K.]

Original Articles.

MILITARY SURGERY.

By W. C. BORDEN ("EDRO"), M.D.*

Captain Medical Department U. S. Army; Professor of Surgical Pathology and Military Surgery, Georgetown University, Washington, D. C.

(Concluded from page 303.)

Wounds of the Face.—Wounds of this region gave a mortality of 5.8%, the lowest regional mortality in the Civil War; while in the Spanish-American War they gave a mortality of 6.7%, being more fatal even than in the Civil War and much more fatal than wounds of the extremities (Table V). This grave nature of wounds of the face is rather surprising, and seems to indicate that wounds of this region by the small-caliber bullet are not so benign as might be expected from the apparent immunity with which the face is pierced in some instances, of which the case in Figure 3 is an example. The septic condition of the nasal cavities and mouth, and the proximity of the brain are the factors of danger in these cases, for of the 4 deaths which resulted from wounds of this region in the Spanish-American War, 2 were from septicemia and 2 from meningitis.

Wounds of the Neck.—Wounds of this region are probably frequently immediately fatal from injury to the great vessels, and wounds of important nerves and structures may add to the gravity of the traumatism even when death is not immediate. This is shown by the fact that in the 35 reported cases in the Spanish-American War, there were 7 deaths, a mortality of 20% (4), while in the Civil War, wounds of the same region gave a mortality of 15%. Thus in this region as with the head, statistics show a mortality at variance with the impression made by seeing numerous cases of bullet perforations of the neck with apparently little bad effect. As no wounds of the spine are recorded in this class and as flesh wounds by the small-caliber bullet are notoriously aseptic, the bad results must be entirely due to severe traumatism of important structures in the neck; and, as the mortality reported is high, even though the total number recorded is small, it may be concluded that *the use of the small-caliber rifle has not decreased the mortality in wounds of the neck.*

Wounds of the Spine.—Wounds of this region are rare, forming but one-fourth to one-half percent of all cases (Table V). They are, however, extremely fatal, as they give the highest percentage of mortality of the wounded of any class of wounds.

Civil War	55.5
Franco-Prussian War (Germans)	67.7
Spanish-American War (U. S. Reg)	62.5

The causes of death in gunshot wounds of the spine are: (a) direct injury to the cord by the missile; (b) hemorrhage from severance of spinal bloodvessels; (c) spinal meningitis; (d) myelitis or degeneration; (e) degeneration of the kidneys and cystitis from trophic lesions of the urinary organs; (f) exhaustion from bedsores. When the spinal substance is injured the mortality is always very high, as Otis states that the spinal injuries during the Civil War followed by recovery were

exclusively those in which the osseous structure of the spine only was involved. Like the traumatic effect upon the brain, traumatism of the spine by the small-caliber bullet are of a very serious character. Dent, in speaking of this class of injuries in the Anglo-Boer War, says that no cases in hospital seem more hopeless or more distressing.¹⁷ He remarks upon the astonishing rapidity of the degenerative changes which occur—deep sloughing bedsores forming in a day or two and cystitis setting in early. He says that if there is any grave lesion of the cord the wound may be set down as mortal even when the wound affects but a small portion of the cord. Even when the traumatism is small, the bullet possibly having barely grazed the cord, the area of damage may be very great. This extensive injury to the cord is undoubtedly due to the fact that it is fluid-saturated, and therefore, like other similarly saturated organs, transmits the energy of a high-velocity missile with lateral explosive violence. It also appears (Table V) that a larger percentage of injuries of the spine will occur from the use of the new rifle—the percentage of occurrences in the Spanish-American War being double that of the Civil War (0.26 to 0.54). This is to be expected; for, from the greater penetrating power of the new bullet, a protected part like the spine is more liable to be reached.

From this it appears that the use of the small-caliber rifle has certainly not decreased the gravity and has increased the frequency of wounds of this class. The number of wounds of the spine in the Spanish-American War was small. There were but eight such wounds reported, but of this number five died. While this number is hardly sufficient for more than very general statistical conclusions, it certainly points to the extreme fatality of this class of wounds and appears to demonstrate that notwithstanding the resources of modern surgery, the destructive effect of the small-caliber bullet upon the spine is so great as to make the percentage of recovery in this class of wounds extremely low. The conclusion reached, therefore, is that *use of the small-caliber bullet has not diminished the gravity of wounds of the spine, and has increased the mortality of the wounded by increasing the number of wounds of this class.*

The treatment of gunshot wounds of the spine should be carried out only under the strictest aseptic precautions. If suppuration occurs it certainly leads to fatal spinal meningitis and myelitis. Operative treatment, therefore, can be recommended in these cases only where aseptic technic can be employed. This is rarely the case in the field hospitals, but at base and general hospitals where means are available, operative measures should be instituted in all appropriate cases. Under such conditions formal or informal laminectomy should be done, and all bone-splinters and depressed bone removed in order to relieve the cord from pressure or irritation.

The complications arising in these cases, such as cystitis and bedsores, should be treated on the general principles of surgery, and every possible means should be used to prevent their occurrence.

Wounds of the Chest.—Wounds of the chest furnish about 8% of all wounds received in war, ranking next to wounds of the extremities in order of frequency (Table V). Wounds of this region probably furnish a large proportion of immediately fatal results from injury to the heart or great vessels, as in 64 deaths in the Spanish-American War, the causes of which were reported, 17 were due to penetrating wounds of the chest.

* The paper signed "Edro" was awarded the Sander prize (a gold medal) for the best paper on military surgery, submitted for competition at the annual meeting of the Association of Military Surgeons of the United States, held in New York City, May 31 to June 2, 1900. The committee of award consisted of Brig.-Gen. J. D. Griffith, Surg.-Gen. N. G. Mo.; Medical Director Geo. W. Woods, U. S. Navy; and Major A. C. Girard, Surgeon U. S. Army, and all papers were submitted to the committee with their *nommes de plume* only.

Wounds of this region are divided into nonpenetrating and penetrating, according to whether the chest-wall only is involved or whether the pleural cavity has been entered with or without injury to the chest-contents. This division is a most important one from a standpoint of prognosis; for while the mortality in penetrating wounds is very high, but few nonpenetrating wounds prove fatal, even though the ribs may be involved, and are generally dangerous only when the destruction of tissue is extensive—as is sometimes the case with shell-wounds—or from extension of infection to the pleura when the wound is infected. With the resources of modern antisepsis these dangers are mainly done away with, and nonpenetrating wounds of the chest will probably sink into insignificance as mortality-producing factors. In the American Civil War, 3.2% (Otis) of all such cases were fatal, while in 61 such cases occurring in the Spanish-American War, there were no deaths.

Penetrating wounds of the chest are much graver injuries.

TABLE VII.—SHOWING PERCENTAGE OF MORTALITY IN PENETRATING WOUNDS OF THE CHEST.

	PERCENT.
French in Crimea (Chenu.)	91.6
English in Crimea (Matthew.)	79.2
French in Italy (Chenu.)	46.48
Civil War (Otis.)	62.66
Prussian in Schleswig (1864) (Lofler.)	41.6
Danish in Schleswig (Lofler.)	67.2
Germans in Franco-Prussian War (Fischer.)	56.7
Japanese in Chinese War (46 cases) (Haga.)	34.7
Spanish-American War (American regulars) (Official.)	24.5

In the Spanish-American War, 58 cases of penetrating wounds of the chest were reported, with 13 deaths (24.5%). By this it will be seen that the mortality in this class of cases is distinctly lower than in former wars when a large bullet was used (Table VII.) All observers have remarked upon the immunity with which in many cases the chest is penetrated or perforated by the small-caliber bullet. This was remarked upon by Senn at Santiago and by Treves in South Africa, who state that there were often no symptoms in these cases beyond an immediate hemoptysis, which was not repeated. The lower mortality in recent wars is probably mainly due to the character of the wounds made by the small-caliber bullet. From the aseptic nature of these wounds, infection, when it occurs, is probably usually due to infection from the lung rather than from the external wound. Notwithstanding the favorable course of many cases, it should be noted that wounds of the chest are of grave import and should by no means be treated lightly. This is shown by the fact that in the Spanish-American War, practically one-fourth of those wounded died. Greenleaf has called attention to the gravity of these cases, and has shown that serious complications are by no means uncommon.²¹ In 24 cases of gunshot wounds of the chest which he collected from the Spanish-American War records, 9, or 37%, developed complications; 3 had hemothorax, and 6 developed hemothorax which became purulent and required operation. From these cases he argues that gunshot wounds of the chest by the small-caliber bullet are not of as light a nature as was supposed and that care should be taken in treat-

ing them. Treves, in speaking of similar wounds in the Anglo-Boer War, says that he has seen surgical emphysema, hemothorax, pneumothorax, and an example or two of empyema, but that, on the whole, gunshot wounds of the chest do well.

Aside from lowered mortality due to the small-caliber bullet, the *treatment* adopted has undoubtedly had much to do with reducing the number of deaths in these cases. It should be directed; (a) to immediate care of the wound; (b) to the complications which may arise.

The primary use of protective dressings will often prevent subsequent infection of the wound, or pleura, with possibly resulting empyema. The serious complications which may follow are: (a) hemorrhage; (b) hemothorax; (c) pneumothorax; (d) empyema; (e) pleurisy or pneumonia; (f) abscess of the lung.

Hemorrhage is of course to be treated by ligation, or pressure by Dessault's plan when the ligation is impracticable. Hemothorax being the result of hemorrhage, the bleeding should, if possible, be controlled by ligature; or if it occurs from the lungs, sedatives, cold applications, and absolute rest should be tried. These failing and the case being urgent the clots should be turned out and ice-water should be injected into the pleural cavity as recommended by Delorme. Where the bleeding has stopped and operation is required, tapping and evacuation by syphonage, as recommended by Senn, should be employed.

Empyema should be treated by free drainage, daily irrigation with warm antiseptic solution and final resort to Estlander's operation if necessary. Abscesses of the lung should be evacuated and treated on similar lines. The surgery of the lungs and pleura has made great advances of late years and adoption of the methods now in vogue will do much to lessen the mortality in complications arising from gunshot and other traumatism involving the pleural cavity or the thoracic contents.

From this and the statistics available, it may be stated that the *use of the small-caliber rifle has lowered the mortality in penetrating wounds of the chest and that modern surgical methods have also been a decided factor in this direction.*

WOUNDS OF THE ABDOMEN.—Wounds of the abdomen, like those of the chest, are divided into nonpenetrating and penetrating. *Nonpenetrating* wounds of this region, like similar ones of the chest, are of minor importance.

Penetrating Wounds of the Abdomen.—These wounds cause a large proportion of immediate deaths on the field of battle.

In 64 deaths from gunshot in action in the Spanish-American War, in which the cause of death was reported, 19 were due to wounds of the abdomen. These immediate deaths were undoubtedly due: (a) to hemorrhage from wound of some bloodvessel; (b) to hemorrhage and shock from wound of some one of the large intra-abdominal organs. These organs—liver, spleen, kidneys—are blood-saturated organs, and at short range the compound bullet often acts upon them with destructive violence. Also, the stomach or bladder, if filled with fluid, may be extensively torn or ruptured. This is due to the violent transmission of energy in all directions from the rapidly moving bullet by the incompressible fluid in fluid-filled or fluid-saturated organs, as was pointed out in the discussion of explosive effect. In these cases extensive laceration and disruption of the organs occur with consequent hemorrhage and shock, which immediately or quickly cause death.

At long range and lower velocities the bullet may simply perforate these organs and recovery take place with few symptoms. Numerous cases of this kind have been reported by surgeons in both the Spanish-American and Anglo-Boer wars, and have been as much commented upon as have similar wounds of the skull or brain.

No class of cases, however, have been so tremendously fatal in war as penetrating wounds of the abdomen, and they still show the highest mortality of wounds of any region. (Table VIII.)

TABLE VIII.—MORTALITY FROM PENETRATING WOUNDS OF THE ABDOMEN.

	NUMBER.	DIED.	MOR- TALITY.
Crimean War—English	120	111	92.5
Crimean War—French	121	111	91.7
Italian War—French	246	163	87.2
Civil War—Federals	3,717	3,031	87.2
Danish War—Prussians	103	59	57.2
Danish War—Danes	89	57	64
Franco-Prussian War (Fischer)	1,047	784	74.8
Japan-China War (Haga)	47	33	70.2
Spanish-American War (U. S. Regulars)	44	29	65.0
Average mortality	..	..	74.3

These figures show an average mortality, previous to the Spanish-American War, of practically 75%. This seems to indicate that the mortality in these cases has been somewhat lowered by the use of the new rifle. The gain would be more evident if it were not for the figures of the Italian War and the Danish War, in both of which, though large-caliber bullets were used, the mortality was lower than in the Spanish-American War. Taking the other wars into account, there is a decided improvement in the mortality—the decrease as compared with our Civil War being over 20%.

In considering the statistics of the Spanish-American war, the factor of treatment should be taken into account.

Penetrating wounds of the abdomen (U. S. Regulars), 44. Laparotomies for these wounds, 4; deaths, 4; mortality, 100%.
 Cases not operated on, 40; deaths, 25; mortality, 62.5%.

The statistics from the Spanish-American War for these cases are small, and it may be that the larger figures which we shall have from the Anglo-Boer War will still further emphasize the comparatively humane effect of the small-caliber bullet and the good results of conservatism in penetrating gunshot of the abdomen. The large percentage of deaths in these cases is due to septic peritonitis, but with the small bullet there is less danger of infection either from the exterior or from fecal extravasation than with the large bullet. From the usually aseptic nature of the wounds made by the small bullet, it may be presumed that peritoneal infection only exceptionally occurs by way of the surface of the body. Infection, when it does occur, must therefore usually be due to extravasation from wounds of the intestinal canal. Undoubtedly there are a number of cases in which intestinal perforation occurs and peritonitis does not result, for both Treves and McCormick report such cases among the British wounded in South Africa. McCormick suggests that it is due to an empty alimentary tract

and the rapid closing of the small perforation made by the bullet, and Treves suggests that the small hole may be closed by apposition with an adjacent coil of intestine. In an empty intestine or stomach, the small-caliber bullet probably produces as small a hole as it does in other soft tissues, and the contraction of the tissues tends to close the small opening, while adhesion to an adjacent intestine may readily occur. Also, a certain number of penetrating wounds occur in which the intestines or intraabdominal organs are not injured. These conditions all aid to lessen the gravity and mortality of wounds of this region.

To summarize, it may be concluded that modern surgical methods have not as yet proved available to markedly reduce the mortality of the wounded in penetrating wounds of the abdomen received in war; but, that the mortality in these cases has been lowered to some extent by the use of the small-caliber rifle.

Wounds of the pelvis and genitourinary organs taken together, in the Civil War had the high mortality of 29.7%. In the Spanish-American War no cases of wounds of the pelvis were reported, but there were seven wounds of the perineum and genitourinary organs with no deaths. Wounds of the pelvis depend largely for their gravity upon whether or not the pelvic contents are injured. If the pelvic peritoneum is involved the wounds belong to the same class as penetrating wounds of the abdomen and the mortality from them and the treatment indicated are practically similar.

Wounds of the pelvis proper by the small-caliber bullet will not be as grave as in former wars. The osseous structure of the pelvis is spongy and will not be as greatly shattered by the small-caliber bullet as by the larger bullet formerly used, while the aseptic nature of the wounds made by the new bullet and the antiseptic treatment now adopted for lacerated and infected wounds made by other missiles will tend greatly to lower the mortality in cases where the extraperitoneal structures only are involved.

Wounds of the bladder are dangerous from the extravasation of urine into the tissues, or its escape into the peritoneum if that cavity is wounded. With the new bullet it is possible that the bladder may be pierced and no bad results follow, but in some cases active treatment will be required. Operative treatment at the field hospital is not to be recommended except in extremely urgent cases, and especially not if the peritoneum is involved. If the peritoneum is opened by operation the chances for recovery will be as infinitesimal as in laparotomy for abdominal penetrations. Operations, not involving the peritoneum, may be attempted where immediate interference is necessary, but all cases in which delay is possible should be transported to base hospitals where proper technic is available. When required, a catheter should be introduced and retained in the bladder, and other palliative treatment adopted until operation can be done with safety.

WOUNDS OF THE EXTREMITIES.

It is in the wounds of these regions that the use of the small-caliber rifle and modern surgical methods have produced the great saving of life and limb. Wounds of other regions of the body, as already shown, present but a moderate reduction in fatality. But wounds of the upper and lower extremities have been surprisingly less fatal in wars where the small-caliber bullet has been used and where the wounds have been treated by aseptic and antiseptic means and by the ex-

pectant and conservative treatment which is a natural concomitant of these methods. (Table IX.)

TABLE IX.—NUMBER OF CASES AND MORTALITY FROM GUNSHOT OF THE EXTREMITIES IN THE CIVIL WAR AND SPANISH-AMERICAN WAR (U. S. REGULARS).

		CASES.	DIED.	MORTALITY.
Civil War	Upper extremities.	87,793	5,608	6.5
Spanish-American War	Upper extremities.	423	1	0.2
Civil War	Lower extremities.	73,665	11,813	13.8
Spanish-American War	Lower extremities.	562	9	1.6

Thus in the Civil War, while the mortality of all wounds of the extremities, upper and lower, was from 6.5% to 13.8%, similar wounds in the Spanish-American War had a total mortality of but 2.4%. The number of deaths in the latter war from wounds of these regions is surprisingly small, but 10 in 991 cases; and of these 10 cases, 3 died very shortly after the receipt of their injuries, probably from hemorrhage.⁴ The difference in treatment adopted in these wars is not less great than the mortality. (Table X.)

TABLE X.—WOUNDS OF THE EXTREMITIES TREATED BY EXCISION AND AMPUTATION, AND BY CONSERVATISM, AND THE RELATIVE MORTALITY OF EACH TREATMENT FOR TWO WARS.

WAR.	WOUNDS OF EXTREMITIES.		AMPUTATIONS AND EXCISIONS.		PERCENTAGE OF OPERATIONS TO WOUNDS.	OPERATIVE MORTALITY.	CONSERVATIVE MORTALITY.
	Total.	Deaths.	Total.	Deaths.			
Civil	174,206	17,421	12,193	2,636	6.99	21.4	9.1
Spanish-American.	991	10	32	6	3.20	18.7	0.4

This table shows at once: (a) The small number of operations done or required to be done in wounds of the extremities since the adoption of the new rifle and modern surgical methods—the proportion having been reduced over one-half (6.99 to 3.20); (b) the great decrease in mortality in these cases, the mortality being reduced over twenty-two times in cases treated conservatively (9.1 to 0.4), and somewhat decreased in those treated by amputation or excision.

The high mortality in operation cases makes it probable that only the extremely serious cases were operated on. In the Spanish-American War in the cases reported among the regulars, the deaths that occurred were all from high amputations. (Table XI.)

TABLE XI.—RESECTIONS AND AMPUTATIONS AND DEATHS FROM THESE OPERATIONS IN THE SPANISH-AMERICAN WAR (REGULAR TROOPS).

	RESECTIONS.	AMPUTATIONS.	DEATHS.
Arm	1	4	1
Forearm	1	2	0
In hand	0	13	0
Hip joint	0	2	2
Thigh	1	5	2
Knee	0	1	1
Leg	0	1	0
Ankle	0	1	0
Total	3	29	6

No deaths from resection.

From this it may be formulated that the use of the small-caliber rifle and modern surgical methods have together greatly reduced the loss of life and limb in gunshot wounds of the extremities.

Having considered wounds of the extremities in general, it remains to study wounds of the joints and bones, wounds of the soft parts having been sufficiently discussed under the general heading of wounds.

Wounds of the Joints.—In no department of military surgery has the treatment of wounds been so greatly changed and for the better as in gunshot wounds involving the joints. From radical operative interference usually by amputation above the wounded joint, treatment has changed to expectant and conservative lines, and with a result in saving of life and limb which is truly astonishing. The credit for inaugurating this change is due to von Bergmann, whose brilliant results in the Russian-Turkish War, with wounds of the knee-joint treated by occlusive and antiseptic dressings and immobilization, inaugurated a new era in the military surgical treatment of joint wounds.²²

In the battle of Gorne Dubrik, von Bergmann selected 15 of the most serious cases of gunshot of the knee in which, aside from the implication of the joint, there was extensive comminution of the bone. In these cases treated by the above method, perfect recovery resulted, with but a single exception, notwithstanding the fact that the patients were exposed for days to pouring rain and had to be transported across the plains over muddy roads. In the same war, of other cases treated by the older methods then in vogue, 95% died.

In considering von Bergmann's brilliant results, it must be borne in mind that the wounds treated were made by the large lead bullet then used, and that the results must be attributed to the treatment rather than to any effect of the missile.

The same line of treatment was adopted by Haga³ in the Japan-China War and by our surgeons in the Spanish-American War. The excellent results obtained as well as the comparatively tremendous mortality in previous wars is shown in Table XII. In this connection, Table XIII is also very valuable and interesting as it shows that the deaths from joint-injuries in two wars since the adoption of aseptic and antiseptic methods and expectant treatment have all been from wounds of the larger joints.

The four deaths reported by Haga were from wounds of the hip and knee, and the single death from joint-wound in the Spanish-American War among the United States Regulars was due to a gunshot of the knee treated by amputation.

TABLE XII.—MORTALITY OF WOUNDS OF THE JOINTS IN FOUR WARS.

JOINT.	AMERICAN CIVIL WAR.	FRANCO-PRUSSIAN.	JAPAN-CHINA (Haga).	SPANISH-AMERICAN (Regulars).
Hip	84.7	71.8	100.0	0.00
Knee	53.7	48.9	25.0	5.5
Ankle	26.9	24.0	0.0	0.0
Shoulder	31.1	35.5	0.0	0.0
Elbow	19.4	21.2	0.0	0.0
Wrist	12.9	12.6	0.0	0.0

TABLE XIII.—CASES AND DEATHS IN EACH CLASS OF JOINT-WOUNDS IN TWO RECENT WARS.

	JAPAN-CHINA WAR. (Haga).		SPANISH-AMERICAN WAR. (Regulars).	
	Number.	Deaths.	Number.	Deaths.
Hip	1	1	0	0
Knee	16	4	18	1
Ankle	4	0	11	0
Shoulder	4	0	3	0
Elbow	16	0	5	0
Wrist	6	0	6	0
Total	47	5	43	1
	Mortality 10.6%		Mortality 2.3%	

Operation was done in but 2 of the 43 Spanish-American War cases. These were both amputations, one for gunshot of the ankle-joint and one of the thigh for gunshot of the knee-joint, the latter amputation as just noted giving the only fatal result which followed gunshot of the joints in the regular troops during the Spanish-American War.

In the Civil War, gunshot of the knee-joint, next to wounds of the skull, brain, spinal cord, and abdomen, gave the highest mortality of any class of wounds—approximately one-half of those wounded died—while in the 38 cases of Table XIII, there are but 5 deaths, or less than 1 death in 7, and in the American cases there is but 1 death in 18 cases and that followed operation. No stronger argument could be adduced for conservatism in *bullet* wounds of the joints. The conditions are practically identical with those present in penetrating abdominal wounds, for in each there is the probability of an aseptic wound which may be made septic by operation, especially if the operation is attempted at the field hospital. The rule of conservatism should be as firmly adhered to in one case as in the other. In civil practice, with all the technic of asepsis, the surgeon may when necessary open a joint as fearlessly as he would the abdomen; but in military practice, in view of the high mortality from operation and the almost certainty of cure by conservatism, the military surgeon should open joints or amputate only when the life of the patient is in imminent peril. The surgeon will be aided along conservative lines by the fact that the small-caliber bullet, except at very short range, rarely fragments the articular ends of bones to marked extent. The bullet in many cases may pass through joints and simply perforate or but slightly fissure the bones. Considering this in its relation to conservative treatment it should be remembered that septic infection more frequently produces ankylosis and impaired function of a joint than does bone-displacement, unless the displacement is marked; and that septic infection of a large joint is a great menace to life.

But in some cases operative interference will be demanded. This necessity will most ordinarily arise from extensive traumatism, from shells or deformed ricochet bullets, or from infection of the wounds. In such cases the operation which will best serve will have to be determined for each individual case, taking into consideration that in a choice between excision and amputation some general rules have been found to best apply for wounds of certain parts. Thus, in general terms, it may

be stated that where bone and tissue destruction is not too great, military surgical experience has shown that excision is to be preferred to amputation in all joints except the knee and ankle. With aseptic and antiseptic technic available, it is possible that more excellent results may be obtained in excision of these joints in the future than has been had in the past, but as yet a sufficient number of cases are not recorded from which to draw conclusions.

In summarizing conclusions relative to joint-wounds it may be stated that *the mortality in joint-wounds has been remarkably diminished by the adoption of aseptic, antiseptic, and conservative methods and by the use of the small-caliber rifle.*

Gunshot Fractures of the Extremities.—The effect of the small-caliber bullet upon the long bones has already been discussed; it remains to study the treatment of these traumatisms. It may be said at once that the treatment adopted in compound fracture by gunshot has as radically changed, and that for the better, as has the treatment of gunshot of the joints. (Table XIV.)

TABLE XIV.—COMPARATIVE MORTALITY OF COMPOUND FRACTURES IN THE CIVIL AND SPANISH-AMERICAN WARS ACCORDING TO TREATMENT ADOPTED.

	MORTALITY, CIVIL WAR.		MORTALITY, SPANISH-AMERICAN WAR.	
	Treated Conservatively.	Treated by Amputation or Excision.	Treated Conservatively.	Treated by Amputation or Excision.
Arm.	14.3	26.0	0.0	20.00*
Forearm.	6.4	13.9	0.0	0.0
Thigh.	49.19	62.4	0.0	57.1*
Leg.	13.8	39.5	0.0	0.0

* One operation only.

From this table it will be seen that as with the joint-wounds, conservatism is made possible in gunshot fractures by the aseptic nature of the wounds made by the small-caliber bullet and that, aided by aseptic methods, conservatism has reduced the mortality in these cases to an extent almost beyond belief. The gravity of compound fractures depends mainly upon the presence or absence of infection, and where this can be excluded or prevented, traumatism of the bones heal as well as traumatism of other tissues. In the Spanish-American War 100 gunshot fractures of the extremities, exclusive of the foot and hand, were reported among the U. S. Regulars. In these 100 cases there were but 5 deaths and these only in cases operated on. (Table XV.)

TABLE XV.—CASES, OPERATIONS AND DEATHS FROM COMPOUND FRACTURES OF EXTREMITIES; U. S. REGULARS, SPANISH-AMERICAN WAR.

	CASE.	DIED.	RESECTIONS.	AMPUTATIONS.	DEATHS FROM AMPUTATIONS.
Arm.	18	1	1	4	1
Forearm.	26	0	1	2	0
Thigh.	30	4	1	6	4
Leg.	26	0	0	1	0
Total.	100	5	3	13	5

Mortality in all cases. 5 %
Operative mortality 31.2%
Conservative treatment mortality 0.0%

It is to be noticed that the deaths all occurred after high amputations, 2 being amputations at the hip-joint of which both died; 2 amputations in the middle third of the thigh with 1 death; and 2 amputations in the lower third with 1 death. The death from amputation of the arm was in a case operated on at a dressing station, death occurring 18 days later, probably the result of infection due to operation in septic surroundings. The results tabulated in the tables given show most emphatically that conservation should be practised in all cases possible.

When *operative measures* have to be adopted the question of excision or amputation will arise.

Excision in the shaft of the long bones has been unfavorably considered by military surgeons in the past. The mortality from this operation has been greater than that from amputation, and the functional use of the part has, as a rule, not been good. It is to be noted, however, that the large statistics now available are from wars in which aseptic and antiseptic methods were unknown and that in recent wars operations have been too few to warrant conclusions. It would seem that with the resources of antiseptics and asepsis that limbs could be saved in many cases by recourse to excision and without greater danger than is entailed by amputation.

The reduced though still high mortality from amputations shown by Table XV, like the high mortality from amputation for joint-wounds, is undoubtedly due to these operations being done only on the worst cases. Amputations and excisions will of course still be necessary in gunshot fractures when destruction of the soft parts is great, when the main vessels of the part are severed and when infection, if present, cannot be controlled. The rule, however, is conservatism in these cases; the results from this line of treatment and the decreased mortality in gunshot of the bones of the extremities being such that it may be formulated: *the use of the small-caliber rifle and modern surgical methods have, together, greatly reduced the mortality in gunshot fracture of the extremities.*

General Conclusions.—In reviewing the foregoing it may be safely stated that the facts and figures show that the military weapon now used in war which inflicts the great majority of wounds, *i. e.*, the small-caliber rifle, together with the surgical methods now in vogue have materially affected the practice of military surgery. Operative measures once thought imperative are now no longer required. The aseptic character of the wounds made by the small-caliber bullet allows conservatism in many cases where radical measures were formerly necessary, while the traumatism produced by it in many cases and in certain regions of the body, is directly conducive to a minimum of evil result. At the same time the effect of the bullet in other regions is such that the mortality of the wounded has not been greatly diminished.

Relative to the use of the small-caliber rifle it may be stated:

1. That the small-caliber rifle is *not* a humane weapon so far as its immediate death-dealing power is concerned.

This is proved by the statistics which show that the proportion of killed to wounded has, if anything, been increased by its use.

2. That it *is* a humane weapon so far as the effects of its projectile upon those not immediately killed are concerned.

This is shown by the statistics, which demonstrate that many more wounded recover and more limbs are saved, than when rifles of large caliber were used.

3. That in certain regions—head, face, and neck—it produces injuries of such grave character that modern surgical methods have not been able to reduce the mortality in wounds of these parts.

This is shown by the fact of the still high mortality of wounds in these regions, although treated according to the surgical principles which now obtain.

4. That in wounds of other regions; chest, abdomen, and pelvis, the wounds as a class are less dangerous than with the old bullet, but in all these regions, the chest not excepted, are usually of grave import.

This is shown by the high mortality which still obtains in this class of wounds.

5. That in wounds of the extremities, the small-caliber bullet produces wounds which are rarely mortal, and which allow conservative treatment to an extent heretofore unknown. *It is in wounds of the extremities that the great reduction in mortality has occurred since the adoption of the new rifle and the use of aseptic and antiseptic methods.* This is proven by the tremendous reduction in mortality in wounds of these regions and the reduced number of major operative measures required.

Relative to Surgical Methods: 1. That asepsis and antiseptics have been as potent factors in reducing post-traumatic complications and mortality in military as in civil surgery.

This is proven by the reduced mortality arrived at by *recognizing and maintaining* the asepticity of bullet-wounds, and by treating infected wounds antiseptically, and, when necessary, by aseptic and antiseptic operative procedures.

2. That conservative treatment, made possible by aseptic and antiseptic methods, has been a most potent factor in the saving of life and limb.

This is proven by statistics of wounds of joints and compound fractures where the mortality from cases so treated is almost infinitesimal.

3. That operative interferences on the field or at field hospitals should be restricted to operations imperatively demanded or to those cases where delay would be more dangerous than the septic infection liable to occur from operating under unfavorable conditions.

This is proved by the high mortality and the post-operative infection in cases operated on at the front—due to the practical impossibility of obtaining asepsis under the conditions which obtain at field hospitals.

Relative to Executive Departments: 1. That permanent base, and general hospitals equipped with all appliances for aseptic and antiseptic work should be established at points as accessible as possible to the field of operations and that facilities for transporting the wounded to these hospitals as quickly as possible should be provided.

By having hospitals so equipped and sending the wounded directly to them, lodged bullets can be located by the Röntgen-ray and removed with safety; operations for compound fractures where there is irreducible displacement of bone, or where the Röntgen-ray shows displacement liable to produce impairment of function, can be done and other necessary operative procedures can be safely undertaken with resulting conservation of function, limb, and life. This was the method adopted in our war with Spain and in the Anglo-Boer War; and, if carried out in future wars, will greatly aid to reduce post-traumatic complications and the mortality of the wounded.

Finally, it is to be remarked that military surgery, viewed as a science, does not differ from surgery in general. It is governed by the same laws and founded on

the same principles. Viewed as an art, it differs from ordinary surgical practice in that it deals with traumatism seldom met with except in the field of war, and that being practised under peculiar and less favorable circumstances is less certain in its effect. Locality and environment frequently make a more heroic and decided form of treatment necessary: and equally, at other times demand that more conservatism be practised than in ordinary surgery. And lastly, military surgery demands of the military surgeon, not only that he should be well informed of the peculiar class of cases with which he has to deal and of the conditions under which they must be treated, but that he should be well grounded in the science of surgery in general, so that with comprehensive grasp and ever holding in view the ultimate welfare of his patient, he may bend his energies to that great end and apply his knowledge according to time, place, and circumstances with rightful prospect of success.

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²¹ Greenleaf, H. S.: Wounds of the Chest, *New York Medical Journal*, vol. lxx.

²² von Bergmann: Die Behandlung der Schusswunden des Kniegelenks im Krieg, Stuttgart, 1877.

AN APPARATUS FOR MAKING ROLL-CULTURES.

By GEORGE H. F. NUTTALL, M.D., PH.D.

University Lecturer in Bacteriology and Preventive Medicine, Cambridge, England.

THE roll-culture method, which was introduced by von Esmarch, is still used to a considerable extent in certain laboratories. In making rolls according to the original method, the cotton plugs (of the tubes containing the liquefied gelatin) are cut off on a level with the mouth of the tubes, and covered by rubber caps. The tubes are then rolled in cold water by hand or by means of the apparatus devised either by von Esmarch or Prausnitz. The drawback to this method is that it is difficult to spread the gelatin or agar in a uniform layer within the tube, and it is almost impossible to avoid

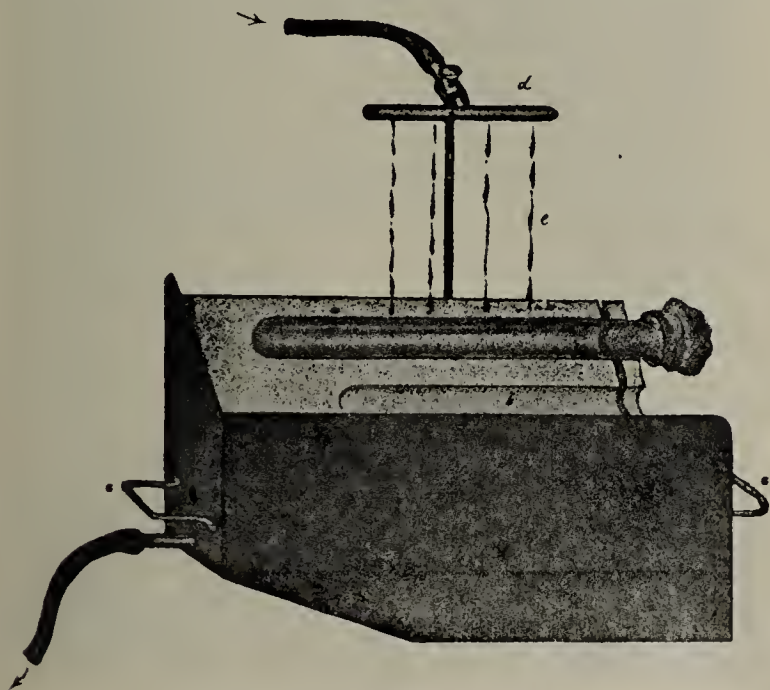


FIG. 1.—(c) Represents dripping water.

bringing the medium in contact with the plug. When the medium collects about the plug the number of colonies developing within the tube cannot be accurately determined. To obviate this difficulty, special tubes with narrowed necks have been resorted to. Such tubes, as also rubber caps, are, however, quite unneces-

sary when the tubes are rolled on ice, as first suggested by Booker, of Baltimore. He used ordinary test-tubes, rotating them upon a block of ice into which a groove of suitable size had previously been melted by means of a tube containing hot water. With a very little practice, excellent roll-cultures of gelatin or agar can be

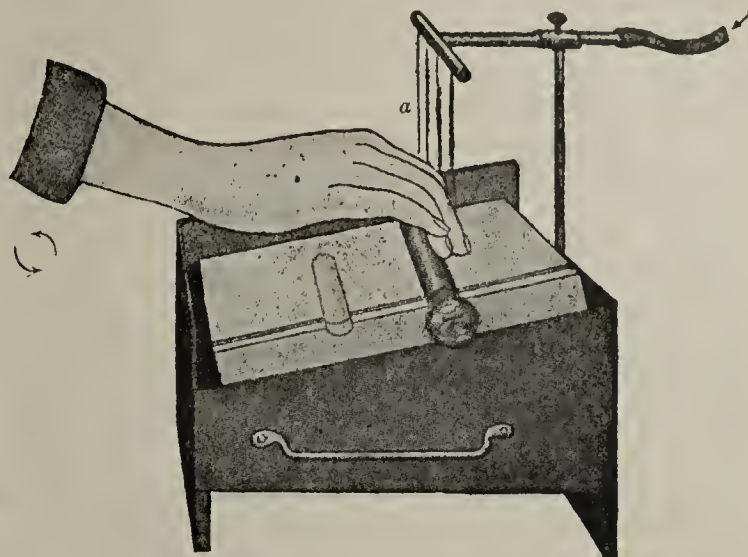


FIG. 2.—(a) Represents dripping water.

made by Booker's method. By tilting the piece of ice, which rests upon a towel, within a basin, there is no difficulty in keeping the medium from coming in contact with the plug. The Booker method requires that one shall have a piece of ice of suitable size at hand. The continued melting of the ice alters the shape of the groove, so that a new one must, after a short time, be melted in the ice. Ice is an expensive item if this method is much used, whereas the Booker method will always be useful where ice is readily obtained. I believe a useful substitute for the ice-block will be found in the simple apparatus about to be described. The apparatus is always at hand, and the cold water, as it runs from the tap, suffices during the greater part of the year for chilling the tubes. In summer, ice-water can be allowed to run upon the tubes from a reservoir overhead. In this apparatus the form of the groove remains constant.

The apparatus consists of two parts: (1) A block of marble; (2) a metal receptacle with attachments. The block (21 x 17 x 5 cm.) is provided upon its upper polished surface with two grooves (b), of a size adapted to tubes of different sizes (the one groove is 17, the other 13.5 cm. long). In cross-section, the grooves must represent somewhat less than a half circle, otherwise the water which accumulates between the surfaces of the tube and groove exerts such an amount of capillary attraction as to seriously interfere with the rotation of the tube. On the right-hand side of the block, about 1 cm. from its edge, is a single groove, deeper than the preceding, which it traverses. This groove serves to drain off the water, which would otherwise run along the length of the tube and wet the plug. Owing to the capillary attraction before-mentioned, the tubes will not rotate properly within a polished marble groove. They, however, rotate very rapidly when the surface of the groove is covered with a thin coat of paraffin, which is melted, applied by means of a brush and smoothed with a heated glass tube. The layer of paraffin requires to be occasionally renewed, the dried block being previously wiped off with a cloth moistened with xylol or turpentine. As seen in the figure, the block is held in a slanting position within the receptacle, which is made somewhat larger than the block, so as to catch any water which may flow over its sides. The

shape of the receptacle is adapted to that of the block, the front and left side being high, so as to catch the water as it splashes from the rotating tube. At the back is attached a vertical rod with a screw attachment to hold a perforated brass T-tube (*d*), through the four openings of which water is allowed to fall upon the tubes. The floor of the receptacle is flat. On the left side is a tube, to which a piece of rubber tubing is attached, the same serving to drain off the water which flows into the receptacle. The receptacle rests upon two sleigh-like cutters, which are cut away somewhat at the left side, so that by pressing down upon the left handle (*c*) of the receptacle it is possible to give the whole apparatus a decided tilt to one side. As soon as this handle is released, the apparatus returns by its own weight to the horizontal position. On the right of the receptacle is a second handle, which, together with the first, serves for carrying the apparatus about. These handles should be made sufficiently wide to admit the four fingers of each hand.

When the apparatus is to be used, water is allowed to flow with *moderate* rapidity from the spray, the left handle is pressed down, and the culture-tube placed in the groove, rotation beginning immediately. As soon as the tube is rotating properly, the apparatus is allowed to gradually resume the horizontal position, and the rotation is continued until the medium has solidified. Solidification occurs rapidly with agar, more slowly with gelatin; so that when the latter is used it will save labor (when the water is not especially cold) to bring down its temperature to near the point of solidification before placing it in the apparatus. It is already known that it is necessary to keep agar-rolls in a slanting position for the first 24 hours in the thermostat. This allows the film of agar near the plug to become dried and attached to the inner surface of the tube; whereas if the tubes are placed in a vertical position immediately after rolling, the agar film slips down within the tube, after the manner of a loose stocking. The dried agar at the edge serves, so to speak, as a "garter." The tubes should be rotated only in one direction (towards the operator), using the tips of one or two fingers gently. Splashing can be considerably reduced by moving the finger backward and forward *between* the small water-jets. By placing the apparatus in a slanting position, it can also be used for slanting media. Any stonemason can make the block required—a workman here has made them for 8 shillings, while a tinsmith makes the receptacles of zinc for about the same price. The marble block has the advantage of giving the apparatus stability. Herr Paul Altmann, Luisenstrasse, 52, Berlin, N. W., will supply a thoroughly well-made apparatus complete for 25 marks.

common of the ocular conditions causing an unseemly expression of the countenance is strabismus. The internal form is usually associated with hyperopia and requires proper correction of the refractive condition, in addition to section of the internal rectus muscle. Failure to wear lenses to correct the refractive defect causes not infrequently a return of the cross-eye condition. I have now under my care a patient in which the strabismus returned, apparently from neglect of this precaution on the part of the former operator. The various operations for correcting internal and external squint, or strabismus, by cutting the muscles, advancing the tendons, or by a combination of both operations, need not be discussed in detail; they are familiar to all ophthalmic surgeons.

Disfiguring white spots upon the cornea may be tinted with India ink. This little operation must be frequently repeated in order to get the tint of the scar-tissue sufficiently dark. Such eyes are defective in vision and the tattooing is simply to make the conspicuous white spot of such a color that it will not attract attention.

Blind eyes, due to injury or any other lesions which destroy the appearance and shape of the globe, may be covered with artificial eyes of glass so colored as to correspond with the normal eye on the other side. Anterior section may be required, if there is a prominence of the diseased eyeball due to anterior staphyloma. Mules's operation, in which a glass ball is inserted into the eviscerated sclera to give sufficient prominence to the globe, is a very satisfactory method of maintaining the prominence and the motions of the eyeball. The glass shell or eye placed in front of this has a much more normal appearance than when it is used after the globe of the eye has been entirely re-



FIG. 1.—New eyelid made with flap from forehead. Photograph taken three weeks after operation.

MÜTTER LECTURES OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

The Surgical Treatment of Congenital and Pathologic Disfigurements of the Face.

By JOHN B. ROBERTS, M.D.

Professor of Surgery in the Philadelphia Polyclinic.

LECTURE X.—*The Cosmetic Surgery of the Eyes.*

(Abstract.)

MUCH can be done for improving disfiguring conditions of the eyeball and eyelids. One of the most

moved. A small eye due to atrophy may, if it is blind, be made to appear larger by wearing a strong convex lens in front of it. In front of the opposite eye a piece of plain glass may be inserted in the spectacle form.

In conditions of exophthalmos, and especially in that

form due to the disease called exophthalmic goiter, the disfiguring bulging of the eyes may be relieved by stitching the outer canthus of the eyelids so as to lessen the size of the palpebral fissure. This operation should not be done until the active symptoms of the disease have subsided. At that time, if the bulging of the eye persists, the removal of a little of the mucous membrane at the outer angle of the eyelids and insertion of a couple of stitches will so cover the eyeball as to make the bulging disappear.

There are many operations possible upon the eyelids which improve the appearance of the upper part of the face. The congenital condition called epicanthus, in which folds of skin extend over the inner angles of the eyelids, is improved by the removal of a vertical ellipse of skin at the root of the nose. Drooping of the eyelids, technically called ptosis, is remediable by removing a section of the skin of the upper lid or giving a new attachment to the elevator-muscle. Warts and other tarsal tumors are very disfiguring, but most of them are easily removed by simple operations.

Wounds of the eyelids should be made aseptic and sutured with care to prevent cicatricial distortion. One of the ugliest of the deformities of the eyelids is ever-

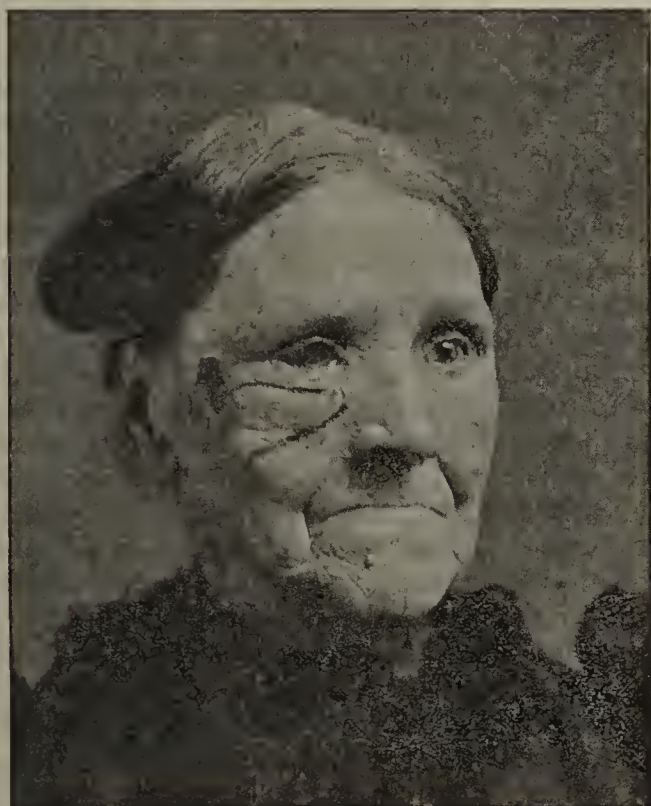


FIG. 2.—New eyelid made with flap from forehead, taken at a later date than figure.

sion of the lid caused by cicatricial contraction following burns, lupus, or ulceration. Thoughtless surgeons sometimes cause this deformity by removing tumors of the face and placing their incisions so that cicatricial contraction drags the lower lid downwards or the upper lid upwards. This contingency should always be recollected in operations in the neighborhood of the eyelids. If the incisions cannot be placed in such a way as to make the drag of the cicatrix operate so as not to disturb the position of the eyelids, a plastic procedure to transfer the tension to another position should be adopted after the excision of the growth. Adhesion of the eyelids to the eyeball after burns of the conjunctiva are very difficult to repair with satisfaction. Many of them, however, may be relieved by plastic operations upon the conjunctiva or the transplantation of skin or mucous membrane. These conditions of symblepharon

tax the ingenuity of the surgeon. Ankyloblepharon is another deformity difficult to deal with surgically. In it the two eyelids are united by cicatricial adhesion.



FIG. 3.—Ectropion of upper eyelid, due to cicatrization after avulsion of entire scalp. Operation consisted in using flaps from temporal region and side of nose. Incisions marked with ink. Head shows result of skin-grafting on ulcerated surface.

Various operations have been devised and are more or less successful.



FIG. 4.—Excision of epithelioma below the eye. Flap from temple used to prevent ectropion. Outline of flap marked with ink.

The plastic procedures required to make new eyelids, after their removal by sloughing or accident, or to fill

in a space left by the replacement of an eyelid which has been dragged outwards so as to cause ectropion, must be performed in accordance with the principles of plastic surgery already laid down. The various forms of skin-grafting will be of some value, but as a rule it is necessary to turn a flap of skin and subcutaneous tissue into the gap left by replacing the eyelid. The space left by the removal of this flap may then

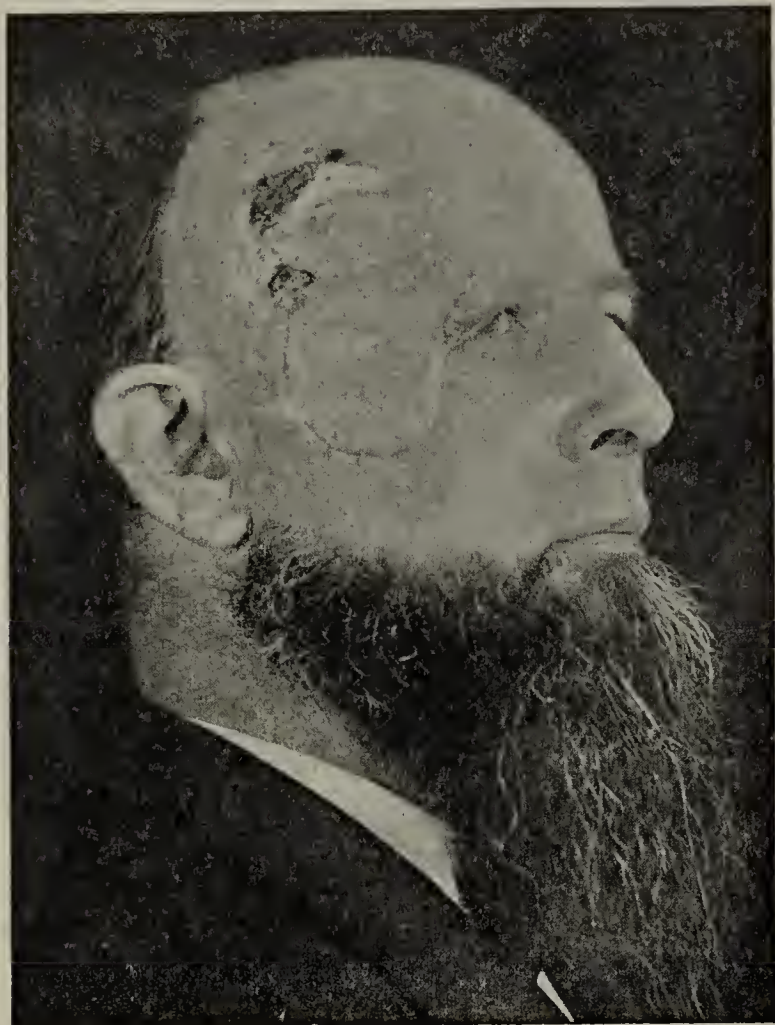


FIG. 5.—Epithelioma near outer canthus removed, the space filled in with flap from temple, shavings of skin applied to surface left by transfer of the flap.

with advantage be covered with skin-grafts. It is usually better to thus utilize the skin-grafting process for covering the original seat of the flap than to depend on it for lessening the tendency to cicatricial contraction.

THE PSYCHOSES OF THE MENOPAUSE.

By JOHN B. CHAPIN, M.D.,
Pennsylvania Hospital for the Insane.

THE term "psychoses of the menopause" is understood to comprise the insanities that are caused, or occur, at the close of menstrual life in women. The term may be good enough, and a convenient one to use, if its meaning is intelligently accepted, and within proper limitations. It is not to be accepted and an error, to suppose that the insanities that appear at the menopause have special mental characteristics that are present only in women at this period of their lives, or that they differ from mental attacks at other periods of their lives, or in the opposite sex. To emphasize the psychoses of the menopause is an instance of an attempt to classify and describe insanities as distinct entities due to causes alone, and to open the door farther to an endless nomenclature and confusion as to the nature of insanity itself.

In both sexes, excepting the reproductive functions and organs essential to the continued existence of the race, there is an exact similarity in the brains and all other organs. Both sexes have the faculty of intelligence, sensory endowments, emotions, will-power, and memory. It is the change from the orderly and normal exercise of these faculties, which may arise from all of the experiences of life, that constitutes the condition commonly called insanity. Aside from some peculiarities that are characteristic and distinguish each sex, insanity in man is similar to insanity in woman, because it is the disorderly action of mental faculties that are common to both sexes. As the brain structure and cells, and the manifestations of various forms of insanity in each sex are similar, and when acted upon by like causes the results are the same, so we may reverse the reasoning and conclude that when insanity has appeared it has been induced by some lowered state of the general bodily health, the quantity and quality of the blood sent to the brain, and the degenerations proceeding from trophic changes, rather than by the absence or possession of any one of the organs of reproduction having only a sympathetic relation with the function of mentalization.

The menstrual life of women is commonly said to be about 34 years, beginning at 16 and ending near the age of 50. The function is a physiologic and not a pathologic condition, and it is just as normal a state of things that it should end as it is that it should begin.

This period of 34 years is the active portion of the life of woman. It begins and ends with two climacteric crises, between which she undergoes the sorrows of maternity, or experiences the worries—even at times her share of the struggles for existence—and the results of the "wear and tear" incident to living and advancing age, through all of which she may pass without damage to mind or body. Superadded, however, to the ills that come from various causes of an extraneous character, a certain proportion of both sexes have a neurotic heredity, or an inherited predisposition to mental disease, so that life begins on a lower plane, or on a descending plane. Every inheritance of the kind is a form of degeneration from a higher to a lower plane, lessening the powers of resistance against the tendencies to mental disease and unusual strains at every period of woman's life, and at the menopause. Clinical experience shows that the risk of insanity at the menopause, while it is believed to be largely exaggerated, is limited mainly to those who have a neurotic or mental heredity, and those who at the period of adolescence or during the menstrual life have had attacks of insanity. The transitions from the menstrual life which have been established perhaps for thirty years, to the new conditions of the menopause, are likely to be attended by changes in the body-weight, sympathetic disturbances, groundless perturbations, and even some psychic manifestations of an unusual character, but they need not alone or together arouse serious apprehensions. That the change in itself is a frequent cause of insanity does not appear from observation. Of the assigned causes of insanity in women in 8,320 admissions to hospitals for the insane, reported in 1899, 22 in 1,000, or 188, became insane at the menopause. These "causes" are to be accepted only with the qualification that they are called "assigned causes," and are often somewhat clouded by speculations of a personal character. Of the dread or risk of insanity at the approach of the menopause in a person ordinarily of sound health and

inheritance, it may be said they have no better foundation than a popular delusion based on borrowed fears.

If, on the other hand, to the neurotic or insane heredity and recurrent attacks of insanity during the menstrual life, from which perhaps complete recovery has not taken place, there be added a neurasthenic condition, sudden shock arising from domestic affliction or financial distress, causing insomnia, sorrow, and depression, then the menopause may become a contributory cause of insanity.

The psychoses of the menopause comprise hypochondria, simple melancholia, or prolonged mental depression without delusions, melancholia with depressing delusions, melancholia with agitation and motor excitement, or melancholia with stuporous conditions; acute delirium of grave import; or those alterations of character, developing gradually, attended by mental and moral degeneration, closely allied to those cases described as paranoia. There is a general agreement that melancholia is the most frequent form of mental disease at the menopause, and that acute mania does not occur as often. If the melancholia is prolonged for a year or more, and the patient becomes negligent of her habits, dirty, and destructive, incoherent in conversation, and has hallucinations, a further mental degeneration has taken place, and the prognosis is unfavorable. In other forms of melancholia the prognosis is favorable for recovery if the patient will take food, tonics, and in other ways cooperates with the physician. It is not the purpose to enter upon a clinical account of melancholia, or any form of insanity, occurring at the menopause, as they do not differ from the same affections in either sex, and at other periods of life in their course and ending.

During the past few years a number of women have been received in the Pennsylvania Hospital for the Insane who had been operated upon for the removal of the sexual organs, the majority of whom subsequently had melancholia with many of the usual symptoms attending the menopause, which had been anticipated by surgical interference, showing that whether the grand climacteric is brought on in the course of nature or by the methods of science, the mental results are quite similar when any have appeared.

It has been observed that many women who have been melancholy, or threatened with insanity at the menopause, have at the age of puberty also had serious neurotic or mental symptoms. This circumstance has been cited on which to predicate a probable recurrence at the menopause. The statistics of the Pennsylvania Hospital show that between the ages of 15 and 20, embracing the beginning of the menstrual life in women and the age of puberty in men, 284 men, and 276 women were admitted. Between the ages of 45 and 55, covering the usual period of the menopause, 975 men and 876 women were admitted into the same hospital. From these data it would appear, as far as they indicate anything, that at both of the periods named more men than women become insane. If the menopause alone was a serious and important factor in the production of insanity, it would so appear in the tables. I borrow further from a paper entitled, "An Analysis of 3,000 Cases of Melancholia" admitted into the Pennsylvania Hospital for the Insane, prepared by Dr. S. Weir Mitchell, which throws a side light on the subject we are now considering. Admitting that melancholia is the most frequent form of mental disease that occurs at the menopause, it would be a logical conclusion that a much larger proportion of cases of this form would

occur at this period. The exact percentage of cases between the ages of 45 and 50 was for men, $20\frac{1}{5}$; women, $21\frac{2}{5}$ —or practically there was no difference in the sexes.

It can therefore be stated that as a clinical conclusion that women who become insane at the menopause as a rule possess a neurotic and mental heredity; or have already suffered from recurrent insanities during the menstrual life; and are rendered unstable and peculiarly liable to a fresh attack at any crisis in their lives. The climacteric at the end of the menstrual life is approached by many with groundless apprehensions of some impending calamity; depression of the vital and physical powers at a time when there is a readjustment of activities, and the nervous forces take new directions to meet different conditions of life. In this sense it is a crisis and a cause of the psychoses of this period, just as depression of the vital forces, strains, worries and shocks produce insanity at other periods of life, and in both sexes.

The critical reader may correctly infer that while I have undertaken to present something about the psychoses of the menopause, and admit the term has some conveniences, I have further attempted to show that outside of the narrow limitations named there is no sufficient clinical experience to warrant the recognition of a distinct class of insanities as due to a normal ending of an animal function that is universal. If I am correct, then it is the province of our profession to remove the unfounded perturbations that worry and distress so many persons as they approach this period of their lives, and to hesitate about the performance of all those experimental operations that may precipitate it.

A CONTRIBUTION TO THE SIGNIFICANCE OF KOPLIK'S SPOTS IN THE DIAGNOSIS OF MEASLES.*

By JOSE L. HIRSH, A.B., M.D.,
of Baltimore, Md.

Associate Professor of Histology and Assistant to the Professor of Pediatrics,
University of Maryland.

ALTHOUGH it has been more than three years since Koplik first called attention to the presence of a characteristic eruption on the buccal and labial mucous membrane in measles, the significance of his observations does not seem to have received the attention which its importance merits. A few scattered communications in this country and abroad have corroborated the findings of Koplik, but it is strange how slowly this diagnostic sign has made its way.

In December, 1896, Koplik's article on the "Diagnosis of the Invasion of Measles, from a Study of the Exanthem as it Appears on the Buccal Mucous Membrane," appeared in the *Archives of Pediatrics*.¹ He there described an eruption which appears on the mucous membrane, cheeks and lips during the invasion of measles from 24 hours to five days before a cutaneous outbreak. This eruption consists of small, irregular spots of a bright-red color; in the center of each red spot is the interesting sign, which is a minute, bluish-white speck. There may at first be only two, or three, or six such rose-red spots with the bluish-white speck in the center. The combination of a bluish-white speck with a rose-red background is absolutely pathognomonic of the invasion of measles. The spots are further characterized by

* Read before the Clinical Society of Maryland, February 2, 1900.

the fact that ordinary manipulation, such as brushing the finger over them, fails to remove them. When picked up with the forceps and examined microscopically they are found to consist of bacteria, chiefly diplococci, and epithelial scales. In diameter they vary from 0.2 to 1 mm. While at first few in number, they later may cover the whole inner surface of the cheeks and coalesce so that the whole buccal mucous membrane becomes of a uniform red color, studded with myriads of these bluish-white specks.

Koplik further pointed out that the eruption runs through a cycle. It appears 24 hours to 5 days before the eruption on the skin and when the skin exanthema appears and is at its height, the spots begin to fade and disappear. In order to see them they must be looked for by everting the mucous membrane of the cheek and lip, allowing strong daylight from a window to fall on them. I have never been able to see the spots by artificial light. When once seen the spots will be readily recognized, but to the uninstructed, various conditions may be confounded with them. It is to be remembered that the buccal eruption is alone significant and pathognomonic of beginning measles. The other eruptions on the hard and soft palate are of no moment as far as a positive diagnosis of beginning morbilli is concerned. In rubella and varicella an eruption is frequently found on the hard and soft palate and on the pharyngeal wall before it appears on the face; this eruption closely resembles the eruption found in the same locality in measles and differs markedly from the characteristic eruption found on the buccal mucous membrane in measles.

Food-remains in the mouth might be mistaken for the spots; of course, the former are not bluish-white, do not rest on a red background and may be readily brushed off.

Sprue is usually not limited to the mucous membrane of the cheeks, the tongue being also involved; the spots are whiter, more opaque and not surrounded by a red areola.

In herpetic stomatitis we have the appearance first of small yellowish-white (not bluish-white) isolated spots and subsequently the formation of superficial ulcers. That the normal "pearls" may be frequently mistaken for the measles-spots I have frequently seen illustrated in the dispensary by the students. Koplik² has called especial attention to this fact and observes that the "pearls" are minute yellowish-white specks shining through the normal epithelium which passes over them.

One of the earliest confirmations of Koplik's phenomenon appeared from the clinic of Prof. Heuber in Berlin; Slawyk,³ his assistant, reported a house epidemic of measles. In 32 cases the spots were observed 31 times; he observed them on the first and second days of the invasion, persisting for 2 or 3 days after the skin-exanthem appeared. Their absence in five cases of rubella and all other affections was marked.

A highly interesting communication by L. Knospel, from Ganghofer's clinic in Prague, appeared in the *Prager Medicinische Wochenschrift*.⁴ In 41 cases of measles the spots were constantly observed. In 17 of these cases the spots were observed before the skin-lesions; in 1 case five days before; in 6 cases four days; in 3 cases three days; in 3 cases two days; and in 4 cases one day. The remaining 24 cases were admitted with the cutaneous eruption, and all showed the presence of Koplik's spots. In 1 case he noted a

deposit of bluish-white spots on the gums. I have also observed this in one case (Case 8).

L. Havas⁵ has likewise reported 16 cases of measles in which Koplik's spots were found in the prodromal stage. In this country, besides the papers of Koplik, confirmatory evidence has been added by Sobel⁶ and Libman.⁷ Sobel reports 65 cases of morbilli in which the spots were constantly present, and in no other affection were they present. Libman reports 50 cases of beginning measles which showed the spots.

While the existence of Koplik's spots is of greatest importance for the diagnosis in the preeruptive stage of measles, their presence or absence may be a crucial test in the diagnosis of any morbilliform eruption. The absence of Koplik's spots in antitoxin rashes, German measles, erythema multiformi, urticarial eruptions, and macular syphilides, enabled Sobel to exclude the possibility of measles. One case of special interest was a young man in whom the eruption simulated in every way a macular syphilide; the presence of Koplik's spots, however, made the diagnosis of measles absolute.

In speaking of antitoxin rashes Berg⁸ says: "Although the chief manifestation of this complication consists in a more or less well-marked cutaneous eruption, this eruption has not, as is the case in acute infectious diseases, a constant and characteristic appearance. At one time it resembles scarlet fever, in another case urticaria, in one erythema, in another measles; and, strange to say, those cases in which the morbilliform eruption appears, occur generally from 9 to 14 days after the antitoxin injection, a period corresponding to the incubation of measles. In this connection La Fetra⁹ reports a case of diphtheria in which six days after an injection a rash resembling measles appeared. The presence of Koplik's spots on the buccal mucous membrane enabled him to diagnose measles and to exclude an antitoxin rash. The further course of the case proved the diagnosis to be correct.

Measles may be complicated by almost any of the other infectious diseases—diphtheria, varicella, scarlet fever, typhoid fever, etc. The absence or presence of Koplik's spots is here highly significant.

My personal observation on this subject extends over a period of 2½ years. As chief of clinic in the children's department of the University of Maryland I have had the opportunity of examining the mouths of many hundred children. During this period I have seen at the dispensary and in private practice between 40 and 50 cases of measles; in every case in which the child was seen before the rash began to fade, the spots of Koplik were noted. I have found the spots most numerous on the buccal mucous membrane, sometimes limited to it, but not infrequently on both the buccal and labial mucous membrane, never elsewhere, with the one exception noted above in which similar spots were found on the lower gums. While many of the catarrhal conditions of children, such as tonsillitis, bronchitis, coryza, influenza, etc., simulate an invasion of measles, I have constantly noted the absence of the measles sign in these diseases. I have likewise failed to find them in scarlet fever, typhoid fever, varicella, or erysipelas. During this period no cases of rubella have come under my observation.

A recent house epidemic of measles in the Children's Ward, University Hospital, has enabled me to study a few cases in detail during the periods of incubation, invasion, and eruption. Of 10 children in the ward,

5 were attacked, all of whom showed the measles sign; of the 5 not so affected none showed any lesion of the mucous membrane. The histories of the cases in brief are as follows:

CASE 1.—Ernest P., aged 8 years, admitted December 26, 1899, and operated upon by Prof. Winslow for caries of the inferior maxillary. No history of a previous attack of measles. Temperature varied from January 1 to January 7, from 98.6 to 100°. On January 7, temperature 101° F., and on January 10, 102.2°. Between January 7 and 10, the patient complained of headache, coryza, and cough. On January 10, an eruption was noted about the face. I saw him for the first time on this date and on examination of the mouth observed numerous Koplik's spots on the buccal mucous membrane; no spots were observed elsewhere. The spots were present until January 12, when the cutaneous eruption about the face began to fade. The patient passed through a typical and uneventful course of morbilli.

Although this patient was isolated the day the eruption appeared, the other children in the ward had been sufficiently exposed to contract the disease. I was in consequence enabled to observe the other children during the period of incubation and invasion.

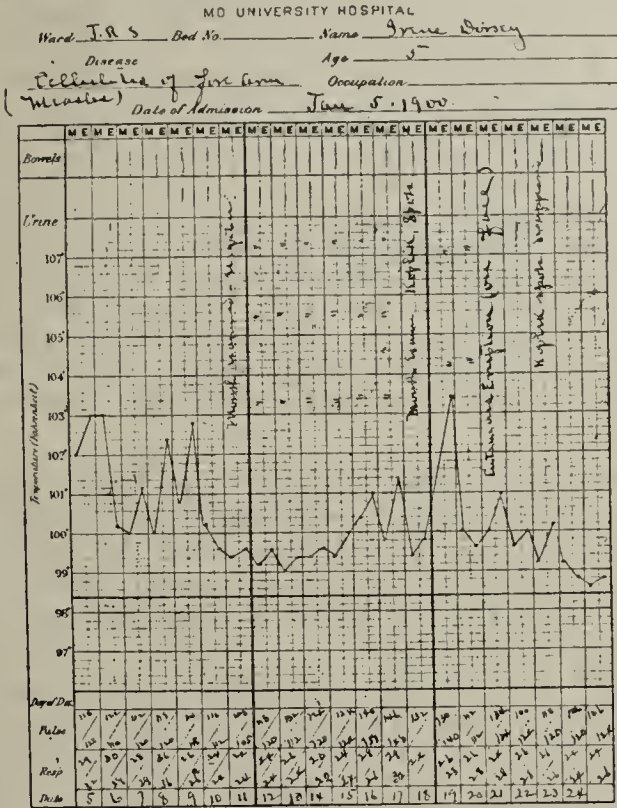
CASE 2.—Rebecca G., aged 3 years, admitted October 30, 1899, for contracture of knee and arm, following a severe burn. Previous history negative. On January 15, 1900, temperature rose to 102° F. Patient appeared dull; slight, cough; examination of mouth negative. On January 17, examination of mouth showed typical measles spots of Koplik on the buccal mucous membrane about the region of the second molar tooth. The cutaneous eruption appeared late the following day—about 30 hours after the buccal spots were first noted. The spots disappeared on January 20.

CASE 3.—Annie S., aged 9 years. Admitted December 29, 1899, for extensive burns of chest and arm. No history of previous attack of measles. Fluctuating temperature for some days prior to January 5, 1900, when examination showed a mild tonsillitis. Headache, coryza, and bronchitis were soon noted. The period of invasion was quite long. Examination of mouth continued negative until January 16, when the spots were noted on the buccal mucous membrane. The following morning the cutaneous outbreak appeared and remained evident for 4 days.

CASE 4.—Louis B., aged 3 years. Admitted December 11, 1899, for papilloma of the lip. Operation by Prof. Winslow.

until January 17, when spots were first noted on the buccal mucous membrane. The following day, a few spots were observed on the labial mucous membrane. The cutaneous eruption appeared on January 19, 48 hours after the spots were first noted. Spots remained evident until January 31.

CASE 5.—Irene D., aged 5 years. Admitted January 5, 1900. Cellulitis of forearm. Has been having elevation of temperature since date of admission, at times reaching 102°. January 17 she complained of photophobia and cough. Ex-



amination of mouth was negative until January 13, when a few Koplik spots were noted on posterior part of buccal mucous membrane; cutaneous outbreak appeared January 21, 72 hours later, and the buccal spots remained evident until January 23.

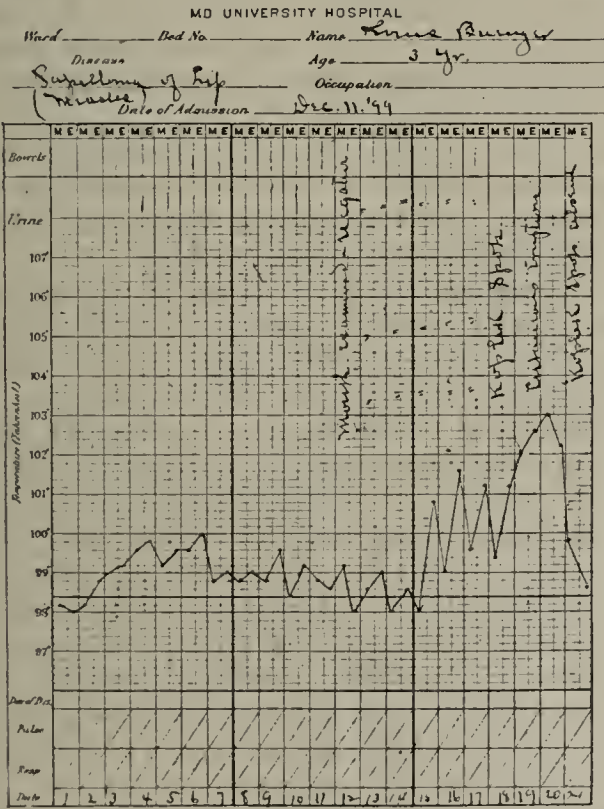
The two following cases are of interest from a negative point of view.

CASE 6.—Franklin I., aged 9 years, was admitted January 2, 1900, for incontinence of feces, with a history of an attack of rubeola in early childhood. The temperature was normal until January 16, when it began to rise, until on January 19 it was 105.3°; pulse 140. Patient complains of headache and pain on swallowing. There is slight conjunctivitis and an annoying cough. Tonsils are enlarged and reddened. Physical examination of chest and abdomen negative. Repeated examinations of buccal and labial mucous membranes show no evidence of Koplik's spots. Diagnosis, la grippe. The further course of the disease substantiated the diagnosis.

CASE 7.—Frank M., aged 8 years. Admitted January 3, 1900, for contusion of buttocks. Had measles in earlier childhood. On January 16, slight elevation of temperature. Mouth negative. Complained of headache, nausea and vomiting. No pain referable to buttocks. On January 21 temperature 101.4. Koplik's spots absent. Blood showed a leukocytosis (11,000). Diagnosis, abscess of buttocks.

The remaining 3 children in the ward showed some elevation of temperature, but at no time exhibited any catarrhal symptoms and the buccal mucous membrane remained negative. In fact, in most all of the cases which I have cited, the child had been having an elevation of temperature due to the condition for which they respectively entered the hospital, thereby, to a certain extent, concealing the period of invasion of the attack of measles.

The diagnosis of morbilli in colored children is often very difficult, especially in dispensary practice, where an accurate history of the attack is difficult to obtain



Child had never had measles. Temperature continued normal until January 15, 1900, when it rose to 100.6° F. Headache, coryza, conjunctivitis. Examination of mouth negative

from this class of cases. The characteristic rubeola-form eruption is seldom present, especially in full-blooded Africans. I have on several occasions been at a loss as to the differential diagnosis of urticaria, drug-eruption, syphilide, or measles. The following case in a colored boy is a typical example of this class of patients:

CASE 8.—George W., aged 19. Admitted to the male colored ward on November 9, 1899, for extensive gunshot wound of thigh and scrotum. No previous history could be obtained. He had been having a fluctuating temperature from date of admission. On January 19 he complained of headache; no cough or coryza. On January 24 an eruption appeared on the face and this soon extended over the rest of the body. I saw the patient for the first time on this day. The eruption was atypical; the boy was so black that the macular part of the eruption, so evident in white children, was entirely absent. The eruption could be felt better than seen. Examination of the mouth showed a few Koplik's spots on the buccal mucous membrane. The lower gums showed a deposit of bluish-white spots, a few of the spots coalescing into larger plaques. The boy had a typical attack of morbilli.

I am confident that had this case been seen when there was no epidemic of measles in his immediate vicinity (I should remark that some of the children went into this ward soon after getting out of bed) a diagnosis would have been in doubt, except for the presence of Koplik's spots.

Knospel has recently reported a case of measles in which the spots were observed in the second attack. That the spots are present in subsequent as well as initial attacks the following case, observed in private practice, will illustrate.

CASE 9.—Marion E., aged 9 years, of wealthy and highly intelligent parents, so that I think I am justified in relying upon the statement of the mother that the child passed through a typical attack of measles 6 years ago. I saw this patient on the first day of the invasion of the present attack, as I was attending another member of the house for an attack of measles. The child has a slight cough, tonsillitis and coryza. The buccal and labial mucous membrane negative. The following day examination of the mouth showed a few spots on buccal mucous membrane. The diagnosis of the invasion of measles was then made and the child was put to bed with her affected sister. The cutaneous outbreak appeared 48 hours later. The child passed through a mild attack of rubeola.

The statement of Holt,¹⁰ and other eminent writers, that before the cutaneous rash a diagnosis of measles is impossible no longer holds good. By this new sign we are perfectly able to diagnose morbilli from one to five days before the cutaneous outbreak. The value of this buccal eruption, not only in the differentiation of measles from similar skin eruptions, but also in enabling us to isolate our cases much earlier than heretofore, a point of great importance in hospitals, orphan asylums and similar institutions, cannot be overestimated.

From a study of the above and many similar cases, I would present the following conclusions:

1. An eruption limited to the buccal and labial mucous membrane and characterized by the presence of an irregular red spot with a bluish-white center, is always present in beginning measles.
2. These spots are present from 12 hours to 5 days before the cutaneous outbreak.
3. The number of these spots bears no relation to the severity of the attack.
4. These spots will be found in no other condition of health or disease.

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TWO CASES OF TRICHINOSIS WITH EOSINOPHILIA.¹

By WM. WATT KERR, M.D.,

of San Francisco, California.

Professor of Clinical Medicine, University of California.

IN 1897, Dr. Thomas R. Brown, of Baltimore, called attention to the blood-changes occurring in persons affected by trichinosis. Since that time he has reported two other instances of the disease, and Professor William Osler has published a series of five cases, which includes the three described by Brown, all of which corroborated the original observations.

Dr. Brown noticed that in cases of acute trichinosis there is an extensive leukocytosis, with the eosinophiles in the blood absolutely and relatively increased in number. Associated with this was a decrease in the quantity of neutrophilic elements. An examination of muscular fibers showed not only the existence of myositis, but also the special prevalence of eosinophiles in the degenerated areas. The similar characters of the neutrophiles and eosinophiles, together with the inverse relationship in regard to numbers in these cases of trichinosis, suggested to Dr. Brown that the latter might arise from the former; and as both varieties of cells were particularly abundant in the infected areas, where also the ratio between them was much closer than in the general circulation, he concluded that, in all probability, the transition took place in the tissues. This opinion was still further strengthened by the discovery in the muscle of cells which appeared to be transitional forms, while they were absent from the general circulation.

Dr. Brown's theory is that the neutrophiles absorb toxins produced either by the trichina or as a result of its action upon the tissues, and that those toxins convert the neutrophiles into eosinophiles.

A few weeks ago Dr. W. T. Howard, Jr., of Cleveland, reported a case of trichinosis in which the leukocytosis was very slight, and in which there was not any excess of eosinophiles in the peripheral circulation. In this case a differential blood-count was not made, the cover-glass preparations were simply stained with the triacid stain and examined. However positive Dr. Howard may be of the value of such an examination, one cannot help regretting that all sources of possible error were not eliminated by a more thorough method. An autopsy was made twelve hours after death, and from examination of the blood in the tissues Dr. Howard reached the opinion that the eosinophiles were derived from the large mononuclear leukocytes and not from the neutrophiles. His line of argument is that in trichinized patients the large mononuclear cells are found to be increased in the general circulation, that in the

¹ Read before the Academy of Medicine.

affected areas these become plasma cells for which chemotactic substances, formed by the parasite or furnished by the degenerating muscle, have a strong attraction; and, finally, that these plasma cells are gradually transformed into eosinophiles. In the cellular reaction around the parasite varieties of cells were found which seemed to indicate this transition.

In view of these recent observations and the diversity of opinion the following cases will be of interest:

Charles Joy, aged 25 years, was admitted to hospital on November 6, 1899. For 12 days prior to this time he had been unable to work on account of severe pain and tenderness all over his body; every muscle in his body ached, it hurt him to straighten his limbs, and he felt as if his back were broken. He had suffered from vomiting for 2 days, the bowels were constipated, but his appetite was good. A herpetic eruption appeared on the left lower eyelid, the lower lip, and the lobe of the right ear.

Examination: The patient had an intelligent expression, his face was flushed, his pupils were large and reacted normally to light and accommodation. The eyelids were tremulous. The tongue was so painful as to be protruded with difficulty; it was thick, flabby, and dry, with red at the tip and edges, and white in the middle. The thorax was too tender to percuss; there was a slightly roughened inspiration over the upper portion of the right lung, and a few rales could be heard under the sternum. The sputum did not contain any tubercle bacilli or Charcot-Leyden crystals. A few rose-colored spots were seen on the abdomen; the liver and spleen were slightly enlarged, and there was tenderness on pressure over the liver, spleen and epigastrium. The patellar reflex was absent, the plantars were lively, but the toes did not move and there was no ankle clonus. The triceps reflex was well marked and there was fibrillary twitching of the pectoral muscles when they were percussed. Epigastric reflex was absent. Urine, specific gravity 1030, no albumin nor sugar; the diazo-reaction was obtained and indican was present in excess. The Widal test was made on four successive days, but no reaction obtained. The stools were examined at intervals, but no trichinae were ever discovered.

During the progress of the disease the patient suffered from attacks of nausea and severe gastralgia, drenching sweats, and the muscles continued to be very tender, although there never was any marked hardening. A piece of the triceps was removed on November 16, but no trichinae were detected until a second section was obtained upon December 8.

The first examination of the blood was made upon November 9; no plasmodia were found at any time. The accompanying table shows the results of the blood-counts made while the patient remained in hospital:

BLOOD-COUNT IN TRICHINOSIS.

CASE I.—JOY. November, 1899.

Date.	Red Cells.	Hemoglobin. Percent.	Leuko-cytes.	Polymorpho-nuclears. Percent.	Small Lymphocytes. Percent.	Large Lymphocytes. Percent.	Eosinophiles. Percent.
November 9	5,800,000	85	25,000	52.0	1.0	1.0	42.0
November 10	4,888,000	85	20,600	49.4	3.6	2.8	44.2
November 11	4,888,000	85	20,600	53.6	5.9	2.2	38.3
November 13	4,888,000	85	20,600	41.7	4.3	0.0	54.0
November 15	4,888,000	85	20,600	36.6	7.7	3.2	52.5
November 16	4,888,000	85	20,600	35.0	5.3	7.6	52.0
November 17	4,888,000	85	13,000	47.0	8.5	15.5	29.0
November 18	4,888,000	85	13,000	46.5	10.5	10.9	31.1
November 20	4,888,000	85	13,000	48.0	8.0	8.0	34.0
November 22	4,888,000	85	13,000	50.8	2.0	14.0	32.0
November 23	4,888,000	85	13,000	52.4	10.9	6.8	34.3
November 27	4,888,000	85	10,000	40.0	15.0	4.0	41.0
November 29	4,250,000	85	10,000	22.5	19.8	14.6	43.0
December 3	4,250,000	85	10,000	28.7	2.8	10.6	57.8
December 8	4,250,000	85	10,000	10.6	6.0	14.8	68.7
December 11	4,250,000	85	10,000	23.6	13.2	14.3	48.9
December 13	4,250,000	85	10,000	23.9	9.8	5.6	60.4

Y. Amanoma, a Japanese waiter, was admitted to hospital on the evening of November 17. He had muscular pains similar to the first patient, but there also was a hard elastic

feel to the muscles, especially towards their tendons. The face and body were edematous, and the pain was so great that the patient could not sleep. Diarrhea was persistently present, the diazo-reaction and excess of indican were again found in the urine; and in all respects this case resembled the former. He was recognized by the first patient as the waiter who had attended him in the restaurant where he had been in the habit of taking his meals. On November 22, a piece of muscle was taken from the gastrocnemius and in it trichinae were found in abundance. This patient had been suffering from gonorrhea for about one month before he was taken sick. The following is his blood-count:

BLOOD-COUNT IN TRICHINOSIS.

CASE II.—AMANOMA. November, 1899.

Date.	Red Cells.	Hemoglobin. Percent.	Leuko-cytes.	Polymorpho-nuclears. Percent.	Small Lymphocytes. Percent.	Large Lymphocytes. Percent.	Eosinophiles. Percent.
November 17	3,340,000	77	18,500	41.6	16.4	23.9	18.1
November 18	3,340,000	77	18,500	53.2	18.9	6.0	21.9
November 20	3,340,000	77	15,200	37.0	11.0	6.0	45.0
November 21	3,340,000	77	15,200	34.0	11.0	4.0	50.0
November 22	3,340,000	77	21,700	20.0	8.2	3.2	68.8
November 23	3,340,000	77	21,700	15.3	5.7	2.1	76.9
November 24	3,340,000	77	21,700	10.4	7.2	1.4	81.0
November 25	3,340,000	77	20,500	10.5	6.4	2.4	80.7
November 27	3,340,000	77	20,500	17.0	6.4	9.1	66.9
November 29	3,340,000	77	20,000	6.5	3.9	8.4	81.2
December 1	3,340,000	77	20,000	4.2	3.0	6.1	86.6
December 2	3,340,000	77	20,000	11.4	10.1	4.9	73.5
December 3	3,340,000	77	25,000	10.0	7.3	6.1	76.6
December 5	3,340,000	77	25,000	14.8	8.0	7.0	70.2
December 6	3,340,000	77	25,000	0.75	5.07	18.88	76.0
December 8	3,340,000	77	25,000	3.1	9.5	8.6	78.8
December 9	3,340,000	77	25,000	10.9	3.6	9.0	72.7
December 11	3,340,000	77	25,000	11.2	18.2	14.2	56.4
December 13	3,340,000	77	25,000	13.1	9.4	9.3	68.2
December 14	3,300,000	77	17,000	13.1	9.4	9.3	68.2

The eosinophilia in this case may have been slightly influenced by the attack of gonorrhea.

Microscopic examination of muscle-tissue removed about 24 days after infection.

Muscle: Stains irregularly, particularly in areas about the trichinae. In these areas, where the staining is faint, the transverse striation lacks definition. In places there is a break in the continuity of the muscular bundles, with a curious curling of the ends of the fibrillae.

Sarcolemma: Apparently there is no thickening of the sarcolemma.

Muscle nuclei: These are greatly increased in number and are in all stages of degeneration and regeneration. Some appear as large faintly stained cells, having a small nucleolus concentrically or excentrically placed, and a greater or less degree of chromatin substance is present. Certain nuclei present 2 or 3 transverse constrictions. Large epithelioid cells with large nuclei were present among the muscle fibers and in the intermuscular spaces. Ziegler considers these to be transformed muscle nuclei.

Trichinae: These were found within the muscle tissue, either surrounded by the sarcolemma of a muscle fasciculus or in the supporting intermuscular connective tissue. The trichinae lay in coils surrounded by partially formed capsules, whose axes lay parallel with the long axis of the muscle fiber.

The capsule: A clearly defined structure lying between the muscular bundles, the poles of which consist of epithelioid cells embedded in a homogeneous matrix. Laterally there is a proliferation of muscular and connective tissue elements. At the poles, and infiltrating their entire neighborhood, were numerous small lymphocytes and a less number of eosinophiles.

Bloodvessels and blood: The capillaries were filled with red blood-cells, and an increased proportion of leukocytes (mononuclears and eosinophiles). The veins were greatly dilated with blood-elements clearly presenting the leukocytosis demonstrated by the blood count. The blood is found in the veins, capillaries and surrounding tissues; the leukocytes being the only extravasated cells. The blood in the infiltrated tissues is represented entirely by leukocytes (mononuclear and eosinophiles). The tissues so infiltrated

were the intermuscular connective tissue, the muscular tissue itself, and the capsule of the trichinae.

Leukocytes: The mononuclears, the eosinophiles a few polynuclears, a few large lymphocytes. The mononuclears were in greatest proportion about the capsular areas. The eosinophiles were most numerous in the rest of the tissue, *i. e.*, in the intermuscular connective tissues in the blood-vessels, and within the muscular bundles. The eosinophiles showed granulations wherever found, and all at the same stage of development. The polynuclears and large mononuclears were remarkable for their scarcity.

Summary: There were present those conditions described by T. R. Brown, the degeneration of muscle-fiber, the proliferation of the muscle nuclei, and the presence of eosinophiles in the connective tissues, and within the muscle bundles. No evidence of transition from polynuclears to eosinophiles was found. No plasma as such were found, but there was an abundance of regenerative muscle nuclei which are sometimes mistaken for them.

The blood-count in those cases showed the existence of a well-marked leukocytosis (25,000) in each. The percentage of neutrophiles was persistently subnormal, and there was a strong tendency to an inverse ratio between them and the eosinophiles, although it was not by any means absolute. The eosinophilia in the peripheral circulation was well marked, the percentage in the case of the Japanese rising as high as 86.6.

The percentage of small lymphocytes was as persistently and extensively diminished as was that of the neutrophiles, and showed almost as great a tendency to inverse ratio with the eosinophiles.

The percentage of large mononuclear lymphocytes varied exceedingly, sometimes being above normal, but more frequently within normal limits or subnormal; neither did these variations bear any relation to the number of eosinophiles. In the case of Joy eighteen counts showed it to be above normal (8%) seven times, below normal (4%) five times, within normal limits six times. In the case of Amanoma, in the counts made upon 19 days they were above normal six times, subnormal four times, and normal for the remainder. There was not any regularity in the rise and fall, and the absence of relationship between them and the changes in the eosinophiles is made very evident by the following comparisons:

Case of Joy.	Eosinophiles	42	%	Mononuclear	lymphocytes	1	%
	"	43	"	"	"	14.6	"
	"	44	"	"	"	2.8	"
	"	48.9	"	"	"	14.3	"
	"	52.5	"	"	"	3.2	"
Case of Amanoma.	"	68.7	"	"	"	14.8	"
	Eosinophiles	21.9	%	Mononuclear	lymphocytes	6.0	%
	"	45.0	"	"	"	6.0	"
	"	86.6	"	"	"	6.1	"
	"	76.6	"	"	"	6.0	"

So far as the blood-count is concerned the evidence in these two cases is opposed to the idea that the eosinophiles are derived from the large mononuclear leukocytes.

While the presence of what are believed to be transitional cells and an excess of eosinophiles in the areas of cellular reaction around the parasite warrant the hypothesis that in these cases the eosinophiles are developed in the affected tissues as a result of phagocytosis, it is possible, on the other hand, that the eosinophilia arises independently of this process, and that it is due to systemic poisoning from toxins secreted by the trichina; just as we find it in patients suffering from uric-acid diathesis where xanthin bases are formed in the intestine and absorbed into the system. With our imperfect knowledge of the origin and function of eosinophiles we are not forced to the conclusion that they are formed in the areas of local reaction simply because

they are more abundant at those points; they may be produced in the bone-marrow, as usual, and simply be attracted to these areas. In other words, they may not become eosinophiles as a result of phagocytosis, but eosinophiles may be the phagocytes that deal with this particular toxin. Neusser believes that gout, uremia, oxaluria, ankylostomiasis, injections of pilocarpin, or tuberculin, and many other known causes of eosinophilia produce xanthin bases which stimulate the sympathetic nervous system and hence the bone-marrow, so that eosinophiles result, and, it is possible, that trichinosis acts in a similar way. So far as I am aware no observations have been made on the blood of recent cases of trichinosis, but there can be little doubt that a powerful poison is produced, because, in many instances, severe symptoms of poisoning have appeared within a few hours after the infected meat has been eaten and before there has been time for tissue-invasion by the parasite. Probably in those instances, where immediate symptoms follow the ingestion of trichina, the disease has been in an active stage when the animal was killed, and consequently the flesh contains large quantities of free toxin; while in those where the symptoms are delayed the disease has passed into the quiescent stage and the parasites become encapsuled before the animal was killed, therefore it is necessary for the trichina to be set free, bring forth its young and enter into the stage of active existence before toxin is furnished in sufficient quantities to cause noticeable symptoms.

The variation in the degree of eosinophilia is explained by the fact that the female trichina continues to bring forth her progeny in successive crops during the 4 or 5 weeks of her reproductive activity.

The only point absolutely demonstrated by these cases is that in trichinosis we have a leukocytosis and eosinophilia which will aid in diagnosis even in doubtful instances; such as that of the patient Joy, where the blood-changes indicated the nature of the malady at a time when the symptoms were indefinite and examination of the muscle had failed to reveal the presence of the parasite.

In conclusion I would thank my clinical assistants, Dr. Ash, Dr. Wightman, Dr. Pope, and Dr. Ebricht, to whose faithful work in our clinical laboratory the important features of this communication are due.

Since this paper was written the report by Blumer and Neuman of 9 cases of trichinosis has appeared in the *American Journal of the Medical Sciences*. Their results in regard to the various leukocytes found in the peripheral circulation correspond with those we have just mentioned.

PHYSICAL DIAGNOSIS IN ITS RELATION TO THE STOMACH AND ASSOCIATED ORGANS.¹

By B. C. LOVELAND, M.D.,
of Syracuse, N. Y.

I WILL endeavor to point out briefly what may be learned regarding the stomach, liver, pancreas, spleen, and kidneys by the physical means at our command, *viz.*, inspection, palpation, percussion, auscultation, and the joint use of the last two means, which is called auscultatory percussion.

Inspection will be considered under two heads, general and local. The general appearance of the patient

¹ Read before the Syracuse Academy of Medicine, January 23, 1900.

always should be considered, no matter how trivial or how serious his complaint may be in his own estimation. He may say that he has enjoyed perfect health till within three months, and is only a little run down, yet he may, as I have observed more than once, show a profound prostration of his nutritive system with the marked cachexia of advanced malignant disease, a condition that may show little or no positive signs by the other means at our disposal. He will grow rapidly worse and die, while another complaining of much more in the way of subjective symptoms, with a worse history perhaps, may present a very healthy appearance, and have no serious disease. Hence, even when we suspect only stomach-trouble, we should note carefully the general appearance of the patient as regards age, quantity and quality of flesh, color and condition of the skin, not being satisfied if the patient is free from jaundice. Note the color, dryness or moisture, and integrity of the mucous membrane of the lips, and take the same care in noticing the condition of the gums, throat, and teeth. The tongue should be examined with regard to its firmness, color, and coating, and both the distribution and character of the coating should receive attention.

The careful observation of these outposts on the way to the stomach will give some idea not only as to the patient's general state of nutrition, but may point quite sharply to something for study when the local examination is taken up.

The *temperature* also should demand attention, as in acute gastritis it may be considerably elevated, and often in the later stages of cancer it will be found to be constantly a little above normal. An illustration or two will serve to emphasize the importance of a careful inspection. The mapped tongue, bright red oval spots occurring usually on the anterior half of the tongue, while the rest of the organ is thickly covered with a white fur, the red enlarged papillae near the tip, and the tremulous condition when protruded are well known indicators of functional nervous disease. The pale, thick, flaccid tongue, when the general appearance is a sort of leathery pale color, would suggest strongly cancer. Yet it is possible for cancer to go on to a fatal termination without this characteristic color. The aphthous patches, and fissures in the mouth and lips of the patient suffering from chronic wasting disease, show increasing seriousness of the situation. The thick, brownish or yellowish coating on the back of the tongue, often piling up thickly around the circumvallate papillae, so commonly called the bilious tongue, hardly needs mentioning.

Local Inspection.—All clothing should be removed from the trunk between the arms and hips to secure an unobstructed view of the portion of the body to be examined. Note now the color and condition of the skin, as it may give a different impression than that gained by observing the hands and face. The surface bloodvessels should not be overlooked, as in obstructive internal disease the surface veins will often present a varicose condition. A condition of varicose venules or capillaries in the skin over the sixth to ninth ribs on each side is often associated with sedentary habits, and the so-called bilious or lithemic habit, and frequently points to a congestion of the underlying organs. Observe the shape or form of the chest and abdomen while the patient is standing, then observe again while the patient is on his back with the knees drawn up. A bulging of the lower ribs and upper part of the abdo-

men may sometimes be seen in cancer of the liver and in hypertrophic sclerosis before ascites has appeared to such an extent as to make the whole abdominal wall protrude. Another feature often associated with malignant disease of the stomach or pancreas is a sharp dip in the abdominal line at about the ends of the tenth rib, the abdomen again showing more fulness or rotundity from the umbilicus down to the pubis. This is best noted from a side view while patient is on his back with his knees drawn up, and sometimes there is also a line like that where the wrists are habitually bent. This line may occur also in chronic dyspeptics who are accustomed to sit in a stooped position.

Palpation.—This method of examination should be employed in all cases of suspected trouble in the region of the stomach; is best practised while patient lies on his back with the legs flexed; but if gallstones or prolapsed kidney are among the possibilities, much is to be gained by turning the patient on the side, or possibly employing the sitting posture.

By palpation may be outlined points of tenderness, gastric ulcer being a marked example; unusual heat as in localized inflammation; tumors or indurations of the pylorus or greater curvature of the stomach; marked increase in the size of or nodules on the surface of the liver; enlarged or distended gallbladder; prolapsed or enlarged kidneys. Very little if anything can be learned about the pancreas unless it happens to be the seat of cystic or cancerous disease, which has gone so far as to make a considerable tumor, and even then it is hardly possible by physical methods alone to ascertain positively its condition, on account of the depth of overlying structures. It may be said that a distinct tumor located in the walls of the stomach is very suggestive of cancer, though a few cancers in that region are not marked by tumor, and occasionally marked tumefaction occurs in connection with gastric ulcer and chronic catarrhal gastritis. I am aware that my statement in regard to the last-named disease does not conform to the table of differential diagnosis by Welch, quoted in the last edition of Pepper's Practice, in which he says that chronic catarrhal gastritis has no tumor.

Among the obstacles to successful palpation are rigidity of the abdominal walls, fecal accumulations, and great distention with gas or fluid. It may be necessary to etherize in order to reduce the rigidity, or to practise palpation while the patient is in a warm bath, as recently suggested by Dr. Hemmeter. If in the stomach, distention with gas may be relieved by the tube or by flushing the colon if that is the seat of the troublesome distention. The tube also would clear the way for diagnosis by palpation in such a case as I once saw in which the stomach was dilated with fluid contents to such an extent that gentle pressure with the hand just above the pubic arch ejected fluid from the mouth. The stomach in this patient contained more than a gallon, as evacuation showed. (Fig. 1.) Its greater curve passed from the border of the ribs at the extreme left of the abdomen down to the iliac fossa, thence across close to the pubic arch to the right iliac fossa, thence upward about to a point midway between the crest of the ilium and the umbilicus, where was located the displaced pylorus. The lesser curve passed from the ensiform cartilage downward and to the right, where it met the greater curve. When this stomach was filled the outline described was distinctly visible on inspection; when empty a tumor was easily felt at

the pylorus. The patient was much emaciated, but free from the usual pallor and cachectic appearance, but died of cancer as the autopsy verified. Another rare case in which inspection and palpation gave the

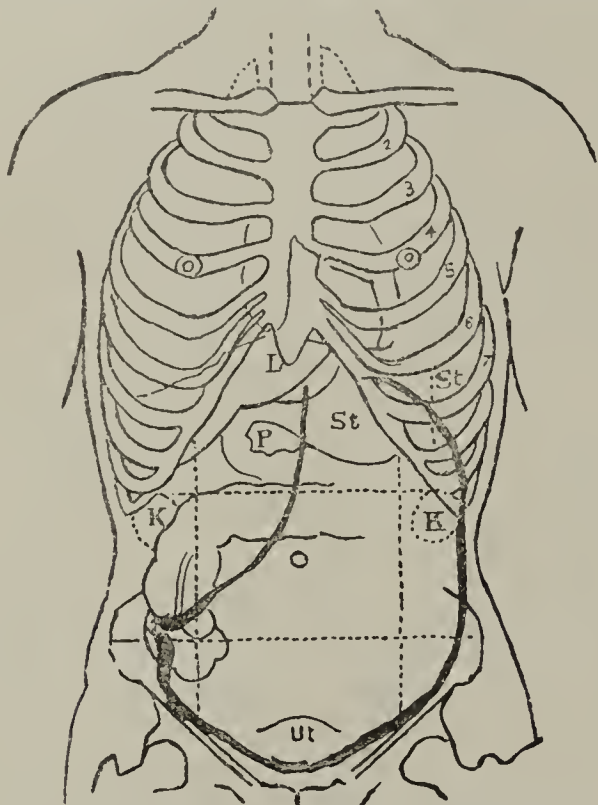


FIG. 1.—Mrs. M. 47 years. Cancer of pylorus, extreme limit of dilation; great emaciation, but no cachexia nor marked anemia. Death from inanition. Autopsy.

clues from which to form a diagnosis resulted fatally; the only diagnosis that was made was a tumor in the pelvis. (Fig. 2.) The autopsy revealed the tumor to

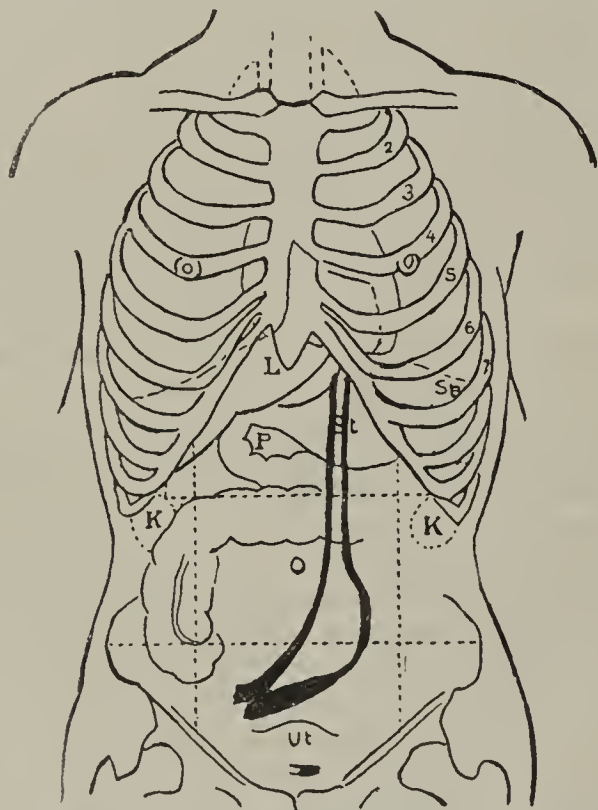


FIG. 2.—Mr. S. Cancer involving pyloric half of stomach with closure of pylorus and great displacement but no dilation. I was asked to conduct the autopsy, but did not see the patient.

be a cancerous stomach, the walls of which were thickened and contracted till it formed a tumor about 2 or 2½ inches in thickness, involving the pylorus and extending two-thirds of the way to the cardiac portion. There was great displacement but no dilation. When there is thickening from any cause, and sometimes when there is no thickening, abdominal pulsation may frequently be felt, not a serious sign, yet often giving the

patient much anxiety, and once, at least, I have known this to be mistaken for abdominal aneurysm.

Filling the lungs with air makes the liver drop further below the ribs, and may be of service in feeling for nodules on its surface. It is often difficult to differentiate a tenderness of the gallbladder incident to cholecystitis or small gallstones from pyloric tenderness caused by catarrh in that region. Help in clearing up the matter can be obtained by placing the patient on the left side with knees drawn up, thereby giving nearer access to the gallbladder, sometimes enabling us to feel calculi not palpable in the dorsal position. The spleen in health is not palpable.

The kidneys may be easily palpated with sufficient thoroughness to ascertain any enlargement or unusual position. The patient should be placed on his back with the knees flexed and abdomen relaxed, and palpation should be practised with one hand placed under the back just below the ribs, the other compressing the abdominal wall so as to bring the kidney between the two hands, if it is enlarged or displaced.

Percussion is a method of eliciting sound by stroking over the surface of the body, which sound, varying in pitch with the density of the subjacent organs, enables us more or less accurately to outline their dimensions. Historically we are acquainted with a direct method, dating back to Hippocrates, known as immediate percussion, but practically we only use the method known as *mediate*, which is practised by the interposition of a substance between the body and the stroking instrument. Numerous devices have been made both for making and receiving the stroke, but nothing has ever been invented that has any material advantage over those instruments which Nature gave us, the human fingers. The main drawback to the finger as a pleximeter is that it may become tender or even sore if it is used constantly for that purpose.

By percussion we may outline on the surface of the body, with a fair degree of precision, the position and size of the stomach, liver, and spleen, and also the colon. The normal position and size of the stomach would be about from the lower border of the fifth rib about 2 inches to the left from its sternal end, to the left and downward to the point of union of the bony and cartilaginous portions of the ninth rib, thence following the curve still downward and to the right, to a point 2 or 3 inches above the umbilicus, thence upward and toward the right to a point just under the cartilaginous portion of the eighth rib, and about 3 inches to the right of the median line, which is the location of the pylorus. The lesser curve can be much less accurately traced on the surface, due to the fact that it is covered by the left lobe of the liver, which interferes with the percussion-sound, but it passes from the point mentioned as the termination of the greater curve slightly downward and to the left, then almost perpendicularly upward to a point on the lower border of the fifth rib about an inch to the left of the sternum. The tympanitic sound of the stomach may be differentiated from that of the colon by changing the amount of gas in one or the other, either by evacuating it by a tube or by forcing air into the rectum by a bulb-syringe. When it is desirable to fill the stomach with gas to better define its outline, it may be done by the use of an atomizer bulb attached to an ordinary stomach-tube, or by drinking first one and then the other parts of an effervescent powder, allowing it to throw off its gas in the stomach. When the last expedient is

resorted to, however, it is well to have a tube conveniently near to relieve overdilatation in case the patient becomes distressed by it. In disease of the stomach, notably in cancer, both dilation and displacement are apt to occur, and sometimes one or both occur to a remarkable degree, as noted earlier in this paper. But we may find dilation and displacement to a considerable degree without malignant disease, simply from an atonic condition of the muscular structure. Another occasional cause of dilation of even an extreme degree is cicatricial contraction after ulceration, and such contraction may produce very odd shapes in the stomach by reason of the location of the cicatricial tissue, the dilation occurring above or toward the cardiac end. One of these forms, at once contracted and dilated, is called the hourglass-stomach.

The dilation affects mainly the greater curve, and when the obstruction is at the pylorus, or when the cause is atony of the muscular coats, the greater curve is increased symmetrically throughout its entire extent. If, in extreme or even considerable dilation, evacuating the stomach reveals long-retained and undigested food, even if there is none of the "coffee-ground" material, it is very strongly suggestive of cancer. Once a patient, quite well nourished, came to me complaining of chronic acidity of the stomach of years' standing. She was not cachectic, and had suffered only a moderate loss of flesh. Twenty-four hours after the first consultation she spontaneously evacuated her stomach, and in its contents were found fiber of watermelon which she had eaten five days before, and prune skin which, according to the best information that could be obtained, had remained in her stomach 11 days. No tumefaction could be felt, partly because she was quite fat, but a diagnosis of cancer was tentatively made, and within a week was confirmed by the characteristic vomit. Very considerable dilation existed. The patient went to her home, passing from immediate observation as soon as the diagnosis had been fully made, and died within two months. However, contrary to this case, instances can be given where considerable digestive power was retained for a long time after cancer of the pylorus had so far advanced as to make the diagnosis clear. Dilated and prolapsed stomachs are much more common in women than in men, are often associated with general weakness of abdominal and pelvic muscles, and prolapse of the kidney or other portions of the pelvic contents.

Percussion is usually practised while the patient lies on his back, but when, as in the case with the stomach, the organ undergoing investigation may be filled in part with fluid and in part with gas, changing the position to the side or even to the erect posture may help in marking out a more definite outline.

There is frequently confusion of diagnosis between gallstones or hepatic colic, and neuralgia of the stomach, and not infrequently cancer of the pylorus is associated with cancer of the bile-ducts or under surface of the liver, but percussion alone does not give much aid in clearing up the matter unless in such an enlargement of the liver as suggests cancer, and that would not be an early sign. What may be learned about the liver by percussion may be briefly summed up as follows: A dulness on percussion marks its width from above downward, in health about a handbreadth, which will be from the fifth rib to the free margin of the costal cartilages, measured on the line of the nipple. This is the point of greatest width. The area of dulness gradu-

ally diminishes toward the left with percussion over the left lobe, but the dulness may be elicited over nearly the same width on the right side quite around on the back. Any variation in size may be noted, smaller even to two or three fingers' width, in atrophy or sclerosis; larger, even reaching to the iliac crest or the brim of the pelvis in some cases of cancer or hypertrophic sclerosis.

The spleen may be located by percussion quite well around to the left side, and extending from the ninth to eleventh ribs. It, like the liver, is subject to great enlargement in malarial and some other conditions, in which it may be outlined by percussion.

Auscultation.—This method of investigation, except as combined in the method called *auscultatory percussion*, is of little use in studying the stomach and neighboring organs. It may be useful, however, in determining the extent to which a tumor compresses the aorta, as one case seen some years ago in which an enlargement of the liver had progressed to such a degree that it compressed the aorta, producing a distinct bruit. (See

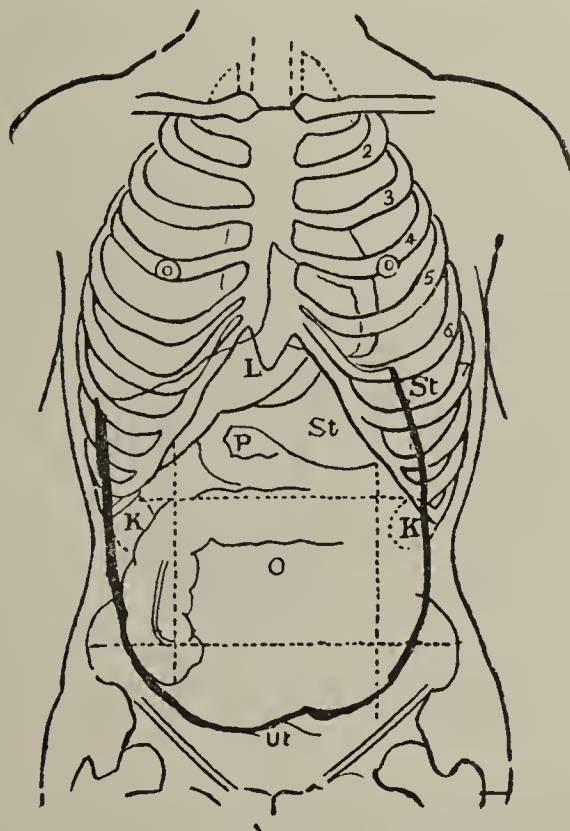


FIG. 3.—Mr. H. C., 50 years. Extreme enlargement of the liver from hypertrophic sclerosis of the liver; compression of vena cava gave distinct bruit; a thrill could be felt below the point of pressure; anasarca and ascites existed; death resulted.

Fig. 3.) It will be noticed also that the more dense the tissue the further the heart-sound will be heard. Succussion-sounds may be induced when there is dilation of the stomach which will aid us in determining the power of the stomach to empty itself. Another condition in which the ear will give us a clue of some significance is that occasionally found in women who complain that each time they take a full breath it produces a gurgling sound. Such a condition is of course distressing, and is caused by a dilated stomach filled in part by fluid and in part by gas, and the constriction at the waist-line is sufficient to make the diaphragm force some of the fluid from below the constriction at each contraction, the fluid gurgling back during relaxation. (See Fig 4.)

Auscultatory Percussion.—This method does not figure strongly in the textbooks, but I think when properly used it is as much more reliable in its results than ordinary percussion, as auscultation aided by a good

stethoscope, or phonendoscope, is more accurate than using the ear unaided. I am sure that all that would be necessary to convince one of the advantage of this method would be to let him try to outline the liver or stomach of any ordinary patient by percussion, marking his results on the skin, then repeat the performance with the phonendoscope, using the small foot-piece, and tapping gently with the index-finger, marking the skin also and compare results. A much more complete outline would result from the latter procedure. Auscultatory percussion may be practised with the ordinary stethoscope, but from experience I have come to like the phonendoscope better. It is almost or quite impossible to outline the left lobe of the liver, or that portion of the stomach which is covered by the liver by ordinary percussion, while either can be easily and fairly accurately done by the auscultatory method. The latter method has considerable advantage also when the abdominal wall is thickened by the accumulation of fat. Of course either method of percussion to be suc-

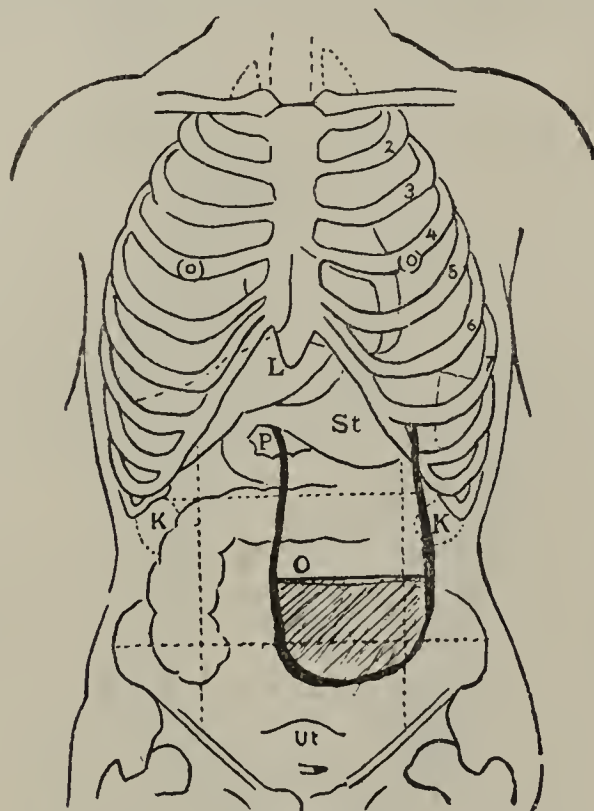


FIG. 4.—Mrs. M., 44 years. Nervous dyspeptic; atonic dilation, somewhat excessive; pylorus normal in position. When she was dressed a gurgling sound was produced at each breath. Splashing sounds also existed. Recovery.

cessful requires some training of the ear to detect slight differences of sound.

In closing it may be well, after taking up the methods of physical investigation separately, to recapitulate a few of the more important points to be gained by such an investigation. We may determine the location, size, shape, presence or absence of induration or tumefaction, in the internal organs, and in many cases the character of tumefaction if such exists, and also the sensitiveness on pressure. This information may be secured in relation to stomach, liver, spleen, or kidneys by purely physical methods, and when we have the opportunity to add to this the history and symptoms, and in selected cases the chemical analysis of the contents of the stomach, and urine, and an examination of the blood, in addition to the clinical appearance, there will be very few cases in which any serious doubt as to the exact diagnosis will remain long in our minds. And yet in the face of some very perplexing problem in diagnosis we may console ourselves with the fact that on rare occasions cases occur so negative in all the signs, both

physical and clinical, that they will defy the diagnostic ability of the most experienced. Such consolation, however, should not be ours until we have gone so thoroughly into the case as to leave nothing undone which might add to our knowledge of that particular condition.

Tuberculin as a Diagnostic Agent.—Veranus A. Moore (*Albany Medical Annals*, June, 1900) says that tuberculin in the dose necessary to bring out its diagnostic effect is absolutely harmless to a healthy animal. Cases of septic infection following its use must be attributed to other causes. In tuberculous animals it produces a rise in temperature which, within certain limits, follows a definite course, usually terminating in from 18 to 24 hours after the injection. The temperature usually begins to rise in about 8 hours, giving a steady but quite rapid elevation for from 1 to 3 hours, a continuous high elevation of from 4 to 12 hours, and a gradual decline. This is practically constant, be the rise moderate or extreme. In addition to the elevation of the temperature there is sometimes a marked nervous chill. Since the reaction is apparently the result of the affinity between tuberculin and living tuberculous tissue, when the two are brought together in the same animal this reaction almost invariably takes place; exceptions being when there is no reaction and no disease found (a beginning lesion not larger than a pea may cause pronounced reaction and yet be difficult to find, especially if located in the marrow of a bone), and when there is no reaction and the disease exists (advanced cases often fail to react, but the disease can then be detected by ordinary clinical methods). Not over 5% of errors exists in interpreting its effects when applied by the ordinary practitioner and even those unskilled in its use. [M.B.T.]

A Brain Tumor; Operation and Recovery.—Mills (*Journal of Mental and Nervous Disease*, May, 1900) reports the history of an exceedingly interesting case of brain-tumor in which the diagnosis was beset with numerous difficulties. The patient, a man of 57, at the age of 42 became nervous, emotional and despondent and suffered from headaches. He spent about two years in Europe and recovered almost entirely, with the exception of an occasional headache. Ten years later he suddenly noticed an unpleasant sensation in the right arm, apparently some form of formication. These attacks recurred at intervals of days, weeks, or months, lasting only a few moments, but followed by a sensation of heaviness. He became neurasthenic and despondent, and suffered with a feeling of distress in the head. For 5 years he was able to attend to his business, but then began to notice awkwardness of the right upper extremity, followed by awkwardness of the right leg, and was frequently hysterical. There was distinct ataxia in both right extremities and impairment of sensation to pain, touch, and temperature over the right half of the body. There was slight diminution of hearing, smell, and taste on the right side, although this was variable. There was slight exaggeration of the tendon reflexes. At first Babinski's reflex was absent, but subsequently it appeared. About 5 years later he began to suffer from amnesia, had difficulty in writing, and was rapidly fatigued by any intellectual work. Optic neuritis was never present. Shortly after this there was some inequality in the pupils and slight ataxia of the left arm. The amnesia increased, and there was some pain in the top of the head. In view of these symptoms tumor was diagnosed and located in the left superior parietal lobule. An operation was performed by Dr. Keen, and a tumor weighing 11 grams was removed, together with a cyst about 10 cm. in depth. After a period during which the amnesia was more extreme and there was complete paralysis of the right side, improvement commenced and progressed slowly but steadily until the patient was able to walk and to use his right arm with considerable freedom. Sensation was completely restored, the amnesia disappeared, and the intelligence was normal. The chief difficulty in the diagnosis was in the exclusion of hysteria, for throughout the whole course of the case, contraction of the form fields and the reversal of the color fields were present. The tumor was examined by Dr. Spiller, who considered it to be a perithelioma or endothelioma. In its neighborhood he found marked alterations in the cells of the cortex. [J.S.]

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GEORGE M. GOULD, M.D., *Editor*

Collaborators

JOSEPH SAILER, M.D.
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D. RIESMAN, M.D.
J. M. SWAN, M.D.

M. B. TINKER, M.D.
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Public Baths and Communicable Diseases—The most careful observation of sanitary requirements must be observed in the management of public baths in order that they may be of sanitary value. The public bath-house may be made a medium of filth and disease rather than an aid to health and cleanliness. Those who are most benefited by public baths are usually most careless of their persons and are most likely to be afflicted with communicable diseases. The attention of the health-authorities of New York has recently been drawn to an epidemic of ophthalmia said to be due to bathing in contaminated water. Some of the earlier attempts to maintain public baths in Philadelphia were abandoned because of the danger of infection, and while those now in operation are managed with care this danger must not be overlooked. Plenty of water is one great essential. The water in the pool should be in constant motion and constantly renewed. On purely hygienic principles—the purpose being cleanliness and coolness—the best thing would be a series of shower-baths. From these all the good results of the pool could be obtained without the danger of personal contamination.

Idolatry in Code-worship is a tendency that seems more and more prevalent. One of the most honored and honorable of American physicians recently protested that consultation with sectarians and stealing patients was more prevalent with some code-worshippers (citing the cases of some principal officers of great medical organizations) than with practitioners excluded from the ranks of the faithful. There is, of course, a usefulness in the antiquated code, but we should not forget that zealots are prone to worship the idol rather than the spirit it represents. Idolatry may be as bad as or worse than atheism. Certainly there is no reason for pride on the part of the idolaters, who disobey the spirit of ethics in their practice, and who excuse the most outrageous professional scoundrelism if it happens to be exhibited by the code-worshippers. One should set his own household right before lecturing his neighbors. It is a standing disgrace that all reputable regular physicians cannot join our national medical organization because of a silly war of words. All who love our profession more than their "logic," cliqueism, or vanity, will surely try to find a common meeting-ground and a method of uniting upon essentials.

"Ex Occidente Lux."—In a recent lecture in London, Dr. Osler is reported to have said that before many years the European medical student would be found spending his year or two of postgraduate study in the United States. If men governed their actions by the logic of facts we could not doubt the fulfilment of the prophecy. We certainly believe that, except for other purposes than practical medical scientific work, the American student can do better now than to go abroad. Few realize what tremendous progress has recently been made in our home-clinics, and in many respects how far superior they are to the foreign ones. In one department of medicine—dentistry—American superiority is universally admitted. At the present rate of advance, it will become true of other specialties. In ophthalmology it is positively ridiculous to think of an American oculist learning anything of value elsewhere than at home, and we wish the European masters would come to our own ophthalmic kindergartens. *Ex Oriente Lux* has been the law of science up to the present time, but the extreme West having been reached by the light of civilization, there is nothing left but a reflex or a reversal of the law, and in many things besides medicine the illustrations are multiplying fast. Principles and theories are valueless except for realization and translation into facts. We may have been taught, we may still be taught, the theoretic principles of our art, but in their practical application we are the better teachers. It is in no spirit of boastfulness that we speak, but to encourage our profession to perfect the science, and especially the art, the practice, or the mechanics of medicine—a work in which we are exceptionally fitted to excel. Here is a most legitimate field for patriotism.

Secondary Education and Medical Education.—At first thought there seems to be a very great gap between the education of the common, grammar, and high schools and that of the medical schools, yet this very early training of the boy has the greatest possible influence on his future when he enters his medical studies and practice years later.

Those interested in secondary education were no doubt reminded by the notices of the recent death of that pioneer in education, Henry Barnard, at the ripe age of ninety years, of the condition of general education in 1840, when Barnard and Horace Mann were

beginning those reforms in the common schools of Massachusetts and Connecticut which have revolutionized the educational system of the whole country. Since those days great progress has been made, but there is still room for much improvement. One greatly needed change is that our students shall graduate from medical schools younger. This cannot come by shortening the medical course; it should not come from the omission of a general college and scientific training. The only alternative is that the secondary schools fit their men for college two years or so younger than at present. This is by no means impossible; those acquainted with the educational systems of Germany and France know that their students enter their professional training about two years younger than is customary with us and yet their general education is better if anything than that of the American student. In an essay entitled "Can school programs be shortened and enriched?" President Eliot of Harvard (*Educational Reform*, Century Co., New York, 1898) compares the programs of French and American public schools in tabular form, much to the disadvantage of the latter. Physicians should be public-spirited men and should lend their intelligence and influence to aid in bringing about these reforms in shortening and enriching public school programs which are so important for the general good as well as for the advancement of the profession.

The problem of hospital organization has occupied the attention of some of the ablest executives both of this continent and in Europe. That the hemispheres have arrived at very opposite solutions is an indication that one or the other or both are wrong. Hillis (*Medical News*, July 7, 1900) has recently contributed a long article upon this subject in which he takes occasion to attack, by means of imaginary hospital episodes, the method particularly practised in this country, that is—of having interns of fixed and progressive term of service, while the responsible work of the hospital is assigned to a visiting staff composed of distinguished practising physicians. While some of the pictures given by Hillis appear to be overdrawn, there can be no question that in the main they represent conditions that not infrequently occur. Very naturally, the unsalaried visiting physician, who in some cases looks upon his connection with the hospital more as an honor and possibly as an advertisement than as an opportunity to do serious scientific and clinical work, neglects his duties whenever his paid outside practice demands his attention. This necessarily throws the responsibility of the care of the patients upon the interns, and although one can say that, in general, they do their work wonderfully well, considering the brief training they have had and the limited opportunity for practical work offered by nearly all our medical schools; nevertheless, they do not do the work as well as the interested

patient has a right to demand that it should be done. Hillis suggests a remedy for this condition which is we think not altogether adequate. He would have permanent residents in the hospital, that is, he would have retained in the service of the hospital for an indefinite period of time, residents who have demonstrated their ability, and would give these residents, under the visiting chiefs, the charge of the services. It is inconceivable that, with human nature constituted as it is at present, there would not speedily be a serious conflict between the visiting chiefs, who take after all a more or less desultory interest in the wards, and the permanent residents, who by their constant attendance would soon acquire the feeling of being the most important element in the whole hospital organization. It seems to us that our European friends have done well in this matter. The position of visiting surgeon, or physician, as the case may be, is one not only of honor but of profit, for a salary is attached to it; the hospital, therefore, acquires a right to the services of these men, and can compel them to make thorough rounds and to spend at least several hours every day in the hospital attending to the needs of the patients. As a result of this, the diagnosis, the treatment, the operations are entirely in their hands and under their direction, and although the interns occupy a decidedly subordinate position, their opportunities for acquiring accurate knowledge and skill in their profession are vastly greater than the corresponding opportunities in America, and therefore leave the hospital better men and more able to fill important positions. There is another very desirable result of this system—it gets rid of all the superannuated attending physicians and surgeons. Hillis thinks that the old surgeon who still hangs on to his hospital appointment and attempts to operate now and again is worse than an active bullet "plowing," as he expresses it, "through the solar plexus of a patriot." Far be it from us to endorse this startling simile. Affairs are not perhaps so calamitous as he depicts them, but the time when hospital positions will mean pay to and require work from the visiting staff seems sadly distant in this as yet imperfectly (medically) civilized land.

A Collegiate Course as a Preparation for Medical Study.—The action of some of our leading medical schools in requiring an academic degree for entrance to their courses has been severely criticised by some. It has been maintained that if three or four years be devoted to a more liberal education the graduate in medicine enters upon his professional career too late in life; that the studies of most colleges are not such as best fit a man for medical work, and the student's time is wasted; that college men are apt to become dissipated and waste time; that the higher requirement shuts poor but deserving men out of the profession because of added expense, etc. There is a certain amount of

justice in these criticisms; the majority of men do enter the profession later than is desirable, some colleges do still allow too little liberty to their students in elective studies, some students waste their time; but is this the rule? are these disadvantages unavoidable? We think not. We know a goodly number of young men of average ability, who, through proper training, were able to enter the classes of some of our leading colleges and universities as young as sixteen or seventeen. This is not above the average of the French or German student, and by proper planning and with efficient teachers it is possible for almost any boy. There is considerable difference of opinion as to the course of study most desirable as a preparation, but with the various curriculums of our leading institutions it would not seem difficult to find one suited to the needs and tastes in almost any case. The tendency with leading educators at present seems to be to advise a course which includes little of the old-fashioned classical and mathematical training and much of science, English, and modern languages. With the liberal elective systems of nearly all our colleges, it is possible to arrange a very satisfactory course of this kind, and in many institutions a special course preparatory to medicine is given. Entering upon such a course at the age of sixteen the student can obtain both the collegiate and medical degree by the age of twenty-four, which is certainly as young as most men are fitted to take up the responsibilities of medical practice.

Few will deny the value of a good collegiate course. Every professional man should have sufficient command of his native tongue to be able to express his thoughts fully, clearly, forcefully, and correctly; and it is highly desirable that he should know something of its splendid literature. The physician should be able to command the attention and respect of the members of his own profession and of the public, when he feels called upon to present his views before them; he should be able to take part in the proceedings of societies and other professional meetings, and to put his thoughts in suitable form for publication in the journals of his profession. To acquire such power of correct use of English necessitates thorough, early training and practice under the guidance of competent teachers. The student who enters the study of medicine after a thorough course of study, including efficient laboratory work in chemistry, physics, botany, zoology, and comparative anatomy, already has an ability to observe accurately and to draw conclusions from his observations that is certain to give him a great advantage over his fellow student who has not had such training. Moreover, the great amount of highly important scientific work which is constantly being done by French and German investigators and clinicians is so great that no one can claim to keep abreast of the times who is unable to read in the original scientific articles written in these two languages.

While some men may be found in every college who

are dissipated, and more who dawdle away their time, this is not general. On the contrary, the atmosphere of college life is invariably stimulating and elevating as is evidenced by the large number of the leaders in the intellectual and moral progress of the times who acknowledge their indebtedness to their early college training. With the large number of free scholarships and opportunities for earning money during student life scores of men have found it possible to make their own way through college, and it cannot fairly be claimed that any intelligent and deserving man need be debarred from a liberal education because of poverty.

We would not advocate that every student should follow an absolutely fixed course of study, but that he should take *some* thorough course of preparatory study and that the general trend of such studies should be along those lines which will help him in his future career. The importance of this can be hardly overestimated. The lack of adequate preliminary training is the greatest weakness in the present system of American medical education. According to the Bulletin of the University of the State of New York on professional education there are 156 medical schools in the United States, and of this number only thirteen require as much as a high-school course of study for entrance.

We hope that the day is not far distant when all our medical schools will require at least the equivalent of two years' college study for admission to their courses.

Proper Unification of Sanitary Interests in State Work.—The interested observer of public affairs in the various states of the Union can hardly fail to note the diversity of administrative methods that prevail, showing both lack of systematic study in original legislation and lack of proper economic methods in administration. This is especially true in regard to those bureaus or departments which directly or indirectly owe their existence to sanitary reasons. The State Board of Health, the ostensible responsible body in regard to such matters, is in most States shorn of many of the powers that should belong to it and denied proper financial support for the performance of the few duties it is directed to assume. Certain other departments of public administration which exist solely for sanitary reasons are exempt from either control by or co-operation with the State Board of Health, but are lavishly if not extravagantly provided for in the annual appropriations. Dairy commissioners, live-stock boards, mine inspectors, plumbing inspectors, pure-food investigators, State chemists and the like officials of whatever grade or character have no other legitimate claim for existence and public remuneration except the sanitary one. When the offices are created separately, given special power, supported by individual appropriations, they lose their effectiveness, minimize the amount

of work done, increase useless expenditures, become more or less influential political jobs and in the end keep the legitimate Boards of Public Health from receiving the recognition and support which should be given them in the interest of the public.

It has been suggested that future public health legislation shall take cognizance of these administrative abuses that are the outgrowth of our present systems. Proposed laws should in the future provide for unification of the various departments of work specified under the control of the State Boards of Health and their executive officers. One trained inspector at a salary of \$1,000 per year can usually do more work for an active Board of Health than is done by a Dairy or Pure Food Commissioner at a salary of \$3,000 per year with an assistant at \$2,000 per year, a chief clerk at \$1,200 per year and a stenographer at \$75 per month. It is well known that in such office forces as that just described the actual work is usually done by the \$75 a month stenographer, while the other highly paid, inexpert and inefficient officers spend their time in using up railway passes. Let us strengthen our State Boards everywhere by giving our interest and support to all measures for increasing their powers, broadening the scope of their control and investigations, limiting the employment of nonprofessional persons in positions that require special training and special capability. The best and most economic administration of all matter pertaining to sanitation is only attained when the powers are conferred upon doctors, and expenditures are controlled by them for legitimate purposes.

The Control of Hospitals. — The disagreement which has lately arisen between the Medical Staff and the Board of Management of the National Hospital for the Paralyzed and Epileptic, in London, serves to bring into prominence some of the evils that may arise from the exclusive control of hospitals by laymen. The medical staff of this well-known institution, the reputation of which is entirely due to the reputation of its attending physicians, contend that the administration has become defective, and that this condition is due to the concentration of power in the hands of one official who is not a medical man. The causes of the grievances are found in a defective diet, poor care of the patients, and unsatisfactory nursing. These complaints have been formulated by the staff in a paper drawn up for the enlightenment not only of the Board of Management, but also of the profession and public at large. With their merits we are not here concerned, except to say that, emanating, as they do, from a body of such distinguished and conscientious men, they are deserving of credence. The controversy has reached such an acute stage that the distribution committee of the Hospital Sunday Fund has withheld the customary grant to the hospital pending an adjustment of the difficulty. As hospital managers are keenly sensitive

in their pockets, this discipline may be effective. The attending physicians of the hospital are in the meanwhile agitating for a representative on the Board of Management, and this is the point of general interest to which we draw special attention.

While it might not be practical in all instances, it would doubtless be beneficial in many, to have such a representative on the boards of management of hospitals. These institutions owe their first and greatest obligation to the medical men who serve them. Whatever benefits they confer, and whatever reputation they acquire, are due more to their medical staffs than to all other agencies combined. We say this deliberately, with all due deference to endowments and to lay assistants and coworkers in general. The essential and crowning work of the hospitals is the work done by physicians and surgeons. To promote that work is the very object of the existence of these charities. This is conspicuously but not exceptionally true of the National Hospital for the Paralyzed and Epileptic, for this infirmary has been served and made illustrious by some of the most distinguished of British neurologists. Without their names and labors the hospital would be unknown to fame. These facts demand recognition in all hospitals, for it would seem to go without saying, that no men are so competent to know the needs of a hospital as the members of the profession without whose skill and labor its very existence would be in vain.

Opium in Summer Diarrhea of Children.—Floyd M. Crandall (*International Medical Magazine*, July, 1900) feels that the conclusion that opium should have no part in the treatment of diarrhea in young children is too sweeping and based on a misapprehension. When used to relieve pain, to check peristalsis, to stimulate the heart, and to decrease the secretion of the intestinal tract, particularly in the later stages of the diarrheal attacks, its results are beneficial. It is not indicated when the movements are not large, nor very frequent and are due to septic decomposition; neither should its use be continued when increasing fever gives evidence of increased absorption of toxic matter. It should not be added to the ordinary diarrhea mixture, but should be given alone at intervals of about 4 hours. Lack of precision and accuracy has caused much of the harm resulting from the use of opium in diarrhea. The dose should be as small as possible, and narcotization should be strictly avoided. Paregoric and deodorized tincture are most available for young children. It is contraindicated (1) in the first stages of acute diarrhea, before the intestinal canal has been freed from decomposing matter; (2) when the passages are infrequent or of bad odor; (3) when there is a high temperature or cerebral symptoms are present; (4) when its use is followed by elevation of temperature or the passages become more offensive. It is indicated (1) when the passages are very frequent, with pain; (2) when the passages are excessively frequent, large, and watery; (3) in dysenteric diarrhea preceded by castor oil or a saline; (4) in late stages, with small, frequent, nagging passages; (5) when the passage consist largely of undigested food, and the bowels act as soon as food is taken into the stomach. [M.B.T.]

Correspondence.

THE PHYSIOGNOMY OF CHRONIC PULMONARY TUBERCULOSIS. A CHARACTERISTIC PECULIARITY IN THE APPEARANCE OF THE NOSE.

By HENRY L. SHIVELY, M.D.,
of New York.

Physician to the Presbyterian Hospital Dispensary, Department of
Heart and Lungs.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

THE interest taken by the profession in the minor signs and symptoms of pulmonary tuberculosis, as evidenced by several recent communications in the columns of the PHILADELPHIA MEDICAL JOURNAL, may make the present communication not untimely. In the course of attendance upon a dispensary service in which a large proportion of the cases are consumptives, I have observed the frequency with which in incipient tuberculosis there occurs a pinched nose of peculiar waxy pallor, against which the brownish-yellow orifices of the sebaceous ducts stand out like dots in marked relief. This anemic, dotted nose may be present when there is but



little or no general emaciation or anemia, and so far as I know has not hitherto been described. The appearance is most marked at the tip and lower third of the nose, and in rare instances a similar condition of the chin has been observed. The appearance is not constant, and is less frequently present in subjects of an excessive alcoholic habit, but occurs sufficiently often to be of some diagnostic value. In a number of instances when the patient has not complained of pulmonary symptoms I have been led to make an examination of the chest by the appearance of the nose, and have found the usual physical signs of incipient phthisis. The accompanying sketch may help to give an idea of the appearance described. The importance of an early diagnosis in pulmonary tuberculosis is so great that every slight addition to the symptom-complex cannot but be of value if confirmed.

ACUTE ERGOT POISONING.

By E. S. CLOUTING, M.D.,
of Germantown, Pa.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

As cases of acute poisoning by ergot are rare, and by gallic acid unknown, I wish to record an interesting case occurring in my practice.

A woman, single, 42, feeble-minded, and a victim of pulmonary tuberculosis, had, on June 9, a severe attack of hemoptysis. I saw her during the attack, administered the usual remedies with success, and on leaving ordered 24 ten-grain powders of gallic acid, one to be taken every 2 hours, also 2 ounces Squibb's fluid extract of ergot, directed to be taken in doses of a half-dram every 4 hours till hemorrhage ceased. The following day I called and found the patient sitting up, having taken all the gallic acid and ergot in the night because she was thirsty, her mother having fallen asleep. I waited,—called the following day. I am sorry I did not have her photographed. All over the trunk and face, back of hands, and upon the arms were large irregular, purpuric spots about from one-half inch to 2 inches in diameter, not disappearing upon pressure. The spots were almost running together. The arms and face, especially, looked as if some one had beaten her, but there was no swelling, and her mother told me the eruption came out while the patient was asleep. There was no rise of temperature at all; all functions were normal; no bad feeling existed. The eruption slowly disappeared, but without the effused blood changing color, as in contusion, and in a few days she was as well as before she was taken sick. I attributed the eruption to the ergot (as I have myself taken almost an ounce of gallic acid in 36 hours with no bad result), but acting contrary to the usual physiological action, in one way, as it increased the quantity and frequency of urination; of this I am positive. I gave her a half-grain of calomel every half-hour for 12 doses, and $\frac{1}{30}$ grain of strychnin nitrate, 4 times a day.

As the physiological action of ergot in large doses is the production of depression of the circulation and progressive paralysis of the vasomotor system and the heart, could it be that this was caused by vasomotor paralysis?

ORIENTAL SORE.

By BARTON LISLE WRIGHT, M.D.,
of Mindanao, P. I.
Assistant Surgeon U. S. Navy.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

A SHORT description of this disease may be of interest to those in the United States who are interested in skin diseases, as well as to medical officers of the navy and army, who must now look forward to long tours of duty in the far East, and are therefore likely to encounter it. I therefore make a few general remarks upon its characteristics, and report one case which I have had under observation. For much of the subject-matter, except the personal observations on the case treated, I am greatly indebted to that excellent work, "Tropical Diseases" (Manson).

Oriental sore is a contagious affection of the skin, of parasitic origin, characterized by the appearance of a shotlike, itching papule or papules, which tend to break down, with the formation of a peculiar pinkish, scaly ulcer, of indolent nature. It is endemic in Morocco, the Sahara, Egypt, Crete, Cyprus, Asia Minor, Mesopotamia, Arabia, Persia, Turkistan, and India, where it is quite common and is often locally spoken of as "Bagdad boil" or "Delhi boil," because of its prevalence in these localities. Manson states that "In Bagdad few escape an attack; visitors, even of a few days only, are almost certain, at particular times of the year, to contract it." "In the tropics it is most frequently met at the commencement of the cool season." (Hirsch.) The disease most frequently appears upon the hands, feet, arms, legs, or face; at times on the trunk; but never on the palms, soles, or scalp. The resultant scar, after healing has taken place, is pronounced, especially when considerable surface has been involved. The following case came under my observation:

One of the crew of this ship presented himself with five or six reddish, itching, shot-like papules in the right popliteal space. In from two to three days these were covered with fine grayish-white scales; which, when scraped off, revealed the beginning of ulceration.

The scales reformed, and the ulcers slowly spread, discharging a small amount of ichorous pus, the center being covered by the scales, which assumed a darker color and became more firmly adherent. As the ulcers slowly increased in size they showed a tendency to coalesce. They now began to show signs of healing; but, at the same time, new papules formed both above and below, going through the same process of ulceration. At about the time the original ulcers were fairly skinned over they would break down here and there, giving more or less trouble. This also took place in the later developed areas of ulceration. By this time the whole popliteal space was involved, the disease extending from 3 to 4 inches up the posterior aspect of the thigh, and from 2 to 3 inches down the leg.

The disease developed about April 12 and lasted until June 17, 1900, a period of two months and five days. Six days of this time, May 3 to 9, the patient was relieved from duty.

On April 8, 1900, we first visited Kudat, British North Borneo, and the crew were given liberty. I have no doubt that the disease was contracted at that time.

The treatment given consisted in daily washing of the affected part with a solution of carbolic acid (2%) and applying the following ointment:

R.—Zinc oxid..... 10.0 grams.
Sulphur..... 10.0 grams.
Petrolatum..... 30.0 grams.

M. et ft. ungt.

Later, about the sixth week of the disease, a 10% boracic acid ointment was substituted for the former, and the "four chlorids" given by the mouth three times daily.

It is claimed that one attack renders the patient to a certain degree immune. Second attacks do not often occur. In this connection it is of interest to note that on this date, June 30, 1900, the patient presented himself, displaying similar papules upon the right elbow. Manson, in his "Tropical Diseases," states that the disease is usually of long duration, lasting from two to twelve months, or even longer.

ANESTHESIA BY INJECTION OF COCAIN INTO THE SPINAL CORD.

By GEORGE G. HOPKINS, A.M., M.D.,

of Brooklyn, N. Y.,

Surgeon to St. John's Hospital, etc., etc.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

SINCE the discovery of general anesthesia by the inhalation of ether and chloroform the trend of investigation has been in the direction of some substance less dangerous to life, yet that would suspend both sensation and consciousness. On May 19 last, Professor Tuffier, of Paris, published a report of a method for suspending sensation throughout the entire human system, while the patient retains perfect consciousness. This reduces the risk of anesthesia, as it does not disturb the most vital and important of functions. Dr. Tuffier's method consists in the introduction of a solution of cocain into the spinal canal. In from 4 to 10 minutes from the time of the introduction of the solution, there is perfect and complete anesthesia of the nerves of sensation, throughout the entire system, with slight diminution of the motor powers, but not the slightest effect upon consciousness. At the time of the publication of the monograph mentioned, he had operated in 63 cases, while the patients were rendered insensible to pain by this method. Since that time he has operated on 107 cases while sensation was suspended by cocain injection. It was my privilege on August 2 and 3 to see him operate on the last four of this second series of cases.

The first operation was a gastrotomy. The case was that of a man, 50 years of age, suffering from cancerous obstruction of the pharynx. The mass involved the entire left side of the neck, extending from the superior maxillary articulation to the sternum, dipping back to the spine and including all the vessels and muscles of that side of the neck. The patient was anemic and greatly emaciated. Observing asepsis and antisepsis, the needle was introduced between the fourth and fifth lumbar vertebrae. The patient was placed upon the operating table, and the assistant prepared the site of operation. In 10 minutes M. Tuffier began his incision for gastrotomy. The man was interrogated from time to time during the operation, which lasted about 35 minutes, and said that he had not the slightest sensation of pain, and his eyes being covered, he could not tell where the operator was cutting. The pulse was slightly accelerated and the patient had some nausea, but it was of a passive kind; there was no retching.

The second operation was for the radical cure of inguinal hernia. The patient was a man, 30 years of age, in fine physical condition—a magnificent specimen of muscular development. The injection was made in the same region, and with the same precautions. In 10 minutes insensibility was complete. M. Tuffier operated with great deliberation, consuming about 25 minutes. The patient said he had not the slightest sensation of pain, and certainly did not in any way indicate that he suffered. He said he could not tell by his feeling; whether the surgeon was operating upon his abdomen or his arm. He had no nausea.

The third operation was for the removal of a bullet, lodged in the femur near the knee-joint. It had entered about the middle of the thigh and passed downward. This man was 25 years of age, and a strong, healthy subject. The cocain injection was made in the same region, and with the same precaution as in the other cases. The patient experienced no pain during the operation. The cut was a longer one, and the search very thorough. This patient had nausea.

The next operation, on the day following, was an abdominal hysterectomy. The patient was a small, spare woman, about 40 years of age, and was evidently a great sufferer. The injection in this case was made with the same care as in the other cases. This operation took 70 minutes, as there were extensive adhesions, and both ovaries were cystic and had to be removed before the uterus could be reached. This patient had considerable nausea of a passive kind. She said that she did not experience any pain, and had no sensation that would indicate to her where the operation was being done.

Such are the results of this remarkable procedure. M. Tuffier uses a long platinum needle built according to his direction. The syringe is much larger than the ordinary hypodermic syringe. He uses a 2% solution of cocain, and places great stress on the preparation and sterilization of the solution before it is injected. A description of the process would be somewhat long for insertion here. The main point is to be sure that the solution is sterile. It should always be made fresh for each operation, or at least not kept longer than 48 hours.

The dose of cocain should never exceed 2 cgm.; usually it should not exceed 1.5 cgm. Perfect insensibility to pain will ensue in from 4 to 10 minutes and continue for 1½ to 2 hours after the injection has been made. Sensation returns first in the pharynx.

Of the 63 cases which M. Tuffier has reported, nausea was present in 50 cases. There was an increase in temperature in 15 of these cases during the first 12 hours; after that it was normal. The pupils are usually dilated; the pulse-rate slightly increased. In 4 cases there was a chill with trembling, lasting from 10 to 15 minutes, but not followed by fever.

M. Tuffier was very cautious in his procedure. His first operations were of minor surgery, working up gradually to abdominal sections and all major operations. His last 107 unpublished operations all were important. He has never

yet had an accident from the use of the cocain. In two cases, when he used a solution of cocain that had been kept for some time, anesthesia was not perfect and he had to resort to ether-inhalation. But since he has been careful to use only a fresh solution, insensibility to pain has always been complete in ten minutes at most, and remained complete for from 1½ to 2 hours. Ether-inhalation after the cocain-injection is not contraindicated.

The ages of his patients have varied from 12 to 63 years. He considers it unsafe to make the injection in young children.

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Board of Charities.—Dr. Ellwood R. Kirby has been appointed a member of the Department of Charities and Correction of Philadelphia, to succeed Dr. Gairdner, deceased.

Christian Science Again.—The Coroner of Philadelphia is investigating the death of Giles J. Burgess, who died of tuberculosis after six months' treatment by a Christian Scientist.

Disease Breeding Nuisance Abated.—Recently 6 traders near Thirtieth and Market streets, Philadelphia, were arrested and fined for throwing decayed and refuse matter in the gutters.

Bequest to Wills Eye Hospital.—By the will of the late George W. Gross, of Lower Merion, Pa., all his estate, after the payment of a few small bequests, will revert to the Wills Eye Hospital, of Philadelphia.

Woman's Medical College of Philadelphia.—Dr. W. L. Rodman has recently been appointed professor of the principles and practice of surgery, and Dr. W. V. Laws, professor of operative and clinical surgery.

Leeches in His Ear.—A boy at Lancaster, Pa., had 2 leeches removed from his ear recently by a physician. He had been bathing and for 3 days following suffered from severe earache, and was almost on the verge of convulsions when the removal afforded instant relief.

Cholera Day in Pittsburg.—Over half a century ago the members of St. Michael's Roman Catholic Church in Pittsburg, Pa., made a vow that if they were freed from the ravages of cholera, then claiming hundreds of victims in that city, they would annually hold appropriate services. On August 21, fully 5,000 persons were present in the chapel of the church at different times.

Faith Curists Arrested.—Rev. Charles F. Newell, Mrs. C. S. Boyd, and Mrs. Louise Eilhart were arrested at Scranton, Pa., recently on information furnished by the Coroner, who charged them with involuntary manslaughter in causing the death of Mr. Newell's wife after childbirth. The parties are believers in the Dowie faith, the doctrines of which are antagonistic to medical treatment.

For Charity.—By the will of Michael Corr of Philadelphia over \$80,000 will be distributed among 23 Catholic institutions and churches in and about the city, in sums varying from \$1,000 to \$10,000. Archbishop Ryan and the Rev. J. Fitzmaurice are each given \$10,000, to be used for charity as they may see fit. After the death of Corr's relatives the money left in trust for them will revert to charity.

Public Baths and Conjunctivitis.—The Philadelphia Health Department has been notified that at 2 hospitals the cause of the unusual prevalence of conjunctivitis has been traced to public baths. At St. Christopher's Hospital about 200 cases have been treated during the last 3 weeks, and almost as many at the Pennsylvania Hospital. The complaint has been investigated by medical inspectors, and they claim that the 9 baths maintained by the city are

in a very satisfactory condition. Fresh water is constantly flowing from the city mains into these pools, and each pool is emptied and flushed with a fire hose 3 times a week and disinfected. In addition to this, every known precaution is taken by the superintendents to prevent persons who are suffering with a skin disease of any character from entering the baths.

Vital Statistics of Philadelphia for the week ended August 25, 1900:

Disease.	Cases.	Deaths.
Total mortality		372
Inflammation of appendix 3, brain 13, bronchi 2, kidneys 17, lungs 15, peritoneum 2, pleura 1, stomach and bowels 16, heart 2		71
Debility 7, marasmus 23, inanition 23		53
Tuberculosis of lungs		37
Cholera infantum 26, morbus 1		27
Bright's disease 8, uremia 8, diabetes 2		18
Heart—disease of 16, fatty degeneration of 1, neuralgia of 1		18
Apoplexy 9, paralysis 7		16
Convulsions 12, puerperal 1		13
Old age		12
Typhoid fever	61	9
Diphtheria	37	9
Casualties		8
Carcinoma of stomach 2, liver 2, neck 1, rectum 1, uterus 1		7
Sunstroke		5
Whooping-cough		5
Suicide—hanging 2, shooting 1, drowning 1		4
Cirrhosis of liver		4
Burns and scalds		3
Aneurysm of aorta		3
Cyanosis		3
Scarlet fever	18	3
Diarrhea 2, dysentery 1		3
Intussusception of bowels		3
Surgical shock		3
Septicemia		3
Abscess of pelvis 1, alcoholism 2, asthma 1, anemia 2, congestion of brain 1, drowned 1, abdominal dropsy 1, epilepsy 1, malaria 2, hernia 1, homicide 1, insanity 1, jaundice 2, measles 2, obstruction of bowels 1, edema 1, poisoning—laudanum 1, opium 1, pyemia 1, rheumatism 2, scrofula 1, teething 2, tetanus 1		

Lehigh Valley Medical Association and the Berks County Medical Society.—A joint meeting was held at the Neversink Mountain Hotel, Reading, Pa., August 16, 1900, it being the summer meeting of the former and the annual outing of the latter. DR. J. MILTON DUFF, of Pittsburg, presented a paper on **Modern obstetrics**. He reviewed the field of obstetrics from its earlier history to the present time. The care of the pregnant woman then and now. Then no care, now she should be seen by her attending physicians every few weeks during pregnancy. See that she has as nearly as can be the proper environment. Examine her urine often, so as to notice early should there be any abnormal change in the secretion of urine. Her blood should also be examined several times, as no woman can have a healthy child whose blood is not in a healthy state. The position of the child should be ascertained as early as possible by external palpation. The pelvis should be measured so as to ascertain the size, and whether the parts are sufficiently large and yielding, so as to permit of passage through the bony structure, as well as through the vaginal canal. Aseptic obstetrics has saved as many lives during labor as aseptic conditions in surgery. The **preparation of the parturient woman** should be the same as for a vaginal hysterectomy, soap, water, douching the vaginal canal with bichlorid of mercury, 1:5000. **During parturition** the Kelly pad and aseptic or sterilized pads, instead of as earlier, old and cast-off clothing that were not always clean, and never sterilized. The hands of the attendant should be scrupulously clean, the nails never in mourning. **Forceps** should be applied only to relieve the woman, or to save the life of the child, and never to save time for the doctor. **Anesthesia**, he said, was a great boon for the parturient woman. It calms her nervous system, relaxes the rigidity of the parts, relieves her of much of the acute suffering, and saves much of her vitality. The physician should at no time be in a hurry to leave the house immediately after labor. If the attending physician can not

give the patient the proper amount of time he should not undertake the case. After making a vaginal examination, and finding all conditions relating to a normal labor, wait and watch for developments, instead of making many examinations at frequent intervals. **Midwives** were condemned in general. **Saving the mother and child during labor.** Some teachers say always save the mother if only one can be saved. Dr. Duff says "save both," as the operation for cesarean section is readily done, and the death-rate when done early is very low, either to the mother or child. **District nursing.** As the price for professional nursing is above what many poor persons can pay, he advised churches or other organizations to raise a fund so as to pay for district nursing, and thus save many lives of women and children. Mortality in the modern hospital is less than $\frac{1}{2}\%$, whilst in general obstetric practice outside of a hospital it was at least 4%. Dr. HALBERSTAT, of Pottsville, in opening the discussion, said modern obstetrics was not due to the results of investigations of the obstetrician, but was due to the bacteriologist in the laboratory. First cleanliness, avoid meddlingness. The forceps were a "godsend" to the parturient woman, when properly used. Dr. P. A. HARRIS, of Paterson, N. J., delivered the annual address before the Lehigh Valley Medical Society upon the subject of **Certain pathological conditions of the fallopian tubes of interest to the general practitioner.**

NEW YORK.

New Hospital at Saratoga.—A new hospital was recently opened at St. Christina's Home, Saratoga, N. Y.

Chapin Home.—By the will of the late C. P. Huntington the Chapin Home for the Aged and Infirm of New York will receive \$25,000.

Sulfonal Causes Death.—Almon W. Sargent died recently at Watertown, N. Y., from the effects of an overdose of sulfonal. To produce sleep he took 440 grains 75 hours before his death, and never woke up.

Fleas and Red Ants.—The south side of Long Island has become the prey of pestiferous fleas and red ants. Their bite is painful, and physicians have been unable to do much for the sufferers, who depend upon home remedies.

Milk Trust.—A charter has been granted recently to the Century Milk Company, of New Jersey, said to be a combination of the big milk dealers of New York and vicinity. The new company has an authorized capitalization of \$1,000,000.

Geneva City Hospital.—By the will of Judge Francis O. Mason, of Geneva, N. Y., the Geneva City Hospital is to receive \$100,000. Of this amount \$10,000 is immediately available, and the remainder at the death of 2 sisters of the deceased.

Kneipp Cure Failed.—A patient came into Bellevue hospital recently and said that while at Monroe he had joined a colony of Kneipp curists. To cure his corns he walked about in his bare feet for several successive mornings until his feet became so swollen as to cause him much alarm. The Bellevue doctors said he was suffering from ivy poisoning.

Sanitation in New York.—Dr. John B. Cosby, one of the Health Commissioners of New York, who has been traveling in Europe for some time, says the hygienic conditions of New York are unexcelled by any other city of considerable size in the world. Whether this is due to the natural advantages of the tide-swept shores or the natural habits of the American people is hard to determine.

Serum that Cures Rattlesnake Bite.—For Dr. Louis de Plasse, of New York, is claimed the honor of establishing in this country the efficacy of Dr. Calmette's serum as a cure for the bite of a rattlesnake. He injected 10 cc. of serum into his dog that had been bitten and was about to die. The animal promptly recovered. Dr. de Plasse states that the injection of 10 cc. of the serum is sufficient for either children or adults in the case of bites of either rattlesnake, copperhead or pilot snake. He says the serum contains no poison and can be injected with perfect safety.

Conference of Deaf-mutes at Syracuse.—The twenty-first annual conference of the Empire State Association of Deaf-Mutes was held in Syracuse, N. Y., last week. The majority of the delegates are bright business men. They use the sign language. President Thomas F. Fox, head teacher of the New York State Institution for Deaf-Mutes, in his address, made an appeal for the Gallaudet Home for Aged and Infirm Deaf-Mutes at Poughkeepsie.

Argon.—New York physicians are experimenting with argon to ascertain its uses as a cure for various diseases. Dr. C. W. Fitch, former surgeon in the United States army, says it is a mystery, but the cures already made have been wonderful. He hazards the opinion that argon acts upon or through the nervous tissue which governs the process of repair, and indirectly, possibly, through the glandular system as well. It awakens sluggish nature to new activity.

NEW ENGLAND.

City Physician of Lynn.—Dr. George C. Carr has been elected city physician for the westerly district of Lynn, Mass.

Woman City Chemist.—Miss Marion Cowan, of Lynn, Mass., was recently elected chemist for the board of health of that city. She is the only woman chemist in New England to act in the capacity for which she was chosen.

Chelsea Hospital.—Improvements, for which the government has appropriated \$45,000, are being made at the United States Naval Hospital at Chelsea, Mass. Larger buildings are to be provided, and plumbing and ventilation regulated.

Athlete Victim of Tuberculosis.—George Hosmer, who was at one time the leading oarsman of the world, died of tuberculosis in a Boston hospital. His professional training may have not been directly responsible for his death, but he is one of a long list of athletes who, after posing as marvels of muscular development, have slowly wasted away from tuberculosis. The strain of physical training is severe in most cases, and professional athletes must be careful as to their habits if they would ward off collapse.

CHICAGO AND WESTERN STATES.

Hospital Ordinance a Law.—The new City Hospital ordinance of St. Louis recently became a law, and plans for constructing the building are being drawn.

Physician Held for Assault.—Dr. W. D. Turner, of Pasadena, Cal., is in the custody of the police awaiting the outcome of the injuries inflicted on Daniel J. Carroll.

Asks \$10,000 for an Eye.—Benjamin Hesse, of Fort Madison, Iowa, has filed a claim for \$10,000 against John E. Hinze for the loss of an eye, caused by a blow.

University of Chicago.—Dr. Lewellys F. Barker, formerly associate professor of anatomy in Johns Hopkins University, has been made professor of anatomy at the University of Chicago.

Poisoned by Milk.—Near Wausaukee, Wis., 5 persons were poisoned by drinking milk. The nausea and vomiting were severe when the physician arrived. An analysis of the milk showed a development of ptomaines.

Emergency Hospital for the Chicago Stockyards.—A movement is on foot to provide an emergency hospital near to the packing houses and railroads where accidents are of daily occurrence. The nearest hospital to the Chicago stockyards is 5 miles distant.

The San Francisco Board of Health have appointed 2 food inspectors. They have also adopted an ordinance intended to regulate the maintenance of slaughter and packing houses and to prevent the sale of watercress and other edible vegetables growing near cesspools or on lands into which any sewage or impure matter is emptied. Plans for the new Nurses' Home at the City and County Hospital, to cost \$2,000, have been filed and referred to the hospital committee.

Physician Injured.—Dr. W. R. Patton, Mayor of Charleston, Ill., while making a professional call, was thrown from his buggy and probably fatally hurt. His injuries are of an internal character, and attending physicians say his recovery is doubtful. He is serving his fourth term as mayor.

Thought to be Glanders.—Recently, several members of a family near Wautoma, Wis., have broken out with a strange disease which has puzzled a number of physicians. Some time ago, the horses of the family were afflicted with glanders, and they think there is some connection between the diseases.

The Washington State Medical Society is made defendant in a suit begun by E. J. Lake. Plaintiff alleges that he was engaged to report the proceedings of a meeting of the society, held in Spokane, and that repeated demands for payment have been refused by the officers of the society, hence the suit.

A Real Globe Trotter.—Dr. LeCluyse, who is making a tour of the world on foot, will be in Milwaukee, Wis., soon. He travels at the rate of 45 miles a day, and has been on the road 20 months, starting from his home in Brussels, Belgium. He is a graduate of the University of Belgium, and because of insomnia has taken to walking.

Unlicensed Physicians.—Dr. L. C. McElwee, secretary of the Missouri State Board of Health, conferred with Assistant Prosecuting Attorney R. M. Johnson recently with regard to the prosecution of physicians who are practising without licenses. Dr. McElwee said there are 5 prominent physicians in St. Louis who had not complied with the law. Warrants will be issued if the proper evidence is submitted.

Nail Driven into Brain.—Dr. Emil Enos, chief of the medical staff at Kankakee Insane Asylum, Ill., has prepared for the coming meeting of the American Association of Hospital Physicians, at Indianapolis, skiagraphs and data of a strange case under his care. The patient is Miss Elizabeth Sharp, of Bloomington, Ill., who has fully recovered physically, after driving the full length of a nail into her brain. The nail was removed with forceps. She used the heel of her shoe as a hammer, and says she felt no pain. Dr. Enos says the nail would certainly have killed her had she not been insane.

SOUTHERN STATES.

Hospital Buildings at Salisbury, Md.—Plans and specifications for a hospital at Salisbury, Md., have been completed and bids for erection invited.

Hospital Needed at Annapolis.—The Health Officer of Annapolis suggests the great need of a hospital in that city. The hospitals of Washington or Baltimore are the only recourse when an accident occurs.

Home for Tuberculous Individuals.—A plan is in operation to build a home at Asheville, N. C., for persons suffering from tuberculosis. A large farm has been purchased and an opportunity will be given the poorer classes to work for their board.

Pure Water at Cumberland.—For the first time in 8 years the water of the Potomac, near Cumberland, Md., from which the city is supplied is clear and odorless, as the result of the closing down of the pulp mill at Luke. Fish driven down by the pollution are again coming up and are being caught near the city. The shut-down at the pulp mill is due to the substitution of the soda for the sulfite process, which is now in progress. The new process is harmless to running water.

Charity Gets \$316,000.—By the will of the late Mrs. Margaret J. Bennett, of Baltimore, the following bequests have been made: \$150,000 for the purpose of founding the Margaret J. Bennett Home for Homeless, Needy, and Deserving Females; \$25,000 to the Woman's College of Baltimore for founding 6 scholarships; \$25,000 to the Hospital for the Women of Maryland; \$25,000 to the Home for the Aged of the Methodist Episcopal Church; \$5,000 to the Free Summer Excursion Society; \$2,000 to the Nursery and

Child's Hospital; \$2,000 to the Kelso Home for Orphans; \$1,000 to the Asylum and Training School for the Feeble-Minded of the State of Maryland; \$1,000 to the Little Sisters of the Poor; and \$1,000 to the Home for Incurables.

MISCELLANY.

The Maine at Hongkong.—Advices from Hongkong report that the American hospital ship *Maine*, which sailed from Southampton for China on July 12, arrived there August 25.

Mortality at Nome.—Since June 1 the coroner's records at Nome, Alaska, show 71 deaths, of which 29 were natives. Only one death from smallpox is recorded, most of the deaths being from pneumonia. In all, 20 cases of smallpox have been admitted to the hospital.

Epidemic in Managua.—An epidemic is causing the death of rats and pigs in Managua, Nicaragua. The number of pigs that have died from the unknown malady is very large. The Sanitary Commission is endeavoring to prevent the outbreak of a possible epidemic among the population.

Red Cross Work for India.—The American National Red Cross announces that under the powers conferred upon it by the last Congress it will at once begin active work for the relief of those suffering from famine in India. Headquarters for this branch of relief will be opened in New York.

Smallpox from Nome.—A steamer from Nome to Seattle recently put into Dutch Harbor, Alaska, with a case of smallpox on board. The patient was isolated on Hog Island. The *Gayhead* arrived later with several cases on board. A Marine-Hospital surgeon has taken charge of the quarantine station at Hog Island.

Physician Sues Queen Lil.—Dr. Charles E. English, of Honolulu, Queen Lil's private physician for over 2 years, has sued her for over \$5,000. He declares he gave up all his practice to attend her, for which he received \$300 a month, with a bonus of \$5,000 should she part with his services. In case she received compensation for crown lands he was to get \$30,000. In July, he claims, she suddenly dropped him and refused to pay the bonus.

Hospital Accommodations Good.—Surgeon-General Sternberg received the following from Major H. O. Perley, Surgeon United States Army, in command of the hospital ship *Relief*: "Taku, August 23.—Have 50 wounded on *Relief*. More coming. Hospital accommodations are excellent Tientsin. Launches and boats from *Relief* bringing wounded from Tientsin. Have everything needed. All well cared for; will look after everything here."

Dentistry and Veterinary Surgery.—It is reported that schools of veterinary surgery have added dentistry to the curriculum. A dentist not long since operated upon a monkey that had toothache; and a sheep-farmer in South Wales has had artificial teeth made for a valuable ram that, owing to the loss of his natural grinders, could not masticate his food. A full set was supplied, and it is said the animal at once attacked his fodder with relish.

International Hospital Courtesies.—Count von Solms, the Imperial Commissioner for Voluntary Sanitary Work in China, wrote to the Secretary of the United States Embassy at Berlin, recently, thanking him for the offer of the American hospital ship *Maine* to accommodate the German wounded and sick in China. In return, Count von Solms tendered the use of all the German hospital facilities there to the United States Army and Navy.

Obituary.—WILLIAM B. WATERMAN, of Brooklyn, August 21, aged 38.—SAMUEL A. KENNEDY, of Shelbyville, Ind., August 22, aged 65.—JOHN D. MCAULIFF, of St. Louis, August 23, aged 77.—MOSES WARREN KIDDER, of Lincoln, Mass., August 15, aged 72.—BENSON BOND, of St. Joseph, Mo., August 24, aged 71.—J. P. EGGMANN, of St. Louis, August 25, aged 31.—FRANCIS FENWICK SMITH, of Frederick, Md., August 26, aged 72.—W. H. MUSGROVE, of Grafton, N. D., August 8.—E. W. BEEBE, of Elizabeth, Ill., August 26, aged 72.—ERNST SCHMIDT, of Chicago, August 26, aged 70.—JAMES H. MAC-

CORMAC, of Poughkeepsie, N. Y., August 25, aged 56.—FERDINAND E. CHATARD, of Baltimore, at Atlantic City, August 27, aged 61.

Alcohol for the Navy and Tartar Emetic.—Captain C. D. Sigsbee, of the U. S. Navy, recently made a proposition to the Navy Department. He says that the presence of alcohol, even wood alcohol, used on board ship for paints, varnishes, etc., leads to considerable drunkenness; that there are among the crew those who know how to abstract the alcohol from mixed shellac and to clarify it even when the shellac has been mixed with venetian red. Captain Sigsbee recommends that an order be issued requiring that all alcohol used in the construction department of ships be mixed with a certain amount of tartar emetic, and that the cases, chests or bottles in which the alcohol is kept shall be marked accordingly. The bureau did not approve of the suggestion.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended August 23, 1900:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
ALASKA:	Cape Nome . . . Aug. 18 . . .	6		
CALIFORNIA:	Oakland . . . Aug. 7-14 . . .	2		
KANSAS:	Wichita . . . Aug. 11-18 . . .	2		
LOUISIANA:	New Orleans . . Aug. 11-18 . . .	3	7	
MASSACHUSETTS:	Lowell . . . Aug. 11-18 . . .	2		
MINNESOTA:	Minneapolis . . Aug. 11-18 . . .	2		
"	Winona . . . Aug. 7-21 . . .	7		
NEW YORK:	New York . . . Aug. 11-18 . . .	1		
OHIO:	Cincinnati . . . Aug. 10-17 . . .	5		
"	Cleveland . . . Aug. 11-18 . . .	12		
"	Dayton . . . Aug. 11-18 . . .	6		
"	Portsmouth . . . Aug. 11-18 . . .	1		
UTAH:	Salt Lake City . Aug. 11-18 . . .	1		
WASHINGTON:	Tacoma . . . Aug. 4-11 . . .	1		

SMALLPOX—FOREIGN.

BRAZIL:	Rio de Janeiro . June 30-July 13	13	
COSTA RICA:	Port Limon . . Aug. 8 . . .	1	
ENGLAND:	Liverpool . . . July 31-Aug. 4 .	7	1
"	London . . . July 31-Aug. 4 .	18	
FRANCE:	Lyons . . . July 22-29 . . .	1	
"	Paris . . . July 14-Aug. 4 .	5	
INDIA:	Bombay . . . July 10-24 . . .	11	
"	Calcutta . . . July 7-21 . . .	26	
MALTA:	. . . June 16-30 . . .	11	1
MEXICO:	City of Mexico . Aug. 5-12 . . .	3	3
"	Vera Cruz . . . Aug. 4-11 . . .	1	
RUSSIA:	Moscow . . . July 21-28 . . .	2	
SPAIN:	Madrid . . . June 30-July 23	77	
STRAITS			
SETTLEMENTS:	Singapore . . . June 30-July 7 .	2	

YELLOW FEVER.

BRAZIL:	Rio de Janeiro . June 30-July 13	4	
CUBA:	Cienfuegos . . . Aug. 17 . . .	1	
COLOMBIA:	Bocas del Toro . July 20-Aug. 3 .	4	2
"	Panama . . . Aug. 8-13 . . .	3	1
FRANCE:	Havre . . . Aug. 9 . . .	On steamship	
	"Caravallas," from Senegal,		
	Africa, 1 case.		

CHOLERA.

INDIA:	Bombay . . . July 10-17 . . .	239	
"	Calcutta . . . July 7-21 . . .	105	
"	Madras . . . July 14-28 . . .	3	
JAPAN:	Osaka and Diego July 21-28 . . .	1	1
"	Yokohama . . . July 7-28 . . .	2	2

PLAGUE.

AUSTRALIA:	Sydney . . . June 30-July 14	4	
BRAZIL:	Rio de Janeiro . June 30-July 13	74	31
INDIA:	Bombay . . . July 10-17 . . .		60
"	Calcutta . . . July 7-21 . . .		107
JAPAN:	Formosa . . . June 21-July 12	82	63

Changes in the Medical Corps of the U. S. Army for the two weeks ended August 25, 1900:

MOSELEY, Major EDWARD B., surgeon, is relieved from the command of the Second Reserve Hospital, Manila, P. I., and will report to the commanding general, department of Southern Luzon, for duty as chief surgeon of that department, relieving Major Junius L. Powell, surgeon, who will report to the chief surgeon of the division for instructions.

POWELL, Major JUNIUS, surgeon, will report to the commanding general, department of Northern Luzon, for temporary duty in that department.

BECKMAN, PETER W., acting assistant surgeon, will be relieved from temporary duty at the Presidio in time to enable him to report on the transport "Aztec," for temporary duty during the voyage of that vessel.

CHASE, ALPHA M., acting assistant surgeon, will be relieved from temporary duty at the Presidio in time to enable him to report on the transport "Strathgyle," for temporary duty during the voyage of that vessel.

SMITH, ARTHUR B., acting assistant surgeon, will proceed from San Francisco to the U. S., General Hospital, Fort Bayard, for temporary duty.

WRIGHT, Colonel JOSEPH P., assistant surgeon-general, is granted leave for 4 months, from August 25.

DUCKER, Major ORLANDO, surgeon, orders which direct him to proceed to San Francisco, Cal., and report to the commanding general, department of California, for duty, are so amended as to direct him upon the expiration of his present leave to report by letter to the Surgeon-General of the Army for instructions.

TRUBY, First Lieutenant ALBERT E., assistant surgeon, is relieved from duty in the department of Western Cuba, to take effect from August 2, and from further duty with the First Infantry, to take effect upon the expiration of the leave granted him by the commanding officer, Third Battalion, of that regiment.

TRUBY, First Lieutenant ALBERT E., assistant surgeon, is granted leave for 20 days, and upon the expiration thereof will proceed from New York City to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

SCHUYLER, WILFRID H., hospital steward, Fort Sherman, is transferred to Fort Wright for duty, to relieve Hospital Steward Revello M. Walker.

WALKER, REVELLO M., hospital steward, will be sent to San Francisco, Cal., for transportation to China, for assignment to duty.

MENAGE, HENRY E., acting assistant surgeon, now at New Orleans, La., will proceed to Denver, Col., for assignment to duty at Fort Logan.

SMITH, BAT, acting assistant surgeon, now at Fort Sheridan, will proceed to Wharton, Tex., and report by letter to the Surgeon-General of the Army for annulment of his contract.

STONE, First Lieutenant J. HAMILTON, assistant surgeon, is relieved from further duty at Santa Clara Barracks, and will report at Hamilton Barracks, Matanzas, for duty.

FIELD, P. C., acting assistant surgeon, is granted leave for 1 month, with permission to leave the limits of the division of Cuba.

VERANES, FELIPE, acting assistant surgeon, is granted leave for 1 month.

HOFF, Major JOHN VAN R., surgeon, will proceed to Taku, China, and report to Major-General Adna R. Chaffee, commanding the United States forces in China, for assignment to duty as chief surgeon on his staff.

HARVEY, Major PHILIP F., surgeon, will proceed from the Presidio to Nagasaki, Japan, for the purpose of establishing a base hospital at that place.

GEMMILL, HARRY C., acting assistant surgeon, is relieved from duty at Fort Thomas, and will report at that post for duty to accompany the Second Infantry, under orders for foreign service.

COMEGYS, Major EDWARD T., surgeon, now in San Francisco, Cal., will proceed to Nagasaki, Japan, for duty as medical supply officer at that place.

RICHARDS, First Lieutenant WM. E., assistant surgeon, is relieved from further duty in the department of Puerto Rico, and will proceed to Plattsburg Barracks for duty.

ALEXANDER, JAMES A., acting assistant surgeon, is granted leave for 10 days, from August 14.

DE POORTER, LIVEN, acting assistant surgeon, now in New York City, will upon the expiration of his present leave, proceed to New Orleans and report by letter to the Surgeon-General of the Army for annulment of his contract.

MCCONATHY, HERBERT M., acting assistant surgeon, now in Washington, D. C., is relieved from duty in the department of Puerto Rico, and will report at Washington Barracks for assignment to duty with Battery M, Seventh Artillery, en route to San Francisco, Cal., for foreign service.

BENNETT, IRVIN E., acting assistant surgeon, now in Washington, D. C., is relieved from duty in the department of Puerto Rico, and will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

BROOKS, JOHN D., acting assistant surgeon, will proceed from Washington, D. C., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

CHABUT, L. D'ORVILLE, acting assistant surgeon, will proceed from Youngstown, O., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

CONDON, WILLIAM J., acting assistant surgeon, will proceed from Jamesburg, N. J., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

COSSITT, HARRY A., acting assistant surgeon, will proceed from Morris Plains, N. J., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

DEATON, U. S. GRANT, acting assistant surgeon, will proceed from Thackery, O., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

DEWITT, WALLACE, acting assistant surgeon, will proceed from Hampton, Va., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

HENDERSON, A. BRUCE, acting assistant surgeon, will proceed from Batavia, Mich., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

KELLOGG, WILLIAM V., acting assistant surgeon, will proceed from Detroit, Mich., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

LEWIS, HOWARD D., acting assistant surgeon, will proceed from Baltimore, Md., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

MABEE, JAMES I., acting assistant surgeon, will proceed from Rockwood, Mich., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

MACY, ROBERT C., acting assistant surgeon, will proceed from Mobile, Ala., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

PATTERSON, EDWIN W., acting assistant surgeon, will proceed from Washington, D. C., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

PERKINS, LOUIS J., acting assistant surgeon, will proceed from Pendleton, Oreg., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

PRESTON, WILLARD D., acting assistant surgeon, will proceed from Attica, N. Y., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

RUTLEDGE, JAMES C., acting assistant surgeon, will proceed from Detroit, Mich., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

SNYDER, CALVIN D., acting assistant surgeon, will proceed from Baltimore, Md., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

BROWN, Major IRA C., surgeon, leave granted to him is extended 20 days.

TRUBY, First Lieutenant ALBERT E., assistant surgeon, is granted leave for 20 days, from August 17, and upon expiration thereof will proceed from New York City to Havana, Cuba, and report to the commanding general, division of Cuba, for assignment to duty.

RICHARDS, First Lieutenant WILLIAM E., assistant surgeon, the acting assistant surgeons and the members of the hospital corps, U. S. Army, who arrived in New York harbor on August 11 on the transport "Sedgwick," from Puerto Rico, will report to the commanding officer, Fort Columbus, for temporary duty pending disposition.

The following changes in stations and duties of officers are announced: Major FREDERICK J. COMBE, surgeon, is relieved from duty in the department of Mindanao and Jolo, and will report to the commanding general, department of the Visayas, for assignment to duty; First Lieutenants JAMES S. WILSON and CLYDE S. FORD, assistant surgeon, are relieved from duty in the department of Northern Luzon, and will report to the commanding officers, Fourteenth Infantry and Twentieth Infantry, respectively, for duty with those regiments, relieving First Lieutenants EDWARD R. SCHREINER and BASIL H. DUTCHER, who will report to the commanding general, department of Northern Luzon, for assignment to duty; Contract Surgeon WILLIAM J. ENDERS will report to the commanding general, department of the Visayas, for assignment to duty; Contract Surgeon WILLIAM R. DAVIS will be relieved from duty in the department of the Visayas, and will report to the chief surgeon of the division for transfer to the United States for annulment of contract.

The following named medical officers will accompany the Second Battalion of the First Infantry and the Light Battery of the Second Artillery to the United States on the Government transport "Crook": With Second Battalion, First Infantry: Acting Assistant Surgeons J. F. DUNSHINE and A. A. NOUEL. With Light Battery F. Second Artillery: Acting Assistant Surgeon J. F. PRESNELL. Upon arrival in the United States, and when their services are no longer required with the troops they accompanied, the medical officers will report by letter to the Surgeon-General of the Army for further orders.

GIBSON, Major ROBERT J., surgeon, having reported at San Francisco, Cal., is assigned to duty as attending surgeon and medical superintendent of the Army transport service and as sanitary inspector of the department of California to relieve Major Wm. H. Arthur, surgeon.

ARTHUR, Major Wm. H., surgeon, will take station in San Francisco, awaiting transportation to Taku, China.

WADHAMS, S. H., acting assistant surgeon, now at San Juan, P. R., on leave, will appear before the medical examining board in session at San Juan, and upon completion of examination will return to his proper station.

SHAW, HERBERT G., acting assistant surgeon, is relieved from duty at the Army General Hospital, Presidio, and assigned to tempo-

rary duty on the Army transport "Sherman," to relieve Acting Assistant Surgeon Henry H. Bradley.

BRADLEY, HENRY H., acting assistant surgeon, will proceed to Camp Osborne, Idaho, for temporary duty at the camp during the absence on leave of Acting Assistant Surgeon J. P. Truax.

CUTLIFFE, WILLIAM O., acting assistant surgeon, is granted leave for 2 months with permission to visit the United States, to take effect upon the arrival of First Lieutenant F. F. Russell, assistant surgeon, at Mayaguez.

SCHULTZE, ERNEST C., acting assistant surgeon, is assigned to temporary duty with troops on the Army transport "Warren," to sail about August 16. Upon arrival at Taku, China, Surgeon Schultze will report to the commanding general, U. S. forces in China, for assignment to duty.

REBART, M. A., acting assistant surgeon, is granted leave for 1 month on account of sickness.

POWELL, DWIGHT C., acting assistant surgeon, now at Logansport, Ind., will proceed to Fort Thomas and report for duty with the Battalion of the Second Infantry, under orders for foreign service.

TAYLOR, DWIGHT B., acting assistant surgeon, will proceed from Columbus Barracks to Fort Thomas, arriving at the latter post not later than August 19, and report for duty to accompany troops to San Francisco, Cal., and upon the completion of this duty will return to his proper station.

TANNER, W. I., acting assistant surgeon, is granted leave for 1 month.

MILLEN, DANIEL, hospital steward, now at Washington, D. C., having relinquished the unexpired portion of furlough granted him from Fort Sam Houston, will be sent to Fort Wingate and report for duty.

GODFREY, Captain GUY C. M., assistant surgeon, the operation of par. 25, S. O. 185, August 8, H. Q. A., relating to him is suspended until further orders.

RAYNOR, WILLIS J., acting assistant surgeon, will proceed from Denver, Col., to Fort Washakie for duty, to relieve Acting Assistant Surgeon Alfred C. Godfrey.

GODFREY, ALFRED C., acting assistant surgeon, will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

NOUEL, AUGUSTE A., acting assistant surgeon, now at Fort Leavenworth, will proceed to New York City, and report by letter to the Surgeon-General of the Army for annulment of his contract.

MENAGE, HENRY E., acting assistant surgeon, now at New Orleans, La., will proceed to Fort Wingate for duty to relieve Acting Assistant Surgeon Charles B. Nichols.

NICHOLS, CHARLES B., acting assistant surgeon, will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

HACK, CHAS. W., acting assistant surgeon, is relieved from further duty in the department of Dakota, and will proceed to Columbus Barracks for duty.

CASS, Wm. E., acting assistant surgeon, will proceed from St. Louis, Mo., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

CLAYTON, GEORGE R., acting assistant surgeon, will proceed from Nevada, Iowa, to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

FLETCHER, PAUL R., acting assistant surgeon, will proceed from St. Louis, Mo., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

LEWIS, FREDERICK A., acting assistant surgeon, will proceed from Walworth, N. Y., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

MILLER, R. BOYD, acting assistant surgeon, will proceed from Millington, Ill., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

MILLER, THOMAS F., acting assistant surgeon, will proceed from Lamar, Mo., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

MINTZER, GEORGE S., acting assistant surgeon, will proceed from Philadelphia, Pa., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

RABBETT, JAMES A., acting assistant surgeon, will proceed from Elkins, W. Va., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

RENN, GEORGE A., acting assistant surgeon, will proceed from Raleigh, N. C., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

SEARS, C. EDWARD, acting assistant surgeon, will proceed from Salem, Va., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

HADLEY, JACOB F., assistant surgeon, will proceed from Passaic, N. J., to San Francisco, Cal., and report to the commanding gen-

eral, department of California, for assignment to duty with troops destined for foreign service.

HOGUE, GUSTAVUS I., assistant surgeon, will proceed from North Lake, Wis., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

SANBORN, CHARLES F., assistant surgeon, will proceed from Willard, N. Y., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

SILER, JOSEPH F., assistant surgeon, will proceed from New York City to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

WHEELER, LEWIS H., assistant surgeon, will proceed from Westport, Conn., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

WICKLINE, WM. A., assistant surgeon, will proceed from Warm Springs, Mont., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

PROBERT, MERTON A., acting assistant surgeon, will proceed from Constantia, Ohio, to Columbus Barracks for temporary duty.

PRESNELL, JAMES F., acting assistant surgeon, now at Fort Leavenworth, will report to the commanding officer of that post for duty with the First U. S. Infantry under orders for foreign service.

RICHARDS, First Lieutenant WILLIAM E., assistant surgeon, is relieved from duty at Plattsburg Barracks, to take effect upon the arrival at that post of Acting Assistant Surgeon David J. Johnson, and will proceed to Fort Ontario for duty to relieve Acting Assistant Surgeon George M. Bradfield.

BRADFIELD, GEORGE M., acting assistant surgeon, will proceed to Philadelphia, Pa., and report by letter to the Surgeon-General of the Army for annulment of his contract.

SHAW, Captain HENRY A., assistant surgeon, is relieved from further duty at the U. S. General Hospital, Presidio, and will proceed to Nagasaki, Japan, and report to Major Philip F. Harvey, surgeon, for duty at the U. S. General Hospital to be established at that place.

HIGGINS, AUBREY F., acting assistant surgeon, is relieved from duty in the department of California, and will report to the commanding general of that department for assignment to duty with troops destined for the Philippine Islands.

SAUNDERS, HERBERT F., acting assistant surgeon, will proceed from Greenville, Ala., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

The following-named assistant surgeons, now at stations designated, will proceed on the mail steamer "City of Peking," to Nagasaki, Japan, and thence to Manila, P. I., for assignment to duty: F. M. WALL, C. H. STOEKLE, G. S. DEAN, F. C. GRIFFIS, W. M. ROBERTS, W. H. TEFFT, J. W. HOLLAND, T. J. STRONG, C. C. WHITCOMB, D. H. LAMB, L. A. SPAETH, OSCAR F. DAVIS, E. F. SLATER and G. M. VAN POOLE, Army General Hospital, Presidio; W. E. CHAPMAN, E. E. LAMKIN and R. B. GRUBBS, Presidio.

Changes in the Medical Corps of the U. S. Navy, for the two weeks ended August 25, 1900:

ELMER, M. K., assistant surgeon, commissioned assistant surgeon from July 18.

LOWNDES, C. H. T., surgeon, commissioned surgeon from June 7.

GARTON, W. M., assistant surgeon, is detached from the "New York," and ordered to the "Massachusetts" immediately, temporarily, by the commander-in-chief of the North Atlantic Station.

COSTIGAN, C. D., passed assistant surgeon, is ordered to the "Monocacy" for additional duty with regiment of marines.

LUNG, G. A., passed assistant surgeon, is ordered to the "Monocacy" for additional duty with regiment of marines.

KENNEDY, J. T., passed assistant surgeon, is ordered to the "Monocacy" for additional duty with regiment of marines.

DAVIS, E., assistant surgeon, is ordered to the "Yorktown."

ALFRED, A. R., passed assistant surgeon, is ordered to the "Castine."

VON WEDEKIND, L. L., passed assistant surgeon, ordered to temporary duty at the headquarters of the Marine Corps, Washington, D. C., August 22, and then to the "Richmond."

WAGGENER, J. R., medical inspector, transferred from the naval hospital, Cavite, P. I., to the naval hospital, Yokohama, Japan, for treatment.

PICKRELL, G., surgeon, detached from the naval hospital, Yokohama, Japan, and ordered to the Cavite Naval Station.

NORTON, O. D., surgeon, detached from the "Monocacy," and ordered to duty with the marine regiment in China.

DOUGLASS, S. W., pharmacist, detached from the "Massasoit" and ordered to the Key West Naval Station immediately.

Changes in the U. S. Marine-Hospital Service, for the two weeks ended August 25, 1900:

WHITE, J. H., surgeon, to proceed to Jacksonville, Fla., as inspector, August 10. To proceed to Camp Perry, Fla., as inspector, August 14.

FRICKS, L. D., assistant surgeon, detailed by chief quarantine officer of the Philippine Islands as quarantine officer at Iloilo, P. I.; confirmed by department approval August 15.

THORNBURY, F. J., assistant surgeon, is granted leave of absence for 3 days.

STANSFIELD, H. A., assistant surgeon, is detailed by chief quarantine officer of the Philippine Islands as quarantine officer at Cebu, P. I.; confirmed by department approval August 15.

McISAAC, F. C., acting assistant surgeon, is granted leave of absence for 14 days, from August 3.

HOLSENDORF, B. E., hospital steward, letter of July 20, 1900, granting Hospital Steward Holsendorf leave of absence for 30 days, amended so that said leave shall be for 15 days only.

WARHANIK, C. A., hospital steward, is relieved from duty at New York, N. Y. (Stapleton), and directed to proceed to Vineyard Haven, Mass., and report to the medical officer in command for duty and assignment to quarters.

PURVIANCE, GEORGE, surgeon, will report at Washington for special temporary duty, August 20. To proceed to Baltimore Quarantine station as inspector.

CARTER, R. H., surgeon, granted leave of absence for 20 days from August 24. August 21.

WHITE, J. H., surgeon, to proceed to Baltimore Quarantine Station as inspector. August 21.

McINTOSH, W. P., surgeon, granted leave of absence for 7 day. August 17.

THOMAS, A. R., passed assistant surgeon, granted leave of absence for 1 month from September 15.

COFER, L. E., assistant surgeon, granted leave of absence for 1 month and 10 days from September 21.

BROWN, B. J., acting assistant surgeon, granted leave of absence for 14 days from August 12.

McKAY, W. W., acting assistant surgeon, granted leave of absence for 4 days. August 21.

STATON, LEE W., acting assistant surgeon, granted leave of absence for 10 days from August 12.

LAGRANGE, J. V., hospital steward, granted leave of absence for 10 days from September 11.

MORRIS, GEORGE A., of Michigan, appointed junior hospital steward, August 15.

Foreign News and Notes.

GREAT BRITAIN.

Plague in Glasgow.—Three cases of plague are reported in Glasgow. A member of the family (father, mother and child) having died on Tuesday, 40 families living in their neighborhood have been isolated. The death was the second resulting from the plague.

Midwives and Puerperal Fever.—Recently a midwife at Westminster was charged with manslaughter. A patient whom she had attended died of fever, and she was warned by the coroner and vestry officials not to attend another confinement for 6 weeks. She did so in defiance of the warning and her next patient caught the disease and died. The prisoner was discharged, as there could be no proof that the fatal disease was actually communicated by her.

Anthrax from Eating Veal.—A laborer at Cropthorne died a few days since after eating the flesh of a calf which had suffered from anthrax, and another man is very ill from the effects of a similar meal. Unfortunately, the report contains no information as to the symptoms. Infection via the stomach is an extremely rare occurrence; indeed, we cannot recall a previous instance of the kind, though possibly its occurrence might help to explain some of the mysterious deaths at present attributed vaguely to ptomain poisoning.—[*Medical Press.*]

The Study of Inebriety.—The Society for the Study of Inebriety has appointed a committee of medical men to inquire into the relation of heredity to the production of inebriety. Much progress has been made with the investigation. The committee are fully satisfied that drunken parents tend to have children who become drunkards, but they earnestly desire to obtain evidence bearing upon the question whether a parent who himself inherits no special tendency to inebriety can, as the result of mere intemperate habits, entail upon his children a potential inebriety.

A Backward Lunatic Asylum in Carnarvon.—According to the *Medical Press* the annual report of the Commissioners in Lunacy reveals a scandalous state of affairs in the North Wales Asylum at Denbigh. Among the many defects was a faulty drainage system and bad construction in the epileptic wards, so that the inmates cannot be properly

supervised. There are 40 more patients in the asylum than the number provided for. The wards are dull, gloomy, and cheerless, and few amusements are provided for the luckless inmates of this Welsh Bastile. Keys admitting to the female wards are allowed to the workmen, and there is a dangerous mingling of sexes in the laundry. The staff is reported to be entirely too small, and the high death-rate is attributed to insufficient ventilation combined with overcrowding.

An Embalming School for London.—The question of funeral reform has received some attention in England, though its discussion is apt to be shelved as too painful. It is probable that there may be differences of opinion as to whether the introduction of the practice of embalming would be a reform or not. Though rare in England, in the United States it is so widespread as to be quite general. Embalmers are, as a rule, licensed by the State Boards of Health, which often lay down stringent regulations with regard to the transportation and the treatment of the dead, more particularly where death has been the result of an infectious illness. Funeral customs in England differ so widely from those in America that it is doubtful whether embalming will find favor there. A course of lectures will be given by Professor C. Renouard, of New York, at the University College.

Grocers as Chemists.—An inquest was held on the body of a child at Lancashire recently after taking a portion of "headache powder." The evidence showed that she had been a healthy child and while playing in the street complained of headache. A "headache powder" was obtained from the local grocer, and the child was given half. She became ill during the night, and died before medical aid could be obtained. The jury returned a verdict of "misadventure through taking an overdose of acetanilid." The British Pharmacopeia considers 3 grains of acetanilid as an adult dose, but the child had been given more than this, though only half the powder. As, however, in 1898 the Pharmacopeia had fixed 10 grains as a maximum dose, the jury decided that the maker of the powder was not guilty of criminal neglect. For some occult reason phenacetin, antipyrin, acetanilid, and other reputed remedies for headache, are not scheduled in the list of poisons, and, owing to the danger involved in taking an overdose, there is surely scope for an extension of the Sale of Poisons' Act. Any grocer or other unlicensed person, as the law at present stands, does not infringe any statute by selling these drugs, and no objection would be raised if a layman ordered in his acetanilid or antipyrin by the ton. There is no check on the sale of these dangerous "cures." It is stated on good authority that one firm alone, that supplies grocers all over the country, advertises that the yearly sale amounts to hundreds of tons of this "headache powder."—[Physician and Surgeon]

Adulterated Vinegar.—In his annual report for the Parish of St. James, Westminster, Dr. Edmunds draws attention to several convictions which he secured under the Sale of Food and Drugs Act, against vendors of vinegar which was either not of the required strength or which had been treated with sulphuric acid. A pure malt vinegar should contain nothing but what is furnished to it by the barley, yeast, and water used in its manufacture. While it is true that mere traces of sulphuric acid may find their way into such a vinegar from the barley and water employed, it is safe to maintain that more than 0.03% of sulphuric acid has either been added to the vinegar or to the materials out of which it is made. Sometimes it is poured into the finished vinegar to preserve it, or is added to the grain in order to reduce it to a really fermentable substance. As to the strength of vinegar, an old Act, since repealed, fixed the strength of proof vinegar as a little over 6% by weight of real acetic acid. Such a vinegar keeps well, and acts efficiently as a preservative, whereas much weaker vinegar does not fulfil either requirement, and for dietetic purposes a vinegar can always be diluted to the consumer's choice. The Government Laboratory at Somerset House regards the acetous strength of commercial vinegar as amounting to at least 3% of real acetic acid. The result is, as pointed out by Dr. Edmunds, that makers of cheap vinegars water down their vinegar to just above 3% bottom limit.

CONTINENTAL EUROPE.

The Moscow Prize.—The prize of \$1,000, established at the Twelfth International Medical Congress at Moscow, in 1897, for medical work of the greatest benefit to humanity, has been awarded to Professor Ránnon y Cajal, for his researches on the minute structure of the nervous system.

Cobwebs as a Styptic.—It is an ancient practice, in certain parts of the country, to apply spiders' webs to a bleeding point in order to control the hemorrhage, regardless of the fact that a poisoned wound or even tetanus may be the eventual sequel of this rough and ready dressing. In a recent paper read by Monsieur Pécus before the Central Veterinary Society of Paris, he described the case of a horse which was hurt in one of its forelegs. Spiders' webs were applied to stop the bleeding; soon afterwards the leg became swollen and the animal developed horse-pox. After careful investigation it was found that the cobwebs had been obtained from a cow-house where several of the cows were suffering from cow pox, and the infection had been conveyed in this way. Monsieur Henri de Parville holds the view that spiders' webs are a source of infection owing to the presence of microbes brought to the webs by the medium of flies.—[Physician and Surgeon.]

MISCELLANY.

Cholera in India.—The present epidemic of cholera in India is one of the worst outbreaks on record. The natives are said to be dying at the rate of 3,000 a week. The epidemic is undoubtedly due to the pollution of the scanty water-supply during the famine.

Emperor of China Said to have Cancer.—Dr. Bachman of Shanghai asserts in the *Gegenwart* that Emperor Kwang-Su suffers from cancer of the throat, and that he is unable to reign. The same view is taken by Dr. Detheré, a French physician, and by Dr. Sheng-Liang-Feng, both of whom have examined the Emperor.

Elephantiasis.—It has been announced that the second malarial expedition of the Liverpool School of Medicine has discovered the distributing agent of elephantiasis. The parasite was found in the proboscis of the mosquito, which of course suggests the probability of that insect being the actual means of conveying the filaria to man. A similar discovery has been made in England by Dr. Low, in the case of mosquitos sent from Australia, and from Captain James in India.

The Cost of Disinfection.—The taxpayers of Sydney, Australia, will have reason to regret not having kept the city in better order, since the cost of disinfection and cleansing necessitated by the recent outbreak of plague is about £100,000. The amount can cause no surprise when one learns that some 5,000 dwellings had to be cleansed, along with 808 shops and houses, 308 yards and stables, 314 warehouses, and 107 factories and mills, and these figures do not include wharves or places where the cleansing process is still going on.

Obituary.—JOHN ANDERSON, of New Cross Road, S. E., August 9, aged 82.—KINGSFORD BURR, at Salisbury Road, Hove, August 10, aged 79.—FREDERIC BLAKESLEY MALLETT, Newport House, Bolton, August 8, aged 59.—WILLIAM DREW PARSONS, of Liverpool, August 7, aged 84.—DANIEL JAMES O'CALLAGHAN, of London, aged 85.—NICHOLAS CRETZULESCO, of Bucharest, aged 92.—ANDREW HENRY BLAKE, of Bayswater, August 10, aged 60.—SAMUEL WAGSTAFF SMITH, of Cheltenham, August 12, aged 65.—JAMES HENDERSON STEPHENSON, of Glasgow, August 2, aged 47.—JAMES HENRY RICE, of Sandbach, August 8.

Medical Schools in China.—There are only 2 medical schools in China, 1 at Hongkong and 1 at Tientsin, and these are of recent date. The great mass of Chinese practitioners have learned their physic out of books of magic. A plaster (a soft one) is applied to a broken leg; a live duck split in two is the common poultice. Duck's blood is smeared on the face to relieve fever and headache, and "dragon's" blood and deer's horn are the popular remedies for leprosy. The most important part of the treatment for all diseases, however, is the burning of printed emblems, beseeching the evil one to ward off illness and death.

The Latest Literature.

British Medical Journal.

August 11, 1900. [No. 2067.]

1. The Maternal Mortality in Childbed. WILLIAM J. SMYLY.
2. On the Prevention of Insanity. R. PERCY SMITH.
3. Ocular Headaches. W. A. BRAILEY.
4. Introductory Address — Nasal Obstruction. SCANES SPICER.

1.—Smyly states that in the first half of the present century the **mortality among parturient women**, especially in hospitals, was probably greater than in any other period of the world's history. Towards the close of the 70's, however, a sudden and satisfactory change took place, and the mortality has dropped from 9% to less than 1%; the greatest improvement being in that class of cases in which death was due to puerperal fever. This was owing to the recognition that infection could be carried from one patient to another by the physician or other attendant, and to the introduction of antiseptics into obstetric practice since 1870. Next to the introduction of antiseptics, he considers the substitution of external for vaginal examination of parturient women as the most important advance in modern midwifery. He endorses the opinion of Crédé, who wrote as follows: "Even the simplest manipulation may cause infection. It should therefore be laid down and taught as a fundamental principle that internal examination of parturient women should be altogether avoided or restricted within the narrowest possible limits; it can be very well replaced by external examination. To instruct their pupils as thoroughly as possible in this method is the present and future duty of teaching institutions." Smyly believes that external examination is not only safer but that it gives more information to the examiner, is easier and more reliable. Not only has his own experience proved this, but in the Rotunda Hospital, where the students are obliged to write down upon the bedcards the result of each examination, mistakes in diagnosis were much more frequent with the vaginal than with the external or abdominal method. If, however, vaginal examination is necessary, as it is under certain conditions, then aseptic rules should be most carefully observed. It is thought that in the maternity mortality in private practice there has been far less improvement than in hospitals, and he urges the faithful observance of the principles herein sketched by all who have the care of parturient women. [W.K.]

2.—There was an **increase of 3,114 in the number of insane** in England and Wales under the care of the Commissioners in Lunacy, in 1898. This increase has affected all classes; the private class, the pauper class, and the criminal class. There was an increase in the rates of the insane so that there was 1 insane person to every 302 individuals. Inheritance is the largest cause of insanity. As shown by statistical tables the presence of insanity in a family demands from its members at least some serious reflection before marriage is entered upon. In this connection it is often in the power of medical men to give advice that may prevent the union of two bad stocks. The existence of insanity is concealed where large property is concerned and where there are several marriageable daughters in a family of limited means and where it is thought that the avowal of insanity in the family will "ruin their chances," as if the chief object in life were to propagate defective individuals. Again, concealment may take place from ignorance or carelessness. In the case of persons who have themselves suffered from a definite attack of insanity marriage should be absolutely forbidden. The popular idea is that the patient is sure to be all right when she is married, and medical men have not always the strength of mind to inform the relatives that the likelihood of insanity after childbirth is greater in such cases than the likelihood of stability. A congenital imbecile should not be allowed to marry and marriage should not be permitted in the case of chronic epileptics. Next to heredity, alcohol figures most largely in the causes of insanity. Statistics show the effect of alcohol on the individual alone and take no note of alcoholic inheritance as leading to the production of insanity, idiocy, alcoholism, hysteria, epilepsy, or

other neuroses in the offspring. Acquired syphilis is one of the most potent predisposing causes of general paralysis, and recently cases of juvenile general paralysis have been recorded, in practically all of which a history of parental syphilis was found. Smith believes that for the **prevention of insanity** the profession, at least, should seriously consider methods of reducing the propagation of the race by those of insane inheritance or those who have suffered from insanity. That it should consider the influence of alcohol in the production of insanity and the need for preventive legislation. And that it should consider the causation of general paralysis by syphilis and the advisability of registering syphilis so that it may be controlled. [J.M.S.]

3.—Brailey discusses **ocular headaches**, that is headaches in association with refractive and muscular errors. Muscular errors are by far the most important; other influences are glare and sudden irregularities in the distribution of light. Both the intrinsic and extrinsic muscles of the eye are concerned. Defects in accommodative movements are responsible for most of the ocular headaches. It is a general law that the larger the ocular error the less the tendency to headache; but both spasm and headache are produced more by moderate inequality of refraction, especially if it be astigmatic, and most of all by astigmatism with asymmetry of the axes. Errors of the extrinsic muscles produce headache, but less than the accommodative muscles, though more migraine, more giddiness, and more general distress. Another factor in headache is the tendency to binocular vision, and so the rule: the stronger the tendency to binocular vision the more headache produced by an error of the recti and oblique muscles. [A.B.C.]

4.—In his address before the Section of Ophthalmology and Laryngology, Spicer said there could be little doubt that in the past the **specialist** was only too often a mere skilled artisan, working in a groove, and with no eye for any considerations outside, and with little conception of the relations and interdependence between the phenomena of his field and those of the organism generally and the external world. Thus he deserved many of the reproaches that were levelled at him. At the present day, however, all that is changed, and any specialist worthy of the name, is not only a master of his special technic, but has a real living appreciation of physical, chemical, and biologic sciences, a thorough knowledge of the principles and up-to-date practice of medicine and surgery, and he also takes a wide, philosophic outlook from the evolutionary and developmental standpoint, and is ready to apply light from each of these sources to the elucidation of each problem that confronts him. He further said: To this newest generation we have good reason for self congratulation that we belong. For whereas we find in our own country that the men who are now holding aloft the standard and fighting in the front rank as specialists in our branches, are men who have won their spurs by gaining the highest university and academical distinctions in original, scientific researches, and in honorably maintaining the efficiency and reputation of our art in practice; on the other hand, on the Continent, and in America, we find the universities giving to our specialities and their professors a recognition equal to that of any other branch of medicine or surgery, even selecting from among our ranks to the post of University Professor of General Medicine one who has devoted his life to our speciality. I refer to Professor von Schrötter, of Vienna. It cannot be long now before laryngology and otology take full rank in all university and qualifying tests in this and all countries. The author discussed **nasal obstruction**, saying that such obstruction to the passage of the inspiratory current will necessarily be followed by a fall of air-tension behind the obstruction. This leads to changes in the membrane, lining the various air-passages, and sinuses, and consequent pathologic changes. He believes even the very slight obstructions which tend to persist are capable of setting up this abnormal condition. Most cases of nasal obstruction are due to injury, and this may follow, even though the injury be very slight. Frequently, patients are submitted to an operation for adenoid growths, whereas the trouble is due entirely to nasal obstruction. Very often, postnasal adenoid hyperplasia does not exist, or is very insignificant. He says that hundreds of operations for adenoids are done unnecessarily every year. Great stress is laid upon the prevention of nasal obstructions by prophylactic treatment in early life. [A.B.C.]

Lancet.

August 11, 1900. [No. 4015.]

1. Maternal Mortality in Childbed. WILLIAM J. SMYLY.
2. The Prevention of Insanity. R. PERCY SMITH.
3. The Remote Results of Structural Lesions ("Interventions Sanglantes") in Urethrostenosis. REGINALD HARRISON.
4. The Indications of Thyrotomy. SIR FELIX SEMON.
5. A New Disease with a Specific Urinary Reaction. N. F. SURVEYOR.
6. Eczema and the Allied Diseases; an Outline of their Etiology, Pathology, and Treatment. W. T. FREEMAN.
7. A Case of Puerperal Septicemia Treated by Antistreptococcic Serum, and Complicated by Phlegmasia; Recovery. A. HAMILTON WOOD.
8. The Sympathetic Origin of Postenteric Tachycardia. P. CLENNEIL FENWICK.
9. A Case of Foreign Body (Clinical Thermometer) in the Bladder; Lithotripsy; Recovery. JOHN H. MORGAN.

3.—From examination of lesions resulting in the treatment of urethral strictures Harrison concludes that in **periuethral strictures** of the deep urethra division as practised in Perreve's and Holt's operation may be limited to rupturing the dense stricture bands in the submucosa, whilst the mucous membrane itself escapes any injury. In such cases permanent cure may result. On the other hand, where the mucous membrane is in itself the seat of stricture it is necessarily torn or lacerated by sudden division, exactly as from traumatism of accidental external violence which are followed by strictures of the most contractile and recurrent form. When the entire thickness of the stricture can be included within the incision of moderate dimensions made by an internal urethrotome the normal caliber of the urethra may be completely and permanently restored. When this happens all the fibers of contraction constituting the stricture are divided at the operation. Absence of recurrence under such circumstances is not necessarily dependent on the use of the bougie, though it should be invariably advised as a precautionary measure. Multiple strictures or strictures of the deep urethra treated by internal incision have a tendency to recur. In case of recurring strictures previously treated by incision and in primary strictures of much length there is doubt whether it would be safely possible to perform the internal operation. Such wounds should be made with due regard to other surgical principles in addition to the one pertaining to the division of the contraction. The tendency to recurrence of stricture after internal urethrotomy is largely diminished by the employment of systematic and efficient urine and wound drainage, such as the combination of external urethrotomy or perineal puncture affords. [M.B.T.]

4.—Semon mentions the following indications for the performance of **thyrotomy**. The operation is advisable for the removal of such foreign bodies as it has been found impossible to remove by ordinary means through the natural passages. It is considered a procedure of slight risk. It is also indicated in rare cases of injury to the larynx in order to replace dislocated fragments in case of severe fracture of the larynx, and, if necessary, to retain them in position by a tube introduced through the mouth or from a tracheotomy opening. Laryngocele or laryngeal air-cysts are also extremely rare. If symptoms are threatening thyrotomy with extirpation of the cyst is indicated. In case of stenosis of the larynx which may result from ulceration of the mucous membrane from perichondritis, particularly of syphilitic origin, hyperplastic inflammatory processes, congenital webs, adhesions between the vocal cords, ventricular bands or ulceration from external wounds, scalding, syphilis, typhoid fever and other causes, or in narrowing following the use of O'Dwyer's tubes, thyrotomy may be indicated. The indications for thyrotomy in acute laryngeal perichondritis are extremely rare. In case of **laryngeal tuberculosis** Goris has recommended the **operation** if the lesions be circumscribed and if the general nutrition of the patient is good, even though the lungs be much affected. It is not desirable in case the general health is very bad. Goris and Semon have both had successful results following thyrotomy with removal of the ulcerating surface, scraping the base of the ulcer and the application of pure lactic acid. Semon's case remains cured 3 years after operation. A danger in these cases is from tuber-

culous infection of the wound. The operation has been once successfully performed for lupus of the larynx. Scleroma of the larynx is a rare indication for the operation. It may be required in case of benign growths in which it has been found impossible to remove the growth by the intralaryngeal operation. The operation is most frequently indicated for the removal of malignant growths, and in order to be successful it must be undertaken very early. The growth itself with a zone of surrounding healthy tissue should be removed and the operation should be performed only in cases in which the disease is limited and situated within the larynx without infiltration of the cervical lymphatic glands. Semon has succeeded in curing 83.3% of all patients upon whom he has operated. [M.B.T.]

5.—In the case of a woman who cut her thumb, there was considerable hemorrhage from the wound, and healing was delayed. About 3 weeks after the accident, the patient had an attack that was characterized by swelling of the left side of the face, with redness, heat, and pain. The swelling was edematous in character and involved the region of the parotid gland, the cheek, the nose, the lips, and the eyelids of the left side. The involved area was covered by a small, vesicular eruption. On examining the urine of this patient, Surveyor added a drop of strong caustic soda solution to the sediment obtained with the centrifuge and noted the development of a bright, pinkish-purple color. The patient had been taking a mixture containing carmine as a coloring-matter, and the author thought that some idiosyncrasy on the part of the patient caused abnormal excretion of the substance; but, in a second attack of the trouble, carmine was withheld and the reaction occurred just the same. The administration of carmine to other individuals failed to produce the reaction. The author is of the opinion that the **reaction is a specific one characteristic of a new disease**. [J.M.S.]

6.—Freeman defines **eczema** as a serous inflammation of the skin not produced by any form of external irritant. He believes that the disease is caused by a specific organism, possibly the "monococcus" of Unna. Among other dermatologic conditions that may be confounded with or that are **closely allied to eczema** are pyoderma, psoriasis, seborrheic dermatitis, dermatitis herpetiformis, granuloma fungoides in its early stages, lupus, seborrhea, and impetigo contagiosa. In the treatment of the condition the author lays much stress on cleanliness and the removal of crusts regularly. He thinks very highly of dusting powders of French chalk, oxid of zinc, or starch. Less value is attached to the general than to the local treatment of the affection. [J.M.S.]

7.—Wood reports a case of **puerperal septicemia complicated with phlegmasia** treated with antistreptococcic serum, in which he considers the favorable result largely due to the use of the serum. There were in this case no bad or uncomfortable after-effects of any kind from its use. [W.K.]

8.—Fenwick suggests that the **cardiac irritability noted in cases of convalescent typhoid fever** are due to a sympathetic disturbance arising in the superior mesenteric plexus and thence transmitted to the cardiac ganglia and plexus. The superior mesenteric plexus supplies that portion of the intestine chiefly attacked by the typhoid poison and is very closely connected to the cardiac plexus. [J.M.S.]

9.—A woman of 32 entered the hospital with very severe symptoms of cystitis and stone in the bladder. Lithotripsy was performed and in washing out the crushings several particles of glass and globules of mercury were found to be mixed with the fragments of the stone. The remnants were boiled with strong HCl and filtered and the glass and mercury remained. An examination of the fragments showed that the glass and mercury were probably from a **clinical thermometer**. It was impossible to determine from questioning the patient when or how the thermometer was introduced **into the bladder**. [M.B.T.]

New York Medical Journal.

August 25, 1900. [Vol. lxxii, No. 8.]

1. The Annual Address of the President of the American Laryngological Association. SAMUEL JOHNSTON.

2. On a New Method of Operation for Exstrophy of the Bladder. CARL BECK.
3. A Case of Cyst of the Epiglottis. W. L. BULLARD.
4. Bladder Incrustations, Multiple Phosphatic Calculi; Median Lithotomy, Irrigation, etc. J. COPLIN STINSON.
5. A Case of Murphy-Button Anastomosis. WILLIAM C. WOOD.
6. Laryngitis a Provoking Cause of the Asthmatic Paroxysm. WILLIAM C. GLASGOW.
7. Secondary Hemorrhage Following the Use of Suprarenal Extract. FREDERICK E. HOPKINS.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1003.

2.—Beck describes a new and ingenious method of operating on **exstrophy of the bladder**. The margins of the exstrophied bladder were freed and dissected up for about 1 cm., which allowed the freshened edges to be easily approximated. Both recti muscles were then exposed and incised along their internal margins to the extent of a little less than half their thickness. Two transverse incisions, one just above the symphysis and the other just below the umbilicus, connecting the outer and inner margins of each rectus muscle and extending down into the substance of the muscle for half its thickness, completed the outlines of the flaps. Beginning at the internal margin of the incision, the upper layers of fibers of the recti muscles were divided, until the flaps so formed could be lifted near their outer margin, with which they remained connected after the manner of a hinge. The bladder walls now being united with thin iodoform-silk sutures the reflected muscular flaps were united above them. [G.B.W.]

3.—Bullard reports the case of a **cyst** on the anterior surface of the **epiglottis**. It was about the size of a small filbert and had a broad base. It was finally cured by incising and cauterizing the inside of the sack with a chromic acid. [G.B.W.]

4.—The case reported by Stinson was one of **phosphatic incrustations on the bladder-wall** with the formation of numerous small calculi, which persisted seemingly in spite of all treatment. Finally a median lithotomy was done and the crustations carefully and thoroughly removed, though this was not accomplished without considerable difficulty. A drainage tube was left in the perineal wound for 6 weeks, the wound healing within 3 days after its removal. During the treatment following the operation it was found that the only solution which would keep the urine acid and prevent the formation of incrustations was a **solution of quinin**, 2 grains to the ounce of a 1 to 10,000 solution (at first) of sulphuric acid. A good recovery was finally secured, and at the time of the last report the patient's urine and micturition were normal. [G.B.W.]

5.—This patient had been gored by a cow and when found had two loops of his intestine protruding through the wound. One of these loops had been badly torn, necessitating resection and **anastomosis with a Murphy's button**. After carefully washing the intestines and abdominal cavity with hot normal salt-solution the abdomen was closed with silk-wormgut sutures. The patient was discharged from the hospital cured on the thirty-fifth day. [G.B.W.]

6.—Glasgow says that it is now generally admitted that **asthma is a vasomotor neurosis** and that the paroxysm is provoked by some peripheral irritation of the sympathetic nerve. This irritation usually lies on either the posterior surface of the turbinates, the interarytenoidal commissure, the posterior surface of the trachea or the membrane at the bifurcation of the trachea, as these have been demonstrated to be the most sensitive areas in the respiratory tract. It is unquestionably an irritation of one or more of these areas which produces reflex cough and it is most probable that a similar irritation produces the symptoms of asthma. According to Glasgow's experience the interarytenoidal area seems to be the most frequent site of the irritation and this in many cases is due to a primary laryngitis, entirely independent of any pathological condition of the nose. He reports a number of cases in support of this latter assertion, all of which were apparently cured by the laryngeal applications. He ends his article by saying that constitutional treatment is a necessary adjunct to the local because in almost all cases there is an inherited tendency toward the disease which can only be successfully combated by keeping the patient in the best of health. [G.B.W.]

7.—Hopkins has found, after a rather extensive use of **suprarenal extract** in intranasal operations, that there is a marked tendency towards secondary hemorrhage, the bleeding coming on in from 2 to 4 hours after the operation. He has written to a number of specialists, and with one exception they all report finding the same trouble. He believes that the mixture of cocain and suprarenal is followed by relaxation sooner than when the suprarenal is used by itself in the majority of cases. After operating in the nose when suprarenal is used it is best in every instance to pack the fossa and so be on the guard against the secondary bleeding. A by far less common sequel to the use of suprarenal is an intense coryza, induced by the secondary relaxation. Hopkins reports 2 such cases. [G.B.W.]

Medical Record.

August 25, 1900. [Vol. 58, No. 8.]

1. Errors Caused by the False Interpretation of the Röntgen Rays, and their Medico-Legal Aspects. CARL BECK.
2. The Presence of Virulent Tubercle-Bacilli in the Healthy Nasal Cavity of Healthy Persons. NOBLE W. JONES.
3. Anuria Followed by Retention of Urine in a Case of Hysteria. ALFRED GORDON.
4. What are Necessary and Desirable Data upon Health Resorts? EDWARD O. OTIS.
5. Tumor Albus. FRANK E. PECKHAM.
6. A Further Report Upon the Use of Pure Carbolic Acid in the Treatment of Mastoid Wounds and Chronic Suppuration of the Middle Ear. WENDELL C. PHILLIPS.

1.—In order to avoid possible errors by false interpretation of **x-rays** Beck calls attention to the following sources of error. Without a thorough knowledge of anatomy normal structures may be mistaken for foreign bodies or severed fragments from fractured bones. The carpus is especially likely to produce such errors. The os trigonum tarsi has been mistaken for a fragment severed from the astragalus. Muscular sesamoids may also mislead. Unless the time of ossification of various epiphyses is remembered they may be mistaken for lines of fracture. The normal skeleton should always be compared with the skiagraph and it should be particularly remembered that certain pathologic conditions, such as rachitis, influence the outlines of bones and may be supposed to represent a portion of an injury. The intraarticular fractures offer the greatest diagnostic difficulties, as the fracture-line is also often obscured by callus formation. If a skiagraph of the other joint is made at the same time, in the same position, and in the same projection, the shadows will be correctly understood and interpreted. In oblique fractures with no lateral displacement it may be necessary to take at least 2 skiagraphs in different planes before the injury will be recognized. Misinterpretations have also arisen from **mechanical and chemical defects**, causing markings in the **photographic plate**. [M.B.T.]

2.—Jones says that experiments have proved that it is possible for the **dust laden with bacilli from dried sputum** to infect guineapigs by inhalation, and also fine droplets of mucus expelled by tuberculous patients by forcible exhalations as coughing or sneezing will do the same. In the latter, close proximity and frequent attendance are necessary when this is applied to attendants on such patients. Strauss made cultures from the contents of the respiratory portions of the nasal cavities of 29 hospital patients and employees who were not tubercular, and these cultures were injected into the peritoneal cavities of 29 guineapigs. Seven died of acute peritonitis or septicemia, and 9 of tuberculosis, showing the bacillus to have been present in the noses of 40.9% of the individuals. The author made cultures from the respiratory portions of the nasal cavities of 31 healthy persons not connected with the haunts of tuberculous patients or with laboratories. The cultures were injected intraperitoneally into 31 guineapigs. One died in a few hours of septicemia, 1 in 3 days of peritonitis, 22 of pulmonic lesions of unknown origin and in which negative bacteriologic results were obtained, 3 of pyemia, 1 was drowned, and 3 died positively of tuberculosis. The results show that *Bacillus tuberculosis* was present in 10.3% of these healthy individuals. One of the 3 was a second-hand furniture dealer, and the other 2 were students. [J.S.]

3.—Gordon reports the case of Mrs. S—, aged 45,

mother of 8 children. She had typhoid at 35, since when she has not been strong. She presents some features of being a degenerate. Menstruation was always normal. Following several severe family illnesses, she developed sudden **anuria**, but no signs of the effects of suppression of urine could be seen. There was no vomiting, no discomfort except the mental effect, the bowels were regular, and there was slight perspiration at one time with no urinous odor. The treatment was milk and other fluids freely, strychnia, and hot applications to the back. The only signs of hysteria were anesthesia of the sole of the right foot and narrowing of the visual fields. About the fourth day the patient was told that frequent applications of a lotion of chloroform and alcohol over the kidneys would positively cure her, and on that day she passed over a pint of urine. She was entirely well the next day. Four days later she developed sudden retention, and this continued until she was assured that similar applications of a lotion of alcohol and tincture of opium over the bladder would remove her trouble, and after the first rubbing she was cured. Three weeks later her visual field was found to be much larger and the plantar anesthesia was replaced by a pharyngeal anesthesia. The author explains this anuria and retention as follows: He believes in the theory of ameboid movements in the neurons. In the formation of a habit, the ends of the neurons are brought frequently in relation, and automatic action takes place when the relation of contact is established. In this case, a psychical influence—mental strain—broke up the normal equilibrium of the neurons in the brain and cord so that normal contact was interrupted, and a reflex reaction was produced in the renal center. Suggestion,—a new psychic phenomenon,—reestablished the lost equilibrium. The intense moral impression of mental strain acting on the cerebral centers produced a reflex action affecting the vasomotor centers in the medulla and cord. These centers send fibers through the sympathetics to the renal plexus, from which muscular fibers go to the bloodvessels of the kidneys and contract them, causing suppression. Similar reflexes in this case affected the center in the cord for contraction of the vesical sphincter. [J.S.]

4.—Otis thinks that, in describing the advantages of a **health-resort**, an accurate, full, and reliable classification is necessary, and he advises placing them under 2 main heads: 1. Natural advantages, including climatic data, as temperature, moisture, etc., elevation from the sea, configuration of land, existence and form of water-courses, character of soil and vegetation, and presence of insect-life. 2. Artificial advantages, including population, drainage and water-supply, existence of a reliable health-board, characteristics of the town (buildings, churches, streets, amusements), roads, hotel accommodations and expense of living, food-supply, sanitation, medical science, etc. [J.S.]

5.—Peckham discusses the pathology, symptoms and treatment of **tuberculous arthritis of the knee** briefly. He disagrees with Nichols in his statement that the disease usually begins in the epiphysis and believes that there are many cases in which the synovial membrane is first affected. He advocates conservative treatment, fixation with plaster of paris and taking the weight off the diseased limb in many cases. If these measures fail arthrectomy is generally required—excision occasionally and amputation as a saving measure. He reports 5 cases in which he has successfully performed arthrectomy. [M.B.T.]

Medical News.

August 25, 1900. [Vol. lxxvii, No. 8]

1. The Construction and Management of Small Cottage Sanatoriums for Consumptives. ARNOLD C. KLEBS.
2. Cooperation of the Public Schools in Teaching "Good Teeth, Good Health." RICHARD GRADY.
3. Tuberculosis and Modern Methods for its Prevention. H. H. VINKE.
4. The Abortive Treatment of Acute Mastoiditis. JAMES F. McKERNON.
5. Medullary Narcosis During Labor. A Preliminary Report. S. MARX.

1.—Klebs favors the erection of **sanatoriums** for the treatment of tuberculosis, in various parts of the country, and not far from the large cities, which offer the

chief source of supply of patients. In them the patients should be taught the hygienic measures necessary to prevent the spread of the disease, and they in turn will become teachers to other sufferers not able to be in the institutions. The chief aims in view in the erection and management are: To supply the greatest possible amount of fresh air and sunlight; a supply of good food, easily obtained if near a large city; protection from reinfection; cheerful surroundings, with means of occupation, recreation, and entertainment for the inmates during their long confinement; a strict, daily regime adapted to each individual case; instruction in hygienic measures; a corps of physicians, nurses, and assistants to carry out therapeutic measures. Sanatoriums should be small, so that the number of patients may be limited, in order that the medical adviser may be able to have the proper supervision over each case. The author's plan is a building consisting of 3 cottages joined by 2 galleries. The main or central building contains on the first floor the offices and bedrooms of the superintendent or head nurse, and on the second floor rooms for bed-ridden patients, with balconies on the southern exposure, where the beds can be wheeled during the day. The laundry and other necessary adjuncts are in wings or annexes to the north. The galleries connecting the other cottages with this one are open on the south, and can be opened on the north as well in summer. The roof is arranged to admit sunlight to all parts, but it may be excluded when necessary. This arrangement admits fresh air and sunlight both in winter and summer. The other 2 cottages contain separate rooms for each patient, facing the south, and with the corridors on the north, with windows reaching to the floor and opening out on verandahs. Bath-rooms and water-closets are in easily accessible annexes, and each room has a separate water-supply and a portable bath-tub that may be placed under the bed. [J.S.]

2.—Grady speaks of the great importance of care of the **mouth and teeth in children** as a prevention of caries and also diseases of the digestive tract and systemic disorders. For 20 years he has been a visiting dentist to schools and also has a large practice among children. He strongly advises as prophylactic measures the routine examination of teeth in schools, and instruction of the pupils in the use of the tooth-brush—an unknown article to most of them. Dental inspectors are appointed by the school boards in Ontario. He suggests that members of the graduating classes in dental colleges be appointed as voluntary inspectors. This examination of the teeth is as important as teaching physiology or physical culture or music, and he thinks the best way to educate the public is through the school children. A tooth-brush drill should be part of the instruction, showing them how to brush the upper teeth downward and the lower ones upward, and then following this by rinsing the mouth with water or some mild antiseptic solution, with the lips closed, and forcing the water through the crevices between the teeth. [J.S.]

3.—Vinke states that all the other contagious diseases combined do not cause so many deaths as **tuberculosis**. Neither the bacillus nor hereditary tendency alone can cause the disease, but both must be combined. We cannot change faulty inheritance, but we can limit the possibility of infection, and as the most frequent source of this is from inhalation of dried sputum in dust, it is essential to teach the laity the dangers of such infection and to disinfect all sputum from tuberculous patients. Those having the disease should be isolated in suitable sanatoriums, when possible. All meat and milk, particularly when ingested by children, should be rendered noninfectious. He lays much stress on the early recognition of phthisis, so that these measures may be carried out as soon as a patient is dangerous to others. In addition to the usual signs in the incipency, he mentions a slight afternoon rise in temperature not otherwise accounted for; a fairly constant dilation of the pupils; and an increased frequency in respiration. [J.S.]

4.—McKernon enters a strong protest against the use of moist heat in cases of **mastoiditis**, while, on the other hand, he believes thoroughly in the application of cold over the inflamed area. His method of treatment is, first, to establish free drainage through the external canal, widely incising the drum-membrane, if the opening made by nature is not already sufficient; a purgative is given, and an ice-coil is applied snugly over the mastoid, and left in place for 24 hours.

If at the end of this time the symptoms have not markedly subsided, the coil should be reapplied for 12 hours, and a second 12 hours if necessary. If at the end of this time symptoms have not moderated or have increased in severity, operation is called for without further delay. In young children the limit of time which the coil should be applied is 36 hours; if then the pain still persists, a rest of a few hours should be granted before proceeding to open the mastoid. [G.B.W.]

5.—Stimulated by the results obtained by Tuffier and Kreis, Marx began a series of experiments in **medullary narcosis during labor**, and now gives a detailed account of 5 cases as a preliminary report. These cases though few in number warrant him in stating that in lumbar cocainization we have a method which is of the greatest value in producing analgesia, which checks almost entirely the pains of labor without, so far as his personal experience goes, the least danger to mother or child. Complications of a severe grade have never occurred from its use; but some disagreeable though evanescent features frequently occur, such as nausea, vomiting, headache, slight increase in pulse-rate and rise in temperature; these, however, seldom continue more than 8 to 12 hours. The technic in medullary narcosis is as follows: The patient's back, from the coccyx to the middle of the dorsal vertebrae, is thoroughly scrubbed with tincture of green soap and alcohol and ether. This is followed by a saturated solution of permanganate of potash which is removed by a supersaturated oxalic-acid solution. The entire area is then covered with sterile towels. A needle about 10 cm. long is employed with a metal hypodermic syringe, both of which are boiled 10 minutes. The patient is placed on the side with arched back. The thumb of the left hand is placed on the spinous process of the fourth lumbar vertebra. (This point may readily be found by locating the deep depression between the spine of the last or fifth lumbar and first sacral, the posterior landmark of the external conjugate, or, in very fat women, a line drawn joining the highest points of the crista ilii will pass over the center of the fourth lumbar vertebra and is a reliable guide.) The needle is inserted half an inch in front of and just outside the edge of the thumb at an angle of about 165°. The direction of the needle is from below upward and without inward. If the point strikes the lamina it is to be moved gently up or down until the space between the vertebra is felt. The puncture may be made either between the third and fourth or fifth vertebrae. The point is then pushed slowly and gently downward until the spinal fluid is seen running out. Ten minims of a cocain solution, representing $\frac{1}{2}$ grain, is now injected and the needle withdrawn. This is all that is necessary. In from 7 to 12 minutes after the injections the pains are very much diminished or entirely allayed, there being a sensory paralysis of the lower part of the body reaching to the umbilicus. Motor disturbances, so far as the uterus and its contractions are concerned, were not noted. The analgesia continued about 3 hours when the woman began gradually to feel the painful uterine contractions. The results in the cases reported were very satisfactory. Marx suggests the use of this method in cases of prolonged and tedious labor, as anesthesia can be produced without interrupting the course of labor in any way. He, however, is not prepared to recommend such measures in private practice until further hospital experience shall fully justify it. [W.K.]

Boston Medical and Surgical Journal.

August 23, 1900. [Vol. cxliii, No. 8.]

1. Medicine as a Science and Medicine as an Art. PHILIP H. PYE-SMITH.
2. Repeated Ectopic Gestation in the Same Patient, with Operation in each Case. MALCOLM STORER and M. T. THURBER.
3. The Mortality of Hysterectomy for Fibroids. F. H. DAVENPORT.
4. Hysterectomy for Myoma in America. ERNEST W. CUSHING.
5. Immediate Repair of Perineal Tears. E. S. BOLAND.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. VI, p. 328.

2.—Storer and Thurber report 2 cases of **ectopic gestation** and think that after one ectopic gestation a second is quite likely to occur, and both patient and physician should be on guard that the condition may be early recognized and

thus treated at the time of least danger. If diagnosis is made before rupture, the vaginal route is to be preferred, otherwise the abdominal route should be chosen unless in case of a very large pelvis. [W.K.]

3.—Davenport discusses the comparative dangers of the removal of **fibroid tumors** by hysterectomy, or of their continued existence and growth, and concludes that whenever a tumor causes hemorrhage, great pain and discomfort, or is the cause of serious embarrassment, operation may be prescribed as the best method of procedure. [W.K.]

4.—Cushing refers to the great **reduction in mortality from operations for myoma**, etc., in the last few years, and believes that total hysterectomy should be performed when the cervix is enlarged and diseased; when the cervical canal is suppurating or septic; when there is a suspicion of malignant disease; and when vaginal drainage appears desirable. Otherwise it is better to leave the whole or a part of the cervix, because there is less danger of hemorrhage during operation, or of oozing afterward; less chance of infection of the wound; and because the lower parts of the broad ligaments with the cervix form a better support to the pelvic contents than does the simple union of the vault of the vagina. [W.K.]

5.—Boland discusses the etiology, prevention, and treatment of **perineal lacerations**, and believes that if carefully carried out, the immediate operation of suturing ought to give 90% of successes, and that in many cases it can be readily done without an anesthetic, thus avoiding the need of an additional assistant and the consequent delay. The obstetrician should always go prepared to do the immediate operation of repairing perineal lacerations. [W.K.]

Journal of the American Medical Association.

August 25, 1900. [Vol. xxxv, No. 8.]

1. Parturition as a Factor in Gynecologic Practice. JOHN MILTON DUFF.
2. Antelexion of the Uterus; Its Causes and Treatment. AUGUSTUS P. CLARKE.
3. A Few Observations on the Efficacy of Protargol in Pyogenic Affections of the Eye. F. C. HOTZ.
4. A Simple Operation for Divergent Strabismus. L. WEBSTER FOX.
5. How to Place Lenses Before the Eyes so that Distance of Their Respective Anterior Foci Shall be the Same. MARK D. STEVENSON.
6. Keratitis Bullosa, With Report of a Case. ELLET O. Sisson.
7. Chemical Factors in Interstitial Gingivitis. W. L. BAUM.
8. The Constitutional Treatment of Interstitial Gingivitis. J. H. SALISBURY.
9. Local Treatment of Interstitial Gingivitis. M. H. FLETCHER.
10. Cerebral Localization. SYDNEY KUH.
11. Medicine and Medical Men in the United States. A. JACOBI.
12. Anesthesia. D. H. GALLOWAY.
13. The Bacillus of Philippine Dysentery. Extract of a Report. R. P. STRONG and W. E. MUSGRAVE.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1277.

3.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1440.

4.—“ “ “ “ “ “ “ “

5.—“ “ “ “ “ “ “ “ 1441.

11.—Will be considered editorially.

American Gynecological and Obstetrical Journal.

April, 1900.

1. After-Treatment of Peritoneal Section. HENRY T. BYFORD.
2. The Mortality Resulting from Abdominal Section for Pus in the Pelvis. I. S. STONE.
3. The Management of Puerperal Infection. FREDERICK W. SEARS.
4. Cranio Rhachischisis. HENRY F. LEWIS.
5. Spontaneous Amputation of Both Fallopian Tubes. EMIL RIES.
6. A Review of the Non-Operative Treatment of Certain Pelvic Inflammatory Lesions. JOHN G. CLARK.
7. Some Observations on Intubation of the Larynx by the O'Dwyer Method, Based on 75 Cases. J. W. WEST.

1.—Byford advocates the systematic method of inducing **peristaltic action** as soon as possible after a **peritoneal section**. He first used this method for the purpose of preventing intestinal paralysis and adhesions, and he noticed in the cases thus treated a marked improvement in all after-symptoms. There were practically no temperature cases, no crying for morphia, no bloating, no fixed pains, and seldom any subsequent pain in the ovarian regions even when firmly adherent appendages had been removed. The method advocated consists of 4 drams of fluid extract of cascara, or some equivalent, 2 hours before the time set for the operation, dram doses of magnesium sulfate every hour from the time the patient awakes after the operation, and a high glycerin and water enema (2 to 4 ounces) every 2 hours, beginning 8 hours after. A high glycerin enema was given before the patient left the table after operations in which adhesions were separated and raw surfaces left. The treatment must not, as a rule, be discontinued until the patient passes flatus, not only with the enemas but freely between enemas. Means must be taken to maintain frequent peristalsis, and a daily evacuation of the bowels after the first days. To that end 2 drams of magnesium sulfate or 2 or 3 ounces of Hunyadi water are given night and morning for 2 weeks, the dose being regulated according to the effect. [W.K.]

2.—Stone summarizes the necessary treatment of cases of **pus in the pelvis** as follows: 1. The abdominal route may be selected in the vast majority of real pus cases because it not only gives a better opportunity to deal with diseased pelvic structures, but also facilitates the inspection of the abdominal viscera and the relief of any pathologic condition of these organs. 2. The vaginal route is still used by the writer as occasion demands, as when a pelvic abscess is pointing in the vaginal vault. 3. In the majority of cases, then, we would advise abdominal section. Still, in a certain small number, we advise vaginal puncture, and in a third class, when the abscess is large and situated high in the pelvis, we reach it through the abdomen, evacuate and drain without attempting enucleation if the patient is evidently too much exhausted to bear the radical operation. In short, we take the position which we think unassailable, that pus should be sought for and evacuated from that quarter which gives the easiest approach and speediest and safest exit consistent with the present condition of the patient, and having in view her permanent restoration to health. [W.K.]

3.—Sears divides **puerperal infection** into the 2 best-known forms of septicemia and sapremia, and believes that in septicemia or true septic infection the curet is contraindicated. One of the conditions favoring the entrance of the poison, is a raw or bruised surface, and as the mucous membrane of the uterine cavity forms a strong barrier to the rapid absorption of the poison, and it is impossible to remove the retained matter with the curet without removing this protective lining, and unless every particle of the septic material is removed, a sharp reaction, due to the rapid absorption of the retained contents, is noticed, and the system may be speedily overpowered by profound intoxication. Frequent irrigations with a safe antiseptic solution should be our main local treatment in these cases. The giving of the intrauterine douche should not be intrusted to the nurse, nor should it be given with a soft rubber catheter. The ordinary curved perforated, glass irrigator is the best for the purpose. In septic infection, great reliance must be placed upon alcohol, strychnin, and moderate doses of quinin regularly. The pulse and facial expression are a safer guide than the temperature. In cases of sapremia, in which there are portions of the secundes or blood-clots remaining in the uterine cavity, and in which an apparently normal convalescence of from 3 to 8 days is followed by a sharp rise in temperature, usually preceded by a chill, it is the purpose of the physician to arrest the absorption of the poison by the safest and quickest method possible. The finger, or fingers, of the physician passed into the uterine cavity to remove portions too large to be washed away, or to serve as a guide to their removal by a pair of small placental forceps, and this followed by a thorough intrauterine irrigation with sterilized water or any other aseptic, nonirritating solution, will most effectually do this. Sears also describes some cases of sepsis which have occurred in his practice which he believes to be due to infection of small tears or abrasions by thick, turbid urine. He regards these cases as cellulitis, due to the absorption of septic matter. He believes large quantities of fluid should

be drunk to carry off the large amount of waste-products eliminated from the kidney at this time. [W.K.]

4.—Lewis presents a large collection of cases of monstrosities due to **cranio-rhachischisis**, or defective closure of the dorsal commissure of the body. In considering the causes attention must first be turned to hydrocephalus, the most common of fetal diseases. The pressure of the fluid within the cavity of the developing cerebral vesicles causes an atrophy of the cerebral tissue and a stretching of the calvarial bones. The cause of hydrocephalus is considered to be a circulatory disturbance of the vascular system of the embryo, perhaps inflammatory, which causes the pouring out of the serum into the cavities of the brain vesicles. If this effusion of fluid and consequent pressure becomes active before the cranial covering can resist, amencephalus or pseudencephalus results. Many of the different forms may depend upon the time of the exertion of the pressure, thus determining whether the malformation shall involve much or little of the cranio-vertebral bony covering and much or little of the brain and cord tissue. This explanation will not, however, suffice for all forms. Those malformations accompanied by retroflexion of the fetal body must have some other causation. Here enters the factor of amniotic adhesions. Bands of amnion or other foreign bodies lying within the normal facial clefts and preventing closure for a certain period may cause a wide diversity of anomalies such as harelip and cleft-palate. Pressure from adherent amnion or by bands may cause defects in limbs, so-called uterine amputations. The great vitality of embryonic tissues explains why we do not often find at birth evidences of these amniotic bands and adhesions, the lesions in question being very apt to heal with the resulting deformity. [W.K.]

5.—Ries reports a very curious case of **spontaneous amputation of both fallopian tubes** occurring in a woman of 32, married for 14 years, and with one child 11 years old. She had since the birth of this child 2 miscarriages, one 12 and one 8 years ago. The physician found her suffering from severe abdominal pain, temperature as high as 103°, loss of appetite, nausea, and inability to move. A diagnosis of inflammation of the right appendage was made and operation for the relief of that condition was performed. The vaginal method was employed and it was found immediately upon bringing the uterus down into the vagina that the tubes formed only very small stumps on either uterine horn. On the right side the rest of the tube presented itself as a bluish-black sac the size of a goose egg. The uterus and the stump of the tube with the ovaries were removed and the patient made a rapid recovery and enjoyed excellent health afterward. [W.K.]

6.—Clark, in considering the conservative treatment of inflammatory conditions of the pelvic organs, reviews 17 cases reported by Stratz, and reaches the conclusion that Stratz is entirely too optimistic as to the results of the treatment by hot vaginal irrigation and hot compresses; yet recent literature upon this subject certainly demonstrates that these remedies, which of late years have not been so freely used, should again be employed more generally. **Acute pelvic inflammatory cases** without the formation of pus, and chronic cases, do not, as a rule, demand immediate operation, but may with safety be submitted to **conservative measures** with operation as a last resort if these fail. But if there is any accumulation of pus in the pelvis, nothing less than evacuation will bring about satisfactory results. Of all classes of cases those operated upon for pelvic inflammatory troubles give the least satisfactory results, because breaking up the adhesions and removing an organ or so may not relieve the disease which caused the adhesions and still firmer ones may follow. It is in this class of patients especially in which pelvic massage, passive movements, very hot irrigations, compression over the lower abdomen, and the elevated dorsal posture is of special service, but should be used in a distinctly methodical way. The most important essential in a rational therapy is the complete emptying of the vascular system of the pelvic organs, and this is secured through increase in the abdominal pressure; through acceleration of the recurrent venous flow; through assistance to the flow of lymph by means of gravity; through an elevation of the pelvic organs and the dropping back of the superincumbent organs out of the pelvic cavity; through absolute rest of the diseased organs and their surroundings. The inclination of the pelvis is secured through

elevation of the foot of the bed 15 to 35 cm. Abdominal compression may be made by elastic bandages, adhesive plasters, shot-bags, potters' clay 1 to 5 kilos; vaginal compression is accomplished through inflatable air pessaries, colpeurynters, shot-bags, etc. Pelvic massage is of great assistance in the chronic stages. While the postural treatment with compression may be employed in all forms of plethora of the pelvic organs, its true field is in the treatment of chronic inflammatory exudates in the pelvis, but it should be preceded by a preliminary puncture of the exudate. [W K]

7.—After using the O'Dwyer method of **relieving laryngeal stenosis** in 75 cases West is convinced that it is the best means yet at our command for the needed mechanical treatment of these cases. Of this number 73 were cases of laryngeal diphtheria; in 2 the dyspnea was due to laryngitis following measles, and in one to obstruction due to erysipelas. The mortality was 45½% and was the greatest under 2 years; beyond that, age did not seem to affect the mortality. It is highly important that the operation should be brief in duration, that there should be care as to bruising the tissues, and that it should be performed as promptly as possible after the dyspnea becomes great. The average time of leaving the tube in position in the cases which recovered was 6 days, and the best method of feeding during this period is with a nursing bottle which may be used with large as well as small children. The apparently great mortality must not be regarded as a serious objection when one takes into consideration the almost hopeless condition of the cases treated; also the great relief from suffering afforded even to those who did not recover must not be forgotten. In conclusion West says that no professional work he does affords him greater satisfaction than the successful relief of a case of laryngeal stenosis by intubation, and nothing provokes a deeper longing for "a better way" than a fatal result in spite of it. [W K]

Wiener klinische Wochenschrift.

June 7, 1900. [13. Jahrg., No. 23.]

1. Knowledge of Emboli in the Pulmonary Artery. DRASCHE.
2. Operative Dislocation of the Thyroid According to Wöfler. JOSEPH PREINDLSBERGER.
3. A Case of Extrauterine Pregnancy. HANS HOCK.
4. Hedonal, a Hypnotic of the Urethan Group. ARTHUR SCHÜLLER.

1.—Drasche reports the case of a woman of 63 who entered the hospital with symptoms of heart-disease. A short time after admission she was suddenly taken with symptoms of asphyxia. There was extreme cyanosis, twitching of the muscles of the face, rolling of the eyeballs, loss of consciousness and convulsions. Death followed 15 hours later. At the necropsy a **thrombus** was found in the main trunk of the **pulmonary artery**. The thrombus was 3 cm. in circumference and 4 cm. in length. It divided into a branch which extended into the right pulmonary, obstructing it completely, and a branch 1½ cm. in circumference which extended into the left pulmonary. The thrombi were of dark brown color. The right iliac vein was also filled with a blackish red clot which extended to the vena cava. It is believed that the thrombus originally formed in the iliac vein and that an embolus was carried to the pulmonary artery which gave rise to thrombosis. [M B T.]

2.—**Dislocation of the thyroid** is the name which Wöfler has given to an operation which he performs in cases in which it is impossible to completely extirpate the thyroid gland for any reason. The thyroid is freed from its bed and is fastened usually in a higher position beneath the skin and the superficial muscles. The indications for this operation are thought to be: recurrence of thyroid growths in which extirpation cannot be carried out without danger of cachexia, though symptoms of compression may be present; and bilateral compression of the trachea by both sides of the gland. An operation is reported which was undertaken for the latter indication in a girl of 15. Wöfler's operation was modified by the ligation of the superior thyroid arteries. The result was in every way satisfactory. [M B T.]

3.—Hock reports a case of **ectopic gestation** peculiarly

interesting because of the long duration of the condition before it was operated upon. The patient, aged 31, had menstruated last on March 9, 1898. The operation was on February 18, 1900. The weight of the entire mass removed was 4,460 g.; of the fetus, 2,710 g. So much trouble was experienced through intestinal obstruction following the operation that a second operation was proposed, but the patient would not permit this; therefore irrigation of the small intestine with the patient in the knee-elbow position was tried with the result that the fecal masses were broken up after enduring for 3 weeks. The patient convalesced rapidly after this and left the hospital on April 16. [W K.]

4.—**Hedonal** is methyl-propyl-carbinol-urethan, and in doses of 1.5 grams (22½ grains), given 1½ hours after the evening meal, is a good hypnotic. [D R.]

June 14, 1900 [13. Jahrg., No. 24.]

1. Agglutination Experiments with the Blood of Mother and Fetus. JOSEPH HALBAN.
2. The Knowledge of Actinomyces Fungus. CARL STERNBERG.
3. An Anaerobic Streptococcus. CARL STERNBERG.
4. Bathing the Newborn. H. KOWARSKI.

1.—Halban has tested the **agglutinating action of maternal and fetal blood**. The latter was obtained from the placental end of the cord; the former, from that discharged by the uterus after the detachment of the placenta. He found that the agglutinating properties of the fetal blood were not dependent upon those of the mother. The action of the maternal blood-serum and the fetal blood-serum of one case on the blood of another case was tested. Out of 14 cases the maternal blood agglutinated 6 times strongly, 4 times feebly, and 4 times not at all. The infantile blood agglutinated twice strongly, 3 times feebly, and 9 times not at all. The experiments were modified in various ways, but all seemed to show that there was a difference in the content of agglutinins, as well as of hemolysins, on the part of the maternal and the fetal blood. That there is a chemical difference between the blood of the mother and that of the fetal circulation had been proved before. The latter is richer in salts, particularly in sodium, and the freezing point is higher. The differences found by the author must now be added to the facts already known. The discovery that the maternal blood often contains agglutinins, while the fetal blood does not, shows that not all the albuminous substances are taken up by the chorionic epithelium. The agglutinins of the human blood which are capable of agglutinating the red blood-corpuscles of other individuals have been designated by Ehrlich and Morgenroth as isoagglutinins, and the author terms those isoagglutinins which are normally present in the blood and are not produced by artificial means **idioisoagglutinins**. As to the source of the idioisoagglutinins, Halban does not think that they are produced by the continuous absorption of bacterial products, as has been maintained, but holds that they are simply a property normally belonging to the albuminous substances—perhaps the globins—of human blood. [D R.]

2.—In 3 cases of typical **actinomycosis** in man Sternberg succeeded in cultivating, chiefly by anaerobic methods, a fungus growing in the form of small yellowish granules which resembled those found in actinomycotic pus. In the cultures the organisms presented the same forms as in the actinomyces roset, but injection into animals only produced abscesses—never the typical roset appearances. Various authors have described actinomyces-like fungi, differing somewhat in their cultural and biologic properties, and Sternberg concludes that **human actinomycosis is due to at least two organisms**, differing culturally and biologically, although the lesions produced are both clinically and anatomically identical. [D R.]

3.—The same author describes an **anaerobic streptococcus** found in the pus from a case of actinomycosis of the lung. [D R.]

4.—From a comparative study between newborn infants bathed every day or every other day, and infants not bathed at all, Kowarski concludes that there is **no harm in daily bathing**. He paid particular attention to the effect on the umbilical cord and the temperature. [D R.]

June 21, 1900. [13. Jahrg., No. 25.]

1. Arterial Sclerosis in the Aged. FRIEDRICH FRIEDMANN.
2. Radiographic Behavior of Pathologic Processes in the Thoracic Aorta. HOLZKNECHT.
3. Depression of the Thorax in Metal Spinners. M. STERNBERG.
4. A New Medicine for the Treatment of Phthisis. JULIUS POLLAK.

1.—Friedmann has studied the cardiac auscultatory signs ascertainable over the back, and finds that the valvular sounds vary in position with the age of the patients. The point of **maximum intensity**, located in the **left interscapular space**, moves downward with advancing age. In **arteriosclerosis** the sounds are loudest **on a line joining the angle of the left scapula and the seventh dorsal spine**. [D.R.]

3.—Sternberg describes a peculiar **malformation** of the right side of the **chest in metal spinners**. Below the fifth rib the chest is pressed inward in front and laterally, and forced outward posteriorly. The right nipple is lower than the left. [D.R.]

4.—Fersan is an iron-preparation obtained from the red cells of fresh blood of cattle; chemically it is a ferruginous paranucleoproteid. The author has used it in 50 **phthisical patients** and has found that it produced a speedy increase in the hemoglobin contents of the blood and of the body-weight. It was given as follows: A coffeespoonful was mixed in a tumbler with a little water, and the tumbler then filled with cold milk. This was taken thrice daily, one-half hour before the meal, and corresponds to a daily dose of from 7 to 8 grains fersan. [D.R.]

June 28, 1900. [13. Jahrg., No. 26.]

1. An Approved Tracheal Canula. R. GERSUNG.
2. Suture Treatment of Luxation of the Acromial End of the Clavicle, and of Fractures of the Nasal Bones. KONRAD BÜDINGER.
3. A Patient with Wandering Gallstone. ROBERT PORGES.

1.—Gersung recommends a **tracheotomy tube** of funnel shape and claims for it the following advantages. Its larger caliber permits freer respiration and its tracheal end never comes in contact with the mucous membranes. The widened tracheal part of the tube fills the lumen of the trachea completely and prevents the entrance of any blood or wound secretion into the tube. A disadvantage is that a larger opening into the trachea is necessary. Gersung claims that pressure necrosis never results after the use of this tube. The disadvantages of the ordinary tracheotomy tubes are that while their bend requires so much room in the trachea their caliber is usually quite small. The tube often presses against the mucosa of the larynx and by inaccurate adjustment is likely to cause pressure necrosis of the soft parts. [M.B.T.]

2.—Büdinger believes **suture** in case of **luxation** of the **acromial end** of the **clavicle** and in certain fractures of the **nasal bones** as quite as necessary as the suture for fracture of the patella or olecranon. He finds that luxations of the acromial end of the clavicle have been estimated to make up from 2 to 6% of all luxations, and the function of the arm is very often considerably disturbed. Often this disturbance of function does not appear until some time after the injury. A special disadvantage is that the end of the bone is very prominent and is pressed upon with laboring men who are accustomed to carry weights upon their shoulders. A case is reported in which suture was successfully performed. Suture for fracture of the nasal bones is recommended in cases in which a longitudinal break is combined with a transverse fracture of the bones. With displacement to the side reposition is almost impossible without operation. The incision in a median line leaves a very insignificant scar which tends to disappear and is never very noticeable. [M.B.T.]

3.—A woman of 47 had had a fistula of the upper part of the thigh for 1½ years. For 20 years she had suffered from pain in the stomach, and gallstone colic, and she had repeatedly taken Carlsbad cure. A painful tumor appeared in the region of the trochanter and produced a considerable deformity. After some time it ruptured spontaneously and

a large mass of pus escaped. The diagnoses of tuberculosis, actinomycosis and syphilis were discussed. Two fistulas remained from which the pus escaped. An operation was performed and on splitting open the fistula it was found to lead into a network of canals in the upper part of the thigh with numerous pockets. In the lower part was a **pouch containing a large number of gallstones**. This pocket reached to the **middle of the thigh**. Numerous incisions were made, a drainage tube was inserted, and the cavity was packed with iodoform gauze. A very good recovery followed. Chemical examination showed the stones to be composed of cholesterol and carbonates. The entire weight of the stones removed was 9.4 gm. It is thought that the gallbladder became fixed by inflammatory adhesions, and when it perforated the stones worked their way along down the back under the fascia dorsolumbalis. [M.B.T.]

Berliner klinische Wochenschrift.

June 11, 1900. [37. Jahrg., No. 24.]

1. Inflammation and Displacement of the Uterus. J. VEIT.
2. Malarial Infection. E. GRAWITZ.
3. Cataract Removal in Persons with but One Eye. FRITZ MENDEL.
4. After-Treatment in Operations on the Eyeball. G. GUTMANN.
5. Typhus Abdominalis. DR. RUMPF.
6. The Term Stomach dilation in the German Literature since 1875. ARTHUR HESSE.

1.—In regard to **displacements of the uterus** Veit is of the opinion that every gynecologist should have full knowledge of therapeutic treatment; and, usually, this should be tried before there is resort to surgical measures; but he admits that the "reception-hour" treatment is lessening as operative gynecology seeks to win the field. Experience has also taught that the sensitive organization of many women will not bear repeated "local therapy," and that in such cases operative treatment is preferable. In the various forms of **inflammation** it is essential to ascertain the etiology of the case in order to treat it to the best advantage. We must understand the hygienic rules which lessen the danger of gonorrheal or other infection, and know how to treat without injuring the patient. [W.K.]

2.—While the mosquito may be the chief agent in the transmission of **malaria**, the **mosquito theory**, according to Grawitz, does not explain the whole epidemiology of the disease. He illustrates by curves that, in the Prussian army, the incidence of the disease rises from the month of March and reaches its height in June, at a time of the year when mosquito-bites must be very rare. Moreover, there has been a marked reduction in the morbidity in the last few years, apparently coincident with the regulation of the water-supply, and he implies that the drinking water may convey the disease. [D.R.]

3.—Mendel states that in the past 8 years 9 patients have come to Hirschberg's clinic who had lost an eye by an operation for **cataract** and who had developed cataract in the other eye. The unfortunate results of the first operation make the success of a second operation extremely important. A thorough aseptic preparation is the chief condition of success. The tear apparatus is a common source of infection, and if any inflammatory condition exists it must be thoroughly treated. The thorough antiseptic treatment of the nose for some time before the operation is also advised. In addition to this the lids must be carefully prepared. General anesthesia permits of much more thorough asepsis and is advisable in these cases. Preparatory iridectomy is also advised and the operation for cataract is undertaken 3 weeks later. In the 9 cases mentioned the cataract operation was performed on the second eye with perfect success. [M.B.T.]

5.—Rumpf's article treats of **typhoid fever** in a general way, and recapitulates the more recent contributions to the knowledge of the disease. [D.R.]

6.—Hesse adopts the views of Kuttner regarding **gastric atony** and **gastrextasia**. Under atony is to be understood that condition in which, with a normal size of the stomach, there is an impairment of the tone of the musculature of the organ. In consequence of this, the stomach wall is abnormally stretched by the food. When empty the organ returns

to its natural size. Gastrectasia implies a **permanent dilation** of the stomach, demonstrable also when it is empty, as well as an insufficient evacuation of the organ, so that even in the fasting stomach more or less stagnating food remains. The exact diagnosis of dilation of the stomach is based upon the simultaneous demonstration of enlargement of the organ and disturbance of its motility. [D.R.]

June 18, 1900. [37. Jahrg., No. 25.]

1. The Anatomical Relation of the Cerebellum to the Remainder of the Nervous System, and the Significance of the Same for the Understanding of the Symptomatology and Diagnosis of Cerebellar Diseases. LUDWIG BRUNS.
2. Early Diagnosis in Lung Tuberculosis. H. STRAUSS.
3. The Influence of White and Dark Meats in Chronic Kidney Diseases. A. PABST.
4. The Prognosis in Glycosuria and in Diabetes. FELIX HIRSCH.

3.—The author found that there was practically no difference between the effects of the **red and the white meat** on the quantity of urine, the specific gravity, and the amount of albumen, in chronic Bright's disease. Both kinds of meat were equally well borne. [D.R.]

June 25, 1900. [37. Jahrg., No. 26.]

1. Brain Anatomy and Psychology. EDINGER.
2. Through What Legal Decisions Are the National Insurance Offices Authorized to Introduce a Provision for Prophylaxis of Disease? O. MUGDAN.
3. A Case of Complete Visceral Inversion, Combined with Dissecting Aneurysm of the Aorta. ARTUR BARBO.
4. Anatomical Relations of the Cerebellum to the Rest of the Nervous System, and the Significance of the Same for the Understanding of the Symptomatology and Diagnosis of Cerebellar Diseases. LUDWIG BRUNS.
5. The Prognosis of Glycosuria and of Diabetes. FELIX HIRSCHFELD.

3.—Barbo reports a case of complete **transposition of the viscera** in connection with an extensive dissecting **aneurysm of the aorta**. As to the frequency of the occurrence of transposition of the viscera, he states that this is the only case which has been found in 676 complete necropsies which have been made at the Pforzheim Hospital since 1878. As a point of interest he mentions that the patient was right-handed, and he finds by an investigation of other cases of the kind that transposition of the viscera is not usually accompanied with left handedness. [M.B.T.]

4.—The **cerebellum** is connected with the cord and with the upper brain in such a way that it constitutes the vertex of a reflex arc to which centripetal fibers go, and from which centrifugal fibers descend. The **centripetal pathways** are the direct cerebellar tract and Gower's tract. They probably convey sensations from the muscles and joints—sensations that constitute the so-called positional sense. It is probable, also, according to Bruns, that the cerebellum receives some fibers carrying touch and pressure sensations—if not from the skin itself, then from the subcutaneous tissues. The **centrifugal pathways** have only recently been discovered. Motor fibers pass from the tegmental nuclei of the cerebellum to Deiter's nuclei. From the latter two motor pathways arise. One passes to the oblongata and the spinal cord by way of the restiform body; the other passes to the floor of the fourth ventricle and to the oculomotor and abducens nuclei. These different tracts complete the **spinobulbocerebellar reflex arc**. The connections between the cerebellum and the cerebrum are not well known. One, passing from the corpus dentatum of the cerebellum to the red nucleus of the opposite side, has been definitely determined. Thence it is continued to the optic thalamus, and possibly to the motor area of the brain. Others, passing from the temporo-occipital and the frontal cortex to the cerebellar hemispheres, have also been established. The most important connections of the cerebrum may be summed up as follows: The cortex, especially that of the vermes, constitutes the vertex of a reflex arc, to which pass sensory excitations by way of the posterior columns, direct cerebellar

tracts, and Gower's tract, and by way of the vestibular nerves. By means of these the brain receives information concerning the position of the limbs and head, of the body in space, and of the tension of the muscles, joints, etc. In response to this information, the cerebellum regulates the position and movement of the limbs, head, trunk, eyes, etc., by way of sagittal fibers passing to the tegmental nuclei, thence by fibers passing to the Deiter's nuclei, thence by way of the posterior longitudinal bundle and the oculomotor nuclei to the restiform body, and finally, along the anterior and anteriorlateral tracts of the cord into the anterior horns. This reflex arc generally acts automatically—subconsciously—but it is connected with the brain, and the various data may in that way come within the limits of consciousness. In **diseases of the cerebellum** the most constant **symptoms** are: (1) disturbances in the equilibrium, so-called cerebellar ataxia; (2) vertigo; (3) changes in the position of the visual axes, nystagmus, and at times paralyzes of ocular muscles; (4) weakness in the muscles, which, in unilateral lesions, is probably on the side of the lesion. The most important are ataxia and vertigo. The ataxia is variable in character. It is produced chiefly by destructive lesions of the vermes, but also by lesions in other situations which may interfere with the reflex arc. The ataxia cannot be considered a pathognomonic symptom of cerebellar lesions, as the same form of ataxia is observed in Friedreich's disease, and in certain diseases of the oblongata, pons, and quadrigeminal bodies; likewise, also, in tumors of the frontal lobes. It is probable that, in lesions of other parts of the brain giving rise to ataxia, the result is due to interference with pathways connected with the cerebellum. [D.R.]

5.—The author's conclusions are as follows: The prognosis in the milder forms of **diabetes** is more favorable than has been the prevalent view. He believes that a relative cure (*i. e.*, absence of sugar, with a diet containing 200 grams of carbohydrates) may be expected when in the beginning of the disease from 80 to 85% of the ingested carbohydrates are consumed. He has observed the assimilation of carbohydrates getting less after influenza, after peculiar colicky attacks (pancreatic?), and in an especially high degree after gangrene and furunculosis. A change of the condition for the worse is sometimes signalized by an increase, and an improvement by a decrease, in the quantity of urine. At times an increase in body-weight coincides with an increase in the glycosuria, which subsides with a restriction in diet. The cardiac debility sometimes observed in diabetes is favorably influenced by an antidiabetic diet, with diminution, but not complete exclusion, of the carbohydrates. [D.R.]

July 2, 1900. [37. Jahrg., No. 27.]

1. The Present Position of Bacteriology. BAUMGARTEN.
2. A Constant Bacteriologic Condition in Scarlet Fever. BAGINSKY and SOMMERFELD.
3. The Treatment of Phthisis in Hospitals and Among the Poor. BURGHART.
4. Is Multiplication of the Blood Corpuscles at High Altitudes Reasonable or Not? GOTTSTEIN and SCHRÖDER.
5. Accumulation of Kidney-Stones. SPIEGEL.
6. Brain Anatomy and Psychology. L. EDINGER.
7. Aspirin Treatment. ZIMMERMANN.
8. Experience with Aspirin in Private Practice. A. DENGEL.
9. Cause and Local Beginning of Phthisis. AUFRECHT.

3.—Burghart describes the **symptomatic treatment of tuberculosis** as carried out in the clinic of Von Leyden in Berlin. **Fever** is combated with rest in bed and cold ablutions; occasionally by the use of pyramidon, quinin, or phenacetin. The **night-sweats** are usually controlled by means of spongings with water, aromatic vinegar, or water containing a little citric or tartaric acid; likewise by a 1 to 2% menthol solution or by formalin alcohol solutions containing 10% of formalin and from 3 to 4% of peppermint oil. Atropin is not employed. If **diarrhea** exists and cannot be relieved by careful diet, compresses of warm oil and cotton are employed, or bismuth and tincture of opium, tannalbin, tannigen, or dermatol. If there is tenesmus, opium suppositories are given. In bad cases creosote seems to be of value or starch clysters. Pleuritic **pains** are relieved by warm applications or mustard plasters, or by fixa-

tion of the chest in a felt splint. In bad cases morphin or one of its succedanea is given. Nothing new is recommended for **hemorrhage**. He has not found gelatin injections superior to other forms of treatment. Injections of salt solution containing from 1½ to 2% of salt have given satisfactory results. The **prophylaxis** of phthisis is touched upon and the usual measures described—hardening the system of the predisposed, care in the domiciliary prophylaxis, etc. The general health of tuberculous patients should be improved by outdoor life, abundant sleep, and an adequate diet, a mixed diet with plenty of meat being the best. The author is a great believer in the value of sugar—cane or beet sugar—as a food, and gives as much as 200 grams (6½ ounces) per day. The use of alcohol in small quantities is permitted, but is not considered indispensable. [D.R.]

4.—Some additional experiments showing that the Thoma-Zeiss apparatus is under the influence of the atmospheric pressure, and that the higher **blood-counts in mountainous elevations** are due to such external physical conditions. [D.R.]

5.—Spiegel has examined a series of stones removed from the kidneys and ureter by Professor Israel, to determine with regard to their composition. Out of 44 stones he found only 6 which were homogeneous in structure. The others were composed of concentric layers of various salts. CaCO₃ was found in 60% of the layers examined. The phosphates were next most frequently found, then the oxalates and urates; the various other constituents were comparatively rare. The oxalates were always found in connection with the urine with an acid reaction and in all cases in which uric acid, urates, or xanthin were important constituents, anuria was present. [M.B.T.]

6.—Edinger's article is of great interest. It pictures the achievements of **brain anatomy and physiology** and the rather barren results of modern **psychology** during the 19th century. Comparative studies seem to show that consciousness is of less importance than has been believed, and that many of the acts of animals, and possibly of human beings, which are considered as indicating the conscious exercise of the will, are in their ultimate nature reflex. The article does not lend itself to abstracting. [D.R.]

7 and 8.—Favorable reports on the use of **aspirin** in rheumatism and neuralgia. [D.R.]

July 9, 1900. [37. Jahrg., No. 28.]

1. The Pathology of Morbid Tumors. O. ISRAEL.
2. Extirpation of Fibrolipoma in Retroperitoneal and Enveloping Tissues. FRITZ KÖNIG.
3. Pupillary Reaction with Consideration of the Refraction of Examined Eyes, as Also a Peripheral and Central Reaction. HUGO WOLFF.
4. The Present Position of Bacteriology.
5. A Constant Bacteriologic Condition in Scarlet Fever. BAGINSKY and SOMMERFELD.
6. The Treatment of Phthisis in the Hospital and in Army Practice. BURGHART.

2.—A man of 44 had first noticed an increase in the size of his abdomen 2 years previously. Recently this increase had become much more marked until he was unable to follow his business. The abdomen was uniformly firmly distended, and to the left below the umbilicus there was decided resistance and many nodules could be felt. It was dull on percussion everywhere. The diagnosis was questionable, whether it was a nodular form of tuberculosis of the peritoneum, with adhesions and encapsulated exudate, or some form of rapidly growing tumor. A median incision was made from the ensiform to the middle between the umbilicus and symphysis. On opening the peritoneal cavity no omentum or intestines appeared. They were entirely pressed upward into a very small space. A yellowish tumor lay directly below the parietal layer of the peritoneum. This was extirpated with considerable difficulty as it was adherent to many important abdominal structures. The peritoneum was independently sutured and the wound cavity was packed with gauze to avoid as far as possible the dangers of hemorrhage and infection. After the operation the patient recovered readily from collapse and remained without rise of temperature. Eight days after operation, however, he died sud-

denly of collapse. The necropsy revealed no cause of death. It was without doubt due to the sudden change in intra-abdominal pressure, as is often the case with such large intra-peritoneal growths. The tumor proved to be a fibrolipoma weighing 22 pounds. König states that 4 years ago 30 cases of such **retroperitoneal fatty tumors** had been collected and since that time but few have been reported. [M.B.T.]

4.—A resume of the present status of **bacteriology**, in which the author declares his adhesion to Ehrlich's lateral-chain theory of immunity and in which he reiterates his non-belief in the existence of bactericidal substances in the blood. [D.R.]

5.—Baginsky and Sommerfeld, from the study of 42 cases of **scarlet fever**, draw the following conclusions: (1) In all cases of scarlatinous angina it is possible to find **streptococci**, sometimes in pure culture, sometimes accompanied by other cocci. (2) In all the fatal cases of scarlet fever examined by them (42) they found in the organs, in the blood, and in the bone marrow, a streptococcus—from which it is fair to conclude that the streptococcus is constant in scarlet fever. In its morphologic, cultural, and biologic behavior the streptococcus is like that described by other authors. It cannot be differentiated by the usual culture methods. (4) The streptococcus is of a variable virulence, and its virulence can be increased by passage through animals. It elaborates a toxin which it gives up to the culture medium. (5) It was impossible to discover any specific properties. (6) The constant presence of the streptococcus in fatal cases of scarlet fever gives it an importance in the scarlet fever process. (7) All the phenomena of scarlet fever can be readily deduced from a distribution of the streptococci in the organs (infection) and the toxicity of its metabolic products (intoxication). [D.R.]

6.—Inhalations of various substances are of value in local tuberculous lesions, and the author recommends **formalin**, beginning with the ¼% solution inhaled through a mask similar to that used in chloroformization. He has no faith in specifics, but he believes that creasote and its various preparations are of value. Creasote is best given in gelatin capsules, combined, in the capsule, with cod-liver oil. [D.R.]

July 16, 1900. [37. Jahrg., No. 29.]

1. The Etiology and Therapy of Tabes Dorsalis. P. K. PEL.
2. The Methods of Proof for Tubercle Bacilli, with Demonstrations and Practical Exercises. M. WOLFF.
3. Metabolic Assimilation in Diabetes Insipidus. G. VAN NINI.
4. Diagnosis of Functional Disorders of the Kidney. CASPER and RICHTER.
5. The Pathology of Morbid Tumors. O. ISRAEL.

2.—A resume of the methods employed for demonstrating **tubercle bacilli** by experimentation on animals. [D.R.]

3.—A study in **metabolism** on 2 cases of **diabetes insipidus**—a man of 47, and a girl of 14 years. It was found that the patients did not eliminate more water in the urine than they ingested; moreover, the insensible perspiration was practically normal, contrary to the statements of some of the older writers. A study of the albumin metabolism showed that in one case there was a retention, and in the other a loss. Digestive functions were good, although the appetite in the young girl was somewhat diminished. The acidity of the urine was high. The elimination of P₂O₅ in the feces was normal. In the urine there was a retention on the part of the man, and a loss of P₂O₅ on that of the girl. The chlorin studies were not sufficient to enable conclusions to be drawn. [D.R.]

4.—It is important in many cases to determine the **functional capacity of the kidneys**, particularly of the two kidneys separately. French investigators have done this by obtaining the urine excreted in 24 hours from each organ by ureteral catheterization. Casper and Richter, however, found that during a period of from 30 to 60 minutes the two kidneys eliminated almost absolutely the same amount of solid constituents, and that it was not necessary to retain the catheters longer than this. One of the best indices of the functional capacity was the elimination of sugar after the administration of phloridzin. The sugar, since it is made in the kidney, is a token of the functional power of the renal

cells. The diseased kidney secretes a much smaller amount than the normal organ. In advanced disease the elimination of sugar from the diseased organ may be practically nil. If both kidneys are diseased, the differences are more or less wiped out. The elimination of sugar and of urea, and the molecular concentration, with few exceptions, run parallel; but the sugar elimination after phloridzin injection is the most delicate of the three agents for testing the functional power of the kidney. [D.R.]

Deutsche medicinische Wochenschrift.

July 5, 1900. [26. Jahrg., No. 27.]

1. Enucleation and Substituted Methods, with Especial Review of Sympathetic Ophthalmia. H. SCHMIDT-RIMPLER.
2. Our Knowledge of Serums. ALBERT SCHÜTZE.
3. Experience with a Substitute of Morphia. L. NIED.
4. Subphrenic Abscess after Pancreas Suppuration of Traumatic Origin. WILHELM STROHMAYER.
5. My Experiences with Light Therapy. H. STREBEL.

1.—Schmidt-Rimpler, in speaking of the three operations on the eye, **enucleation**, evisceration and neurectomia opticociliaris, prefers almost without exception the first when either of the three is indicated. The wound following enucleation heals more rapidly, in recent injury cases, in about half the time required after evisceration. In cases where the sympathetic inflammation had already set in, some very satisfactory results were secured by the enucleation; in 4 out of 10 cases the eye recovered and was capable of visual activity. In cases of recent injury he removes the injured eye when the sight has been destroyed and signs of sympathetic irritation begin to appear in the second eye. In cases where the primarily injured eye still retains considerable sight more conservatism should be practised. He ends his article by reporting 4 cases. [G.B.W.]

2.—Schütze first reviews previous work concerning the dissolving effect of various serums, mentioning the most important details that have been accomplished in this work, particularly the fact that serums which kill epithelium have been produced in guineapigs. This and other facts have made it seem reasonable that by working upon this line it may prove possible to provide a serum which will be effective against malignant growths. He reports his own results in the production of an antihemolytic serum. He found that after injecting rabbits with the blood of guineapigs the serum of the rabbit gradually acquired a marked hemolytic power against the serum of guineapigs. If now the serum of the rabbit were injected into the guineapig in small doses there was gradually produced some substance which prevented the hemolysis of the guineapig's blood by the rabbit's serum; hence some antistubstance had been produced. Its production was due apparently to the so-called "intermediate bodies" in the hemolytic serum, the "end-bodies" playing apparently no role in the production of the antihemolytic substances. He made attempts to produce a liver and kidney serum, analogous to the hemolytic serum, by injecting emulsions of normal livers, and kidneys of guineapigs into rabbits. The results were negative. But, as stated, this does not show that such a thing is impossible. Wassermann has previously demonstrated that similar results may be produced with the serum of certain animals, while that of other animals has no effect. [D.L.E.]

3.—Nied reports a series of cases to demonstrate the good effects of **heroin**. They were chiefly pulmonary tuberculosis, bronchitis, pleurisy, asthma, and Bright's disease with marked dyspnea. [D.L.E.]

4.—In the case of **traumatic suppuration of the pancreas** reported by Strohmayer the characteristic symptoms of pancreatic disease were lacking, in that there was no fatty diarrhea and no diabetes. The symptoms present were pain in the upper abdomen, nausea, vomiting, loss of appetite, irregularity in the bowel movements, abdominal distention, general loss of strength, and at times icterus. At the postmortem pus was found in the right pleural cavity which communicated by a small opening with a subphrenic abscess. Abscess of the head of the pancreas was also found. [G.B.W.]

5.—Strebel gives a somewhat lengthy account of his ex-

perience with **light-baths**, having apparently found them useful in any form of disease in which they were tried. He mentioned especially that they were valuable in kidney and heart-disease, in diabetes, and obesity. It had particularly good effects in arteriosclerosis and fatty heart. Probably the chief effect was produced by the sweats in most cases. It is, of course, quite possible that the baths may exercise some influence upon metabolism. As to whether this is directly due to the action of the light and heat, or indirectly the result of the increased sweating, is uncertain. [D.L.E.]

Centralblatt für innere Medicin.

June 30, 1900.

1. What Clinical Importance may be Attributed to the Ephemeral Rises of Temperature which Occur on the Day of Admission of Patients to Hospital? E. FROMM.

1.—It is often observed that the **temperature rises** somewhat on the day of admission to hospital and then sinks—a phenomenon which is frequently attributed to the nervous excitement incident to removal to the hospital. Fromm, at Strauss's suggestion, looked over the records of 100 cases in which this rise of temperature occurred, with the special purpose of seeing whether it had any relation to phthisis, since the temperature in phthisical patients is very easily influenced. He found that, with the exception of febrile rheumatism and gastrointestinal disturbances, very few of the cases occurred with any other condition than diseases of the respiratory apparatus. The latter were chiefly phthisis; in fewer instances, bronchitis and pleurisy. The 2 latter diseases might readily have been of tuberculous nature, and hence he decides that these temporary rises in temperature, while not by any means positively indicative of phthisis, are, in the presence of other suspicious conditions, decidedly suggestive of phthisis, and are to a certain extent a guide in diagnosis. [D.L.E.]

July 7, 1900.

1. Some Unfavorable Experiences in the Subcutaneous Use of Gelatin in the Treatment of Hemorrhage. MAX FREUDWEILER.

1.—Two cases of **hemorrhagic nephritis** are reported in which gelatin was used with the thought that it might control the loss of blood through the kidneys. Instead of this, the result was a very marked increase of the albumin, a reduction of the amount of urine secreted, an increase in the amount of casts, and in both cases a marked hemoglobinuria. The symptoms appeared so quickly after the use of the gelatin that it was decided that it was the result of its use. Another case is referred to in which uremia came on directly after the use of the gelatin, and we are reminded that Lancereaux himself has always stated that gelatin is not a harmless substance. [D.L.E.]

Centralblatt für Gynäkologie.

July 7, 1900.

1. Upon Bruns' Ointment as Material for Dressing Wounds. A. DÖDERLEIN.
2. Artificial Abortion; Its Indications and Its Execution with Certainty and Without Danger. OEHLISCHLAGER.

1.—Döderlein highly recommends Bruns' **airol ointment** for the dressing of aseptic wounds. He has used it in operations upon the perineum, in Alexander-Adams operation, and especially in laparotomies. After closing the incision with proper sutures, he covers it with a rather thick and broad layer of the ointment, covers that with gauze strips, and then strips of adhesive plaster, and does not touch it until the twenty-first day, when he removes gauze, ointment, and sutures. With this method, out of 400 cases, 356, or about 90%, healed satisfactorily. In the others, he ascribes the stitch-abscesses or suppuration to the condition of the patients, who had pyosalpinx, suppurating cystitis, or tuberculosis. He values the ointment, not for any antiseptic qualities, but for its hygroscopic, drying, immovable, and hermetically sealing characteristics. [W.K.]

2.—Since it has long been an established fact that under certain conditions **artificial abortion** is demanded and is justifiable, Oehlschlager believes that the earlier it is produced the less dangerous to the patient and the more easily its effects are overcome. For this purpose he introduces a curved metallic catheter into the uterus to the fundus, then passing a syringe of the same caliber, syringes the uterine cavity, especially near the ovary, with 3 to 4 g. of iodine tincture. Afterwards he places a tampon in the vagina to protect the mucous membrane from being irritated by any outflowing iodine. One application usually suffices; if not, it may be repeated. The peculiarities of the iodine are that it quickly penetrates the tissues, destroying fetal life; that its high antiseptic powers ward off injurious effects, and it stimulates the activity of labor-pains in the uterus. [W.K.]

July 14, 1900.

1. Healing of Rectal Prolapse by Restoration of the Pelvic Floor. OTT.
2. Medullary Narcosis in Obstetrics. O. KREIS.

1.—Ott holds that **rectal prolapse** is usually due to loss of equilibrium in the pelvic organs caused by some weakening or injury of the muscles of the pelvic floor; hence any true or efficient remedy must be directed to the restoration of the pelvic floor, and thus all the neighboring organs may be properly supported. He reports a case treated on this principle, first reducing the prolapsed rectum, and then continuing the operation as for complete laceration of the perineum. Convalescence was uninterrupted and the cure complete. [W.K.]

2.—Tuffier and Bier both conducted experiments in using **injections of cocaine in the spinal cord** to produce insensibility of the body while undergoing operations either upon the bones or the soft tissues. And Tuffier's report of the success of these experiments, the loss of sensation involving little or no disagreeable accompaniments, led Bumm and his assistant Kreis to conduct a series of experiments testing its use in obstetrics. Kreis gives a detailed report of 6 obstetric cases. The injection of the cocaine was made between the fourth and fifth lumbar vertebra and in 5 to 10 minutes produced complete analgesia of the lower part of the body, while the control of the muscular movements appeared to remain complete. Although the patient was conscious of no suffering, the activity of the labor-pains continued, and the motility of the uterus remained undisturbed. While the procedure may not be adapted to all cases, Kreis thinks it is valuable for patients in whom the presence of some disease of heart or lungs makes the use of chloroform full of danger. [W.K.]

July 21, 1900.

1. Reply to Ballin "Upon the Treatment of the Umbilical Stump According to Martin." A. RIECK.
2. Porro-Cesarean Section for Excessively Large Dead Child. H. RIEDINGER.
3. Malformation of the Female Genitalia. KREISCH.

1.—Rieck considers Martin's method of **treating the umbilical cord** by a combination of ligating and cauterization by means of silk sutures and a cautery as a decided advance. Scientific investigation will confirm this view, since it brings healing of the stump quickly, avoids any hemorrhage with the greatest certainty, and furnishes simple and agreeable conditions for the after-treatment. [W.K.]

2.—Riedinger reports the case of a primipara of 30, married 7 years, who was delivered by **Cesarean section** after a pregnancy of 300 days, the child being dead 9 days before delivery. He first made every effort to deliver the woman by the use of the cranioclast and forceps, but without avail, and in order to save the life of the mother was obliged to perform Cesarean section. The impossibility of delivery through the normal route was due to the extraordinary size of the child which, without the brain and apex of the skull, weighed 5,750 g., and measured in length 64 cm., being the largest he had ever observed in 26 years of obstetric practice in and out of the hospital. [W.K.]

3.—Kreisch reports the case of a young woman coming under his observation, who, although the external genital organs were perfectly developed, had no vagina, and a careful examination under anesthetic showed no trace of uterus, ovaries or tubes. [W.K.]

Neurologisches Centralblatt.

July 1, 1900. [19. Jahrg., No. 13.]

1. A Contribution to the Knowledge of the Earliest Stages of Multiple Neuritis. S. POPOFF.
2. Psychical Observations in a Case of Gas Poisoning. WEYGANDT.
3. An Anomaly of the External Ear. C. KLIENEBERGER.

1.—It has been generally supposed that the **earliest symptoms of multiple neuritis** were the paresthesia or the paresis complained of by the patient. There are, however, objective symptoms that probably precede by a considerable period these purely subjective disturbances, which are extremely important for the reason that it is still possible by the withdrawal of the toxic influence to prevent the occurrence of the disease in its developed form. Popoff believes that by means of careful electrical measurements it is possible to detect them. Of course, the opportunity is not frequently presented. He was led to this opinion by observations upon a patient who for a number of years had indulged to excess in alcohol, but was apparently perfectly well, with the exception of a pronounced ataxia of the hands and feet. An electrical examination showed that the interosseous muscles 1 to 4 in the left hand did not contract to the faradic current and, although they gave the normal contraction, their response to galvanism was diminished. Other patients in the hospital were then examined. A man of 68, who had had a slight apoplectic attack involving the left side, and who had always been an alcoholic, had ataxia in both legs, more pronounced on the left side and in the left arm. There was pain in both calves, some disturbances in the motion of the fingers, the reflexes were diminished or abolished, and Romberg's symptom was present. Careful measurements showed disturbances in the muscles acting upon the toes and fingers on the left side and in a few of the muscles of the hand on the left side. None of the affected muscles reacted to faradism or only by a sluggish contraction—that is to say—this patient, in addition to his apoplectic condition, suffered from multiple neuritis. The third patient, a man of 40, had had lead-poisoning. He developed a hemiparesis with loss of tactile sense on the left side. There was disturbance in the thenar muscles on the right side, and of the thenar and interosseous on the left side. The case could not be hemiplegia due to cerebral lesion on account of the absence of degeneration of muscle, because the diminution of the response to electricity exceeded the degree of muscular degeneration and because the lesions were symmetric. [J.S.]

2.—Weygandt, having warmed the air and heated the water in a small bath-room with a gas stove, and thereby vitiated the atmosphere to such an extent that neither candle nor lamp would burn in it, undertook to take a bath. He noticed so soon as he entered, severe pulsation in the temples, ringing in the ears, a feeling of anxiety, then dizziness, some irritability; he then recollects going into his sleeping apartment, when he became unconscious. When he awoke he found himself lying upon the floor of his room, there was intense headache, vertigo, but nevertheless a feeling of indifference. He imagined that he had had an epileptic attack and thought of several peculiarities in the character that tended to confirm this diagnosis. He arose, went into another room and again became unconscious. When he awoke he found that he had vomited, there was roaring in the head, and extreme weakness of the muscles. He imagined that he had been poisoned by some preserves, but was nevertheless able when assistance arrived to ask for stimulants and to write to a colleague requesting him to come to his assistance. At the same time he correctly diagnosed his case. The **psychical course** of the condition, therefore, represents a disturbance of the intelligence and motion, then complete unconsciousness. This was followed by amnesia that involved a considerable period previous to the intoxication, that is retrograde amnesia associated with a correct recollection of earlier periods. The poison appears to have been due almost exclusively to **carbonic acid-gas**. [J.S.]

3.—Klieneberger reports the case of a man suffering from general paralysis who presented a curious **anomaly of the ear**, the tip being closely joined to the scalp; otherwise the appearance of the ear was almost normal. It appears, as a result of an investigation upon 450 patients in the insane asylum, to be an exceedingly rare anomaly. [J.S.]

Original Articles.

THE MASTER OF MEDICINE AS THE TEACHER
OF MEDICINE.BY BAYARD HOLMES, M.D.,
of Chicago, Ill.Professor of the Practice of Surgery in the University of Illinois, and Secretary
of the Association of American Medical Colleges.

IN these days of endowments and of great hospitals, great laboratories and "poly-logical" institutes, the teacher as a factor in medical education is apt to be forgotten. This strange socio-psychic phenomenon is brought to mind in this connection by reading a recent article on general American education by a German professor of psychology.¹ He considers the chief and distinguishing characteristic as well as the principal virtue and glory of his education in Germany to have been the masterly superiority of his teachers. His teachers of mathematics were first and above everything else masters and doctors of mathematics; his teachers of Latin were masters of the Latin literature, and his teachers of chemistry were distinguished chemists. Thus in the most elementary class he was under the tutelage of no mere disciplinarian, but in the radiant enthusiasm of a master, a leader and a discoverer. To such superior teachers he attributes the rapid advance of the German boy through science, literature, and philosophy with a gain of one third the time and energy which the American boy expends.

It is certainly true that our colleges and universities are full of professors who hold positions to which they have, by the evidence of work done or mastery attained, no reasonable claim. Professors of Latin are ignorant of anything but the most rudimentary Latin; professors of physics are tyros in a laboratory, and are lost in the mathematics of optics; professors of music are unfit to lead the orchestra of a beer garden. Mere proficiency in Arabic, a knowledge of the language, literature, and history of Arabia may not be the only desirable qualities of a professor of Arabic, but they certainly are essential qualities. Our colleges and universities are full of men who are masters of nothing. They are, many of them, pleasant amateurs, but they are guiltless of grasp or art in their departments.

In only a few of our medical schools has any serious effort been made to teach medicine. When we have in every State of the Union supporting a medical school, such an anatomical institute as that at Berne or at any one of twenty German universities, when each of fifty of our medical schools provides such a physiologic institute as that at Leipzig, and have equipped on the same scale pathology and pharmacology, it will perhaps then be time to talk about thoroughly prepared teachers. It is a source of great satisfaction that Harvard and Johns Hopkins in the East, and Michigan and Minnesota in the West, have such magnificent equipment in laboratories and hospitals. There are other schools following not far behind these. But equipment alone is not enough. The studio does not make the sculptor nor the violin the artist. These laboratories and hospitals must be manned with masters and teachers. There are some most remarkable examples of good teaching in almost every branch of our medical curriculum, and the past records many celebrated and

original lectures. The serious progress of our American medical education is obstructed by poor teachers everywhere. These men hold their positions because they are there and no one can displace them. The students are passive because they know nothing about the subject, or knowing, they are powerless to change.

No effective check is placed on poor teaching or poor teachers, no preferment comes to the good teacher, and no search is made by the university for scholars. When adjunct professors are sought by overworked professors, the weaker rather than the stronger candidate is selected. How many times has this been illustrated in the last ten years! The second place in a department is to be filled. The candidates are assembled. The choice falls upon the senior professor. He chooses the harmless and forceless man because he can never become a rival.

In any good and workable educational system there must be some method by which the ability of educated men to teach medicine can be tested—by which a constant supply of trained teachers can be provided for the medical school. Prof. Osler has suggested the advantages of extramural teaching. This system, so much in use elsewhere, has not been tried to any extent in America. With the growth in hospitals and the great increase in the number of medical students, it must soon be considered. It would put many men as well as many hospitals on trial, and would no doubt discover, if not develop, a lot of good medical teachers.

Our whole system of medical teaching has been too far exclusive, proprietary, and iron-clad. We have a professor of anatomy, instead of several professors of anatomy. The student must attend certain lectures and do certain laboratory work, instead of attaining a required proficiency. He must pass certain professors' examinations, instead of having an opportunity to show his knowledge of medicine in an original work. The whole aim seems to be to train helpless incompetents. There is no teaching or training of strong men in medicine—independent and progressive.

But what can be expected with such faculties as are gotten together. "Like teachers, like pupils." Take a medical college catalog from your table and read of the names of the faculty from dean to diener. Opposite each name write down any contributions made to his science by each professor in turn. Consider the quality of the man's contributions and its influence. Then alone can the sterility of our medical education be explained.

Our system is bad—a survival of the ancient Scotch method. Our teachers are badly chosen on account of the very motive of medical teaching, and were it not for a most remarkably earnest student-body the results would be disastrous. Medicine is so absorbing and inspiring, and our American student is so self-reliant and venturesome, that, given now and then a teacher to set the student a pace, the results of our system become endurable.

If instead of looking at the actual present conditions we look at the progress made in medical education during the past 15 years, we have great reason to rejoice. The danger now lies in arresting this growth because our schools have become big and prosperous. Our progress has been great, but it has just begun. We must insist on adequate equipment in every department. Every college that is worthy of the name must have an institute of anatomy, an institute of physiology, an institute of pathology, a medical library, a hospital

¹ *The Atlantic Monthly*, May, 1900.

of general medicine and a large coordinated faculty. Every man in that faculty ought not only to have earned his position through the mastery of his science which he originally showed by a contribution to its advancement, but he should hold his position by continued contributions and by his ability to lead and inspire students to similar original work. As the time to appoint members of the faculty approaches, the dean should ask what contributions to medicine each applicant for appointment has made for himself or in the names of his students. If no work has been done, the questions may be asked: Has the man stopped growing? Is he working under dwarfing conditions? Can this unfruitfulness be otherwise satisfactorily explained? Let the faculty be composed of well-equipped and growing men, let each teacher have freedom and each student have guidance and example, and our students will bring honor upon our profession and they will enrich our literature.

THE TEACHING OF PHYSIOLOGY.

By WILLIAM TOWNSEND PORTER, M.D.,
of Boston, Mass.

Associate Professor of Physiology in the Harvard Medical School.

To the physician the study of physiology is of use largely because it creates a habit of thought essential to the highest professional success. Physiology is a *rational* science. Its problems require the scientific method. They demand the precise statement of the question in hand, a severely critical examination of the results of experiments, and the arrangement of the accepted experiments in the order that shall lead logically, step by step, to a correct solution. Medicine is itself an experimental pursuit. Its higher walks are open only to those skilled in research. The scientific method cannot be acquired by the study of anatomy and pathology in the purely descriptive form in which they ordinarily are presented to the medical student; in this form they are stuff for visual and aural memory—not for the exercise of reason. Nor can the experimental state of mind be readily acquired by the study of clinical medicine. Reliance must be placed on a well-developed highly rational science cultivated to train rather than inform the mind, pursued not for its stores of information but for the highest product of human faculty—the system of inquiry that leads to light through darkness. Too often in our medical schools information is mistaken for knowledge. Only knowledge is power. The getting of mere information wastes the student's time. The vast accumulations of centuries of medical study confuse the undisciplined mind and crush the spirit. The burden of fact which any man can bear is relatively small and each year grows relatively smaller. To find new truths and to look undismayed upon the old is the perfect fruit of education. This physiology can give, and on this power to train should rest the high position of physiology in schools of medicine.

I purpose in this article on the teaching of physiology to show how great is the gap between sound theory and existing practice, to point out the ease with which large classes of students may be carried along the well-known roads that lead to scientific power, and to give the results of one year's experience with a method of instruction different from those heretofore employed.¹

The physiological lectures in medical schools are commonly given by one man and cover the entire field of physiology. This field is much too large to permit of even superficial personal acquaintance by one man. Necessarily, therefore, the instructor must take the chief part of his lecture from textbooks. To this he adds citations of a few experiments or observations taken from the original sources. He has not and cannot have real knowledge as to the present state of special opinion on the majority of the chapters in his subject, because none but a specialist can cope with the constantly rising flood of meritorious research in any one chapter,—to keep pace with the whole of a science which stretches ample arms over the larger part of human and comparative biology is impossible. Physiology could not be taught by the lectures now so largely given, even were lecturers gifted with superhuman knowledge. Physiology deals with phenomena, not with words. Many of these phenomena, for example the heart-sounds, cannot be described; others can be pictured dimly, but only to those who know related phenomena from having actually seen or otherwise sensed them; in no case can lectures properly instruct unless the fundamental facts or closely related facts have first been learned by actual observation in the laboratory. The student should come to the lecture already possessed by his own efforts of the phenomena to be discussed. Chapters, such as metabolism, in which the fundamental experiments are unusually difficult or protracted, should be preceded by less difficult though related chapters. If the obstacles to practical work in any field are insurmountable, the protocols of classical experiments in this field, together with a suitable connecting text, should be studied before the lecture. At present the lecturer too often merely offers a list of facts which mean little or nothing because they cannot be associated in the student's mind with phenomena already observed. The lecturer attempts to remind the student of that which the student never knew. The secondary schools have prepared the student to see nothing strange in this. Most men enter the physiological course persuaded that natural science can be acquired chiefly from books, and leave convinced that a deal of talk and a pennyworth of nature will give real knowledge of the action of living tissues.

A natural science cannot be well taught except by those who have themselves made experimental investigations in the special field which they would teach. No one in these days can work profitably in many fields, and only necessity should make one man attempt to teach them all. A man trained, for example, in the physiology of digestion is likely to have but a relatively feeble grasp on the physiology of the circulation, the nervous system, or the special senses. It follows that most of the instruction in the one-man system does not adequately represent the present state of knowledge. It is behind the times in all except the special field cultivated by the instructor himself. So far as possible, the didactic instruction in each field should be given by the member of the physiological staff actively at work therein, but this wise principle of the division of labor is not usually regarded.

Passing now to the demonstrations, we find that in the larger schools they are made before an audience of

¹ In December, 1898, I laid before a committee of the Faculty of the Harvard Medical School a report on the teaching of physiology. This report was after-

wards presented in part as an address before the Society of American Naturalists (*Science*, January 20, 1899, p. 87). It was printed by the *Boston Medical and Surgical Journal*, December 29, 1898, p. 647, and by the University Press, Cambridge, as a pamphlet, in January, 1900. The proposals there made were accepted by the Harvard Faculty, April 1, 1900, and have been in force during the collegiate year just closed, 1899-1900. Portions of this report, in a more or less altered form, have been included in the present article which is essentially an account of the instruction to be given during 1900-1901.

at least 200. Thus the greater number cannot see the demonstration clearly. If the class be divided into small sections, the brief glimpse allowed each man does not suffice for a full grasp of the details. Very commonly the demonstrations requiring much time are given in a course separate from the lectures. In short, most of the demonstrations as now given are an aid to the memory rather than a means of training in science. The position awarded them by the usual lecturer and by almost every student is one of the evidences of the fundamental pedagogical error which renders most medical teaching of anatomy and physiology so largely futile, namely, the deplorable notion that demonstrations are merely illustrative, and the book and the lecture the main force. Never was the pedagogical cart more squarely before the horse. Contact with nature is the essential of all training in biology.

The laboratory work in large schools is usually done in relatively small sections, and is not coordinated with the regular lecture course. The student feels that the experiments are purely secondary. The experiments are imperfectly arranged into groups. They merely illustrate the textbook. In no case do they present a full picture of any field. The time allowed is so short that criticism of results and insistence upon the proper standard of excellence is not attempted.

The instruction is the same to every student without regard to what his life is to be. Much time is given to matters which have a very remote connection with the future of most students, and which are not better material for training the mind than matter bearing directly on the student's future work.

It is important to inquire how this extraordinary system was developed. The reply is that the present method is a survival of medieval methods; the student of tradition finds a rich field in the history of medical teaching. The teaching of physiology has broken away from anatomy; men now living have taught both subjects in the same course of lectures. Descriptive anatomy became the most conspicuous discipline in medicine at a time when the best mental training could be had only from books, from lectures, from abstractions. It was the flowering time of metaphysics, of authority, of the deductive method. The true principle of approaching nature discovered by the Greeks survived only in a few men of genius, a spark that in our own time has been fanned into flame. Joined to the powerful example of the most liberal education of that period was the difficulty of obtaining material for dissection. Stark necessity united with specious theory to fasten upon this most concrete of sciences the methods of the schoolmen, and to this day the bulk of the instruction in anatomy remains didactic and consists of books, diagrams, and more or less misleading models. Dissections are made to illustrate the book. The printed description is learned by rote, and the dissection practised too often simply as a manual exercise. The anatomy of the medical college is largely a memory drill—such as belongs pedagogically in the secondary schools. These seventeenth-century notions have been passed from anatomy to physiology. That which began as a makeshift has become a dogma.

Practical work in physiology has also been kept back by the erroneous ideas that the cost of apparatus and other materials is prohibitory, that medical students cannot master the details of exact experimentation, that delicate apparatus cannot be trusted in their hands, and that instruction to the extent required cannot be

given to large classes because the course will become too complicated to be carried out.

Perhaps the chief obstacle which has kept physiology in an ancient and now almost abandoned path, is the public belief that because anatomy and physiology were once taught chiefly from books, they should still be so taught; that the functions of living organs can be learned from books with the occasional exhibition of dead organs; that the natural sciences should continue to be studied in secondary schools without laboratory work; in brief, that nature can be studied apart from nature. The public has a just contempt for men who profess to have learned disease without practical observation of the sick,—experience is conceded to be necessary here,—but the public is ready to applaud, and even to compel by law the study of the same organs in their normal state by reading or hearing a description at second hand of what some third person saw. The real drags upon progress are the failure of the secondary schools to teach science by scientific methods, and the fatal conservatism that binds teachers of medicine to a past that we should do well to forget. These venerable delusions no longer impede experts in pedagogy, but unfortunately medical teachers for the most part are more zealous than learned in pedagogy. They fail to see that medical training should be "for power" and only secondarily for information.

If it be replied to these strictures that a system which produces so many able physicians cannot be much in need of improvement, I answer that the men of talent veil the defects of the mass. They owe much to themselves; genius will thrive on the intellectual diet that stunts the merely industrious man. The average student does not build upon a sound foundation. He knows little anatomy, less physiology, and still less chemistry, and even his training in practical medicine has to be supplemented where possible by postgraduate work in a hospital. On the whole, it may be said that his industry has been largely misdirected.

The picture I have drawn of the instruction in physiology in the average medical school will be accepted by teachers of that science. The sense that the usual methods of instruction neither develop nor much inform the mind is general. Careful inquiry should therefore be made to determine how far the defects can be remedied with the means at our disposal. The problem is: How far can the correct theory be realized in practice? To what extent can all students of physiology be taught in the manner in which men are trained to be professional physiologists? Evidently physiologists are likely to study their own subject in the most profitable and labor-saving way.

The expansion of physiology has broken it into specialties. Even professional physiologists can no longer have personal acquaintance with the whole subject, or even a relatively large part of it. To a considerable degree the physiologist himself must acquire his information from reading the work of others. It would therefore be idle to expect the student to get a personal experimental knowledge of the whole subject. His limited time must be used chiefly for training and not chiefly for the acquisition of facts, as at present, and this training must follow the lines laid down by physiologists for their own development.

Deal so far as possible with the phenomena themselves and not with the descriptions of them. Where the fundamental experiments cannot all be performed, fill the gap with the original protocols from the classical

sources. Associate facts which the student can observe for himself with those which he cannot observe. Use as the basis of professional instruction, where practicable, the facts and methods to be used by the student in earning his living. Teach the elements by practical work. Let the student state his observations and results in a laboratory note-book, which, together with the graphic records of his experiments, shall form one of the requirements for the Degree. Control his progress and remove his difficulties by a daily written examination and a daily conference, in which the instructor shall discuss the observations made by the student and supplement them from his own reading. Stimulate the student by personal intercourse in the laboratory, by glimpses of the researches in progress, and by constant reference to the original sources. Diminish the distance between professor and pupil; both are students and both should be fed on the same intellectual diet. There is but one way to get and keep an education. Demand of every student a written discussion of some very limited thesis, giving the results of the original investigators, together with any observations the student has made for himself. Give the more capable students opportunity for original experimental work. Towards the end of the instruction, when the student is ripe for such work, offer a liberal number of courses of didactic lectures with demonstrations. Let each course consist of from one to four lectures not more than 45 minutes in length, presenting all that is known of the chosen subject. These lectures should show the student the historical development of scientific problems, the nature of scientific evidence, and the canons of criticism that help to sift the wheat from the chaff of controversy. From the beginning to the end of the instruction hold fast to concentration, sequence, and election. Such are the lines along which sound theory would direct the teaching of physiology in medical schools.

Concentration, sequence, and election are the safeguards of economical labor.

Whether the student's time is to be given wholly or only in part to the subject taught is the first problem to be solved in planning the actual instruction. Men in training for professional physiology commonly concentrate their energies for a sufficient period on this one subject; and this is regarded as the most economical way of mastering any science, for the ground gained by one day's work is still fresh in the mind when the next day's work begins, and continuity of thought is not disturbed. The plea that the instruction in one subject should be broken by the study of other subjects in order that the instruction in each may have "time to sink in" need not be entertained; experience shows that much of it sinks in so far that it cannot be recovered without the loss of valuable energy. A more serious objection is that the method of continuous application is highly fruitful in men of exceptional powers, who are keen in spite of protracted effort, but is wasteful for the average brain, which is fatigued and unreceptive after some hours of unremitting labor. The truth of this must be allowed; but the objection does not apply to wide-ranging sciences such as anatomy and physiology, which are not narrow, hedged-in areas, but which consist rather of broad and diversified domains composed of many contiguous fields, the varied nature of which is a perpetual refreshment.

A correct sequence of study is also highly important. Very often in medical schools the lectures in physiology

are given before the student has any acquaintance with the anatomy of the structures considered, and still more are heard before the student has any true anatomical knowledge,—that based on actual contact with tissues and not upon a glimpse of a distant prosection or a hasty glance at a diagram. Similar instances are not uncommon in later parts of the curriculum. The natural sequence demands that the study of structure should precede the study of function, and the study of the normal precede that of the abnormal. Thus the natural order of medical study is descriptive anatomy, physiology, pathology, and medicine. There is a considerable advantage in treating organs individually, studying their structure, physiology, pathology, diseases, and treatment in continuity, but practical difficulties in arranging such a course make this inadvisable.

Election is correct in theory and unavoidable in practice. Generations have passed since it was possible to teach every clever student all things. Yet in many schools the effort is still made. The herd of students is driven hastily past the monuments of genius and learning in the hope that they who run may read. Students are exhorted to be great, while littleness is thrust upon them. The obstetrician and the ophthalmologist still receive the same instruction. It is obvious, however, that this indiscriminate gorge will be soon an unpleasant memory. The wonderful growth of medicine is breaking bonds already centuries old. All minds in one mould is ceasing to be the ruling axiom in medical teaching, not because it is a terrible delusion which by retarding discovery has cost the lives of countless thousands, but because it is no longer practical. Success demands some acquaintance with all subjects and an intimate knowledge of one. Day by day the walls rise higher between one specialty and another. The parting of the ways begins at the threshold. In anatomy, physiology, and pathology the student should spend his time on those portions which are directly associated with his future work as practitioner or investigator.

This early election will be strenuously resisted by partisans of the tradition. They will contend that the present instruction embracing the entire field is known to give a very inadequate acquaintance with the subjects taught; therefore, instruction covering only a part of the ground will give still less. The argument is beside the mark. The present method of instruction would be inadequate in any event. The medical degree is granted for superficial information in twenty-five or thirty subjects. The sign of the scholar and scientist, namely, thorough knowledge of some one field, is wanting. Yet this training of the scientist is more and more necessary for success. Moreover, a thorough training in at least one subject increases the power of acquiring the fundamental data of related subjects while it protects the mind against superficiality. A further necessity for election is seen in the fact that the great medical schools are university departments. They are attended by an increasing number of men who will never practise medicine but will become investigators in some branch of biological science.

Following the idea of concentration, sequence, and election, I have proposed that the student's undivided attention be given to one principal subject at a time. The principal subjects in medicine are anatomy, physiology, pathology, and clinical medicine including surgery. The four years' course in medicine is divided into eight terms or semesters which usually comprise 16 weeks of instruction. The first of the 8 terms may

be given to the primary course in anatomy, including histology; the second to the primary course in physiology, including physiological chemistry; the third to the primary course in pathology, including bacteriology; the fourth to pharmacology, clinical chemistry, and physical diagnosis; and the four remaining terms to clinical medicine and surgery. The primary courses just mentioned provide the instruction in anatomy, physiology, and pathology which every student is advised to take. Advanced instruction in these subjects may be offered in subsequent elective courses.

To meet the needs of the several classes of students found in universities the department of physiology must provide: 1. The primary course already mentioned, suitable for every student of biological science, including medicine; 2. An advanced course, intermediate between the primary course and research; this advanced course will be taken by candidates for the degree of Doctor of Philosophy who have selected physiology either as their principal subject or as one of the two or three subordinate subjects required of such candidates. 3. Opportunities for physiological research.

The primary course in physiology is held from 9 A.M. to 1 P.M. daily during the second term of four months in the first year of the medical curriculum. The afternoons of these four months are devoted to physiological chemistry. The primary instruction in physiology is divided into three parts. Part I, of 5 weeks' duration, provides thorough experimental work in some limited field. In this, the student should acquire the point of view, the general physiological method, training in technic, and a complete knowledge of one or more tissues to serve as an introduction to the physiology of the remaining tissues. There can be little doubt that the physiology of muscle and nerve should be chosen for this purpose. It is the most fully developed chapter in physiology and is well adapted to train the mind in habits of exact experimentation and close reasoning. Moreover, the physiology of muscle and nerve is in large measure the physiology of all living tissues, so that a man learned in this one field is in effect already acquainted with the general principles of physiology. Part II, of about 7 weeks' duration, comprises carefully arranged fundamental experiments giving in turn the elements of each field in physiology except that of nerve and muscle which has just been studied. In Part III, covering the remainder of the term of 16 weeks, the instruction is divided into special courses on the physiology of the eye, ear, larynx, digestion, the spinal cord, the innervation of the heart, etc. Each course is long enough to include all the practicable experiments that should find a place in a systematic, thorough study of the subject. The number of such experiments, and hence the length of the special courses, is naturally different in the various instances; thus the experimental physiology of the eye occupies more time than the physiology of the larynx. The student may elect the subjects that most interest him, but must choose a sufficient number to occupy him during the entire four weeks of instruction. In planning these courses, the aid of distinguished specialists is sought.

Each student is required to present one written discussion of some small and sufficiently isolated thesis, giving the work of the original investigators. The way of dealing with the sources at first hand is thus learned. Many of these essays are read and discussed before the class. The discussions begin with the sixth week of the course and are held daily during nine weeks. None is

held during the last two weeks. The literature of each subject is divided into two portions and each is assigned to one man. The 54 subjects, therefore, are presented in 108 essays. The men chosen for this purpose are the best in the class; their choice is determined at first by the results of their examinations in anatomy, and, so soon as practicable, by the results of their work in physiology. In addition to the two men who read theses, one or more of the investigations on each subject are studied by four men, who are thus specially qualified for the discussion. The four are selected in turn from the whole class. To illustrate, let us take as an example "The transmission of the cardiac excitation wave." One student defends the theory that the cardiac excitation wave is transmitted through muscular tissue; a second defends transmission through nerve tissue. Each presents a carefully written account of the evidence pro and con. The four men, each of whom has read at least one of the investigations on this subject, lead the discussion, which is held by the entire class and the departmental staff. The subjects chosen for discussion are, as a rule, such as cannot be fully studied in the laboratory. Thus the discussions complement the remaining instruction. The subjects to be discussed are bulletined before the appointed day, so that the class may come to the discussion somewhat prepared.

In the last two weeks of the course, students who have performed their experimental work especially well may elect instruction in physiological research. The subject chosen must necessarily be very narrow, and, where possible, should be one the literature of which has been already examined in the preparation of the student's thesis. Experience has shown that after 14 weeks of strenuous labor in experimental physiology, the student of average ability learns to work rapidly and carefully, so that much can be accomplished in two weeks of experimentation in one small subject. Even a very brief experience of investigation is of the greatest value and interest. Examples of subjects suitable for training in investigation are: "The compensatory pause;" "The tetanus curve;" "The action of calcium and sodium ions on rhythmic contractility."

Beginning with the second week of the course, a daily written examination, 20 minutes in length, is held. One or, at most, two questions are asked. They concern the student's own experiments. The purpose of the examination is to cultivate precision in statement. The emphasis which the question gives imparts a correct perspective. Further, the examination reveals men whose indolence or incapacity marks them for special care. The following questions are some of those asked in such examinations: "Give experimental evidence to show where stimulation begins on the closure of the galvanic current? Explain the difference between the stimulating electrodes and the physiological anode and cathode in the stimulation of human nerves? Give the experimental basis for an explanation of the auriculo-ventricular interval?"

The didactic instruction consists of a ten-minute talk in the laboratory, commenting on the examination of the previous day and explaining any special difficulties in the experiments, and of a daily lecture. In every instance this lecture is intended to discuss experiments. Wherever possible the experiments are to be performed by the students themselves before coming to the lecture. Experiments which the students cannot do for themselves are studied by them from the original protocols, furnished with a suitable explanatory text. Thus the

fundamental elementary information is gained from the original sources before the lectures. The students are questioned concerning these fundamental experiments. The questions are arranged in the sequence required for a systematic presentation of the subject. Wherever necessary, the lecturer adds from his own stores to the information already possessed by the student. The class is encouraged to question the lecturer concerning matters not quite clear. At the close of the exercise the lecturer sums up briefly. The end in view is the development of the mind rather than the imparting of information. For example, the fact that the pressure of the saliva in the ducts of the submaxillary gland during secretion is higher than that of the blood in the carotid artery is not presented as a fact to be memorized, but is discussed with reference to its bearing on secretion by filtration; the student has learned the fact itself from the original source before coming to the lecture. Some of the lectures on special subjects, such as the eye, are given by distinguished specialists in practical medicine. Each instructor gives as an elective one or more lectures describing, with demonstrations, his own investigations; the investigator discussing his own experiments is a powerful intellectual stimulus; too little account has been taken of this educational force.

The student should be provided with what may be called a laboratory textbook. This textbook consists of a series of experiments and observations, taken from the original sources, and arranged in the sequence suited to develop the subject. Very often the historical sequence serves this purpose best. The description of the experiment follows the original so far as practicable. The experiments are provided with a suitable commentary text. The student is made to feel at every step that physiology is an experimental science, that the only material proper for discussion consists of observations and experiments free from error, and that safety demands constant reference to the original source. The laboratory textbook is supplemented by the student's laboratory notebook, in which the student preserves the graphic records of his experiments and the notes of his observations.

The examinations held in the primary course consist of: 1. The daily written examinations, 75 in all; these are corrected daily and the papers of each student filed by themselves. 2. A written examination which is held at the end of the course and includes all that is taught. 3. The laboratory notebooks; these are collected and marked once a week. 4. A practical examination. This practical examination so well illustrates the character of the work accomplished under the method of instruction described in this article that an extract from one of the examination papers may be of service.

DEPARTMENT OF PHYSIOLOGY.

Practical Examination, May 28, 1900.

NOTICE.

Each student is assigned the number written on the tag fastened to his locker. He is required to make either one of the two experiments bearing his number and to write an account of his results on the blank furnished herewith. Where the results of the experiment are not expressed in a graphic record, they must be demonstrated to an instructor, who will then countersign the student's account of the experiment.

Questions.

- I. A. Show the effect of inhibition of the heart on arterial blood-pressure in the frog.
B. Show the influence of temperature on the form of the contraction wave.
- II. A. Prove that the spinal cord possesses vasomotor functions.
B. Measure the electromotive force of the demarcation current (current of injury) of nerve or muscle.
- III. A. Furnish evidence that the ventricular contraction wave may be transmitted by muscular tissue.
B. Demonstrate polar stimulation by the galvanic current.
- IV. A. Show that the fields of distribution of sensory nerves overlap.
B. Show the influence of an increase in peripheral resistance on the blood-pressure in the frog.
- V. A. Demonstrate the function of the anterior roots of spinal nerves.
B. Prove that the extensibility of muscle is increased in tetanus.

The final written examination counts 50, the daily themes 30, the practical examination 15, and the laboratory note-book 5, in a scale of 100.

After this brief yet comprehensive glance at the instruction, let us consider the question of ways and means. Let us suppose that the number of students in physiology is 200. Experience shows that it is of advantage to have the men work in pairs; indeed, many of the experiments in physiology cannot be done by one man alone, because the necessary manipulations require an additional pair of hands. Thus 100 sets of each apparatus must be provided for Parts I and II of the above course, in which the students all do the same work at the same time. In the elective subjects the number of sets is less, first, because the number of students in any one subject is smaller, and, secondly, because the character of the work permits a method of rotation to be applied. Expensive apparatus can be provided in sets of four or more, and the section divided in such a way that while four pairs of men work with one set others can work with the other sets, and so on. Much of the apparatus for the special courses is that in use by physicians in everyday practice, and may be obtained in small quantities from the manufacturers for little or nothing, as the advertisement of their product by its selection to serve as a model in the university is a valuable consideration. The cost of the remaining apparatus for students should be covered by \$50 for each pair of students, or \$5,000 for 200 students. Much of this apparatus is permanent, some will last for 20 years or more without renewal, and some is likely to require frequent renewal. If it be assumed that the whole plant must be replaced every 10 years—surely a liberal estimate—the entire cost of apparatus, including simple interest at 4% on the original investment of \$5,000, would be met by setting aside \$3 a year from the fees of each student—a sum within the reach of any large medical school. It is assumed that one piece of each kind of apparatus shall be made by the laboratory mechanic, and bids for a hundred duplicates taken in the open market.

The staff of the physiological department, including physiological chemistry, should consist of two professors, three able instructors, eight assistants, a mechanic, a

secretary, three laboratory boys, and a scrub-woman. All these should give their entire time. The cost of such a department is about \$22,000 per year. A suitable building containing separate laboratories of physiology and physiological chemistry, for 200 students, suitable rooms for research, an ample library, a machine shop, with accommodation for the necessary animals, etc., costs \$150,000.

Little need be said concerning the instruction intermediate between the primary course and research. In the intermediate course the experiments chosen for the individual student vary with his goal, and are arranged in the order that seems best adapted to train the mind for research in the direction desired.

The methods of primary and advanced instruction here presented are obviously the methods of the investigator. They can be carried out effectively only by those whose chief purpose is the advancement of human welfare by discovery. In many schools, instructors are still selected mainly because they can talk agreeably of the work of others; in some, the instructor must have made one experimental study in the subject which he teaches; in a very few of the large schools, the higher positions are occasionally bestowed on men to whom research is more than a memory, but these positions almost invariably are burdened with a great mass of petty administrative detail. The university devotes these men to researches which the university prevents them from making. Thereby its best minds are set to its lowest work. A change is necessary here. No man who has not made at least one experimental investigation should be appointed assistant in a department of physiology, no man who has not shown marked capacity for original work should be made instructor, and the professor's chair should be filled only by those in whom the ardor of discovery is not likely to be cooled by the advancing years. At least half the day should be set aside for research, and the hours thus reserved for the highest studies should be guarded against every encroachment. The best elementary instruction can be given only in the atmosphere of research. Discovery fires the imagination of youth, consoles the aged, and lifts the mind from mediocrity to greatness.

ON THE TEACHING OF PHARMACOLOGY, MATERIA MEDICA, AND THERAPEUTICS IN OUR MEDICAL SCHOOLS.

By JOHN J. ABEL, M.D.,

Professor of Pharmacology in the Johns Hopkins University.

It would seem unnecessary to define in the columns of a medical journal what is meant by pharmacology, but the frequent confusion of this term with pharmacy by those who are not teachers of medicine must serve as a reason for a brief statement of the methods and aims of this branch of medical science. The vague and often erroneous use of the word pharmacology seen in earlier writings, as in the definition of Nathan Bailey (1736), "a treatise concerning drugs," or in that of Samuel Johnson (1755), "an equivalent of pharmacy or pharmaceutics," is still frequently met with in our own time. Briefly stated, pharmacology tries to discover and explain all of the more obvious functional, and the less noticeable chemical and physical changes that occur in a living thing that has absorbed a substance capable of producing such changes, and it is also its province to learn the fate of the substance thus incor-

porated. It is not, therefore, an applied science like therapeutics; it is one of the biological sciences, using that term in its widest sense.

The interested student of the history of medicine discovers in every epoch some man far in advance of his contemporaries who may be looked upon as a leader in one phase or another of our subject. Such were Erasistratus, Dioscorides, Mesua, Avenzoar, Paracelsus, and Haller; and when we turn our attention to the modern laboratory methods of pharmacology and the lasting achievements gained by their aid, we find that the first great impulse was given by Magendie. That great experimenter's classical research on the physiological action of upas, undertaken early in the present century, was the first instance of the completely successful application of the analytic method in the study of the coarser changes of function which follow on the use of drugs. As early as 1813 he had also proved that the blood is capable of taking up and carrying metallic poisons, but it was not until the middle of the century that the pernicious doctrine of the "action of poisons by sympathy" received its death-blow. About the middle of the century, too, the memorable experiments of Claude Bernard and of Kölliker proving that the paralyzing action of curare centers in the end plates of the motor nerves gave further evidence of the value of physiological analysis as applied to the study of drugs.

Brilliant discoveries of a similar character have followed from time to time, and we have now innumerable instances of the rational analysis and at least partial comprehension of the more obvious functional changes that follow upon the administration of drugs and poisons. One has but to recall atropin, pilocarpin, muscarin, eserin, cocain, digitalis, amyl nitrite, chloral, chloroform, ether, salicylic acid, ergot, and other well-known drugs and poisons, to appreciate how great is the store of knowledge relating to the action of drugs which is at the disposal of the modern student.

It was experiments like those of Magendie and his successors that induced Mitscherlich (1847), and later Buchheim, to insist on the insufficiency of the mere bedside study of the action of drugs and led to the erection of special laboratories in which experimenters can build up their science undisturbed by the intrusive demands of practical utility. Buchheim's pharmacological laboratory, founded at the University of Dorpat in 1849, was the first public institution of the kind in the world and was long the best equipped in Germany. But it was not alone in Germany that attention was called to the new methods. The medical literature of our own country contains some eloquent pleas in favor of the analyses of medical problems by means of experiments. From among these I would call attention to that of Dr. R. Cresson Stiles, contained in a worthy but little-known research, published in 1865, entitled: *On the Direct Influence of Medicinal and Morbific Agents upon the Muscular Tissues of the Bloodvessels*. This physician was interested in the problem as to how the blood, in febrile conditions, acts upon the circulatory mechanism. He evinced considerable experimental skill, as shown by his use of the "surviving" umbilical artery in his transfusion experiments, and he seems to have had some premonitions of our later theories, for he subjected the umbilical artery to the action of blood drawn from a patient with typhoid fever and compared the results thus obtained with those noted when normal blood was used.

In one part of his paper he defends and justifies his methods in the following words: "Moreover, it is not to mere clinical experience that we must look for a revelation of the laws of disease. The laws of chemistry were not discovered in blazing fires or crumbling rocks; the laws of hydrostatics and hydraulics were not revealed in torrents, tides, or ocean currents, nor those of pneumatics and electricity in winds, whirlwinds, and thunderstorms; much less could it be rationally expected that the laws of pathology should be discovered amid the much greater complexity and more multitudinous conflicts of elements presented to the physician at the bedside of a diseased or dying patient. It is in the laboratory, and by artificially contrived experiments that the clue has ever been spun and the torch lighted to guide through the labyrinths which hide the arcana of nature."

By means of "artificially contrived experiments" we are today enabled to demonstrate in detail how drugs act on the various organs of the body and what is their immediate, specific action on the parts of a compound mechanism like the circulatory apparatus. Thus we teach the student of our day the method by which is analyzed the action of a drug on the heart and arteries, on the vasomotor, cardioinhibitory and respiratory centers, on the terminals of the vagus, on the spinal cord and brain, on the intestines, the uterus, the salivary and other glands, the iris, ciliary body, etc. Conceptions familiar to the therapeutician are thus resolved into their elements and made accessible to the beginner.

The empiricist may perhaps assert that an experimental demonstration and analysis of the manner in which atropin, for example, causes dilation of the pupil is of little service to him, that the clinical fact is all-sufficient. A physician of this practical turn of mind may long use with safety his corrosive sublimate, his ether, his salicylic acid, his homatropin, eserine, and other drugs; but, sooner or later, if he is an observing man, he will find himself confronted by doubtful and obscure questions which directly concern the welfare of his patient, questions that can only be cleared up with the help of the "artificially contrived experiment." No branch of practical medicine can afford to neglect the study of the principles and methods of pharmacology. For, like other branches of experimental science, it teaches conservatism by pointing out how vastly complex are the phenomena of the action of drugs and showing how little is clearly understood aside from the grosser and visible changes which follow upon their administration. The dogmatic use, in symptomatic treatment, of cardiac stimulants, depressants, antipyretics, and innumerable other remedies whose extraordinary virtues are lauded in commercial circulars, finds no justification in the teachings of pharmacology. Its teachings are not always or immediately convertible into bedside dogmas.

It must be confessed that the therapeutic nihilist who uses only what is indispensable among drugs, but who is wise in the curative power of air, water, food, rest, and exercise, will have less to answer for in the final reckoning than his drug-enslaved colleague who prates of controlling disease in its every symptom with this or that panacea and who is guilty of the premature application to practice of what are only unproved theories.

Pharmacology gives no support to the unthinking worship of canonical authority. In instances when true specifics and well-founded remedies are manifestly powerless, the plan outlined by John Locke is as ap-

plicable now as it was when he wrote: "You cannot imagine how far a little observation carefully made by a man not tied up to the four humours, or sal sulphur and mercury, or to acid and alkali, which has of late prevailed, will carry a man in the curing of diseases though very stubborn and dangerous; and that with very little and common things, and almost no medicine at all."

In an age in which pathology and diagnosis are so far advanced and in which more genuine help is derived from the rational use of drugs than ever before in the history of medicine, haphazard drugging is unpardonable, and still more to be condemned is a fanatical and conceited adherence to dogmas based on a superficial understanding of complex physiological principles.

I have spoken thus far only of the older and well-tried methods of pharmacology, methods that are still fruitful, although newer tendencies are now followed and fresher fields are being tilled. The more detailed examination by means of modern physiological methods of the respiratory, circulatory, muscular, nervous, and other functional derangements which are met in "intoxications" will surely lead to most important results. One of my younger colleagues, who is now carefully reviewing the list of drugs that act on the heart, tells me that not a single one of them has been studied on all sides from a modern physiological standpoint. Digitalis alone of the list has been the object of a fairly complete physiological examination, but everywhere in this field of the *cardiaca* there seems to be a great accumulation of physiological facts ready for the coordinating hand of the pharmacologist. As elsewhere, judgment and special knowledge are required, and the day has long passed when he who knows the drugs of the pharmacopeia and their clinical uses and who is able only to set up a kymograph and attach a few registering instruments can claim to be a pharmacologist. Such an one will not travel far beyond the region of mere routine, a region chiefly of pedagogical interest.

Thoughtful pharmacologists have also made it the object of their investigations to understand more fully the chemical and chemico-molecular phenomena that underlie and accompany the coarser changes to which reference has already been made. The principles of physics and chemistry must furnish the pharmacologist with provisional or permanent explanations of these phenomena. Like the physicist, he is well aware, however, of the "futility of attempting an ultimate explanation of natural phenomena," and fully recognizes the limitations of his method. At present we make use of a hundred terms which convey anything but a clear idea to the mind. Take so old a drug as ethyl alcohol, for example, and endeavor to explain why it is not a dynamogenic substance for muscle-tissue. We hide behind such expressions as "protoplasm poison" and the like. We know that alcohol is oxidized in the tissues and that liberation of energy follows, but a more careful study of the subject shows that oxidizability and the liberation of energy are not alone the measure of dynamogenic value. A closer study of the intermediate steps in the oxidation and of the chemico-molecular processes which are initiated by these products and by the alcohol itself will alone clear up a problem of this sort.

Knowledge of the "chemical architecture" and constitution of a given drug often enables the pharmacologist to trace it in its passage through the body, and in

studying its chemical fate and final disposition, valuable facts bearing on the synthetic, oxidative, reductive, or splitting powers of various tissues and organs have been brought to light. In this way, too, intermediate products of metabolism are discovered and glimpses of hidden chemical processes are obtained which throw light on deep problems of pathology and clinical medicine. The results of the study of the relation of chemical constitution to physiological action as yet apply only to certain families of chemicals. They have not led to any principles of universal application. Recently a clearer statement of the action of whole series of drugs and poisons has been given in the language of physical chemistry. Thus, this or that feature of the pharmacologic action of many acids is in proportion to the concentration of their hydrogen ions and depends to a lesser degree on the specific properties of their anions. The toxic or disinfecting action of a series of dilute metal hydroxids stands in relation to the concentration of the OH ions. The theory of electrolytic dissociation, on the other hand, plays but a subordinate part in determining the toxic properties of phenylic and other compounds. But wherever this theory is applicable to the problems of our science, it has put them in a new light. Yet it must be remembered that when we say that pharmacologic action in a given case is *ionic*, we are still far from the last possible analysis and explanation of the observed phenomena.

A new epoch began with the belief that many diseases are but instances of acute or chronic intoxication. The growth of the doctrine of toxins forced upon us by modern experimentation in bacteriology is seen in pharmacological literature and methods. The recent studies in the action of toxins and antitoxins, on the nature of immunity, on the nature and cause of diabetic coma, uremic poisoning, and other pathologic conditions in which poisons generated within the body play a role, are all instances of researches in which repeated use of pharmacologic methods and principles is made. It is evident, then, that pharmacology deals with the most fundamental conceptions of medicine, that it conserves and augments a variety of facts, methods and principles which are of service not alone to every branch of the medical art, but also to other branches whose subject-matter confines them to the laboratory, the private study, and the lecture hall.

When and how shall this subject be taught in our medical schools?

First, as to the time when it should be taught. I hold that this should be when the student begins his clinical studies and not before. I do not deny that it is often difficult to make room for this subject in the first clinical year, but the argument which in reality excludes it is that pharmacology, like physiology, is so capable of illustration by laboratory experiments and of presentation in the form of lectures, that it can be taught as soon as the student has the needful foundation in the way of physiologic chemistry, anatomy and physiology.

But this argument ignores the fact that every drug has its clinical uses, that the teacher of pharmacology is expected to point out what these uses are, and that it is impossible to avoid reference to diseases and their symptoms. In the interest of the student, by way of lightening his work and making it more profitable to him, it is imperative to teach pharmacology hand in hand with the early clinical work. For now he begins

to see drugs used; he notes, for example, how a patient behaves under ether; for what conditions the clinician prescribes iron, quinin, mercury, salicylic acid, codein, digitalis, potassium iodid, amyl nitrite and the like; what antiseptics and local anesthetics are used by the surgeon. He perhaps sees an outpatient with a gangrenous finger due to his having swathed it in 5% carbolic acid; he learns of mercurial stomatitis, of palsies and neuritic affections and anemias caused by the heavy metals, of exanthems due to drugs; he sees examples of iodism, cinchonism, etc., and specimens of urine that show misleading features in consequence of certain drugs. Though only a beginner, he meets at every turn with some practical application of the articles of our materia medica. Drugs now have some significance for him, an interest is aroused in their action, important data and conceptions are gathered by actual experience.

It must be remembered, too, that a description of the symptoms that appear when more than the therapeutic dose of a drug is given is an integral part of the teaching of the pharmacologist. In a word, toxicology is inseparable from pharmacology, and instruction in this branch, so far as it is not of a chemical or medicolegal character, deals with clinical and pathological data. How wasteful of energy is it to teach this part of the subject at a time when all practical knowledge of such data, with the exception of that gained by experiments on animals, is lacking! What does the student profit from descriptions, for example, of the nature of cocain, atropin, opium, or arsenical poisoning, at a time when he has seen nothing whatever of bedside medicine?

To say that the practical examples of the uses of drugs and of their toxic action can be as well learned by the student after he has taken the course in pharmacology is to deny the principle of economy in intellectual work, and indicates a lack of appreciation of the fact that the applied and the theoretical parts of pharmacology are not capable of a sharp separation in courses intended for medical students.

The question as to *how* we shall teach pharmacology may now be considered. But first, a few words concerning instruction in *toxicology*. It has already been stated that, from a scientific point of view, no sharp line of demarcation can be drawn between this subject and pharmacology. Only when the medicolegal, the industrial, or the chemical sides of toxicology are considered is it advisable to make a distinction. But these aspects of toxicology should not be neglected in our medical schools. Even in institutions in which the general principles and methods of toxicological analysis are taught in connection with the work in chemistry, or in which extensive courses in legal medicine and in hygiene are given, there will still be left a large field to be covered by the pharmacologist. In my own experience I have found it advantageous to give a brief course in toxicology as a preliminary to the work in pharmacology. My students begin their work with me at the conclusion of the first third of their second year, at a time, therefore, when they have had no clinical work and but little pathology. The course requires eight weeks, and there are two afternoon sessions and a Saturday morning recitation or conference. The points aimed at in the course are: First, the acquisition and comprehension of the physiological phenomena of intoxications; second, certain important phases of the subject regarded as a part of forensic medicine; third, the more important chronic intoxications which are

met with in the arts and industries; and fourth, the general principles of toxicological analysis as illustrated by actual practice at the laboratory desk.

Nothing in the way of vivisection is done by the student himself in this course.

The afternoon's work begins with a brief lecture and with demonstrations of a physiological character. In these a number of circumstances bearing on the action of a given substance, whether used as a poison or as a drug, are clearly set forth. These demonstrations constitute the best introduction to pharmacology. Some of the points illustrated are the varied symptoms of poisoning, such, for example, as the paralysis of the respiratory center by hydrocyanic acid or morphin; the influence of the place of application, as illustrated by the fact that not all mucous surfaces absorb poisons with equal rapidity; the rapidity of dispersion of poisons throughout the body; the paths of elimination for drugs and poisons, and the storage of drugs in various tissues and organs, and the great differences that obtain in these two fields; changes in the blood; the anatomical lesions produced by powerful poisons, such as arsenic, phosphorus, nitric acid, carbolic acid, alkalis, etc. A wide range of demonstrations, in which organisms ranging from paramecia to dogs and rabbits may be employed, is at the disposal of the instructor, who has access to original literature. In this way the beginner receives ocular proof of the fact that an intoxication, whether acute or chronic, is as complex a matter as any of the clinical conditions that he will later study in the hospital; that drugs can produce fever, convulsions, paralysis, and other symptoms; lesions of the various organs, alterations of the secretions and of the blood—in short, an interest in the manifold problems of medicine can here be aroused. It is, of course, understood that the rules of the physiological laboratory in regard to anesthesia are to be observed in work of the above character. During the first week of this course the demonstrations extend so far into the afternoon that the student has no time left for laboratory work, and can only arrange his desk for the chemical work.

The chemical work of the student is so planned that it shall instruct him in certain methods which will be of use to him in his later work in clinical medicine and will enable him also to make at least the necessary preliminary tests in a case of suspected poisoning. A small laboratory manual drawn up by the instructor is placed in his hands and its directions are modified from year to year. The ground covered in the laboratory includes the methods of isolating volatile poisons and the analytical methods applicable to the detection of small quantities of this class of poisons; the search for alkaloids and glucosids by the methods of Dragendorff, Brouardel, Kippenberger, and others, some typical poisons of these classes being mixed with foods and subjected by the student to processes suitable to their extraction; the search for metallic poisons and non-volatile acids; a study of blood-stains and the separation of blood from rust-spots, etc.; a spectroscopic and simple chemical study of the various hemoglobin derivatives as methemoglobin, hematin, reduced hematin, hematoporphyrin, carbon monoxid hemoglobin, etc.; a study of the changes in the urine induced by drugs.

In a course of this kind a wise selection of examples must be made and assistance must be given to the student by means of class demonstrations and informal talks, as well as by instruction at the laboratory desk.

In the past few years our students have come to us

with a better preparation in chemistry, and many of them have already had a special course in the detection of metallic and other poisons.

To avoid repetition we have therefore arranged a few class demonstrations showing the best methods of oxidizing organic matter and of detecting arsenic, antimony, lead, mercury, and phosphorus, paying especial attention to the simpler preliminary tests which shall enable the physician, if need be, to ascertain with certainty whether one or another of these poisons is present. The object of this chemical course is, therefore, mainly to give the student a bird's-eye view of the field, with a certain technic of an elementary sort and to further improve his chemical knowledge, something for which the modern physician finds more and more practical uses. Should the student who has taken such a course ever find himself involved as a medical expert in a medicolegal case he will not be entirely incapable of comprehending the controversial points which are agitating the chemical experts in the trial.

Along with this chemical work goes the reading of selected chapters of a good textbook, recitations, and informal talks by the instructor on special subjects, as the commoner poisonous plants of the country, or the intoxications met in the modern arts and industries. The talk or the recitation, as the case may be, is held early in the afternoon, before the laboratory work is begun. An hour on one other day on which no laboratory work is done is also given up to a recitation on assigned subjects.

It will be seen that there is little in the way of didactic lectures. The student profits most when, for example, he has himself detected opium in some mixture and has read his Blyth, Kobert or Lewin and then meets his instructor, to discuss with him, in an informal manner, the chief points in the physiologic action of the poison in its chronic use, or in its medicolegal significance and chemical detection. His previous reading has aroused his interest, and taken in connection with his chemical experiments and the demonstration on the living animal, it has prepared him for a conference whose chief aim is to help him to separate the essentials from the nonessentials.

The remainder of the year is devoted to *pharmacology*. This course is only in part a laboratory course, the class working in sections of four. Even if it is impossible for the student to perform more than a half-dozen experiments, this kind of work is too valuable to be omitted. Nowadays, when simple apparatus can be had at a comparatively low cost, it is not a matter of great difficulty to give every four students out of a class of 75 a number of highly instructive experiments. These may be so arranged that the student himself learns the chief pharmacological facts involved, say, in the action of ether and chloroform, the diuretics and purgatives, atropin, morphin and chloral, or digitalis, the nitrites and other agents that have a pronounced action on the circulatory apparatus.

I would, therefore, urge that at least 5 or 6 topics be made the subject of laboratory experiments to be performed by the students themselves under competent direction. The "artificially contrived experiment" has made the subject what it is; it is that instrument of knowledge with which the teacher and investigator tests the theories of the day; it is his very shortest road to certainty of opinion. Why, then, should it not give a clearer insight to the student also? As Porter so tersely puts it, "the meat on

which professors are nourished is just the diet for students."

As for the rest of the experimental work, numerous class demonstrations are necessary. The work in physiology, perhaps going on at the same time, has prepared the student to grasp the principles to be illustrated by the more complicated experiments and perhaps also made it unnecessary for the student himself to perform the many simple experiments to which he is equal, but which can be more quickly performed for him. For we must keep in mind that as Professor Welch has said, "Laboratory methods are extremely time-taking and are not adapted to teach the whole contents of any of the medical sciences." I need not recount the list of practicable class demonstrations. There is hardly a drug of importance for which a good demonstration is not to be found in the various scientific journals. We know that the list of drugs in actual use is very large, but if we ask what are those that have been found to be really indispensable to the surgeon, the gynecologist and obstetrician, the internist, the ophthalmologist, dermatologist and other specialists, we can easily reduce our portentous list to some fifty instances. Let these constitute the basis of instruction and serve as types; take these up in great detail, and whenever possible connect with them less important ones of similar action.

But to assist the student to master the contents of his particular subject should not be the only aim of the medical teacher; he should seek to arouse an appetite for all that is fundamental in the science of medicine; he should stimulate to inquiry, to a searching and logical analysis of the phenomena to be grappled with, be it in the laboratory or at the bedside. And in striving to carry out this high purpose, his own life work, his spoken words and his attitude toward his pupils are his chief means of influence.

I have thus far said nothing on the subject of *Materia Medica*. I do not believe that special instruction in this branch is called for. In the day when the student to the medical school entered with little knowledge of chemistry, botany, and other sciences, it may have been well enough to give special courses on the physical, chemical, and botanical characteristics of drugs, but the result in general was to overburden the student's mind with a multitude of dry details of interest or value solely to the pharmacist or to the student of pharmacognosy. When I began to teach pharmacology ten years ago, I discarded all separate instruction in materia medica. My plan has been to give only those points which are of actual importance to the student of medicine or which he ought to know for historical reasons. The drugs and preparations which are discussed in lectures and recitations are placed on a table where all may examine them, and the more important ones are passed from hand to hand while they are being described. In speaking, for example, of rhubarb, digitalis, cinchona, ergot, or opium, only brief historical remarks, with short accounts of their chemical composition and their behavior towards solvents are introduced.

Certainly all unnecessarily detailed description of crude drugs, of their active principles, or of the modern synthetic remedies, is out of place in a medical school. The instructor should allow himself but the briefest introduction as to the physical and chemical properties of a drug before he begins the more important discussion of its pharmacological action. Thus,

when chloral is the subject, he will describe its chemical relationship to the other anesthetics and hypnotics, its solubilities, its deliquescence, its decomposability by alkalies, etc. A rapidly-performed test-tube experiment showing how chloroform is split off when it is brought into contact with an alkali will prevent the student from prescribing it in this form. Such a method of treatment consumes but little time and is easily comprehended by the student who has had a suitable preliminary course in chemistry. In a word, I would teach materia medica in direct connection with pharmacology, letting it serve in the case of each drug or class of drugs as a brief introduction to the latter and giving only such parts as are indispensable to the physician in his administration of drugs or of such historical significance that they ought not to be neglected from the culture point of view. Here, as everywhere in our crowded courses, wise selection is our only safeguard. With regard to the *pharmacopoeial preparations* it has always been my plan to require only a knowledge of the more important ones, the student being requested merely to read over those of lesser importance. There is much truth in the remark made by William Withering more than a century ago, that "the ingenuity of man has ever been fond of exerting itself to vary the forms and combinations of medicines. Hence we have spirituous, vinous and acetous tinctures; extracts hard and soft, syrups with sugar or honey, etc., but the more we multiply the form of any medicine the longer we shall be in ascertaining the real dose."

Certain chemical and physical points which have a bearing on the combination of drugs as called for in prescriptions, or official preparations may be taken up again in a brief course in *pharmacy*. I cannot believe that the art of preparing drugs for therapeutic use requires a prominent place in the better medical schools of the day. The young physician who is fairly well trained in chemistry can get all that is necessary in the way of pharmacy out of a course of at most a dozen or fifteen lectures in which systems of weights and measures, incompatibles, and special points relating to prescriptions are dealt with, and in which demonstrations are given of how pills, tablets, suppositories, tinctures, and other official preparations are prepared.

In schools where the student is admitted with but a poor elementary training much more than this may be necessary. But, even under the most favorable conditions the limited course above outlined will leave much to be desired, even then the physician is not ensured against the commission of grave errors in prescribing. Without further study he must often rely upon the friendly hand of the professional pharmacist to correct his mistakes.

Here, too, then, the question is one of selection, of just how much will suffice in a field which is occupied by an allied profession.

There are great differences of opinion in regard to instruction in *Therapeutics*. In teaching pharmacology the therapeutic uses of drugs must necessarily be considered in more or less detail and pharmacological discoveries harmonized whenever possible with clinical practice. It is, therefore, necessary that the teacher of pharmacology shall be familiar with clinical work and with the actual effect of drugs and poisons on human beings. It is not necessary, however, that he should be an active practitioner, and it is only a man of unusual powers and exceptional training in science who can successfully combine practice with the demands

made on the pharmacologist of the present day as an investigator and a teacher. In all the leading universities of the world it is becoming more and more the custom for teachers of physiology, anatomy, pathology, physiological chemistry, and hygiene to devote themselves wholly to the duties of their chairs, and this practice will prevail more and more among pharmacologists as the wealth of medical foundations increases. No one individual, even if he has the widest clinical experience, can hope to teach the whole art of therapeutics. Is it necessary to attempt this? Is not the clinical teacher who is well grounded in the fundamental sciences the only one who can rightly train the medical student in the correct choice of drugs and other agents whose employment falls within his province?

Who, for example, can better teach the student how to treat the various acute and chronic forms of skin disease than the dermatologist; who better to treat the diseases of young children than the pediatricist; who better the details of drug application in diseases of the eye, throat, and nose than the specialist in these branches; who give wiser counsel in the use of drugs, foods, and other agents in the wide field of the internist than he who daily grapples with difficult problems in the cure and alleviation of disease? A practical mastery of therapeutics can only be obtained from contact with these men and their work.

In a limited way, a special course in *practical therapeutics* in the field of internal medicine may be given in a medical school, and it is of great assistance to the medical student who is obliged to enter upon practice immediately and without the advantages to be derived from a year or two of hospital practice. A course of this kind is a part of the curriculum of the Johns Hopkins Medical School and is given by an instructor in clinical medicine. It occupies a period of 15 weeks and consists of lectures and demonstrations given twice a week; as stated in the announcement of the gentleman in charge, this course comprises the clinical study of a number of the more common and useful drugs, their dosage, administration, and effects, methods of prescription-writing and illustrative formula, demonstrations of practical therapeutic measures, the use of hydrotherapy, the preparation of simple and useful forms of diet, the care of patients considered from the nursing point of view, the treatment of various emergencies and of special diseases by climate, rest, and other practical procedures.

The clinical work of the third and fourth years affords abundant opportunities for further training in practical therapeutics.

This brings me to the subject of *lectures and recitations or conferences*.

Some didactic teaching, be it in the form of lectures, recitations or conferences, is necessary in most, if not all, branches of medicine. In these exercises, the teacher not only clears up doubtful points and summarizes scientific evidence, but he also has an opportunity to so direct "the unwary understanding" of the young, as Sir Thomas Browne has it, that some perchance will escape intellectual sclerosis at forty.

My own experience with students has led me to believe that they profit most if they have first read their textbooks before attending a lecture on a given subject. The teacher's own experience is that he derives most advantage from a consultation with a specialist in some

other branch of science when he has first informed himself on the points at issue. It is then that a short talk with a man of wide experience easily clears up an obscure point. The student should be put into a similar attitude of mind by proving to him that he will get more out of an hour with his teacher than out of an hour with his books at home. If the subject under discussion is one that is well treated in textbooks, the established points may be passed in rapid review and then the latest researches, the newer theories brought out by the instructor. Whenever it is possible to do so, demonstrations and experiments should be used to illustrate the points under discussion, and these may be given either during the talk or immediately after.

No matter how well a textbook may be written, the teacher who is himself a worker in the laboratory and who follows attentively the researches of his contemporaries, will be able to clear up doubtful points and also to daily anticipate the author's second edition, for the last chapter of a textbook is hardly completed before the first needs revision. Aside from this, he is likely to have the advantage of the author of the book in certain fields, for no man is able to cover the whole ground with equal authority.

Now as to the student's part. I hold that only the laboratory work and attendance on such demonstrations as are of the highest importance should be obligatory. With such attendance and diligent reading of the best textbooks on the subject, the student will be able to bring himself up to the "pass" mark, since the examination should only cover the essential points, aiming like the later State examination to test and insure an average of attainment and an ability to make use of acquired knowledge. Of course the student will not in this way get the utmost possible out of the course, but to do this may not be a part of his plan of study.

He should be plainly told that he need not attend the lectures and recitations unless convinced that he will profit by them, and the head of the department and his corps of assistants will surely be above any small resentment when the student accepts this permission in good faith. The mutual attitude of teacher and student is of far more importance than rigidity of examinations or any tests or credentials whatever. I firmly believe in the liberty of both teacher and student. It is but fair to require of the former that he be a worker in some part of his field, and that he shall meet with enthusiasm and give his best to those who elect to go deeply into the subject as well as to do his duty to those who choose only the minimum or required work.

The immediate result of this frank understanding between teacher and student will be that the latter is free to give additional time and energy to some other line of work for which he may have a decided bent. But much more, he has the freedom of personal choice, with all the development that it brings to one who understands his own mental habits and needs. Petty and irritating restraints are removed and also the undue weight of authority sometimes attached to a curriculum supposed to be the result of the wisest judgment of his elders. We are apt to forget that we are dealing with men and women of some maturity whose plan for their life-work is made and who have a clear idea in general, of what their time is worth. They should have, as Bowditch, Mall, and other writers on this subject have pointed out, the advantages of an elective system and also, I maintain, have some freedom as to method of work in the field chosen.

Have childish restrictions, such as marking for daily attendance, and all the hateful machinery of the factory time-card system, by which some teachers attempt diurnal estimates of the student's mental status, resulted in such a remarkable elevation of the average student, that we should cling blindly to our present system?

As to *examinations*, that "necessary evil," I believe it will be admitted that, in subjects like that now under discussion, they should not be conducted as if the student were intending to make a specialty of each branch. They must be fair to the class as a whole. In my own opinion, a combination of written and oral insures the best results. Personal knowledge of the student's laboratory work, and also of the intelligence shown by him in recitations, is of great importance in enabling the instructor to judge of a student's right to his pass certificate. The ideal examiner for a given student is not always the man who has taught him, but may well be a specialist of equal rank in some other university. Such a change, so stimulating to the intellectual independence of the student, and so broadening to the teacher, could only be based on a better agreement than now exists in our country as to the teaching of a given branch in schools of equal grade. As long as faculties issue diplomas, they assume a responsibility toward the world of learning. How they shall discharge this duty is too large a subject for full discussion here, but it is very desirable that the method used shall involve a minimum of worry and strain on the part of the student, and of police duty on the part of the teacher.

THE UNIT SYSTEM OF LABORATORY CONSTRUCTION.

By CHARLES S. MINOT, LL.D.,
of Boston, Mass.

It is the usual custom to plan a laboratory building with a series of rooms adapted to particular needs, so that there shall be large rooms for large classes, smaller rooms for more special work, and private rooms for the instructors, places for apparatus and so forth. Undoubtedly an excellent building may be thus designed, and one well adapted for its original purpose. The suitability of any such building must, however, diminish more or less steadily as the years go by, for the simple reason that science changes, and its advance involves new changes in the teaching, changes of subject, of method and of apparatus, and it often happens that an old laboratory can meet the new demands but unsatisfactorily. Such difficulty arises especially, when any branch of science develops so much that it must for teaching purposes be differentiated into two, or three, or even more separate courses of instruction, each requiring special conveniences for its giving. Thus we have seen histology differentiated from anatomy, and making demand for quarters of its own, separate from the dissecting and with other conditions of light. Or again (an example), bacteriology represents an even greater differentiation from pathology, and insists on new laboratory accommodations. There is, too, a second factor, which constantly tends to render every laboratory inadequate, namely, the increasing growth of the medical schools in numbers. I am not acquainted with any statistics showing comprehensively the rate of this growth, but it is certainly rapid. These two factors, together with the conscientious effort to improve the quality of instruction, have led to an intense demand

for new laboratories, and now at this school, now at that, one hears of a new and costly building. We expect that many new laboratories for medical uses will be erected during the next few years.

Under these circumstances it becomes important to decide what design of the architect will be most likely to secure a building permanently available through the shifting needs of the future.

Now there is a class of buildings allied to laboratories, which, when well planned, allow for future enlargement, to wit: public museums. Formerly these were designed very much as laboratories now are, but at present a museum design is not considered good unless it is based upon a museum unit, *i. e.*, the floor-area covered by a single museum exhibition-case plus the necessary space around it for visitors. All the rooms are made multiples of this unit area. The other indispensable condition is sufficient lighting. If a museum is constructed upon these two fundamental principles, its rooms can all be used indifferently as work-rooms or exhibition rooms, or when it is enlarged the cases can be moved about each as a whole, and the entire museum easily rearranged.

This same conception of the unit, by multiples of which the dimensions of all the rooms are to be fixed, may be applied to laboratory construction. Although I know of no instance in which this unit system has been actually utilized for a laboratory building, I nevertheless venture to think that it is advantageous and practical.

It seems to me that the proper laboratory unit is the space necessary for a single student doing elementary laboratory work. The space must fulfil four requirements—it must offer room for the student to sit or stand and for others to pass by, it must offer room for a work-table, it must offer room for storage, and, finally, it must be abundantly lighted. The estimate of the floor-area for such a unit will necessarily vary, but it is likely to be about 20 square feet, which allows a table top 4 feet by 2 feet, and a space 4 feet by 3 feet for the student and for passage. It will also permit the table to have, say, two drawers and a locker below them, making a tier about a foot wide, and still leaving space for the student to sit comfortably at the table.

Next we may conveniently construct our units in pairs, that is, make tables for two students each, the drawers and lockers being placed at opposite ends of the table. This type of table is of course already often seen. Such a double unit may well serve for a single advanced student, or special worker, and for those cases, in which as often happens, two students make an experiment in partnership. A pair of students also can advantageously utilize a single window.

After fixing the size of our unit we must decide upon the number of units which should be taken for a single room. There are here two principal alternatives between which we may choose—the adoption of large laboratories or of a series of small laboratories. The choice is between keeping the students in large classes and dividing them into small sections. Personally I can advocate only the latter choice and must plead for it very strongly. In a large laboratory with 75 or 100 or more students, the noise and confusion are necessarily great, and the detailed supervision of the work is extremely difficult. If the students are subdivided into small sections, these and other difficulties at once vanish, and if each section can be assigned a separate room it may be put under the charge of a special instructor, who shall be personally responsible for the work of that

section. Thus each assistant can be given a certain independence and the sense of opportunity with the accompanying responsibility will tend to improve the quality of his teaching. He can be directed to carry his section over a certain part of the subject in a given time and left free to accomplish the result. If the section is small enough the work can be interrupted for an explanation, a direction or a quiz, and the students will ask more and better questions than in the large laboratory, where the many listeners embarrass them, and where they may not find always the same instructor at hand. Finally, the instructor can learn the personal qualities and needs of the men in a small section and establish personal relations with the individuals. It should never be forgotten that such personal relations are the most important factors in efficient teaching. It might be urged against the position here taken that the class could be divided into sections in a large room, but my experience convinces me that such a scheme is utterly impracticable.

There should, I believe, be a unit room adapted to a comparatively small number of students, and the laboratory should consist of a number of such rooms, and nothing else except the necessary passage-ways and lecture rooms. A unit room can serve without change for a smaller advanced class. It could be divided by temporary partitions into two or more assistants' rooms, or fitted up for a collection of specimens, apparatus or books. Finally, when the necessity for enlargement arises, it will be necessary only to add so many new unit rooms as may be desired, and as the rooms are all alike they may be interchangeably utilized as convenience dictates.

As to the size of the unit room, I am inclined, after considerable deliberation and discussion, to fix it at 24 students, which seems to me quite the maximum number that one teacher can properly supervise and direct in a practical laboratory course. Such a room would, however, be somewhat larger than 24 unit spaces, since there must be provided additional room for various fittings for common use, such as sinks, lockers, apparatus cases or tables, and also a place for the instructor's personal use. This would make a room of about 800 square feet of floor space. Such a room is probably more commodious than has been regarded hitherto advisable, but it is not more than should be provided now that the value of laboratory work is so thoroughly appreciated that it has become the essential part of the curriculum in medical science in all our good schools. Moreover, such a unit room could be used by at least two sections, coming at different hours of the day and thus be made to provide not for 24 but for 48 students.

As to the general disposition of unit rooms the best plan will probably be found to be that of long corridors with rooms on each side, after the manner so common in large hotels. The provision for staircases, toilet rooms, etc., may well be left to the architect, and to the decision of the needs in each special case.

The suggestion of the unit system is made only in general terms, thus leaving open for further consideration the exact size of the unit spaces and the exact size and shape of the unit rooms. These dimensions may well vary, and be more or less liberal according to the standards and resources of each medical school. But quite aside from these details, the adoption of the unit system seems to me well calculated to diminish the difficulties of both the planning and maintenance of laboratories for medical instruction and research. A

building on the unit system would not be more expensive than one of irregular plan, although it would offer greater advantages.

METHODS OF TEACHING GYNECOLOGY.

By HOWARD A. KELLY, M.D.,
of Baltimore, Md.,

Professor of Gynecology in the Johns Hopkins University.

THE question as to the best methods of teaching any particular branch of our art is always one of burning interest, which should command the serious attention of teachers everywhere. Such a topic is also especially timely at this juncture, inasmuch as while, on the one hand, gynecology has now been taught regularly in various schools for a quarter of a century or more, and the methods of teaching gynecology have largely settled into well-defined ruts, on the other hand the evolution of scientific pedagogy has in the same period taken remarkable strides. It behooves all teachers, therefore, to question their systems and to decide whether they are really advancing on the best lines, in accord with what is recognized as good teaching in schools and colleges.

I believe that gynecology is, as a rule, very badly taught, and the medical student gains but little from this part of his course. This fact would be evident at once to anyone familiar with thorough scientific methods of teaching employed in other departments; but, unfortunately, the object-lessons of this sort in America are still few and far between.

Before we can decide what are the best methods of teaching gynecology we must consider a few of the difficulties in the way of securing anything like a consensus of opinion among the teachers.

And the first of these difficulties lies in the fact that so many schools have reorganized their plans of instruction in extending the two-years course to one of three years, and others the three-years course to four.

Advanced as the University of Pennsylvania has ever been in the lines of medical instruction, my own class was the first which graduated as a class with three years of compulsory study. As a rule, the professor of gynecology, continuing on from the old system into the new, made no corresponding change in his method of teaching to meet the altered conditions.

Another even more serious difficulty, and one which will, I believe, in the end, swamp gynecology as a specialty in the sense in which it has been practised, is the encroachments of the general surgeon in the field of abdominal surgery, leaving the gynecologist no particular settled ground which he can consider as peculiarly his own. It is foreign to my purpose to consider this question here or to assume the prophetic role, but I may briefly state my conviction that the unification of surgery brought about by the general adoption of the principles of asepsis leaves the barrier between general surgery and gynecology a purely artificial one, and one which must inevitably, sooner or later, be broken down. My advice, therefore, to all gynecologists is to study general surgery and become general surgeons first.

Three classes of men come to me for instruction in gynecology, and I feel obliged to provide to the best of my ability for each. They are:

I. Students preparing for graduation.

II. Postgraduate students revisiting schools for better equipment.

III. Graduates desiring to become specialists.

I. Students preparing to take the degree of doctor of medicine. How much should a student know at graduation? or how little may he know?

I think the tendency of most of our schools is to give entirely too much instruction in this purely special branch. One year's instruction is ample, even in a course graduated to extend over 4 years. This leaves the student free to devote more time to the fundamental branches and laboratory courses in general medicine and in the principles of surgery.

But few students ever become gynecologists, and it is a waste of valuable time to treat the whole class as if they were working with this end in view. I shall refer later to the training necessary to build up a specialist.

In the last year when medical specialties are taken up in the natural order after a thorough preliminary training in the fundamental branches, from 3 to 4 hours a week may be devoted to the class in gynecology divided as follows:

1. History-taking and ward work, attending to dressings and removing sutures, and studying the sequels of operations, the convalescence.
2. A touch course once a week in which gynecological diagnosis is taught with the patient preferably under anesthesia.
3. An hour a week in the pathological laboratory studying scrapings and cultures and examining gross specimens.
4. Watching gynecological operations, the class divided into small sections.
5. Lectures.

I think the day for teaching gynecology by performing operations in an amphitheater before a large class of students has long since gone by. The students see practically nothing of what is going on, absolutely nothing in a deep, abdominal, or vaginal operation, and their very presence is a serious menace to the life of a patient.

The history-taking, the ward-work, the touch-course, all of which demand personal instruction, are the most valuable methods, bringing student and patient together, as they must meet in the natural course of events after graduation, and carrying the student up to the point beyond which he will not be apt to go, that is, up to the point of deciding upon the line of surgical treatment to be followed.

It must be borne in mind that, with our present conception, gynecology is essentially a surgical specialty, and making a diagnosis of a gynecological affection means, as a rule, an operation, while, with the vaguer methods of diagnosis of our predecessors, the very uncertainty allowed a delay for weeks, or months, during which time all sorts of so-called palliatives were employed, a line of treatment easily carried out by the general practitioner. I well remember the first instructions I had in a special course, when all I learned was to give the woman much pain by the examination, and to paint the vault of the vagina with Churchill's tincture of iodine in one case, and the next woman, without rhyme or reason for the change, with a carbolic acid and chloral mixture, and so on *ad infinitum*, completing each treatment with a ball of absorbent cotton. Many were the cases of "cellulitis" which owed their origin to such a course of treatment, associated with "intrauterine applications."

I cannot dismiss the touch course without urging that the number who make the examination should be

limited to several working under the watchful eye of the teacher, lest harm be done.

The early recognition of cancer as taught by the study of endometrial and cervical scrapings in the laboratory (perhaps the most important function of the teacher of gynecology) constitutes a leading feature in my own teaching as ably conducted by Dr. Thomas S. Cullen.

The use made of the lecture-room should depend upon the lecturer; if he is an inspiring teacher who well comprehends the modern definition of a teacher, not as one who talks volubly, but as "one who causes another to know," he may make his lectures associated with demonstrations and specimens, diagrams, and lantern-slides, a great attraction to the students. If he is a poor, dry talker he would better relegate this part of his work to a good quiz master and confine himself to the more practical lines of teaching.

"Seeing operations," especially the major gynecological operations, is perhaps the most abused of all methods of teaching. It is utterly useless for the student to see over and over again a hysterectomy or an ovariectomy which he will never do himself, and which, if he did attempt to do, it would be of but slight service in making him a safe operator. What he most needs to see repeatedly are the various minor operations which he may have to do, such as curettage and suture of the relaxed vaginal outlet.

It may be more convenient and profitable to divide the class into small sections and to double or even treble the amount of instruction in a given space of time. This involves repetition with each succeeding group, but it saturates the students for the time being with the subject and brings them individually closer to their work.

II. The plan of teaching for post-graduates must, as far as practicable, imitate the laboratory methods so widely used in other departments. Lecturing must be subordinated to demonstrations *in animâ vivâ*. The place of the lecture is a short informal talk about topics with which the hearers are not likely to be familiar, which are about to be demonstrated in practice.

The operator will then do well as he goes along in his practical work at the operating table if he remembers the needs of the bystanders and tells them from time to time precisely what he is doing and his reasons for doing it.

I do not consider it right, in the interests of the patient, to utilize men who enter a clinic for a few weeks only, as assistants in important operations.

Unfortunately, too, for the same reason (the patient's rights) only a limited number can be allowed to examine the patient beforehand. The surgeon must try to supply this want as far as possible by giving graphically both the history and results of his own examination.

A great need which we feel most keenly in this country is that of female cadavers enough to supply the demand for special dissections and for demonstrating operations to both students and post-graduates. An abundant supply of such material would greatly enrich our teaching facilities.

It is my own custom to receive post-graduates as on-lookers at any time in the course and for any period, to provide for them abundant demonstrations of the various gynecological operations, and an opportunity to study scrapings in the pathological laboratory.

III. I come now finally to a class which I think has not yet received sufficient attention in other clinics, a class, however, which I am personally inclined to

regard as really the most important of all to us teachers, that is to say, those men who are to be built up to become specialists in gynecology. In order to train a man this way the chief must be careful to select men who have real surgical ability; he must keep them for periods of from four to six or even eight years; they must receive exceptional opportunities in the operating-room (some of my assistants perform upwards of two hundred abdominal operations while acting as first and second assistants in the hospital). The chief must treat his capable men with the utmost generosity in this particular.

He must further supervise the development of a good man in his laboratory work, in his ward work, and in his teaching, and finally often end by sending him abroad to give him that assurance in his own powers which often only comes after witnessing the work of others. One of the greatest pleasures of my life has come from the association through a period of years, with just such men who have afterwards gone elsewhere to render distinguished services.

The man who in this way looks not only to his own success but endeavors to stimulate and to develop others, much as he would himself have wished to have been treated early in his career, will not only command the respect of his own generation, but will surely be reckoned by the men who follow him among those who have done the most to promote the best interests of his specialty.

The following is a summary of the course in gynecology as conducted for undergraduates in the Johns Hopkins University and Hospital:

At the Johns Hopkins Medical School the fourth-year class is divided into four sections, each of which devotes a large portion of its time for two months in turn to practical work in medicine, surgery, gynecology, and obstetrics, while in all those subjects lectures and quizzes are given to the whole class throughout the year.

The graduating class of last June numbered about 40.

The instruction in gynecology during the university year 1899-1900 was conducted as follows:

Lectures.—In gynecology, two didactic lectures were delivered each week to the fourth year students. Dr. Kelly lectured once a week, and Dr. Russell once, and between them the whole range of the subject was gone over.

The lectures were illustrated by blackboard sketches, diagrams, pathological specimens, and, whenever practical, by the demonstration of cases. Quizzes were occasionally substituted for the lectures, in order that the instructors might keep informed as to the students' progress.

Clinics.—Dr. Kelly operated three days a week throughout the year, and Dr. Russell one day.

The operating room was open to as many of the class as cared to attend, and the gynecological section was required to be present.

Before and during the operation the cases were discussed, opportunity given for a limited number of the students to make examinations under ether, and so arrive at their own diagnosis.

Special care was taken to impress the students during the operation with the importance of careful aseptic technic.

Ward Work.—To each member of the gynecological group several cases in the public wards were assigned during their two months' service.

The students took the histories of these cases, made the examinations under the supervision of the resident, witnessed the operation, and followed the after-treatment progress of their cases.

Rounds were made with the gynecological group by the resident twice a week, during which dressings were made, and the reasons for the treatment adopted explained.

Touch Course.—Once a week throughout the year a "touch course" was conducted by Dr. Russell. Here, from 3 to 6 dispensary patients whose condition without an anesthetic was uncertain, were carefully examined under ether by two to four members of the gynecologic section who made their diagnosis under Dr. Russell's direction. This course has for years proved of the greatest service to students.

Experience has shown that it was better for all concerned that the gynecological dispensary be conducted by a limited number of experienced men, hence this department has not been opened to the undergraduates.

Pathology.—For 4 months during the year a course in gynecological pathology was conducted by Dr. Cullen.

After an introductory lecture at each exercise sections were given out for microscopic study. Whenever possible the history of the patient, the operative interference, and the subsequent treatment were reviewed, while the preparations were being examined and demonstrated under the microscope. The pathological laboratory was open throughout the year for any students who cared to carry out original investigations.

Examination.—At the close of the term a final examination, both practical and written, was held, covering the work of the year.

THE METHOD OF TEACHING PHYSIOLOGICAL CHEMISTRY.

By R. H. CHITTENDEN, PH.D.,
of New Haven, Conn.

Professor of Physiological Chemistry in Yale University.

IN considering the methods of teaching physiological chemistry it is important to bear in mind that this department of biological science is in many ways more closely related to physiology than to chemistry; indeed physiological chemistry is to be considered as an integral part of physiology. Physiology deals with function, with the chemical and physical processes of living organisms, and the only reason why, in the minds of many persons, physiological chemistry stands by itself is the fact that the methods of work are essentially chemical. To be a physiological chemist a man must be a thorough chemist, well trained in chemical methods and well versed especially in the facts and theories of organic and physical chemistry. But while all this is true, it must not be overlooked that the ultimate object of all work in physiological chemistry is the elucidation of physiological phenomena. The questions to be settled are physiological questions, while the methods of work are essentially chemical. Obviously, then, the physiological chemist who hopes for a thorough understanding of the subject must be as well trained in physiology as in chemistry. Indeed, he should be a physiologist, as the term is ordinarily used, and at the same time possess an intimate and concise knowledge of chemistry and its methods. There are, to be sure, many purely

chemical problems, in both organic and physical chemistry, solution of which may throw light upon certain physiological problems; the chemical constitution of many organic substances occurring in the body is a case in point. Such questions are purely chemical, and for their solution require chemical knowledge only, although their elucidation may prove of great advantage to the science of physiology. The point the writer wishes to emphasize, however, is that physiological chemistry, while requiring a thorough knowledge of chemistry for its study, is something more than a mass of accumulated chemical data, and that its proper understanding involves a broad and thorough grasp of physiological principles. In order to rightly interpret the many and varied chemical facts which the student of physiological chemistry is called upon to study there must be, first of all, an accurate comprehension of the physiological significance of the facts in question, otherwise the work loses its chief value.

From the foregoing statements it will be evident that the study of physiological chemistry should be undertaken only after the student has acquired a working knowledge of chemistry and physics, and has received some training in general physiology. With this knowledge as a basis he is then prepared to pass on to the more thorough and experimental study of chemical and physical physiology. The two should go together; bearing in mind that what is desired is a broad knowledge of physiology. The writer has no sympathy whatever with the so-called short courses in physiological chemistry which deal simply with isolated experiments and groups of chemical reactions characteristic of the various proximate principles. To be sure such courses may be better than nothing, but they do not deserve the title of physiological chemistry. What is needed, on the other hand, in any course in physiological chemistry worthy of the name, is a thorough presentation of those chapters of physiology which are essentially chemical in nature, the principal and underlying facts to be worked out in the laboratory and supplemented by didactic lectures, demonstrations, and textbook recitations. In the writer's judgment it is only by this method of treatment, viz., by considering the subject as a part of physiology, to be studied in connection with related topics more physical in nature, that the full bearing of the experimental work can be made clear. For example, take the chapter on saliva and salivary digestion. The common method of treatment is for the chemical reactions of saliva, the conditions favoring the amylolytic action of this fluid, and the chemical nature of the products formed in amylolysis to be studied by themselves as a part of physiological chemistry, while the secretion of saliva, the influence of the nervous system on secretion, the histological changes of the gland-cells incidental to secretion, etc., are treated quite independently, and frequently at another time by a different instructor, under the head of physiology. How much better and how much more satisfactory to the student for the entire subject to be considered at one time, or as closely related matter requiring practically simultaneous treatment. Thus, it is an easy matter to not only show each student the influence of stimulation of the *chorda tympani* on the flow of saliva from the submaxillary of the dog as illustrating secretion, but at the same time the chemical composition of the fluid can be compared with that resulting from stimulation of the cervical sympathetic. The influence of alcohol, ether-vapor, etc., on the secretion of human

mixed saliva can be easily compared with the secretion resulting from simple mastication of some tasteless substance like rubber, not only by noting variations in volume for given periods of time, but in addition by studying the difference in chemical composition, and more particularly by demonstrating the differences in amylolytic power, thereby obtaining experimental evidence of the influence of the form of the stimulation upon the chemical composition and amylolytic strength of the secretion. By such a method of study, added to the usual demonstrations of amylolytic action, etc., the student is made to feel that his work in physiological chemistry is an integral part of his physiological training, and the subject acquires an interest it would not otherwise possess.

Again, in the study of gastric digestion it is not sufficient for the student to demonstrate merely the well-known facts regarding pepsin-acid proteolysis, but he should see for himself the production of a gastric fistula on a good-sized dog, collect gastric juice under different conditions and forms of stimulation, study the chemical composition of the secretions, determining the percentage of free and combined acid and the extent of their proteolytic power, and supplement these observations by the chemical examination of stomach-contents from man in health and in disease. Further, as a part of his chemico-physiological training he should study the character and extent of absorption from the stomach (ligated at the pylorus) and at the same time gain some practical experience as to the influence of such agents as alcohol, etc., on the secretion of gastric juice, both from a qualitative and quantitative standpoint. Again, not only should the chemical properties of the several products of gastric digestion be studied with great thoroughness, but likewise the physiological effect of these substances when injected intravenously. The influence of peptone and albumoses on the coagulation of the blood, on arterial pressure, as lymphagogs, and their action on the kidneys, are all subjects which may appropriately be studied experimentally with the products which the student has himself prepared in his work on digestive proteolysis. It is by such methods of study that physiological chemistry can be made to yield the best results; by giving to the subject its true position as an integral and essential part of physiology.

As another illustration take the glycogenic function of the liver. How incomplete and unsatisfactory to limit the study of this subject to the mere preparation of glycogen from the liver and a demonstration of its more common chemical reactions, as is so frequently done! How much more instructive and satisfying to demonstrate in addition the influence of diet upon the yield of hepatic glycogen, to study by micro-chemical methods the distribution of glycogen in the liver-cells, to demonstrate the relationship between the glycogen-content of the liver and the amount of sugar appearing in the urine after puncture of the floor of the fourth ventricle, to show by experiment on a fasting dog (with liver free from glycogen) that the injection of phloridzin is followed by a large excretion of sugar in the urine, thus indicating that the sugar can come from something other than carbohydrate, and lastly to trace out in the phloridzin dog the relationship between the excretion of nitrogen and sugar through the urine, thereby obtaining data in conformity with the theory that the sugar comes from the breaking down of the proteid.

It is, however, in the chapter on the urine that one commonly finds the most conspicuous lack of appreciation of

the true scope of physiological chemistry. The average teacher seems to rest contented if the student simply becomes familiar with the methods of separating the more common urinary constituents and learns their chief chemical reactions, adding to this a little experience in the testing for abnormal constituents such as albumin, sugar, bile-pigments, etc. Occasionally, too, a little experience is gained in the quantitative estimation of total nitrogen, urea, albumin, sugar, etc., but more generally with special reference to their clinical application in hospital-service, etc. Too little attention is given to the physiological axiom that the chemical study of the urine gains its chief importance from the light which it throws upon the processes of metabolism, both normal and abnormal, going on in the body. Here lies a great field, full of richness and one which should be explored more or less thoroughly by every student of physiological chemistry. Let the student be trained to make a complete quantitative analysis of the 24 hours' urine determining total nitrogen, urea, uric acid, nitrogen in the form of ammonia, sulphuric acid in the form of pre-formed sulphate and as combined sulphuric acid, total phosphoric acid, earthy phosphates, chlorids, etc. Let such a series of analyses be made by a class of students—say twenty men—and the results tabulated on the blackboard. By so doing a series of figures are obtained from which many important conclusions can be drawn. With a record of the body-weight of the individual students, of the total volume of urine and specific gravity it is easy to see that the volume of urine and the excretion of nitrogen are quite independent of body-weight. Proteid metabolism as indicated by the amount of nitrogen, sulphur, and phosphorus excreted is found to be independent of the size of the body, while the ratio of uric acid to total nitrogen shows such variations as to suggest at once that uric-acid production must be independent of ordinary proteid metabolism. The proportion of combined sulphuric acid and the yield of indican throw light upon the extent of intestinal putrefaction, and in this way by a careful scrutiny of the results obtained by the students in the analysis of their own urine many points of great physiological interest are demonstrated, and in a manner to arouse interest and enthusiasm. Further, by putting the men upon diets of different kinds many other facts of value may be obtained. Thus, if one man is fed mainly upon a diet of roast beef with some bread and potatoes while his neighbor consumes an amount of sweetbread (rich in nuclein) equivalent to the beef taken by his neighbor, it makes an interesting study to compare the output of nitrogen, uric acid, and phosphorus in the two cases. By a scrutiny of the results the students see at a glance that while the total nitrogen egested may be essentially the same, the nuclein-containing diet results in a much larger output of uric acid and phosphorus, thereby indicating the probable origin of uric acid, in part at least, in the nuclein molecule.

Again, in studying the extent of proteid metabolism in its relation to the amount of proteid food ingested, it is an instructive experiment for the student to determine the amount of nitrogen in his daily food, and likewise the amount of nitrogen in both the urine and feces for the 24 hours. In this way data are obtained as to the extent of digestibility or availability of the proteid portion of the diet in question, thereby emphasizing the distinction between the so-called food and that which is physiologically of service to the body.

Obviously, there are certain chapters of physiological

chemistry in which chief interest centers around the chemical facts themselves, but even here it is not a difficult matter to bring to the surface the bearing which these facts have on the broader physiological and biological questions which surround us on all sides. For many reasons the beginner in physiological chemistry devotes his attention first to a chemical study of the various forms of proteid matter, but here the significance of his work in relation to physiology may be made clear by a series of illustrations showing the importance of proteid as an integral part of all cell protoplasm, of its constant presence as an essential component of all living tissues, and the extent of its decomposition in the living human body. By calling attention to the fact that a man of average body-weight excretes about 35 grams of urea per day (with 46% of nitrogen), and that this must of necessity come primarily from the breaking down of proteid, we have a sufficient argument for the physiological importance of proteid, and at the same time a striking illustration of the value of a thorough study of the decomposition products of proteid by oxidation and otherwise, with a view to understanding, so far as possible, the chemical constitution of this complex molecule and the changes which it undergoes in the body in the processes of catabolism, prior to its final excretion as urea.

Again, in the chemical study of the inactive tissues of the body—viz., the epidermal, connective, cartilage, and bone—where the facts to be gleaned are mostly chemical, it is still possible to bring out with great clearness the bearing which these chemical facts have upon the genetic relationship of the tissues and their origin from the mother proteid.

This, then, is the point I would emphasize in the method of teaching physiological chemistry—viz., to so teach the subject in the lecture-room, class-room and laboratory as to emphasize in every possible manner the relationship of physiological chemistry to physiology; or, in other words, to treat each subject under consideration broadly and with due regard to its physiological significance and relationship. In no other way can the study of physiological chemistry attain the importance it merits, or exert that influence as an educational factor which its close relationship to medicine and biology warrants.

TEACHING OBSTETRICS.

By J. WHITRIDGE WILLIAMS, M.D.,

Professor of Obstetrics, Johns Hopkins University, Baltimore.

THE ideal method of teaching obstetrics would be to divide one's students into two groups, according as they expect to practise that branch of medicine in their future professional work, or as they study it merely as a part of their general training.

To the former an extended course could be given and many subjects considered in detail which are of but little interest to the average student, and facilities could be afforded for a large amount of practical work. While, on the other hand, an elementary course could be given to the second group, in which only the general outlines of the subject would be taught, together with a minimum amount of hospital work. For it appears to me that it is a great waste of energy for a student, who expects to devote himself strictly to internal medicine or to one of the purely scientific branches, to be obliged to devote

practically as much time to the study of obstetrics or surgery, for example, as to the subject in which he is particularly interested.

Unfortunately, these ideals, desirable as they may be, cannot be attained until the methods of medical education are entirely revolutionized and a system inaugurated in which the individual student is permitted to elect, to some extent at least, certain branches of medicine to which he desires to pay particular attention. So that at present one must be content to instruct all students in practically the same way, no matter what their individual preferences may be, and limit one's aspirations to making one's course as profitable and practical as possible.

For the past two years I have attempted to differentiate my students to a slight extent, by affording increased clinical facilities to those who desire them during the summer months. I do this at the end of the third year by ascertaining which students are particularly interested in obstetrics, and then allow 12 of them, who have stood best in their class, to have the run of the wards for three weeks each. In this way each of the 12 students is enabled to see 20 or 30 women delivered, instead of 8 or 10, as the rest of the class. This plan has proved very satisfactory, as it solves the problem to a slight extent, and also affords a method of rewarding those who have done conscientious work.

Obstetrical instruction should be given in the third and fourth year of the medical course, and should consist of—1. Lectures. 2. Recitation. 3. Manikin work. 4. Laboratory work. 5. Demonstrations. 6. Ward classes. 7. Delivery of patients in the lying-in ward. 8. Delivery of patients in the out-patient department. 9. Clinical conferences or clinics; and 10. Examinations. The theoretical and laboratory work should be given in the third, and the practical work in the fourth year.

In considering the details of the course, I cannot do better than by practically repeating what I wrote two years ago for the Committee on Course of Study of the Association of American Medical Colleges.

1. LECTURES.

At present many teachers favor abandoning didactic lectures in favor of recitations and clinical conferences, but I believe that they still serve a useful purpose, but that their utility depends, to a great extent, upon the person giving them. If the teacher simply bases his lectures upon some standard textbook, I believe that he will best subserve the interests of his students by abandoning them, and allotting a certain number of pages or chapters of the textbook for recitation at each meeting of the class, which he will supplement by demonstrations of various kinds and freehand drawings upon the blackboard.

If, however, he has higher aspirations, and is able to avail himself of the recent English, French, and German literature, I believe that the didactic lectures will continue to play an important part in obstetric instruction, and will enable the student to obtain a rounded idea of the theory of obstetrics, four or five years in advance of the doctrines laid down in the latest edition of his textbook.

The lectures should be accompanied by as many demonstrations as possible, and the teacher should rely less upon carefully prepared diagrams and drawings, than upon plentiful freehand drawings upon the blackboard. The student may admire the former, but the latter he can reproduce in his notebook.

2. RECITATIONS.

A recitation hour should follow every third lecture, and the student questioned not only upon the work immediately preceding the recitation, but upon the work so far as it has been covered, thus necessitating a constant review of the entire subject.

The students should be encouraged to ask questions freely, and the recitations should be conducted as informally as possible, but at the same time a record should be kept of the work done, which should be considered in estimating the final standing of the student.

The recitation is almost as important for the teacher as for the student, as it enables him to emphasize and elaborate important points and discuss them with the students and frequently demonstrates how imperfectly he expressed himself in his lectures. The recitations should, therefore, be conducted by the teacher himself, and not be delegated to one of his assistants.

3. MANIKIN WORK.

Exercises upon the manikin should form an integral part of the obstetrical course; but their scope should depend, to a great extent, upon the amount of material which is available for clinical instruction. If there is a large lying-in hospital in connection with the medical school, it will be unnecessary to attempt to teach the technic of abdominal palpation, vaginal touch and internal pelvimetry upon the manikin, as it can be taught very much more satisfactorily upon the living woman. But if the clinical material is limited in amount, we consider it advisable that the students be taught the rudiments of palpation, touch and pelvimetry upon the manikin, so that they will know exactly what they are to do when they examine the patients in the wards, whereby clinical material is economized, and the patients saved considerable annoyance. For this purpose, the Budin-Pinard manikin is to be recommended.

The main object of the manikin work is to teach the various operative procedures, and each student should be obliged to perform all possible operations upon the manikin, at least once during the session.

The manner in which the work should be conducted must vary according to the size of the class. If it does not exceed 50 members, I believe it best to attempt to instruct the entire class together. This can readily be accomplished by employing three or four manikins, one to every 12 students, and having the professor at one and an assistant at each of the others. In this way, three or four men can be operating at the same time.

At the beginning of the hour, the professor should give an outline of the operation, its mode of performance, indications, etc., and then call upon the students to perform it under his supervision. While this is being done, it is well to quiz the class, and thus make the meeting serve a double purpose. Such meetings should last about one and a half hours, during which at least 12 men can operate upon each manikin.

If the class exceeds 50 in number, it will be necessary to divide it into sections. We believe that the professor should always take part in the manikin instruction; and, if it becomes necessary to divide the class, he should alternate between the sections.

4. LABORATORY WORK.

I consider it imperative that laboratory work should be included in the obstetrical course, as it is impossible for the student to grasp the subject intelligently, unless

he be more or less intimately acquainted with the minute structure of the organs of generation, and with the lesions associated with the various diseases, which may complicate the pregnant and puerperal condition.

Of course, many of these subjects are studied during the first and second years, in the courses upon histology and pathology; but owing to the immense field which must be covered in each of these branches, it is impossible to more than touch upon salient points, which are soon forgotten. It is, therefore, necessary that this field should be gone over again more in detail, and with especial reference to the practical side of obstetrics, and this can only be done by one who is particularly interested in this branch of medicine.

This work should be delegated to a special assistant, whose duty it should be to prepare the material for the class, and with the aid of the others, to demonstrate it to them. While this work is going on, the class should meet twice a week for one and a half or two hours. The sections should be given to the students at one meeting, when they must stain, mount, and study them. At the next meeting they should be described by the instructor, who should then go around the class and ascertain that the necessary points have been made out by each student. It is not advisable to give more than four or five specimens in any one week.

This work should be begun at the commencement of the year, and the normal anatomy of the genitalia and the development of the placenta thoroughly studied. When this is accomplished, the same hours should be devoted to manikin work, and after its completion, the pathology of obstetrics should be taken up. In this way, two meetings a week of one and a half to two hours each may be occupied profitably throughout the year.

If the class exceeds 40 or 50 in number, it will be necessary to divide it into sections of convenient size.

This work, of course, does not necessarily require special laboratory accommodations, as it may be done in the histologic, pathologic, or clinical laboratories, as may be most convenient.

In the following list are mentioned the specimens which may be profitably studied in this manner:

1. Labia majora and minora.
2. Vaginal mucosa.
3. Longitudinal section of cervix, showing transition from cervical to vaginal epithelium.
4. Transverse section of cervical canal, showing its arborescent structure.
5. Endometrium of young girl.
6. Endometrium of adult.
7. Endometrium of old woman.
8. Pregnant uterus, showing increase in size of muscle-cells.
9. Involution uterus showing decrease in size of muscle-cells and degeneration of vessels.
10. Menstruating uterus.
11. Uterine end of fallopian tube.
12. Central part of fallopian tube.
13. Lateral end of fallopian tube.
14. Round ligament.
15. Ovarian ligament.
16. Infantile ovary.
17. Girl's ovary.
18. Adult's ovary.
19. Senile ovary.
20. Corpus luteum, fresh.
21. Corpus luteum, eight to ten days old.
22. Corpus luteum, two to four weeks old.
23. Corpus luteum of pregnancy.
24. Ovary showing corpora fibrosa.
25. Ovary showing atresic follicles.

26. Corpus luteum cyst.
27. Decidua, four to six weeks.
28. Decidua, four months.
29. Decidua reflexa (from abortion).
30. Early chorion, to show double layer of epithelium.
31. Placenta, three months.
32. Placenta, four months, if possible in connection with the uterine wall.
33. Normal placenta at term.
34. Normal placenta at term injected.
35. Uterine wall and fetal membranes outside of placental site.
36. Young umbilical cord, fetal end to show stalk of umbilical vesicle.
37. Umbilical cord at term.
38. Inflammation of decidua.
39. Early placental infarct.
40. Developed placental infarct.
41. Hemorrhagic placental infarct.
42. Normal fetal epiphysis.
43. Syphilitic fetal epiphysis.
44. Syphilitic placenta, fresh, tease out chorionic villi. Compare with normal.
45. Syphilitic placenta, hardened.
46. Hydatidiform mole.
47. Tubal pregnancy, to show decidual and placental formation.
48. Rachitic bone.
49. Osteomalacic bone.
50. Eclamptic kidney.
51. Eclamptic liver.
52. Eclamptic lung.
53. Puerperal infection, showing streptococci limited to decidua.
54. Puerperal infection, showing streptococci in the uterine wall.
55. Puerperal infection, showing streptococci in the broad ligament.
56. Puerperal infection, showing noninvolvement of the fallopian tube.
57. Puerperal infection, due to streptococci and putrefactive organisms.
58. Puerperal infection, due to putrefactive organisms alone.

It is apparent that any one who has carefully studied these sections will have a far better and more lasting conception of obstetrics than one who has not.

In addition to the normal anatomy, he will have precise and accurate information upon the ordinary diseases of the placenta, and will be able to diagnose fetal syphilis by the examination of the placenta and the fetal bones.

He will learn, for example, that the hydatidiform mole is not merely a myxoma of the chorionic villi, but that it presents marked changes in its epithelium, which places it in close relationship with the deciduoma malignum or syncytial carcinoma. He will also learn the true nature of rachitis and osteomalacia, and thus more readily understand the genesis of certain varieties of deformed pelvis. By studying the tissues from a case of eclampsia, he will learn that it is a disease not merely of renal origin, but that it is accompanied by lesions in the liver and other organs, which place it in a totally different light. The examination of sections from the various varieties of puerperal infection will afford most important indications for treatment, and teach the futility of cureting the uterus in cases of streptococcus infection, and the marked benefit to be derived from the same operation in those forms due to infection with putrefactive and other organisms.

These and many other benefits will accrue from the study of obstetrics in this manner, and we feel that its importance cannot be urged too strongly upon the teachers of obstetrics.

5. DEMONSTRATIONS.

Demonstrations should also play an important part in obstetric teaching. They should serve partly for the illustration of lectures and frequently should be given independently of them.

Every teacher should exert himself to obtain as many objects as possible which are suitable for demonstration. Many can only be collected gradually, such as frozen sections of pregnant and parturient women, as well as of the fetus and young children of various ages for demonstrating the fetal and infantile pelvis and the relations of the generative organs, series of ova at various periods of development, placental diseases and abnormalities, and many other anatomic and pathologic specimens.

Among the various aids for teaching which can be bought at any time, we may mention: Trammond's three specimens of dissections of the female perineum and pelvic floor, which greatly facilitate the demonstration of this difficult subject; Tarnier's bronze pelvis, manufactured by Collin, of Paris; Edgar's aluminum pelvis and blackboard, manufactured by Reynders, of New York; Edgar's models of the pregnant uterus at the several months of pregnancy, also manufactured by Reynders. These models are of great value, in that they enable us to give the student an accurate conception of the exact size of the uterus at each month of pregnancy. Edgar's casts illustrating the immediate repair of the lacerated perineum are also very valuable, while his leather uterus is a useful adjunct to the manikin, and enables us to teach the student how to pack the uterus with gauze to check hemorrhage, and to sew up the lacerated cervix for the same purpose.

One of the greatest aids in teaching, especially in this country, where certain forms of contracted pelvis are rarely observed, is the series of 24 models of the various forms of deformed pelvis, prepared by Trammond of Paris. All of them are modeled exactly after celebrated examples of pelvic deformity in the various museums of Europe. An appliance, which is invaluable for demonstrating the genesis of the various forms of deformed pelvis, is the pelvis in "composition molle," manufactured by Trammond, which can be given any shape by the hands.

This list might be extended almost indefinitely, but we have referred only to such models and appliances as we consider essential.

Any one interested in this line of work is referred to the interesting article of Dr. J. C. Edgar, in the November and December numbers of the *New York Medical Journal* for 1896, which contains many valuable suggestions.

6. WARD CLASSES.

For teaching the technic of examining pregnant women, the class should be divided into small groups, whose size must depend upon the amount of clinical material available. Each student should be carefully drilled in the principles and practice of asepsis, taught to diagnose the position and presentation of the fetus by abdominal palpation and vaginal touch, impressed with the necessity of measuring the pelvis both externally and internally, in every case, etc. They should also be required to take the histories of patients in the ward, to make the necessary urinary examinations, and to accompany the professor or the resident obstetrician at the daily visit.

They should also be required to examine the puer-

peral women just before they are discharged from the hospital, so as to become acquainted with the condition of the genitalia in the latter part of the puerperal period.

Each student should be required to examine at least ten pregnant women, not including the cases seen during labor, before being allowed to come up for the final examination in obstetrics.

7. DELIVERY OF PATIENTS IN THE LYING-IN WARD.

A small number of students, preferably two, but certainly not more than four, should be called to the ward to see every case of confinement. They should be required to examine the patient, both internally and externally, once during the first, and again during the second stage of labor. In uncomplicated cases one of the group should deliver the woman himself, under the guidance of a competent assistant.

A much larger number of students may be called to operative cases as onlookers. Each student should be required to see at least five cases delivered in the lying-in ward; for it is only there that he can learn the ideal method of conducting a labor case. A service of 150 cases yearly will be sufficient for a class of 100 students, provided four students were called to each case.

8. DELIVERY OF PATIENTS IN THE OUT-PATIENT DEPARTMENT.

An obstetric dispensary should be organized in connection with every medical school, and poor women delivered at their own homes by students under the personal supervision of an assistant, who should be accompanied by a trained nurse if possible.

The custom of sending two students alone to a labor case cannot be deprecated too strongly; for they are almost certain to fall into slipshod methods and fail to carry out the more or less rigorous technic which they have learned in the lying-in ward. But when they are sent to these cases under the charge of a competent assistant, who is prepared to demonstrate the case and to see that the rules of asepsis are strictly followed, we believe that the out-patient obstetric service will be quite as useful in training students as the lying-in ward, and perhaps more so, in that it teaches them to conduct a labor aseptically under all the disadvantages which are encountered in the homes of the poor, quite as well as in the ward with all its conveniences, and thus they are fitted directly for private practice.

The student should be required to visit the patients during the puerperium, say for the first five days and again on the seventh and tenth days, and should be provided with a fairly full printed history sheet in which he should be required to outline the more important facts concerning the case, which should be given to the assistant in charge after the last puerperal visit.

It should be understood that the instructor regards the return of the history sheet as an important matter, and that the manner in which it is filled out plays an important part in determining the final standing of the student. I consider that two cases carefully observed in this manner are quite as valuable to the student as ten cases seen in the usual way without supervision. Each student should be required to attend at least five out-patient cases; and a service of 250 cases a year would be sufficient to furnish cases for a class of 100 students, if two students conducted each case.

In large cities, a considerable part of the out-patient obstetric material is lost for the purposes of clinical in-

struction by the time consumed in getting the student to the case, especially when he lives a considerable distance from the hospital. To obviate this difficulty, one or more rooms should be provided by the department, according to the size of the service, in which two or more students should be kept on call at night, until they have seen their quota of cases.

9. CLINICAL CONFERENCES.

During the fourth year there should be a weekly meeting of the class, in which most of the teaching should be done by the students themselves. Here interesting cases which have been observed by the students are discussed. A student who has lately seen an interesting case should be informed a day or so in advance that he is expected to report upon it. When the class meets, he should read a concise history of the case, and then perform upon the manikin the operation which may have been required. The case is then discussed by the instructor, and the class questioned concerning more or less cognate cases.

At another meeting, a dead-born child and its placenta may be exhibited. Two students may be called upon to perform an autopsy upon the child to ascertain the cause of its death; to a third student the placenta may be given, with instructions to tease out some villi, examine them under the microscope, and ascertain if they present syphilitic lesions. This will consume about half an hour. Then the diagnoses are called for, and the history read by the student who observed the case, and it is attempted to bring the clinical history into accord with the anatomic findings and vice versa.

At another meeting, several ova of various ages may be given to as many students, who should carefully examine them and then report what stages of development they represent, and their reasons therefor.

Another very practical manner of spending the hour is to take three deformed pelvises and give each one, with a pelvimeter and a piece of paper to two students. Allow 15 minutes for measuring the pelvises, and then call upon one student in each group for the diagnosis, his reasons for making it, and the measurements upon which it is based. And ask the other how he would diagnose a similar pelvis in the living woman, and what procedures he would adopt to deliver her, etc.

Of course, this kind of work may be amplified to almost any extent, and is only limited by the amount of time and material at the disposal of the instructor.

10. EXAMINATIONS.

I do not believe that the standing of a student should be based solely upon the mark obtained in a written examination, but consider that it should also depend upon the character of his class work and the general impression which he makes upon the instructor; and that each of these factors should count equally in estimating his value.

At the end of the third year the student's standing should be estimated from three sources—written examination, recitations, and general class work. The value of the first two is readily estimated, while that of the general class work is of a more personal character, and therefore cannot be determined so accurately. It is based less upon the actual performance of the student than upon the general impression which one gains of him. Thus, many a student who can pass a good examination and answer fairly well at recitations, impresses one as an indifferent or poor man by the

manner in which he answers and asks questions, and by the way in which he appears to take hold of the subject; while, on the other hand, another student may pass a poor examination, but still show by his class work that he is really an excellent man.

In other words, I advocate basing a part of the total mark upon one's estimate of the personal equation of each student. In very large classes this, of course, is out of the question, and even in small classes one's estimate is not always correct. But any mistake in this respect can usually be equalized or corrected by marking the examination papers without knowing by whom they are written.

In the fourth year the standing should likewise be estimated from three sources—recitations, clinical work, and a practical oral examination at the end of the year.

In estimating the value of the clinical work, especial stress should be laid upon the manner in which the history-sheets are filled out and upon the general behavior of the student. The final examination should be conducted at the bedside or with the manikin, and an attempt made to test the practical knowledge of the student. At the same time questions should be asked of such a character as to give some idea of his powers of reasoning, instead of how well he can memorize a textbook.

Examinations of this character consume considerable time, and cannot be well applied to large classes unless conducted by several examiners. But where they can be carried out, I am confident that they afford the most satisfactory means at our disposal of ascertaining what a student is worth.

ON THE TEACHING OF PATHOLOGY.

By J. G. ADAMI, M.A., M.D.,

Professor of Pathology, McGill University, Montreal, Can.

THE first thought of all will be, as it was my first thought, when, unguardedly, I acceded to the editorial invitation to contribute to these pages under the above title, that, if any one, a teacher should be able to write about the teaching of his special subject. Yet, unless the teacher is satisfied merely to set forth his particular methods the matter is far from simple. Those particular methods depend in every case upon environment, opportunity, and the man. In the case of pathology they depend upon the general curriculum of the school—whether by tradition the subject is made a part of the second, third or fourth year's course or is spread over two or more years; upon the number of hours allotted; upon the extent to which the special pathology of different systems and conditions is taken up in the courses in medicine and surgery; upon the nature and extent of the course in bacteriology. In fact, just as every school differs in the details of its curriculum, so must the course in pathology vary in its details in order that it may dovetail into the rest of the teaching with the maximum of benefit to the student and the minimum of loss by repetition. Not that repetition is not in itself of high value; next to wandering from one university center to another and gaining a broad and discriminating understanding of a subject by observing how it is regarded by those in different surroundings, comes the advantage of hearing and seeing how the different teachers in one center regard the same subject or portion of a subject common to all of them; but with the four years' course, and the terrible difficulty,

may, the impossibility of compressing everything into it, repetition has to be reduced to the smallest limits.

And as for the man, the fuller the acquaintance with the methods of the great masters in any subject, the stronger the conviction that successful teaching depends not upon the fulfilment of any one code of procedure, but upon the peculiar gifts of the teacher. In pathology, for example, one man may be but an indifferent didactic lecturer, may, through his lectures give to his students but a poor and lifeless insight into his subject, yet in the laboratory he may be an enthusiast, and his keen interest in the disclosures afforded by the microscope or in the details and results of experimental investigation may be infectious and may fully accomplish the great aim, that, namely, of imbuing the student with an appreciation, nay a love, for the subject taught. Another may reach the same goal by his enthusiasm in the postmortem room, his deep knowledge of gross anatomical disturbances, his power of fixing in the mind vivid pictures of the results of different morbid processes. To yet another may belong the gift of clear, forcible exposition and of stimulating thought, so that the student carries away from the lectures not so much a wealth of facts as a knowledge of underlying principles and an added power of orderly reasoning over the problems which will confront him in the practice of his profession. To different men different talents, and if among these there be, for the teacher, the first great talent, that of communicating the sacred fire of enthusiasm, it matters but little what methods be employed. After all, what the university professor can accomplish is to instil only the beginning of knowledge into the student; this instilled, and a right interest aroused, it is for the student to increase that knowledge and he, with interest properly aroused, will surely "arrive."

Herein, very possibly, I speak as a heretic. In common with the majority of those having an English university training, the study of pedagogics has not formed part of my education; it is but right that in venturing to discuss "teaching" I should openly announce this fact, that my words be received with due caution. Nevertheless, if I may venture to criticise pedagogical methods, I would urge that those methods in the main are calculated for the nonenthusiastic and for the development of substitution products. They are methods whereby those cold and incapable of communicating the fire are enabled to excite the attention of the student. It is true that employing them the interested teacher may become more interesting. But first and foremost must stand ardent and evident love for one's subject, and this—like the broader love, charity—covereth a multitude of sins.

I dwell upon this matter of diverse talents because at the present moment there is a movement, initiated at Harvard, to make the teaching of pathology almost entirely practical—and it is not unlikely that this movement may develop into a fashion, and fashions, I need scarce say, are apt to be extreme, applied without thought of propriety. If I understand aright, the orderly course of didactic lectures is practically abandoned; short talks are given daily upon the main subjects of, or arising out of, the demonstrations and experiments. But it is impossible to cover the whole ground of pathology by experimental work; certain important divisions do not lend themselves to classwork in the laboratory and, even if they did, it is here in very truth a case of "ars longa"; time imperatively forbids that the whole, of general pathology alone, be covered in this

manner. As a consequence the student gains a peculiar insight into certain portions of the subject and none into others, completes his course and goes out into the world with an imperfect perspective or "Uebersicht." He has specialized too soon, and is liable to be one-sided.

This is the main objection to the method. Yet it is supported (*pace* Professor Bowditch) by a long array of pedagogical arguments, and in the case of individual teachers of strong personality it may be eminently successful in arousing a keen appreciation for pathology. I will go further and say that, where good teachers are wanting, the method is calculated, by the inherent interest of the subject, to make the student appreciate and gain benefit from pathology; for by it he is brought into the inner chamber. To "see the wheels go round" in itself attracts and fascinates the beginner; to study the works themselves and find out why they go round is of the highest value. Not for a moment do I question the value of laboratory methods; I do but question whether the reaction in favor of practical teaching may not be carried too far, and whether, generally adopted, the Harvard method will be as fraught with good results elsewhere as it may very possibly be at the place of origin.

Everything depends upon the teacher in the first place, upon his opportunities in the second; and this being the case, I shall not venture to set out any ideal course. The most that can usefully be done is to discuss the place of pathology in the scheme of medical education, and, taking the different portions of the ordinary course in our subject, to consider certain aspects of the teaching of the same.

Pathology is the science dealing with the modifications undergone by the functions of the body in disease, with the causes, the course, and the results of those modifications. In order to understand deviation of function with the associated alteration in structure, it is essential to have a knowledge of normal function and normal structure; hence, the teaching of physiology and of anatomy (with histology) must precede the teaching of pathology. And here, if for a moment, I may digress into rank heresy, may I, as a pathologist, protest against the attitude of many physiologists of the present generation—an attitude which is damaging their influence in medicine. I refer to their tendency to teach their subject *per se*, regarding their science alone and regardless of the fact that their course to medical students is an integral portion—or should be—of one great whole. It is quite right that in instructing would-be physiologists this attitude be taken, and that research also, apart from teaching, be determined by the purest scientific considerations; but where in lecture and in the laboratory they have the choice of dwelling upon several branches of their subject, of equal value from an educational point of view, then dealing with medical students, they assuredly should give especial attention to such as are of especial value to those students, as forming a basis for their later studies.¹ The laws governing muscular irritability undoubtedly throw great light upon the irritability of cells in general, and nerve-muscle experiments in the laboratory, performed by the students themselves, are of peculiar value as an introduction to

¹ I do not for a moment wish to suggest that the course in physiology should be in "medical physiology" alone. The student should be given a broad grasp of the whole subject. The ideal curriculum for the medical student, as Sir Michael Foster points out to me, is an elementary course in which the outlines of every department of physiology are treated, followed by an advanced course in which those portions which have a peculiar bearing upon medical problems of present interest are studied in fuller detail.

the methods of exact investigation of bodily processes; but surely it shows a lack of sense of the fitness of things to devote one-third or so of the whole course in elementary physiology for medical students to the study of muscle-phenomena alone. As a consequence, the time of the pathologist is too often taken up in teaching elementary physiology. This ought not to be.

But while complaining thus, let me urge that the physiological laboratory is peculiarly the training-ground of the pathologist. Every physiological experiment is at the same time an experiment in pathology. Each time that the physiologist varies one or other factor concerned in a vital process, in order to determine the part played by it, he introduces a deviation from the normal; the experiment is physiological or pathological solely according to the point of view of the investigator. It is in the physiological laboratory that the student should learn the methods of pathological investigation.

Thus much with regard to the relationship of the subject to the first part of the curriculum. Now as to its relationship to the latter portion.

In order to understand the significance of the symptoms of an individual case of disease and the connection between them, it is essential to have a ground-work of knowledge of how those symptoms are in general produced, what disturbances they indicate in the structure and functions of one or other organ, and how those disturbances are likely to affect the system in general. It follows that the teaching of pathology should either precede that in medicine and surgery [more exactly, in medical and surgical diagnosis and prognosis]; or, as this is commonly not possible, that the main teaching in pathology be given coincidentally with the first year's teaching in medicine and surgery, the instruction in the latter subjects being at the same time made largely pathological—that is to say, bearing not only on the symptoms of disease in themselves, but also, and particularly, upon their significance. From every point of view the latter is the better course. The student who has studied, it may be, a mere half a dozen cases of disease, realizes thereby the practical bearing of pathology; there is the same difference between the alternatives as between learning a foreign tongue at home and learning it among the people who speak it.

In his teaching, the duty of the pathologist connected with a school of medicine is emphatically to keep ever before him the idea that his course is part of the curriculum, and—though this is not a popular statement—that he is the connecting link between the physiologist and the anatomist on the one hand and the physician and surgeon on the other. His duty is so to instruct those under him that they gain a basal knowledge of the deviations from the normal, of the principles of disease, a general knowledge which can be applied for the understanding of individual cases in the wards and in practice.

Keeping this in mind we obtain a standpoint for determining the nature of the instruction to be given in the different courses forming the curriculum in pathology.

Didactic Lectures.—If the textbooks of pathology most popular in English-speaking countries are in any way to be taken as an index of the general didactic teaching of our subject, then such teaching would seem erroneous in principle. Pathology does not stand towards medicine and surgery in the Hudibrastic relationship of hetic to oratory and composition. It is not primarily, as those textbooks would appear to indicate, the science

of naming one's tools. Science to be complete science does not consist in the mere accumulation of details, in the grouping of facts and the naming of the same. This much is true, that in the evolution of every science there are three stages which may overlap but are still recognizable: The first, that of vague generalizations from inadequate data, terminating in the generalizations being tested and found wanting; the second, reactive, of recognition of the urgent need for the accumulation of masses of facts, the stage, if I may so express it, of appreciation of facts as facts; and the third, the stage of full development, when with abundant data before them the workers in the science may proceed so to group those data that general laws can be recognized and theories confirmed or disproved.

Under the dominant influence of Germany, owing to the inherent love of the German student for exact detail *quā* detail, but over and above all, owing to the, in most respects, wisely conservative influence of Virchow and his school, pathology has for long years been restrained in the second stage, which many still regard as the complete science. Our textbooks, which are either translations from the German or of necessity reflect German teaching, dwell far more upon facts than upon their relationship and significance. Lectures along these lines are largely useless, save as a means of introducing the student to the whole array of morbid phenomena, and to this is owing the small influence exerted by pathology upon the medical student in the days of pure didactic teaching. But lectures can be of inestimable use if the hours be employed in applying the facts, in discussing their causation and relationship and deducing the laws governing the development of morbid phenomena, thus incidentally training the student in the methods of medical thought. If by this means the student is helped to think (and he has too little stimulus to develop the faculty during his medical course) it is comparatively a matter of small moment if some one or other conclusion or theory of the lecturer fails to stand later criticism. It is along these lines that the didactic lecture must be laid down if it is to aid the student in the study of cases of disease. If from conscientious objections, or a natural unwillingness to venture upon conclusions, the teacher cannot thus teach, those lectures are better deleted from the calendar.

Lectures or Conferences upon the Special Pathology of the Different Systems.—These should follow the course in "general" pathology, preferably during the next year; their extent depending upon the extent to which the pathology of the different systems is treated by the lecturers in medical subjects; and, I may add, as regards certain portions of surgical pathology, by the surgeons. Where, as is most often the case nowadays, special pathology forms an important portion of medical teaching, the teaching of this branch in the pathological department best takes the form of a series of weekly conferences over museum specimens, the different systems being reviewed in succession, oral examinations being held upon the gross anatomical conditions characterizing the various departures from the normal, the teacher from time to time stopping to dilate upon special topics and to systematize the facts brought forward. I do not say that this is at all adequate treatment; it is in many cases the most practicable. The true special pathology is the application of the laws of general pathology to special cases and its converse, the study of how the special case conforms to the general laws. And from the point of view of medical educa-

tion the advantage would be great were this method of regarding special pathology to govern the later teaching of our subject more than it does at present—the physician and the surgeon (as is now the case) employing the former mode of dealing with the subject, the pathologist the latter, the student thus being instructed to gain a fuller appreciation of values by regarding phenomena from two aspects.²

Surgical Pathology.—Surgical pathology, by-the-by, is an *olla podrida* of select portions of general and systemic pathology, which should be treated didactically and practically in their proper places in the pathological curriculum. It only deserves to be recognized as a distinct entity when the needs of the surgical teachers demand that these select portions be treated at an earlier period than is possible in the orderly scheme of instruction. As a course it is possibly of service as a means of giving prominence to those matters in which the views of the surgeon run counter to the generally accepted teaching of medical science or the teaching of the individual pathologist—but such divergences, after all, can equally well be noted in the general courses in surgery and pathology. Happily, with the advance of surgery—and of the surgeon—into every organ of the body, surgical pathology promises soon to be concurrent with and to fuse with pathology proper. But much can be said in favor of the establishment of a special course of surgical clinical microscopy, in immediate connection with the wards and operating theater, for the determination of pathogenetic microbes and instruction in the rapid preparation and diagnosis of sections of removed tissues.

Laboratory Courses.—The value of laboratory training is so great that much might be said upon this topic alone, but at the same time it is nowadays so fully appreciated that my remarks need be few. As I have already stated, I doubt whether with the time at our disposal we are justified in giving the ordinary student a training in experimental research; that training he should have already received in the physiological laboratory, and, having received it, it is sufficient to presuppose a knowledge of modes of investigation and to deal in the main with the practical results of disease. An occasional demonstration bearing upon the mode of development of some particular morbid condition is, however, useful. The main course must be, and must remain, that in morbid histology. For this to be truly serviceable to the student, even if it be materially aided by the projecting of sections or microphotographs upon the screen, there must be an abundant supply of demonstrators—one to every ten students—to advise, instruct, and superintend the notebooks and drawings of the same.

I can but refer, in passing, to two other practical courses, that in clinical microscopy at the hospital or hospitals, in immediate connection with the ward cases, and that in pathological chemistry. The former, while conducted in connection with the medical department, should equally be under the supervision of the pathological; it is so valuable a portion of the practical teaching. To give practical advice concerning the latter is difficult, owing to the lack in English-speaking countries of those devoting themselves to this branch of the subject. But, certainly, the chemist who is not a med-

ical man, and what is more, a trained “biologist,” is not the right man to undertake the teaching of this subject, or, otherwise, it cannot in general be recommended that such teaching be conducted in the chemical department. Pathological chemistry gives so much promise of throwing, in the very near future, so much light upon pathology in general, that the time has come for greater activity in the teaching of this branch in immediate connection with the pathological department.

Postmortem-Room Teaching.—This is capable of being made a far more vital portion of the course in pathology than it usually is. The mere instruction in methods is after all of very secondary importance, and it cannot be said that the weekly demonstration of material from autopsies, crushed, discolored, and removed from its relationships, is particularly satisfactory. But if the students, in batches, be made to attend the actual performance, and take an active part in the same, the case is very different—and more, if, after the method pursued by my colleague, Wyatt Johnston, such students be given each an organ, be made to describe its appearance, to make or study sections from the same, to study the descriptions given by standard authorities kept for this particular purpose in the adjoining laboratory, and noting the descriptions to write a diagnosis stating how far the appearances correspond to or depart from the described state, then the postmortem-room becomes the first of all laboratories, the instruction there received the most valuable, whether from the point of view of pure pathology, or of the development of the good physician.

There are many details which might with advantage be taken up and discussed—among these, especially, the relationship of the bacteriologic and pathologic courses. Personally I am strongly of opinion that in a medical school the teaching of bacteriology should be under the direct control of the pathological department, for there is no study which at the present time throws more light upon the causation and development of disease, none so powerfully contributing to the advance of pathologic science. The relative stagnation of those schools of pathology from which, in Germany, bacteriology has been divorced, is in itself an object-lesson. I cannot, however, enter into the pros and cons of the matter. Space forbids. It will, I trust, be held sufficient if here upon the broadest lines I have outlined the individual opinions of an individual teacher upon the teaching of his subject.

METHODS OF TEACHING HYGIENE.

By VICTOR C. VAUGHAN, M.D.,

of Ann Arbor, Mich.

Professor of Hygiene in the University of Michigan; late Major and Division Surgeon, U. S. V.

IN order that this theme may be intelligently discussed it may be well, first of all, to come to an understanding of the meaning to be attached to the word hygiene, and, furthermore, there will be less likelihood of confusion if we decide to whom this subject is to be taught and what knowledge of collateral branches the student seeking information is supposed to have had. Within recent years, hygiene has frequently been confounded with bacteriology. It must be admitted that the latter has contributed richly to the former, but the two are by no means identical. By way of introduction I will, therefore, give a definition of hygiene as I understand it, and as I have attempted to teach it.

² An admirable method of teaching “special” pathology has, I learn from Dr. Polk, been initiated at the Cornell Medical School. Arrangements are made whereby each special course in ophthalmology, laryngology, neurology, etc., is made complete in itself, by the physiologist giving a short course on the physiology, the pathologist upon the pathology, the specialist upon the medicine and surgery of the subject. In this way the fullest results are obtained with the least repetition and overlapping, or neglect.

Medicine, in its broadest and best meaning, as a science, consists of those facts, learned by man by observation and experimentation, which can be utilized in the preservation of health or in the cure of disease—restoration to health. As thus defined, medicine is both preventive and curative. Those facts that are of service in the preservation of health constitute the science of hygiene, while those that are employed in the restoration of health make up the science of medicine in its restricted sense. Since health is a relative and not a sharply defined state of being, the science of hygiene may embrace a discussion of all conditions that affect for good or ill the physical man. It follows that the subject is a boundless one and that no man can hope to teach it exhaustively. The best that the teacher of this subject can do is to select those lines of instruction that are likely to prove of most value to his students. It is probable that no two instructors would agree in detail concerning the topics of greatest importance. For the ensuing year my schedule of lectures in hygiene will be substantially as follows:

1. PERSONAL HYGIENE.

- a. Foods.*—Definition of a food; food principles; the nutritive value of foods; the economical values; discussion of different foods; the preservation of foods; food-poisoning; food adulteration; food suitable for different climates; dietaries for invalids; cooking; beverages and condiments.
- b. Clothing.*—Fibers employed and their properties; importance of texture; importance of color; selection of clothing for different climates and seasons; so-called dress reforms.
- c. Baths.*—Bathing for cleanliness; bathing for pleasure; resuscitation of the drowned; medicinal baths.
- d. Exercise.*—The necessity for exercise; pulmonary and muscular respiration. Out-door exercise: walking, riding, rowing, wheeling, games, etc. Indoor exercise: at home, in gymnasium

2. HYGIENE OF THE HOME.

- a. The house.*—Selection of site; construction of house; arrangement of rooms; heating and ventilation; furnishings.

3. SCHOOL HYGIENE.

- a. The school house.*—Site, construction, heating, ventilation, lighting, desks, blackboards, playgrounds.
- b. Mental hygiene.*—The physical basis of education; system in study; hours for study; conditions necessary for study; rest and recreation.

4. MUNICIPAL HYGIENE.

- a. Water-supply.*—Sources; chemical and bacteriologic examination; purification.
- b. Sewage disposal.*—Systems; plumbing; pollution of streams; sewage farms; sewage purification.
- c. Garbage disposal.*—Street cleaning; by burning; by dumping into water.
- d. Tenement houses.*—Construction; overcrowding; isolation when infectious diseases appear.
- e. The sanitation of municipal and other hospitals.*
- f. Municipal laboratories.*—Bacteriologic examinations; chemical and microscopic analysis.
- g. Municipal boards of health and health officers.*—Duties; notification of infectious diseases; placarding infecting houses; disinfection; vaccination; food inspection; abatement of nuisances.

5. RURAL HYGIENE.

- a. The drainage of wet lands.*
- b. The farmhouse and its surroundings.*

6. STATE HYGIENE.

- a. State boards of health.*
- b. State laboratories of hygiene.*

- c. State quarantine.*
- d. Interstate notification of infectious diseases.*

7. NATIONAL HYGIENE.

- a. Inspection of immigrants.*
- b. Quarantine and disinfection.*
- c. The public health duties of the Marine Hospital Service.*

8. INDUSTRIAL HYGIENE.

- a. Prevention of the diseases and accidents incident to occupation.*

9. THE HYGIENE OF TRANSPORTATION.

- a. The heating, ventilation, and disinfection of railroad cars.*
- b. The sanitary care of street cars, cabs, etc.*
- c. The sanitation of boats.*

10. MILITARY HYGIENE.

- a. Examination of recruits.*
- b. Sanitation of camps.*
- c. The soldier's clothing.*
- d. The soldier's ration.*
- e. The sanitation of army hospitals.*
- f. The duties of medical officers.*

11. THE INFLUENCE OF CLIMATE ON HEALTH.

- a. The geographical distribution of disease.*
- b. Diseases of tropical countries and their prevention.*
- c. The agency of insects in the transmission of disease.*
- d. Climate and consumption.*

12. THE PUBLIC HEALTH DUTIES OF THE PHYSICIAN.

- a. The disinfection of his own clothing and person.*
- b. The notification of infectious diseases.*
- c. Isolation and disinfection.*
- d. Sanitary advice.*

I have now given a definition of hygiene and an outline of special topics that may constitute a course in this science. Before the student enters upon the study of hygiene he should have completed thorough courses in the general and fundamental facts of physics, chemistry (both inorganic and organic), anatomy, physiology, and bacteriology. It is useless to attempt to discuss scientifically heating and ventilation before those who know nothing of the physics of heat or the diffusion of gases. It would be equally idle to talk of the force value of foods to those who have never heard of the conservation of energy. If the student in your class in hygiene is ignorant of organic chemistry, the statement that the chief food-principles are proteids, carbohydrates and fats will not convey to him much information. One must know something of bacteriology before he can listen with profit to a lecture on food-poisoning.

What methods are best suited for giving instruction on the above-mentioned subjects in hygiene? To a teacher of experience it is well known that no cast-iron methods of instruction in any branch of science can be followed. The successful teacher is one who is resourceful, quick to see whether or not students are getting the information which he is attempting to impart, and ready to adapt his methods to the particular students under his charge at the time. Moreover, he must manage to give some students in his class more work than others have. In teaching hygiene this is very easily done and is generally appreciated by those upon whom the extra work is imposed, because it implies a compliment. Textbook instruction, as this is generally understood, is impracticable for several reasons. In the first place, the compass of the instruction to be given is too great to be covered by any textbook. Secondly, advances in this science are being made so rapidly that a textbook in hygiene is hardly dry from the press before it is obsolete

in some part. Thirdly, each year brings with it some new problem that must be discussed.

Who dreamed three years ago that questions in military hygiene would be of the great importance to us that they have since assumed, or who supposed at that time that tropical diseases and their prevention would so soon become matters of practical interest to us? Three years ago the bubonic plague was barely mentioned with reference to the history of epidemics and with the statement that it had recently reappeared in China and India. Now the measures adopted by our Government and European countries to prevent the diffusion of this disease are of interest to every intelligent citizen. In discussing the question of water-supply before our next classes, we cannot omit reference to the work recently done by Fuller at Cincinnati in the preliminary experiments on the purification of the water of the Ohio river, to the filtration-plant now being constructed by Hazen at Albany, or to the effects of the drainage canal on the water of the Illinois and Mississippi rivers, even if we fail to mention the valuable experiments made a few years ago by the Massachusetts Board of Health on the purification of sewage by filtration. The problems of hygiene are living questions of today and are not suitable for embalmment in textbooks. Even the elaborate handbooks of hygiene that have been written—and there are some most excellent ones—cannot be placed in the hands of the student without the caution that the statements therein made represent the best information of the writer at the time of writing and not that of the present time. Again, books on hygiene by foreign authors, however eminent they may be, are not suited to American students. As an illustration of this I may mention the most admirable work by the late Dr. Parkes of England. Even in the most recently revised edition, this classical work cannot be used as a textbook in our schools. If our school-houses were not provided with more efficient means of ventilation than that recommended by some European authorities on hygiene we would expect our children to die of asphyxia, or if we were limited to the amount of water-supply per capita recognized as ample by the same authorities we would always be both thirsty and dirty. For these and other reasons, textbook instruction in hygiene for medical students I believe to be wholly impracticable.

The course in hygiene should consist of (1) lectures, (2) collateral reading directed by the teacher, (3) the observation and description of sanitary appliances, and (4) laboratory experimentation. The lectures must of necessity be condensed and should consist, for the most part at least, of the statement of bare facts. This part of the instruction is for every member of the class and it may be all that many of them can carry along with other work. Frequent quizzes should be given in order to ascertain whether or not the students correctly comprehend, retain, and correlate the statements made in the lectures. An occasional written examination on the lectures is desirable. In directing the collateral reading the teacher has the opportunity of distributing the burdens imposed on individual students as he chooses. He may request one or more students to read an article or a book and present to the class a digest or abstract of what he has read. I frequently ask five students to read one article or book and require four of them to write digests of what they have read and these are turned over to the fifth student who reads each, adds such comments as he deems fit and then hands them to

me or my assistants. (I must admit that this is by no means a pleasant occupation to read students' essays, but I am confident that since the writing of theses has been abolished, medical students have too little instruction in the art of essay writing.) Sometimes I request five students to read up some subject and then have one of them give a short talk on it, while the others are permitted to criticize.

Many useful lessons may be imparted by asking students to observe and describe sanitary works. One is asked to visit a part of the city where the sewer system is being extended and to write a description of what he sees with such comments as he desires to make. Another is asked to investigate the heating and ventilation of some public building, while a third interests himself in the plumbing. One lives in a city where the water-supply is filtered and he is asked to describe the process to the class. While there is no attempt to make sanitary engineers out of medical students, studies and observations along the lines here suggested are both interesting and profitable.

Laboratory methods of teaching hygiene do not differ from those followed in physical, chemical, and bacteriological experimentation. Practically the only hygienic laboratory courses given to medical students are: (1) The sanitary (chemical and bacteriological) examination of drinking-water; (2) The analysis of foods and the detection of adulterations. In all of the best equipped schools facilities for the prosecution of research in the various lines of hygienic study are now at the service of advanced students.

THE TEACHING OF ANATOMY.

By WILLIAM KEILLER, F.R.C.S. Ed.,
of Galveston, Texas.

Professor of Anatomy, Medical Department, University of Texas; Late Lecturer on Anatomy, Edinburgh Medical School.

IN approaching the subject of the teaching of anatomy it may be well for us first to consider just what sort of knowledge of the human body we wish to impart to the medical student, and how much of the big subject he ought to know in order that he may be well fitted for his lifework; for the subject is a very large one, too large to be fully mastered in the ordinary four-year medical course, and it may be approached by the student in various ways, each best fitted to impress on him a special aspect of anatomical science. Clearly we must bear in mind that the medical student is in training to become a physician and surgeon, not a comparative anatomist, and however interesting the science of human anatomy may be in its comparative relations, it would be wrong in a teacher of medical students to waste their limited time and overstrained faculties in making them acquire a knowledge of facts bearing on the science in its biological aspects, except in so far as these throw light on anomalies and disease. The teacher himself, then, should be a physician and surgeon, or perhaps I should say, considering the limited possibilities of human energy, should be a surgeon, with a previous wide experience as a physician before his work became specialized, and he should never lose sight of the fact that he is teaching men who are placed under his care that they may become efficient physicians and surgeons. To the medical eye the whole body should be transparent, its minutest relations and connections as clear as those of a watch to the eye of the watchmaker,

those of an electric power-house to the skilled electrical engineer. To the medical touch each bony prominence, each muscular elevation, each solid resistance or yielding depression should be perfectly familiar. The physician should have eyes in his fingers and more than eyes, his whole brain should be capable of concentration in them, and the first training of eyes and fingers is given in the dissecting room. Here, too, knife, forceps, saw, and chisel are first put into the student's hands, and he must learn to use them rightly from the beginning. Surely the proper teaching of anatomy is no light undertaking, the branch no minor one in medical education. Anatomy has long been recognized as essentially a laboratory subject. From the first the student must be taught that he can learn nothing from books alone. His eyes and fingers must be taught, and so the mere enumeration of the muscles attached to a bone is useless; he must know the bone by sight and touch and should be able to mark with accuracy muscles and ligamentous attachments in chalk with his eyes shut. Every bone should be so familiar that he should be able to tell its side (right or left) and outline its prominences by touch alone. So, then, he must have such training that he will refuse to read a line without the bone before him, that he may verify the textbook description on the specimen; and he must learn to read his bones with chalk in hand, marking each muscular attachment on the bone by aid of text and diagram till no ridge or smooth surface, no eminence or depression is without its meaning. But it is in the living man that the physician has to interpret bony landmarks, and so no anatomical training is complete without a course of living anatomy, clearly a course in all its aspects best fitted to form the climax of anatomical teaching.

Skin and fasciae should be familiar as they differ in different situations, and especially the relations of the fascia lata. These are parts easily neglected; the student is anxious to get to deeper structures, and it requires a special effort to make him study the floor of the axilla, the saphenous opening, the palmar fascia and tendon sheaths, the annular ligaments and intermuscular septa. What shall we teach him of the muscles? Origins and insertions, nerve-supply and actions go without saying, and the only knowledge worth having is accurate knowledge; their grouping, too, is all-important, the great compartments in which they lie. While their relations and blood-supply must be familiar, I have always thought that it was hardly necessary that the student should spend much time in reading these, as his practical acquaintance with the muscle and his careful study of vascular relations impart to him from other aspects the necessary familiarity with these points, and neither in written nor oral examinations have I ever asked a specific statement of the arterial supply or immediate muscular relations of any individual muscle. And here I would ask "just how should a doctor know his muscles?" (Permit me to use the word "doctor" as the most convenient expression for that most important member of the whole fraternity, the specialist without a specialty, the curator of the health of the people, the general practitioner: specialists do not compare with him for a moment in his vast importance to the community.) I require the student to point the muscle out to me on the dissected body, to show me on the living subject or undissected cadaver what prominence is formed by it, to tell what part is fleshy, what tendinous, the direction of the fibers and

their general arrangement, and to show accurately on the skeleton or dissection its bony and fascial attachments. He should know what nerve supplies it; he should know that by reference to his textbook he can tell pretty accurately what spinal nerve root contributes its particular nerve filaments (it seems to me useless and nearly impossible to memorize this last fact). He should know where the nerve enters it, how thick the muscle is, and what lies under it. He should be able to demonstrate on his own person what he does with his deltoid muscle, its anterior, middle, and posterior fibers, the whole muscle acting at once; and how the arm would hang if it were paralyzed. And so of the other muscles.

Passing now to the vessels (we will take the heart with the viscera), how much should the doctor know about the arteries? I doubt if there be any fact concerning any artery in the body that he can forget without sacrificing to some extent his strength as physician or surgeon. How the vessel begins and how it ends, its relations, depth from the surface, branches, their distribution and anastomoses. There is one tendency I wish here to protest against most strongly. It is convenient for the student that he may be able to see at a glance a list of the relations of a vessel represented by a circle in the center of the page and a list of names around it, in front, behind, on the inner and outer sides; but that must be used only to refresh a well-instructed memory. That such a list should be the only method of enumerating relations is no credit to any modern textbook. The anatomist must not only know that the median nerve bears a triple relation to the brachial artery, but he must know just what relation it bears to the vessel in any particular part of the vessel's course; he must know what to expect surrounding the vessel in its upper, middle, or lower third, and I never yet met the medical student who could acquire that kind of information from a list of relations and a diagram. As to anastomoses, no one can doubt their importance, yet I do not think it necessary or wise to require students to memorize them; if they know their vessels well enough by dissection and are familiar with the course of each, it will be comparatively easy to think out anastomoses. They, like all other facts in anatomy, should be seen, learned by careful dissection, and then they will not be difficult to remember.

The veins are not such a big subject. It is necessary to know where companion veins become single trunks, and the relation of each of these to its artery; especially is it necessary to appreciate the size of these great trunks as compared with the corresponding arteries, and this is better seen in sections than by dissection. The main superficial veins of both extremities, the great subcutaneous venous anastomoses of the trunk, the anterior and external jugular veins of the neck and their connections, the venous sinuses of the dura can scarcely be surpassed in surgical importance; the hemorrhoidal, vesical, portal, and azygos systems must be familiar.

It seems to me we are apt to slight the lymphatics. Lymphatic vessels are not easily demonstrated, and in ordinary subjects the glands are usually so small that the dissector readily removes them with the fat without recognition; yet even glands the size of pinheads may become so important when diseased that no anatomical structure should be more familiar to the doctor. A subject with generally enlarged glands should be hailed as a godsend and made a permanent preparation of. I have a series of plaster casts of one which are invaluable to me. No mere words could sufficiently emphasize

the relations of the deep glands of the neck to the internal jugular; and while under ordinary circumstances it is difficult to demonstrate the iliac glands, my casts show a pelvis whose subperitoneal tissue is crowded with them in great masses. Those casts teach more anatomy than an hour's talking. I am glad to say that in cadavers prepared for dissection by my formalin method lymphatic glands and even vessels come out with unusual prominence.

As to how much of the brain and spinal cord should be taught to the medical student my opinion has changed considerably in late years. In my enthusiasm over my own freshly acquired knowledge of the central nervous system I was at one time guilty of loading my students with minutiae of doubtful establishment, and unknown physiologic import; but lately I have felt that there is so much of the nervous system that the physician and surgeon must know that these facts should be taught and taught thoroughly, while the ordinary medical student can very well afford to leave unstudied most of what has as yet attained no physiologic or clinical significance. I have lately, therefore, been guided, in determining the amount of knowledge of the central nervous system I shall require of my students, by a consultation with my colleague in the chair of physiology, and have insisted on their knowing and knowing well just so much anatomy as should fit them for his physiologic course. In the nervous system especially our terminology must be clinical as well as anatomical, and however much we may favor newer names we must duplicate our names sufficiently to fit our students to read the general run of textbooks on nervous diseases.

Of the peripheral nervous system I have vainly tried to find anything that may be safely left out. The facts as to the deep origin of the cranial nerves may be put broadly and, being mostly impossible to demonstrate by ordinary dissection, may form a fitting subject for one or two lectures illustrated by drawings and lantern demonstrations of sections of the pons and medulla, but from their superficial origin on there is little that cannot be confirmed by dissection, and nothing that can be forgotten with impunity. I have not thought it profitable to make my students memorize the exact spinal origin of each peripheral nerve, or the exact relations of segments of the spinal cord to vertebral spines, believing it impossible to keep these facts in our memory for any length of time, and also that there are very few clinical emergencies where one would not have time and opportunity to refer to a textbook for the necessary information. Passing now to the viscera. Above all things a doctor should know just where and how they lie, their relation to the surface and to each other, their vascular and nervine supply, and how the abdominal viscera feel to the hand introduced into the peritoneal cavity. Nothing can be more important than the exact relations of the stomach in all its varieties of contraction and dilation, emptiness and fullness. And as no two bodies are just alike in this respect the student should be brought into personal contact with as many bodies as possible. Fortunately, cadavers prepared by the formalin method approach very near in the relations of the viscera to what obtains in the living subject. Above all things, the anatomical teaching of the viscera should lead up to clinical aspects, medical and surgical; and the relations of the viscera are of the utmost clinical importance. The student's anatomical training should at least give him a good working knowledge of the organs of special sense.

Lastly, having acquired by dissection a systematic familiarity with the whole body, he must learn it all over again from the physician's and surgeon's point of view, and this necessitates an advanced course of medical and surgical anatomy and an anatomical course on the living subject.

Having summarized how much anatomy we have to teach, let me run over shortly the methods that I have found most serviceable in teaching it. It seems to me that lectures have but a limited application in this branch of medical teaching. The main work must consist of demonstration on the cadaver to small sections of students, and of personal superintendence of the students' own dissection. A few introductory lectures will be required at the beginning of the course, a few lectures on such parts of the nervous system as can only be taught in our limited time by diagrams, such as the tracts of the spinal cord and deep origins of the cranial nerves; one or two lectures to summarize what the student has learned by dissection of the cranial nerves, sympathetic and lymphatic systems, and that is about all. All the rest I teach by demonstration of actual dissections of the cadaver made in great part by myself before small classes while I talk. The professor should be the teacher par excellence. All dissecting is done during the day, and I object emphatically to dissecting at night, when the student should have time for home study. I also very strongly prefer regional dissecting as opposed to the systematic method, as thus relations of parts are more carefully studied. Bodies can be preserved indefinitely in all weathers, and there is no reason for hurry. The student in his freshman year masters all the bones of the body, and dissects the arm, leg, and thorax, including the joints; sophomores dissect the head and neck, abdomen, brain, eye, and ear; and juniors have an advanced laboratory course of surgical and medical anatomy on the cadaver and living subject. This last course also includes the study of the main points of interest in fetal and infant anatomy. The freshman class is divided into two sections, the one to dissect the arm, the other the leg, each section changing subjects after Christmas. Each section starts with the bones and must know them thoroughly before commencing dissection, having to mark each muscular attachment accurately in chalk. Then comes dissection, two men being put to each part, as I find most men dissect best in couples. One reads while the other dissects, and each dissection is preceded by a demonstration of the region, on a dissection conducted mainly before the class; the classes being small enough to enable each man to see. It takes till Christmas for the complete dissection of an extremity, commencing with the bones of the part early in October. Similarly the sophomores are divided into two sections, the one assigned to the abdomen, the other to the head and neck. The brains are removed, preserved in a formalin and glycerin fluid, having been previously magnificently preserved *in situ* by my formalin method of preparing the cadaver, and form the first subject for study after the Christmas holidays, thus preparing the men for their lectures on the physiology of the nervous system later in the sophomore year. My laboratory course for third year students is a new feature with us and promises to be a great success. As an example, the student commences by mapping out on the shaved head the bony landmarks, Chiene's and Reid's methods of outlining the fissure of Rolando, the fissure of Sylvius, and middle meningeal artery. He then removes an inch-wide strip of scalp

over the fissure of Rolando; studies the layers of the scalp from a surgical standpoint, removes the bone over the entire length of the fissure and exposes the fissure. Next he exposes similarly the middle meningeal artery. In the temporal region he studies the temporal artery from the surgeon's standpoint, the layers of the scalp here, and temporal muscles, and finally removes the squamous portion of the temporal and exposes the Gasserian ganglion. In the mastoid region he exposes the mastoid, antrum, lateral sinus, cerebellum and cerebrum. And so over the whole range of the surgical anatomy of the trunk. The limbs are studied on the living subject, and by dissections and sections of the cadaver, with a special view to ligature of vessels, distribution of nerves, amputations, resections of joints, fractures and dislocations. Such is a short outline of the method which hitherto has given me the best results. Above all things students require to be taught to see everything for themselves; and anatomy is a most satisfactory subject to teach because you can show everything. I have not touched on histology and embryology. With us these are special subjects and too large to be included in this paper.

ON THE PRACTICAL CLINICAL TEACHING OF STATE MEDICINE.

BY WYATT JOHNSTON, M.D.,

of Montreal,

Assistant Professor of Hygiene and Legal Medicine, McGill University.

By instruction in State medicine, I refer to that beyond what is required to qualify the average medical student for his degree, up to what is required to qualify him as a medicolegal or sanitary official. Though the term State medicine has by usage come to signify, in this country and England, merely public hygiene, it should properly include legal medicine as well, and it is in this wider sense that I employ it.

On comparing American facilities for instruction in State medicine with those existing in Europe, we find ourselves handicapped by the absence of official connection between the medical schools and the State. Professors of hygiene and legal medicine do not with us, as they do in Europe, become as such entitled to official positions which give them opportunities to study and practice the specialties which they teach; hence, except in the case of a comparatively few State universities, it is evident that our schools must select their teachers in these branches from among those persons holding State positions, or that the latter must obtain teaching positions in order to make practical teaching possible. Evidently, active cooperation between teaching bodies and State or municipal authorities is highly desirable.

The largely increased number of teachers who now occupy State positions, as compared with that of a few years ago, naturally leads one to inquire to what extent the teaching had become more practical. We find, however, that beyond a decided augmentation in the amount of laboratory work, the State medicine courses are still largely modeled on the old plan, and little or no teaching analogous to clinical instruction is given.

Professor F. W. Draper, of Harvard Medical School, who has for some years made systematic clinical instruction in legal medicine a feature of his course, is almost the only teacher who has done so. In hygiene very little has been attempted anywhere in the way of

practical instruction in sanitation, and while courses have been begun in several institutions, they have as a rule been discontinued. I would not advocate any great increase in the compulsory work in these subjects for all students, since hygiene and legal medicine are subjects in which, while every student must know the minimum, advanced work is better left optional. This rule, which applies to all specialties, has been well pointed out by Dr. F. P. Mall in a recent article in the *PHILADELPHIA MEDICAL JOURNAL*.

I thought it might be of interest to record some attempts which I have made to place instruction in State medicine on a practical clinical basis in Montreal.

1. *Legal Medicine*.—A special advanced optional course was given in this subject for students who had already fulfilled the University requirements. I had, as coroner's physician and as pathologist to the Montreal General Hospital, postmortem material making with some outside cases a total of about 300 autopsies yearly. By being officially placed in charge, through the kindness of my colleagues, of all the medicolegal cases and damage claims averaging, arising in connection with cases treated in the Montreal General Hospital, a very interesting medicolegal material was obtained which could be readily utilized for instruction. This was given in the form of demonstrations and a weekly clinic, together with a system of medicolegal case reporting by students, similar to that followed with our medical and surgical cases. In this way, each student attending the course has occasion to report a number of cases and receives a fairly thorough training in the scientific estimation of disability, based upon the methods of the German authorities, who have made the subject a special study. This training in estimating the disability after injury or deciding whether or not a disease is really due to traumatism, appears likely to be of more real service to the majority of physicians than training in criminal medicolegal work. I prepared a class syllabus giving the principal data on the subject of disability according to standard authorities, which has been published in the *Montreal Medical Journal* for April, 1900.

For training in the criminal side of medicolegal work, besides the examination of stains, etc., each student was required to do autopsies on bodies upon which typical injuries in the way of cuts, stabs, shots, and corrosive poisoning had been previously inflicted (post-mortem). The extent to which the written report, prepared in each case was accurate, clear, and to the point, showed in how far the technic was correct and the appearances accurately observed and properly interpreted. The practice was followed throughout the course of detailing two students to each case, one representing the plaintiff or State, and the other the defense. The latter was required to comment upon the report of his colleague and criticise it. (A plan which incidentally saved the instructor a good deal of labor.)

The largest amount of material available on any one class day occurred in the spring of 1899, and was as follows: (1) A case of infanticide; (2) a case of sudden death; (3) a case of attempted murder with inquiry into mental condition of accused; (4) a case of alleged rape with examination of stains; (5) a damage suit for injury to nerves of arms; (6) an accident-insurance case of fracture of the leg; (7) an employer's liability case of loss of an eye. Such a variety of material was, however, quite exceptional, and is by no means necessary.

During the course, one evening a week was set apart for a conference at the teacher's house (after a method followed by Professor Wm. Osler) at which the work of the week was discussed. I had also in my class the students of the McGill law faculty, to whom I give a short annual course of lectures. We tried the experiment at these conferences of detailing two law students, who had also usually seen the cases at the clinic, to act as prosecuting and defending attorneys. The evidence, of course, was confined mainly to the medical points, essential outside facts taken as being in evidence when necessary. The medical witnesses were then examined and cross-examined, and after the judge (a law student) had given his decision, I was enabled to make a few remarks as referee.

The study of the cases in this way appeared to be more thorough and real than when the cases were simply demonstrated, and the students appeared to digest and apply their information very well.

A set of syllabus forms for medicolegal investigation, some of which were adapted from those of Professor Lacassagne, proved an invaluable practical guide in studying and reporting cases.

The course was followed by 20 students, of whom 12 obtained certificates.

2. *Hygiene*.—The class in this subject was a post-graduate one and the standard adopted that of the English *Diploma in Public Health*. This calls for six months of practical outdoor sanitary work and six months of bacteriological and chemical laboratory work.¹ What I wish to say concerns chiefly the plan of instruction in outdoor sanitary work, which is as follows:

A practical course in sanitation was given in connection with the Montreal Health Department jointly with Dr. L. Laberge, medical officer of health for Montreal, without whose kind cooperation the work would have been impossible.

Each member of the class was given a syllabus or prepared one for himself, detailing the points to be observed in making some special sanitary inspection, for instance, of a dairy, a vaccine institute, a water-supply, a factory, etc. Each one had thus personally to study the objects most important from a sanitary standpoint, doing also any necessary laboratory work and preparing (1) a full report; (2) a summary of the objectionable features found, and (3) recommendations for improvement. The reports made during the week were discussed at the weekly conferences of the class and criticised by the members. In their spare time, the members also accompanied the inspectors and officials in the discharge of their routine duties, though this was less insisted upon. The candidates were given opportunities of clinical study at the civic infectious hospital, though this part of the work was not organized.

By the plan followed, a maximum amount of independent work is secured, with a minimum demand on the instructor's time, and the nature of the work obliges the men to study the subject thoroughly and draw their own conclusions unaided.

Another means by which we propose to utilize the opportunities for study in sanitation without too much loss of time is a series of clinics in connection with the local health board in which the various questions of interest requiring to be dealt with during the week can be discussed before the class and the reasons explained

for the course adopted. This is a departing from the stereotyped lectures with diagrams and models of drains, etc., which often form the stock in trade of the teacher in hygiene. Set demonstrations and inspections of typical sanitary objects of interest are better, but still lack variety and do not sufficiently confront the student with the actual problems which present themselves for solution.

The laboratory instruction consisted in a practical course in sanitary chemistry by Professor R. F. Ruttan, and one in sanitary bacteriology by myself. Some lectures on sanitary law were given by Mr. C. M. Holt. Some instruction in sanitary engineering had been arranged for, but we found no time to give it. This was also the case with meteorologic work.

In recording the methods I have personally followed, I have to plead guilty of ignorance as to the extent to which they may have been already used by others, never having personally had the benefit of any systematic instruction in hygiene or legal medicine. I can only say that being struck by the fact that little was apparently being done in these branches upon the well-tried lines of clinical instruction which has been found to answer so well in other subjects, I tried to adapt them to State medicine. Although no doubt others are doing this also, they are still too commonly neglected. While, as far as I can judge, the result has been decidedly encouraging, the ultimate result of the plan may be success or failure. The experience of other American teachers who have tried to establish advanced teaching in hygiene have shown that the matter is not very easy; in fact, one reason for reporting my experience now is a fear that later on I may be unwilling to do so, and may have unrecorded experiences which, if not fortunate in my hands, might still be helpful to others.²

For the benefit of those working along similar lines, I may mention that in beginning work of this kind, one must secure beforehand the cooperation of teaching, licensing, and sanitary bodies to prevent a clashing; one must be prepared to give personally any part of the whole course if necessary; and one must find before beginning some means by which those attending will derive a material advantage from it.

A cooperation of sanitarians, teachers, and legislators, effected through some central sanitary body like the American Public Health Association, might afford a valuable means of securing uniformity in the matter of qualifications and diploma. I think that a diploma should imply at least several months of instruction; for shorter courses certificates might be given.

I think it important that in connection with medical schools facilities should be provided for advanced and practical teaching in State medicine, and that the State authorities should aid in the matter. Elaborate laboratories are less needed than practical and systematic utilization of the ordinary sanitary material on the same basis as clinical teaching. I have tried to show how facilities such as exist in every city in America may be readily made use of to place the teaching of State medicine upon the basis which it occupies in Europe.

Another direction in which teaching bodies might render more assistance to the health boards is in the systematic training and certification of sanitary inspectors and the lay officials of health departments. Uni-

¹ This standard was adopted officially by McGill University and a diploma provided for, this being arranged by Dr. F. R. Ruttan, Registrar of the McGill Medical Faculty, to whose prompt action in the matter the successful issue of the course is largely due.

² Since writing the above we have completed the course and 5 candidates, 3 of whom are health officials, have earned diplomas; 8 others, including 3 health officials, have partially filled the requirements and will complete them later on.

versities proper having the teaching-staff equipment are in a better position to do this than health boards. I am at present giving a course of systematic instruction to the sanitary inspectors in connection with the Montreal Health Department at the request of Mr. H. B. Ames, chairman of the Health Committee, as a return for the opportunities afforded for teaching my own classes. The courses of the British Sanitary Institute have been selected as the best model to follow in courses of this sort. It is difficult to see what body should hold the examinations and issue certificates such as are given by the British Sanitary Institute.

We have secured informal pledges from the public authorities that a qualification in public health will be made in the near future a prerequisite to the holding of certain positions, and in the meantime they have at my suggestion adopted the plan of giving a cash bonus to such officials already in office as may secure the qualification, on the assumption that their services would thereby become more valuable.

COMPARATIVE PATHOLOGY: ITS RELATION TO BIOLOGY AND MEDICINE.¹

By THEOBALD SMITH, M.D.,

of Boston, Mass.

THE progress of medicine, like that of other departments of human inquiry, consists of retreats as well as advances. Man frequently attempts the conquest of problems from the least accessible quarter. This is true of that stage in the development of medical science when the human species was the chief object of study. Within the past two or three decades medicine has been gradually and almost unconsciously drifting toward animal pathology as the chief, if not the sole, means of clearing up the greater doubts which a broader science inevitably brings with it. We have today definitely reached this second stage, the study of the more accessible, more varied diseases of higher animals. The preparations for this step date well back, and the most conspicuous investigators in human pathology have always had a yearning toward the rich field of animal pathology. A glance through the works of Virchow will show how largely he drew upon its resources for his ideas. Another pathologist of prominence, Bollinger, was early identified with this subject, and as far back as 1875 he was led to make the following suggestive statement, which applies perhaps with still more precision to medicine a quarter of a century later:

"By competent authorities the not unjust criticism has been made that in the newer medicine, the one-sidedness of observation, as well as that of information, is steadily on the increase. It is not our task now to trace the cause of this lamentable condition. It is evident, however, that the younger generation of medical men reveal frequently certain defects in their general medical training which have led to a partial loss of the wide horizon and the comprehensive point of view. Not only comparative anatomy, physiology, and embryology, but also comparative pathology, is in a high degree adapted to operate against this undesirable state of affairs, to widen the horizon, and to protect against a complacent narrowness."²

The decisive step toward a proper valuation of the

study of animal diseases was taken with the advent of bacteriology. Both Pasteur and Koch made their appearance in medicine as students of animal infections, and since their early work bacteriology, so far as it bears upon disease processes, has been essentially comparative in its scope and method. It was, in fact, reserved for modern etiology, the offspring of bacteriology, to lift pathology permanently out of the level of a merely descriptive science, for with the entrance of a dynamic factor, a causal element under the guise of microorganisms, the experimental era definitely began. After the opening of that vast domain of parasitism, it became possible to begin an analysis and interpretation of the phenomena of infectious diseases which go to make up such a predominant part of the substance of pathology. In this new study, the microorganisms have become the keys which unlock the secrets of biology, or the liberating impulses which, in virtue of their specific energy, set the complex processes of disease in motion according to the intent of the experimental pathologist. They have begun to convert pathology into a science possessing in a large measure the power of prediction.

The current definition of comparative pathology has thus been formulated by the course of events as the study of the diseases of the higher animals, including man. The true comparative stage has, however, still to be reached. Only when our positive information of the many, chiefly infectious diseases of animal life shall have reached a certain level can comparative studies in reality begin. The comparative pathologist still finds himself in the position of the early naturalist who scoured the earth for new species, and the dictionaries for new and untried names with which to label them. His duty for the time being will be the natural history of the different diseases as the stock-in-trade of the comparative and experimental pathologist of the future. As the older naturalists provided the groundwork for the present biologic sciences, so the foundation for general pathology must be laid by a thorough exploitation of existing diseases. Such exploitation, even along the most advanced lines, will still leave us in the dark concerning many pathologic phenomena. The higher animals do not differ very much from man, and while they may manifest in their peculiar reactions toward disease a multiplicity of adaptations and modifications of vital phenomena, these latter must be pursued still further back toward simpler organizations. We shall then be in a further stage of comparative pathology, driven back, though onward, to lower forms of life. In the course of this forward as well as backward march, pathology will eventually merge with physiology, since the various phenomena of disease must be looked upon as adaptations of physiologic processes. Ultimately they may be traced to the cell as the source of all phenomena of life.

As we reflect upon this possible course, the thought comes to us—why not go to the cell at once as the surest and quickest way of analyzing the disease processes of higher animals. This seems at first thought reasonable, but a little reflection will show its insufficiency. The ovum, though containing the possibilities and latent forces which evolve from the single cell the fully developed organism, is, after all, only a cell. The older theory of preformation, which put into it the fully developed but miniature animal, disappeared with the advent of the microscope. If we wish to study muscle cells, bone, cartilage, or nerve tissue, we go to the developing or adult organism, for they do not exist in the ovum.

¹ Address delivered by invitation at the Annual Conversational Meeting of the Philadelphia Pathological Society.

² *Deutsche Zeitschrift f. Tiermedizin*, 1875, i, p. 20.

So with the functions of animal tissues and organs. In tracing the principles governing the defenses of the body, we should find them either wholly undeveloped in the free living cell or present only in a crude form. Through the course of evolution of higher animals, the principles of immunity have slowly become specialized and greatly magnified in certain directions, and they are probably nearest perfection in the highest types.

The stimulating researches of Metschnikoff, upon the comparative pathology of inflammation, from which he originally inferred that phagocytosis is the chief defensive process of the mammalian organism, illustrate well our theme. We know today that even if the protective mechanism of the body toward foreign intruders has its origin in the intracellular digestive processes of free-living cells, this crude mechanism has been refined and specialized beyond all imagination in higher animals. We are now prepared to realize that the crude device of the roving ameba would not do for the highly differentiated, chiefly sessile cell masses of higher animals. From these considerations it becomes evident that eventually all classes of organisms may be drawn into pathologic inquiry, otherwise we may be left with gaps which neither reason nor imagination can bridge over.

This backward progress—if such naturally exclusive terms may be coupled together—toward a deeper and broader analysis of phenomena has been the route of all inductive science. Beginning with the most complex, because, perhaps, the most important subjects, man has been retreating to simpler conditions more accessible to analysis and experiment, and, with the results before him, he is continually rectifying current information which has been accumulated by equally industrious but less fortunately placed predecessors.

This apparent retreat of medicine, which I need not force upon your belief with illustrations and arguments, as it is going on under our very eyes, is associated with another movement of equal, if not greater significance, which, in one sense, is also a retreat covered by experimental and comparative medicine, but from another point of view is a triumphant advance. The rapid strides which have been made, since Koch's discovery of the peculiar action of tuberculin, in our knowledge of resistance and susceptibility to infection and of the factors which produce immunity during the course of infectious diseases, have led to the discovery of wonderfully subtle and effective substances which may influence the incidence and course of disease. I refer to the products of bacterial growth, the various toxins on the one hand, and the products of animal metabolism under the influence of bacteria, the antitoxins, bactericidal substances, and agglutinins, on the other. These discoveries have opened our eyes to the ultimate impotency of most of our efforts to obtain artificial therapeutic substances to hurry immunity and recovery, as well as to the innate power of the animal organism to develop its own therapeutic resources directed with unfailing accuracy toward the special assailants of the hour. Where such powers fail, drugs cannot create them. But the ingenuity of medical science has found substitutes not only in bacterial products, but in the kindred body of higher animals, where they are developed under duress by artificial infection. But the energy of animal life, as displayed in the antitoxic forces of the blood, cannot create energy within the sick body, but only tide over the prostration of its mechanism of defense. Here, also, we have reached a limit in modifying and suspending the decrees of nature, and as a result we find medical science retreating

not only toward lower forms for energy, but even back along the individual life of each person and to that of his ancestors. Everywhere there is a retreat to the springs and sources of life. These must be kept pure and undefiled. The view that all successful cures with specific substances are nothing but a belated immunity is one with the almost universal tendency to stop the momentum of disease as far back along the chain of causation as it is possible for us to go.

This doctrine that disease, like other natural phenomena, is the outward expression of series of interacting causes and effects accumulating energy on the way, and that this energy is counteracted with greater and greater difficulty the nearer we approach the open manifestations of disease, has led to the almost universal practice of preventing disease wherever possible. But preventive medicine is largely the offspring of bacteriology and etiology, and these in turn owe much of their prestige to the somewhat artificial study of human diseases in animals, and to the study of animal diseases themselves.

These two movements in medicine, both taking their origin in a broader conception of disease, signify that we have come to regard medical science as only a phase of the great problem of life, and that as a knowledge of the whole is necessary to a comprehension of any of its parts, medicine must lay the whole of biology under contribution. From this point of view comparative pathology is simply one of the approaches to the science of life, but one not to be confounded with the others. Just as we are made aware in times of war of the latent energies of a nation's life, so the pathologist, in studying the disturbed equilibrium of the body, called disease, finds forces in operation of which physiology had little or no cognizance. That these forces are not new, but simply the workings of a machinery belonging to the normal body and roused into activity as a means of defense, seems well established.

According to this broader conception of pathology, a disease no longer begins with malaise and a rise of temperature, or when the patient takes to his bed, but it begins whenever the series of phenomena leading to disease, however remote at first, turns toward the particular individual in question, and whoever, through his skill and ingenuity, turns that disease aside in any portion of its course, is entitled to a doctor's credit. This broader view furthermore looks upon disease as a certain inevitable factor in life which cannot be suppressed or driven out, but which it is the task of medical science to study in all its bearings, to investigate with reference to its vulnerable side, to conciliate, and eventually to utilize for the common good.

The amended definition of comparative pathology would, therefore, be the study of the phenomenon of disease for its own sake, abstracted from any immediate association with a particular subject, such as man, on the one hand, and a particular object, such as a cure, on the other. It is a biologic study of disease, or, in other words, an attempt to explain its origin, incidence, and place as a phenomenon of life and its relation to other phenomena. If this definition is to be considered as fairly representing the attitude of the advanced medical thought of to-day, it is obvious that medical science needs to come in touch with biology at as many points as possible. We have already anatomy, histology, and embryology, physiologic physics and chemistry, which are working over biologic resources for medical use. A further and important link would be the comparative

study of disease as I have defined it, for the pathologist takes the standpoint of medicine throughout. It is his task to study the abnormal in animal life, and in this respect he should stand closer to medicine than the physiologist or the morphologist. The territory covered by any branch of biologic science must be small in order to be properly cultivated. Unless there are a sufficient number of adjoining or overlapping territories extending from biology to medicine, the resources of the former will remain unknown and unused.

Let us now turn to some practical matters by means of which this broader conception of medicine may be realized. What is the true direction which education and research should take? Individual views cannot count for much to-day. Only by arousing attention and often vigorous opposition from various quarters can we hope to promote our object. Let us first of all glance at the field of operation of our subject and some of its present resources. It seems to me that at present the most fertile domain to be explored is that comprising the varied diseases of the higher animals. If I said simply infectious diseases, the program would be amply large. A thorough investigation of the latter will inform us of the limitations of infectious agents, and by the way of these limitations we shall most easily be guided to other still unknown causes of disease. In this field, which must form the groundwork of comparative pathology, much has already been accomplished, mainly with the aid of grants made by various governments in aid of agriculture. In our own country we have a central government making large, regular, and often very lavish, incidental appropriations for the study of animal diseases. We have in every State and Territory a fund donated by the national government for agriculture, a part of which may be used for the same purpose. There are also appropriations made by certain States for similar work within their own boundaries. These, all together, represent, I may safely say, the annual income of a fund as large as that possessed by many of our smaller colleges.

The utilization of this fund under governmental authority has certain advantages and disadvantages which we should keep clearly before us. If we look upon the bright side we see that much has been unearthed that would otherwise have lain dormant for years. We have within the last decade learned to accustom ourselves to the idea of the rôle of insects in disseminating certain diseases, and their *modus operandi*. We have obtained valuable data upon such mysterious diseases as foot-and-mouth disease and rinderpest. Our knowledge of tuberculosis and various animal plagues has made considerable progress, and with the aid of men devoted especially to comparative pathology, this fund of information will be worked over and moulded into use for medical science in its widest sense. Another benefit of more popular character derived from the work carried on with the public funds is the dissemination of medical knowledge on a large scale by publications free to all. A kind of school for instruction in disease is created, and as such it cannot but do good in clearing the receptive mind of that mysticism concerning disease which is the eldorado of the modern quack. The agricultural world has within its reach the information concerning infectious diseases which is the outgrowth of medical science. I may be over-estimating the value of this free literature, but I firmly believe that the doctor and the health officer will find a more tractable and reasonable community where epizootics among

valuable animals have led to reflection and serious thought, stimulated and guided by appropriate reading.

These are the chief advantages which occur to me as the outcome of such work in our own country. But they are offset by difficulties. There is, in the first place, the constant warfare between the so-called theoretic or scientific and the practical. There seems to be a continual struggle between the demand for prompt results and the abortive efforts of the government to satisfy it. The identity between scientific and practical is not sufficiently grasped by the people. The truly practical is the knowledge which ripens on the tree of science instead of the tree of empiricism, and it cannot be other than scientific. It is the unproven theory or fad upon which the public money is so frequently sacrificed. I believe the thorough testing of new theories upon animal diseases to be a legitimate function of governments in which no means should be spared. When the principle has been established, then the time has come for the inquiry—Will its application pay? As a rule the reverse is practised. The experimenter stumbles along with inadequate means, and as soon as a ray of light appears, or he thinks he sees it and so expresses himself, he is overwhelmed with funds. The theory is made to work, whether it resists or not. The scientific atmosphere is furthermore disturbed by the temptation which comes to the investigator to praise or overrate the results of his own work in order that it may be the recipient of that approbation which insures further appropriations and continued tenure of office. These difficulties are well known. Among some of the remedies to be suggested are selection of the best men, their adequate compensation and their protection in office, so that the praise or blame of inexperienced laymen supporting some fad or doctrine may not disturb the modest self-critical attitude of the investigator. We should endeavor to promote the progress of investigation and the diffusion of knowledge rather than the distribution of so-called curative and diagnostic agents. These will take care of themselves. The economic as well as scientific importance of animal diseases is so great that the national government could with profit maintain a trained expert for every one of the plagues that decimate our domestic food-producing animals. It could afford to give him all the facilities for experiment and study and travel necessary to keep our knowledge of that particular disease in this and other countries up to the high-water mark of medical science.

Another means of promoting the best use of government funds in the interests of accuracy and economy—a method by no means new and in use by the other governments—is the alliance between our higher institutions and the government in such a way that the more abstruse, more fundamental work can be done by the most accredited men in different institutions. This method would not only lead to greater efficiency, but it would accrue to the benefit of medical science, in which all the people are equally interested. It is, in fact, almost necessitated by the geographic distribution of many diseases. In short, if the medical profession would begin to regard the great domain of animal diseases as its own, if it would accept the broad view of disease I have endeavored to sketch, and take a sympathetic interest in the efforts to study pathologic phenomena wherever they appear, there would be but little difficulty in utilizing to the best advantage the great resources furnished by public authority.

There are other resources for the study of comparative

pathology which I would be remiss in passing over unmentioned. In all biologic laboratories many problems under investigation either have a direct bearing upon general pathology or else are on the border-line as ordinarily drawn. We shall undoubtedly perceive in the near future a strong current setting in toward pathology from biology, which will meet the one setting in from the medical or anthropocentric side, and passing from the pathology of the higher to that of the lower animals. Of these new possibilities let the biologist himself speak.

If we next turn to our subject as a general educational factor, we shall discover, upon a little reflection, possibilities worthy of development. Starting from the doctrine I have brought to your attention, that pathology is a phase of biology, there is no reason why its principles cannot be taught in our colleges to those who intend to enter medicine, or who wish to gain a general knowledge of disease processes, inasmuch as it is now possible, with a little judicious selection, to teach pathology in the laboratory without any recourse to the hospital or its autopsy-room whatever. The great omnipresent problem of parasitism, with its numerous pathologic manifestations, may be made a biologic study as instructive and broadening as any that may be offered to those already trained in the fundamentals of biologic science. Whether we desire this innovation or not, the necessity for earlier specialization toward medicine continues to grow, and that institution will reap the benefit which adapts itself most smoothly to the changing demands. In fact, an impartial view of our educational methods and aims cannot fail to occasion surprise that while we have endowed professorships and equipped workshops (be they libraries or laboratories) in so many departments of human inquiry, from astronomy to Sanscrit, we have but very few for the study of general pathology, that subject which comes as near to us as any. What the intelligent public need is instruction in the newer ideas of cleanliness. Has not this idea undergone a complete revolution in the minds of all older physicians, and does not it undergo a change in the mind of the student as he passes from school and college into medicine? The old adage that cleanliness is next to godliness stands unshaken today, because it is a universal method of repelling the agents of disease. The pointless fastidiousness of everyday life should be converted into a pointed, useful weapon of defense in the hands of the public generally. May not our indifference to the diffusion to sound biologic knowledge concerning health and disease be in part responsible for the lamentable diffusion of charlatanry and the multiplicity of the "isms" which claim the power to cure and the right of admission to the ranks of the medical profession? Evidently the subject of disease repels the average student; but this repulsion is largely due to our ignorance of the subject of disease and its unnatural separation from biology. As an introduction of the educated laity to the facts governing disease, animal pathology would be the most wholesome as well as the most broadening study. It could be so conducted as to be free from any personal dangers, since not a few animal diseases are quite harmless to man. Finally, the influence of a wider dissemination of the facts of general pathology as disclosed by animal life would be of very great value in the formation of a healthy, alert, and receptive public opinion upon the many questions of sanitation which are of such momentous importance in our congested centers of population, and which public inertia often keeps at a standstill.

The place of my subject in purely medical instruction remains to be created. Since each department or branch of medical teaching is not the result of the best ideals, but rather moulded by the conjoint pressure of all the other branches upon it, any new branch that may claim independence and endeavor to push its way into the limited space will probably have a quite bizarre shape for a time. It would be useless, therefore, for me to suggest a definite finished program. I should, however, consider the little influence it may wield for a time to act chiefly in the direction of enlarging the student's views of disease. He needs a truer conception of the general relations of disease to other phenomena of nature, of the powerlessness of man to create energy in the sick on the one hand, and his power to husband and possibly divert it wherever needed, on the other. These facts lie at the foundation of medical science. Among the special advantages which a comparative study of disease offers are the accessibility of various types of infectious diseases and the study of these diseases from beginning to end at short range, the important conception of variation of host and microorganism, and hence of the resulting disease—in other words, the continual flux of pathologic phenomena, a fact so easily demonstrated but so often lost sight of when our attention is concentrated upon a single species. The student comes in contact with disease at once from all directions. When we bear in mind that most, if not all, good teaching is a more or less arbitrary tearing apart of related phenomena, either because some are inaccessible or for greater simplicity of presentation, the educational advantage to the student of having all his studies focussed on a single object entirely under his control is worth the temporary detour toward animal pathology.

There are many other minor advantages derived from the study of animal diseases, of which I shall delay to mention but two. The investigation of human diseases must be continued by experiment on animals wherever possible. In the study of animal diseases we can continue them upon the same species from beginning to end, and thereby avoid erroneous deductions. The study of typhoid and cholera in guineapigs is quite a different thing from its study in man. Again, we are able to study animal diseases at all stages. This is only apparently true for man. A case of typhoid fever which terminates fatally in the first week is probably due to a much more virulent bacillus or a weaker resistance than one ending fatally after the third week. The two cases are not stages of the same type of disease. In animal diseases we may terminate life at any stage for purposes of investigation, and thereby gain a better insight into the evolution of disease processes. I believe that the whole subject of the diseases of the blood would be greatly simplified by adopting a comparative standpoint and extending our studies to animal life.

In my remarks I have been mingling together thoughts bearing upon instruction and research quite indiscriminately, because their interests are to a certain extent the same. Yet they are not identical. Medicine, in our own country, has been so preoccupied with building up medical education devoted directly to the training of practising physicians that little energy has been available for advanced work in the building up of medical science itself. The need of research to keep the springs of knowledge pure is now being generally realized. In Europe institutions are appearing in which instruction is quite secondary to research, and into which students are admitted to create knowledge rather than to absorb

it. The need of such institutions in our own country is far more pressing than that of new medical schools. There is no sign on the horizon, however, that foretells their speedy coming. I wish to enter here a plea for institutes in which the large territory of animal diseases may be made accessible to research and instruction. Such an institute, besides performing work of great economic value, would fill in the gaps of the more pointed and immediately practical instruction in human pathology, and could be adapted to the comparative study of other branches of medicine. The pathologist interested in the lesions of any organ, such as the kidney, will seek light in the direction of animal pathology. The clinician will be eager to study comparative changes in the morphologic elements of the blood. He will welcome the opportunity to study the pathologic secretions of the kidney in animals. But before this can be realized there will be needed well-equipped departments in which all the accessible diseases and lesions of animal life are mapped out, studied, and classified in connection with as complete as possible a history of the animal furnishing the material. Such a department will come to represent the clearing-house through which material becomes accessible to general medicine. Though the achievements of the comparative pathologist himself may not for a time rise above those of the descriptive stage, owing to the great extent of the territory to be covered, he will be in a position to put into circulation valuable material, and his laboratory should become the center of all inquiring spirits who find their path blocked by the necessary restrictions governing the study of human diseases.

I have no doubt that the program I have outlined of comparative pathology as a factor in education and research will be regarded as fanciful, because at present not feasible. I acknowledge the anticipated criticism as being in part justified. The ultimate success of such a program will depend on a variety of factors, especially on adaptability to a greater subdivision of work now becoming necessary. Pathologic anatomy is breaking up into a number of specialties devoted to different objects. Pathology will divide along other lines of cleavage. Experimental science demands division according to methods of work. The most successful pathologic work will be done by those specially trained in morphology, physiology, and chemistry, and the best pathologic laboratory of the future will employ such specialists working together. The limited capacity of the individual mind for the absorption of details demands the shrinkage of our own individuality and its intimate cooperation with others.

Another criticism which I also anticipate is the one that pathology is already taught comparatively by the best teachers. This I gladly acknowledge to be true, and it is their influence which makes any further advance in the direction I have pointed out possible at present. Yet the point of view of the human pathologist will generally be different from that of the comparative pathologist, for the former is more directly associated with medical practice. He is in many of the smaller institutions still too much preoccupied with routine work to get much time for the working out of problems having a general bearing upon disease. Only an adequate force of assistants and an extensive material equipment will enable him to treat disease from the comparative standpoint. This would be equivalent to creating a new department. It should also be said that a department covering too much ground is apt to fall to pieces

sooner or later, because the interest of the investigator is apt to grow narrower and deeper with the passing years, and the success of the laboratory depends, as we all know, upon the personal interest of its director in all the details of the work. I see, therefore, no valid reason why an independent department of comparative pathology is not compatible with the best results. At the same time the gradual evolution of such a department may go on under the wing of human pathology until the fledgling is ready to fly to another perch.

In conclusion, I wish to call your attention to certain problems which are not, as a rule, recognized as coming within the scope of medical science, and to which biology has already given much attention. I believe that we all agree that the medical science of the future should not exhaust itself in the task of trying to save or prolong individual life, but it should endeavor to minister as well to the wants of the social body of which we are the units. Though the universal demand be to save or prolong individual life, it does not require deep thought to believe that the exercise of this function alone may not, after all, be the best that medicine can do. The pathology of individual life may be the physiology of the higher organism to which the individual belongs. Pathologic phenomena may be correctives of conditions of unstable equilibrium of the social body, whose true significance may entirely escape us. The propriety of giving attention to the more general phenomena of disease in addition to the saving of individual life and the relief of suffering, therefore, is obvious. The medical profession should, in other words, give itself up to reconstructing as well as mending the individual. This work of reconstruction, which manifests itself in the activity of personal and public hygiene, has already drifted partially out of the hands of the medical profession, partly of necessity, partly because it has been too absorbed in the process of mending. Yet the medical profession is the only one which has the resources to successfully carry on this work. In this broader field the subject of parasitism naturally falls to comparative pathology. By the word parasitism I mean all associations of organisms with animal life, be they bacteria, or protozoa, or fungi, or the larger animal parasites. Such associations should be studied, whether they produce a manifest disease or not, or whether in producing disease they are regarded as secondary or accessory agents, or of primary importance, because our hypotheses or suspicions are not sufficient to create a fact. A symbiosis in one species may be the source of a fatal disease in another or in the same species in another climate.

Parasitism, from a general point of view, is a weapon used by nature to eliminate those that fail to reach a certain standard. Parasites take the place under domestication of those larger enemies which every species has to encounter and from which the only protection is perfect working of the powers of resistance, whatever form they may assume. It is one of the problems of comparative pathology to analyze the relation between host and parasite and to find out what is to be credited to predisposition, what to the specific energy of the parasite. Such a problem includes the whole environment of the individual as well as that of his ancestry. This phenomenon of parasitism is closely linked to the evolution of society as well as to the domestication of animals. In this process of civilization or domestication pathologic conditions arise owing to imperfect adaptation to rapidly changing conditions. The task of pathology is to trace this want of adaptation, to analyze it, and to

determine its ultimate effect. The pathologic conditions may finally become physiologic in a new environment, or they may remain pathologic and lead to great destruction. I may mention as one of these problems that of tuberculosis. On the one hand, it is claimed that this disease is a result of environment with the parasitic factor of only subordinate importance; on the other, it is claimed that the parasite is chiefly to blame, and that all that is necessary is to protect ourselves against it. Much can be learned concerning these problems by a careful, continuous study of animal life under domestication. Many parasitic diseases of higher animals and plants appear in an accentuated form with domestication, and it becomes the duty of pathology to accurately estimate the separate influences which conspire to bring about this state—the parasite, the artificial environment, the relaxation of the struggle for food, and a number of others. The same problem is confronting us with the human race. This, reduced to its simplest terms, may be defined as the adaptation of the individual to so-called pathologic states, rendered inevitable by the great diversity as well as monotony of conditions under which individuals must live in forming together a higher social organism.

It is furthermore possible that the efforts which have been made by biology to apply its principles to the higher social organization may in the future be seconded by pathology. There are many traits of the social body which recall certain phenomena in animal pathology. Can the latter in cooperation with biology throw any light upon the path we are going? Undoubtedly we all recognize the fact that even prodigious erudition and great prophetic vision cannot as such be of any influence in guiding the world, but that the knowledge must be vitalized by assimilation through the units which compose it—in other words, through education. It is difficult, however, not to be optimistic in holding the belief that biology will be of great service in foreshadowing the evolution of the social organism, because the same principles appear to be at work that have brought to such perfection the cellular organization of man. I refer, of course, to the mechanism and not to the essence of life, which will remain for mortal man ever a mystery and a faith. In the evolution of life there have been ups and downs, movements forward and backward, the latter representing the disturbed equilibrium or the pathologic phase. In the progress of society we seem to note similar movements. Can individual men, by a study of the forces that tear down as well as those that build up organisms, and by the popularizing of the knowledge thus gained, so that it may become part of the mental and moral outfit of the individual, save society from impending catastrophes similar to those that have overtaken it in the past; or will it simply be the privilege of the individual to foresee the future and analyze the past? In any event, if pathology could simply, from its own material and its established principles, interpret and verify, or even reconstruct and perfect, the simple, moral rules which have served as a guide for the individual of the social organism for nearly twenty centuries, its task would not be in vain.

Plague.—The returns for the week ended July 21, show for all India only 198 deaths from plague. The fall in the death-rate from plague is annulled by the great increase in mortality in Bombay from cholera. During the week ended August 11, 29 cases of plague occurred in Hongkong, China, and 28 deaths from the disease. A fresh case of plague is reported in Sydney, Australia.

ON THE ETIOLOGY OF TROPICAL DYSENTERY.

Middleton-Goldsmith Lecture, Delivered Before the New York Pathological Society, April 12, 1900.

By SIMON FLEXNER, M.D.,

of Philadelphia, Pa.

Professor of Pathology, University of Pennsylvania.

THERE are few subjects in medicine that have attracted more attention than dysentery. Its history dates from the earliest written records and its ravages, unlike those of many of the pestilential diseases, have continued practically unaltered to the present day. The most ancient writing upon medicine—the papyrus Ebers—contains allusions to dysentery; the oldest Indian medical writers refer to it under the name “Atisar,” while Herodotus speaks of its prevalence in Thessaly. Hippocrates, however, was the first to regard dysentery as an independent disease. I should hesitate to bring before this audience a subject so time-worn were it not for the fact that the nature and more especially the etiology of dysentery are among the problems that still await a satisfactory solution. Although the destructive epidemics which characterized the appearance of the disease in ancient times, and which were not unknown even as late as the last century, are in our own day encountered only as accompaniments of war and famine; nevertheless, dysentery still occurs in epidemic form in many Eastern and Western countries, while in the tropics the disease—not unlike cholera, another infectious disorder, the characteristic lesions of which are situated in the intestines—would seem to have found an endemic home.

Our imperfect knowledge of the nature of dysentery should be ascribed neither to lack of opportunity for the study of the disease nor to lack of energy in its pursuit. The literature contains some of the most distinguished names among clinicians and investigators, thanks to whose efforts its clinical history, its epidemiology, and, to a less extent, its pathological anatomy have received partial elucidation. Nor has the disease in the past quarter of a century escaped the attention of the bacteriologists, although it must be confessed that the results of somewhat extensive studies along these lines have been far less conclusive than might have been expected. Given a disease that is never entirely absent from temperate and tropical regions, that appears with epidemic severity, that permits of easy access to the *materies morbi*, one would certainly have been tempted to predict that the success achieved in so many other and apparently no less difficult fields would probably be repeated. That the attempt to establish a common etiological factor for all cases of dysentery has thus far failed, this audience need not be reminded. That this failure has tended to emphasize the existence of several pathological states, for which the term dysentery is employed merely as the collective designation, need not be maintained here. But that these conclusions regarding the disease may after all not be in keeping with the facts is at least open to suspicion. When we recall the protean nature of other infectious diseases, among the most common of which are tuberculosis and typhoid fever, there can be no *a priori* objection to the hypothesis that the causative agent of dysentery need not necessarily vary for each of the many types of the disease that have, from time to time, been distinguished.

For the purpose of my inquiry, I shall consider briefly

the clinical and pathological types, after which I shall ask your attention to the evidence for belief in specific causes. In considering this topic I shall endeavor to bring out the bearing of such studies upon dysentery in general and upon particular types of the disease. Finally, I shall hope to emphasize certain considerations connected with the etiology and pathology of dysentery by reciting some observations made upon the dysenteries prevailing in the Philippine Islands.

Types of Dysentery.—That the lines of demarcation between the several clinical and pathological types should be inaccurate is not a matter of wonder. Both the beginning and end of any given instance may vary widely, and the symptoms and lesions of cases arising sporadically in temperate climates may agree with those of dysentery occurring endemically in the tropics or epidemically in both localities. The terms "catarrhal," "tropical," "epidemic," and "diphtheritic," are far from signifying sharply-defined entities. The clinical manifestations and pathological lesions of the catarrhal variety occur in all kinds of dysentery and in all places where the disease prevails. Ever since the time of John Hunter there have been those who, upon pathological-anatomical grounds, have separated the endemic from the epidemic disease, and the line has been even more sharply drawn during the past decade, since the discovery of *Amœba coli* in its relations to tropical dysentery. But the distinction between tropical dysentery and the epidemic disease is far from being sharp and constant. Diphtheritis and ulceration are not safe criterions, for while the former is commonly present in the epidemic disease, it occurs also in the tropical malady, and may, according to Kartulis, be associated with the ulcerative amebic variety, in which the lesions begin with destruction of the submucous coat of the gut.

As must always occur when classification of a disease proceeds upon clinical and pathological rather than etiological lines, the literature of dysentery is burdened with an interminable mass of appellations indicating the nature of the disorder or the author's conception of its pathological anatomy. Dysenteries, however, are now divided by the chief writers into several groups, depending upon the clinical history or the mode of prevalence. Thus Osler writes of 4 varieties, the acute catarrhal, the tropical or amebic, the diphtheritic, and the chronic dysentery. Davidson considers the subject under 2 headings: (1) according to prevalence—epidemic, endemic, the dysentery of war and famine; (2) upon clinical grounds—acute fibrinous or pseudodiphtheritic, and chronic dysentery. Kartulis describes endemic, epidemic and sporadic varieties; Manson speaks of a catarrhal and ulcerating dysentery, while Delafield distinguishes in the environs of New York at least 5 distinct types of this disease, only one of which would appear to be due to a specific agent—*Amœba coli*.

Evidences for Specific Causes. Bacteria.—The presence of bacteria in the stools and tissues in dysentery was demonstrated by Klebs, Prior and Ziegler, whose studies, carried out upon the epidemic disease, have now only a minor historical interest, although Ziegler still holds that the relations of certain bacilli to the lesions speak for their pathogenic action. The early studies of Hlava upon the epidemic disease yielded quite inconclusive results, since, although he was able to obtain as many as 19 different kinds of bacilli in cultures, inoculations into animals failed entirely to reproduce the morbid

process. Chantemesse and Widai were somewhat more fortunate. From five cases of tropical dysentery they obtained a bacillus which, when injected into the stomach or rectum of guineapigs, give rise to diphtheritis, an observation which Grigoriew, who believed that he had isolated the same microorganism from 10 cases of dysentery, failed to confirm.

Maggiori, who studied 11 cases of the epidemic disease, obtained *B. coli communis* regularly and in large numbers. Less frequently *B. proteus vulgaris* was isolated, while in some cases the pyogenic cocci and *B. pyocyaneus* were found. This investigator considered it highly probable that the disease was caused by a *Bacillus coli* of intensified virulence—a conception also shared by Laveran, Arnaud, Celli and Fiocca and Escherich, who isolated the same organisms from dysenteric cases. Arnaud's series was larger, embracing 53 acute cases occurring in Tunis, from all of which *B. coli* was isolated. The spleen of a fatal case also yielded him the organisms. The ingestion of cultures in the case of several kinds of animals gave no results; while rectal injections of bouillon cultures, previously raised to 60–80° C., produced in two dogs a fatal and characteristic dysentery—a result in striking opposition to those reported by other writers.

The studies upon this bacillus by Celli and Fiocca are the most important which we possess. Their cases numbered 62 and included examples of the sporadic, epidemic, and tropical disease occurring in Italy and Egypt. From the fact that especial attention was paid to the occurrence and action of *Amœba coli*, the results of these authors are doubly useful. They exclude this organism as the cause of any form of the disease and consider that a variety of the colon-bacillus, of especial virulence, which they designate *B. coli dysenteriae*, is responsible for the lesions. Along with this colon-bacillus they found typhoid-like bacilli and streptococci. Their experiments upon animals are also more conclusive than any others. With cultures they were able to produce dysentery in cats, and while they admit that other microorganisms were also capable of producing similar results, they found that the latter acted far less constantly than their dysenteric bacillus. A toxin separated from growths of the organism was found to give rise to similar conditions. Celli, in another publication, expresses the view that it is this toxin that first exerts an injurious effect upon the intestinal mucosa, after which the destructive lesion is produced by the pyogenic cocci. Results similar to those of Celli were obtained by Del Pino and Alessandri. The latter, working on a case of postoperative dysentery, secured cultures of *B. coli* that yielded a toxin capable of setting up dysentery in young cats. In their most recent paper, Celli and Valenti describe the production in dogs of serums, which, when tested upon experimental animals, exert a protective and healing effect. Upon human beings its action was not equally positive.

The colon bacillus is also believed by Escherich to play an important part in the production of a contagious enteric disorder (colitis contagiosa) in children. In its morbid anatomy the disease agrees with catarrhal dysentery.

The bacilli thus far enumerated, except those of Chantemesse and Widai, so far as they could be studied in cultures, have shown no specific properties. They all represent a well-known bacterial species, constantly present normally in the situation from which the organisms were obtained in disease, and whose only unusual

properties were increased virulence when tested upon animals, and a capacity to set up enteritis when injected into the intestines of dogs and cats.

The investigation of an epidemic of dysentery which prevailed in Japan yielded different and apparently more convincing results. Ogata isolated fine bacilli, which liquefy gelatin, stain by Gram's method, and set up, when introduced by the mouth or by the rectum into guineapigs and cats, intestinal ulcerations. The organism regarded by Ogata as the cause of epidemic dysentery was isolated from 23 cases of the disease occurring in Padua by Vivaldi. Since that time it appears not to have been found again.

This list does not entirely cover the bacillary species isolated from cases of dysentery. The recent publication of Shiga, who also studied the disease prevailing in Japan, is needed to complete the number. But as this investigator's studies have a very direct bearing upon my own, I shall defer speaking of them for the present.

On the other hand, a causative role in the production of dysentery has also been ascribed to the pyogenic cocci. Besides being found in association with bacilli, by several of the investigators already mentioned, they have been regarded as the chief pathogenic agents by Zancarol, whose studies were carried out in Alexandria, by Silvestri of Turin, by Bertrand and Baucher of France, and very recently by Ascher, who investigated cases arising in Eastern and Western Prussia. These cocci, especially the streptococci, were capable in certain instances (Silvestri, Ascher) of setting up, in cats, dysentery and liver-abscess. The cocci isolated by Ascher were also said to have shown the agglutination reaction with the blood-serum of the patients from whom they were obtained. As a cause of a special variety of endemic dysentery—the endemic enterocolitis of Cochin China—Calmette obtained *Bacillus pyocyaneus*. The same microorganism was isolated from a small epidemic of the disease occurring in New York State by Lartigau, in another epidemic in children prevailing in Canada by Adami, and in certain sporadic cases of gastric and enteric infection by L. F. Barker in Baltimore.

Protozoa.—Because of the great diversity of the normal intestinal flora the varieties of bacteria which can be isolated from the dejections and intestinal contents are relatively numerous. The differences in the numbers and kinds of bacteria capable of flourishing there, rendered possible by the existence of pathological conditions, readily account for many of the results of the bacteriologic studies given. With animal microparasites the case is different. Protozoa do not exist in easily demonstrable forms or numbers in the dejecta in health, and the number of species occurring under all conditions is small. Of these the list is confined to a few kinds of flagellates, which even when present in considerable numbers do little harm, and the amebae.

It is to the role of the amebae—a particular variety of which has achieved the distinction of being connected in a causal relation with endemic dysentery—that I wish to direct your attention. Since the studies of Kartulis, Councilman and Lafleur, and Kruse and Pasquale, so firmly has the idea of this connection taken hold of the popular medical mind, that the designation "amebic" as synonymous with "endemic" or "tropical" dysentery has been widely adopted. And yet the evidence upon which this belief

is based cannot be regarded as convincing. Until we shall have gained means of differentiating amebae other than those we now possess, and, moreover, until we are able to control their development with at least as great perfection as in the case of bacteria, the question of the precise part played by them in dysentery cannot be satisfactorily determined.

Since the historical observation of Lambl upon the occurrence of amebae in the dejections of human beings, and especially since the confirmatory observations of Cunningham, Lewis and R. Koch, our knowledge of the distribution of these organisms in human beings has constantly widened and deepened. It was, moreover, the study by Lösch of a case of dysentery in which an ameba, called by him *Amoeba coli*, occurred that gave the impulse to the investigation of the pathological actions of such organisms.

The importance of amebae was further enforced by the demonstration of the organisms in sections of dysenteric ulcers by R. Koch, first in Egypt and afterwards in India. Following these successes, and probably directly through the suggestion of Koch, Kartulis began his series of observations and publications, which more than any other similar writings have tended to isolate tropical dysentery and place it upon a probable etiological basis.

The work of Kartulis need not be reviewed in detail in this place. His conclusion that in every undoubted case of dysentery occurring in Egypt the amebae are present, has not been entirely confirmed. That they are, moreover, never present in the intestines in other enteric diseases and in health has also not been the experience of all other investigators. But that amebae are abundant in many cases of tropical dysentery and may also be demonstrated in the contents of the hepatic abscess in the disease, the studies of Kartulis and those of subsequent investigators have definitely shown.

To follow the list of discoveries in cases of dysentery which have accumulated in the last decade is unnecessary and would carry us too far afield. Reports confirmatory of the results of Koch and Kartulis have appeared from many European countries, the Pacific Islands, and from both North and South America. Ten years have, however, seen a modification of the views regarding amebae, as causes of pathological conditions in human beings. The demonstration of amebae, indistinguishable from *Amoeba coli*, in various intestinal diseases and even in healthy persons, has necessitated a recasting of the exclusive belief in their pathogenicity and relation to dysentery.

That amebae may exist in diseases other than dysentery was conclusively proven by the early observations (Cunningham, Lewis) upon choleraic discharges. More important results were obtained by Grassi, first in 1882 and later in 1888. He describes amebae which may occur, in considerable numbers, in diseases as varied as typhoid fever, cholera, pellagra, and colitis secondary to tumors. He demonstrated their presence in diarrheas and dysenteries, but at times also found them in the dejecta of healthy individuals. That amebae may exist in the intestines without any disturbance of the health of their host was, therefore, definitely established by Grassi's observations as well as by those of Calandrucci, Massiutin, Kruse and Pasquale, Gasser and Schuberg. The observations of the last-named investigator are especially valuable, in that he showed that to the reaction of the lower colon and the consistence

of the feces was due the fact that amebae could not be constantly found with comparative ease in the dejecta. If a laxative, as for example, Carlsbad salts, is administered and the contents of the upper colon are then collected and examined, amebae are frequently demonstrable. Moreover, under these conditions flagellates—the trichomonas and cercomonas—appear in the stools. He looks upon these parasites as common commensals in man.

It can, therefore, no longer be held that amebae are necessarily pathogenic when found sojourning in the intestine in man. Indeed, the necessity of recognizing distinct species of amebae had already begun to force itself upon thoughtful students, who until lately believed in their constant pathogenic action. Quinke and Roos, who observed amebae first in a healthy individual, and later in two widely dissimilar cases of enteritis, tested the different organisms concerned for pathogenesis upon cats. From their results they believed that according to certain structural differences, and the action of the parasites in engulfing red blood-corpuscles, two main varieties or species can be distinguished, the one phagocytic for red blood-corpuscles and pathogenic for man and cats—this species being identical with *Amœba coli* of Lösch—the other, non-pathogenic and nonphagocytic for blood-corpuscles, which they designate *A. coli mitis*. According to this view *A. coli*, *A. felis*, and *A. dysenteriae* of Councilman and Lafleur are all one species; *A. coli mitis* is a harmless saprophyte, or at least is one of relative pathogenic insignificance.

It requires no elaborate argument to bring out the fallacies of such a method of distinction. Results following the introduction of so complex a material as dejecta into an animal cannot be accepted as deciding the properties of any single constituent. What has already been said concerning the ability of pure bacterial cultures to produce enteric lesions affords a sufficient criticism of such a procedure.

That amebae when combined with bacteria may cause intestinal lesions and even ulceration is now established. Furthermore, the experiments of Kartulis and Kruse and Pasquale with the contents of hepatic abscesses, supposed to be free from bacteria, are all but convincing, in so far as they may be supposed to prove the capacity of ameba alone to set up such changes.

The attempt to cultivate *Amœba coli* without admixture of bacteria has in all probability never yet been successfully carried out. The supposed positive experiment of Kartulis is now known to have been erroneous. Whether Celli and Fiocca have succeeded is still doubtful. In any case no satisfactory experimental production of amebic dysentery in cats or other animals has thus far been achieved with cultures of amebae free or relatively free from bacteria.

The pathological findings in amebic dysentery have been adduced as proving its specific character by Councilman and Lafleur, Kruse and Pasquale, and Kartulis. According to this view the intestinal ulcers in amebic dysentery begin as in infiltration of the submucous coat that leads to necrosis of the overlying membrane. The lesions, unless complicated by the presence of bacteria, are free from the products of purulent inflammation. The accompanying abscess of the liver exists independently of the presence of bacteria. Kruse and Pasquale, and Kartulis ascribe greater significance to bacterial association than do Councilman and Lafleur. Kartulis sees in the occasional diphtheritis

evidence of their action, while Kruse and Pasquale have followed them in their penetration into the coats of the gut, where they lie side by side with the amebae or even precede them in the invasion. Both bacilli and cocci occur, and wherever necrosis is found bacilli are sure to occur in groups and masses. "The amebae and bacilli together start the lesions in the intestine." (Kruse and Pasquale.)

The form of lesions here described does not entirely represent the disease as it appears in the tropics. Even Lafleur in a later communication says that the term "tropical" can be used only as a partial synonym for amebic dysentery, inasmuch as, on the one hand, the disease, though more frequent in the tropics, is by no means limited to those regions, while, on the other hand, there are undoubted cases of dysentery in the tropics which are not of the amebic form—a statement borne out by my own observations.

How far, then, have the foregoing results aided us in clearing up the hitherto obscure etiology of this protean malady? While epidemic, endemic, and sporadic dysentery have been subjected to bacteriological investigation, the chief work thus far done has been with the tropical variety. Although the actual number of cases of the epidemic disease which have been carefully studied is small, it is significant that, with two exceptions—the studies of Ogata and Calmette—the several different microorganisms isolated have all been bacteria which are normally present in the intestinal canal. The cultures have, it is true, undergone changes of virulence, but in other respects they have retained their ordinary biological and physiological properties unaltered. It would certainly seem *a priori* highly improbable that so severe and devastating a disease as epidemic dysentery should be due to microorganisms which are constant inhabitants of the intestinal tract. Moreover, when it is recalled how easily and under what great variety of conditions such accessions of virulence may be achieved, it would be remarkable that epidemics of dysentery are, nevertheless, relatively rare phenomena.

Turning to the tropical disease, we also observe that several microorganisms have been assigned as the causative agent. Chantemesse and Widal have described a bacillus not obtained since from similar cases; Arnaud, Laveran, and Celli, and Fiocca have seen in the colon-bacillus, modified in its pathogenicity, a sufficient cause. More weight, and with for greater justice, has been laid upon *Amœba coli*. But this organism has been found more especially in chronic cases. Kartulis states that the catarrhal stage, which is common in the epidemic and sporadic disease, is uncommon in this form. If *Amœba coli* is the organism most commonly present in the acute dysenteries of the tropics, the fact has not yet been conclusively established. However this may be, in Manila, where the organism is not infrequently present in the chronic disease, its absence in the very acute and often rapidly fatal cases of dysentery must be regarded as of significance.

From the preceding considerations the following conclusions seem warranted:

1. No bacterial species yet described as the cause of dysentery has an especial claim to be regarded as the chief microorganism concerned in the causation of the disease.

2. It is unlikely that any bacterial species that is constantly and normally present in the intestine or in the environs of man, except where the disease prevails

in an endemic form, can be regarded as the probable cause of epidemic dysentery.

3. The relations of sporadic to epidemic dysentery are so remote that it is improbable that the two diseases are produced by the same organic cause.

4. The pathogenic action of *Amœba coli* in many cases of tropical, and in certain examples of sporadic, dysentery has not been disproved by the discovery of amebae in the normal intestine and in diseases other than dysentery. While amebae are commonly present and are concerned in the production of the lesions in subacute and chronic dysentery, they have not thus far been shown to be equally connected with the acute dysenteries even in the tropics. In the former varieties, bacterial association probably has much influence upon the pathogenic powers of the amebae.

THE DYSENTERY OF JAPAN AND THE PHILIPPINE ISLANDS.

Every year, especially in the summer and autumn, dysentery prevails in Japan. Ogata and Eldridge have given the statistics of incidence and mortality in the years from 1878 to 1899:

YEAR.	CASES.	DEATHS.
1878	1,118	206
1879	8,322	1,487
1880	5,047	1,305
1881	7,001	1,837
1882	4,330	1,313
1883	21,172	5,066
1884	22,702	6,036
1885	47,377	10,690
1886	24,328	6,839
1887	16,125	4,244
1888	26,789	6,570
1889	22,893	5,970
1890	42,632	8,706
1891	46,358	11,208
1892	70,842	16,844
1893	167,305	41,282
1894	155,140	38,094
1895	52,711	12,959
1896	85,876	22,356
1897	91,077	23,189
1898	90,933	22,379
1899	125,989	26,709
	1,136,047	276,309

The epidemic studied bacteriologically by Ogata occurred in the province of Oita where in 1890, 801 cases occurred with 221 deaths, and in 1891, 8,390 cases with 2,163 deaths—an average mortality of from 26 to 27%. This epidemic had been preceded by sporadic cases in the previous winter, and in its spread showed a strikingly contagious character. The lesions in the intestine are described in one case, death having taken place on the eleventh day of the disease. The lower segment of the small intestine was hyperemic. The large intestine was greatly swollen so that the lumen was almost obliterated. The mucous membrane was hyperemic and presented a deep bluish-red color. The contents were chocolate-colored. The mucosa of the transverse and descending colon, and especially of the sigmoid flexure, showed small ulcers, the size of peas, which were so numerous as to give to the membrane a sieve-like appearance. They were also found, though in smaller numbers, in the descending colon and rectum. No large ulcers were present. The peculiar bacilli—staining by Gram, liquefying gelatin, and causing in animals, whether injected beneath the skin or into the rectum, hyperemia and ulceration of the intestinal mucosa—have been already described.

Ogata's decision was that the bacillus isolated was probably the cause of the epidemic of dysentery prevailing in Southern Japan.

I am not acquainted with a full description of the morbid anatomy of the dysentery prevailing in Japan. Schaubé, formerly of Tokio, in his "Die Krankheiten der warmen Länder," does not give a detailed account of the Japanese variety, but contents himself with the usual classification and description of the disease. The meager accounts may possibly be explained by the fact that necropsies are obtained in Japan only with great difficulty. Dr. Eldridge states that the lesions seen in "amebic dysentery" as described by Councilman and Lafleur are seldom met with. The common lesions are destructive, progressing from the surface downwards, associated with necrosis of the mucosa and croupous infiltration (diphtheritis). Perforation is unusual, the muscular coat offering a strong resistance to the pathological process.

The most recent bacteriological study of dysentery has been made by Shiga, to whose results I would ask especial attention. During 1897 the disease prevailed epidemically in Japan, 89,400 cases with 22,300 deaths (24%) being recorded from June to December. Out of a considerable number of cases occurring in Tokio, 36 were subjected to bacteriological examination by Shiga.

As was readily recognized by him, four points must be proved in the effort to show that an organism suspected of standing in etiological relation to any given disease is really the causative agent: (1) The organism must occur constantly; (2) it must be a species not present normally in the diseased part; (3) it must be pathogenic and produce in experimental animals lesions similar to those from which it was obtained; (4) it should in virtue of its pathogenic activity in man show the Widal agglutination reaction with the blood-serums of those who have suffered from the disease. From the series of cases examined there was obtained from the dejecta and intestinal contents and walls, and from the mesenteric glands, a bacillus which fulfilled all these requirements and which was regarded as the cause of Japanese dysentery, at least.

Before entering upon a description of this organism I should like to direct your attention to the dysentery prevailing in the Philippine Islands, especially in and around Manila. The report of the Surgeon-General of the Army for 1899 contains a tabulation of diseases, observed among the American troops, during the first four months of the American occupation of Manila. In it the dysenteries are included with the diarrheal diseases. The total number of cases reported is 445, the death-rate being 0.48%. The comment made is that "the malarial diseases exceed their prevalence in the United States in the proportion of 370 to 96, and the diarrheal diseases in the proportion of 445 to 116, or about 4 to 1 in both instances."

This compilation fails to give an adequate idea of the extent, severity, and mortality of dysentery in Manila. Although, unfortunately, figures are not obtainable, I am convinced, after nearly three months' residence in Manila, that the enteric diseases, of which dysentery was the most frequent and important, were the chief causes of disability and mortality among the land forces of the American army.¹

¹ The studies on dysentery here recorded were made by a commission consisting of Dr. L. F. Barker and myself, sent out by the Johns Hopkins University to study the diseases prevailing in the Philippine Islands. To this commission were attached Messrs. Joseph M. Flint and Frederick P. Gay, who were, at that time, members of the Johns Hopkins Medical School.

The disease appears in two main forms, acute and chronic dysentery. The stools and intestinal contents at autopsy were scrutinized for amebae. So far as regards the acute cases these organisms were absent or very difficult to find in the fresh stools and in the intestinal contents immediately after death. In the chronic forms of the disease ulcers were present in the mucosa and submucosa; the lesions were confined to the large intestine, the coats of which were greatly thickened; at times large sloughs of the mucous membrane, partly detached, were encountered. Amebae were commonly present, but were variable as to actual occurrence and numbers. Large hepatic abscesses, usually single, were encountered in a number of these cases. Amebae were not always found in the contents of these abscesses; sometimes bacteria were present alone or associated with amebae. Amebae not distinguishable, except by the absence of specific inclusions, from those in the stools of human cases exist in the dejecta of monkeys liberated from captivity and now at large in Manila.

The morbid anatomy of the chronic disease agrees in part only with that of "amebic" dysentery. I shall draw attention later to another form of the chronic disease.

The pathological changes in the acute cases differ widely from those of the chronic affections. I shall now give in brief the condition of the intestines in several cases of acute dysentery. The patients were American soldiers.

CASE 1.—Death on the sixth day of the disease. The entire large intestine from the cecum to the rectum is dilated and the walls of the gut are thickened. The mucous membrane is swollen, its consistence is much increased and the normal folds are thrown into elevated, coarse corrugations. The general color of the mucous membrane is deep red, but there are present many brighter spots, evidently due to hemorrhage. No distinct false membrane is to be made out, but here and there are scattered white elevations, which, after the intestine has been washed, become more prominent and can be removed only with some difficulty, small defects in the membrane being left behind. In the fresh state ulceration was not made out, but after the washing referred to, there is found in the lower portions of the sigmoid flexure minute, sieve-like points, with perfectly sharp edges, representing defects which lead into the submucosa. The smallest of these openings are the size of pin-points, the largest about 2 mm. in diameter. The contents of the intestine showed no amebae.

CASE 2.—Death on the fifth day of illness. The small intestine, excepting the lower end of the ileum, which is deeply congested and swollen, shows no alteration. The serosa over the large intestine is injected, but is otherwise normal. The large intestine is much thickened and its consistence is increased. On opening the gut the contents are found to be dark or nearly black in color, an appearance probably due to the administration of bismuth. The mucous membrane extending from the rectum to the ileocecal valve, and beyond the valve in the ileum for a distance of 4 cm., is congested, swollen, and hemorrhagic. Scattered here and there on the surface are elevated, white, irregular points and small, flattened areas, which suggest a pseudo-membrane, but which cannot be absolutely identified as of such a nature. The normal velvety character of the mucous membrane is lost. No ulceration can be made out and the lesions seem to be chiefly in the mucosa and submucosa. Particularly conspicuous is the wide diffusion of the lesions, no part of the mucous surface within the limits defined having escaped. The mesenteric glands are congested and moderately swollen. Although amebae had been found in the evacuations two days previous to death, they could not be demonstrated in the intestinal contents at autopsy.

CASE 3.—Death after an illness of 6 days. The large intestine is markedly dilated and the serous coat is much injected. The contents of the large intestine are represented

by a grumous, pink, pulpy material. The mucous membrane is swollen and hyperemic, and presents a striking granular appearance due to exudate upon the surface; many areas of hemorrhage are also observed. The entire mucosa of the large intestine is implicated in this process. Ulceration is not present. The mesenteric glands are swollen, congested, and hemorrhagic. The spleen is moderately enlarged. Amebae were not demonstrable in the intestinal contents.

The three cases which have been selected do not agree with amebic dysentery as hitherto described. In only one were amebae found in the stools, and even then they could not be demonstrated in the intestinal contents, obtained immediately after death, which took place two days after the first examination. The stools consisted, as was the rule in the acute disease observed in Manila, of mucus and blood. The microscopical examination revealed epithelial cells, red blood-corpuscles, a moderate number of bacteria and many amebae. On the same day injections of quinin were begun, ipecac being administered by the mouth. The note 24 hours later states that the stool contained mucus but less blood. Epithelial cells were still present and the bacteria appeared in greatly increased numbers. No amebae could be discovered. Death took place on the day of this examination.

In their pathological histology also the acute dysenteries differ from the amebic form. The histological changes appear in the mucous membrane, submucosa and muscularis, being most marked in the former situations. Those of the mucous membrane consist of coagulative necrosis with exudation of fibrin and polymorphonuclear cells. The fibrinous and cellular exudate may entirely replace the glandular layer, or here and there a gland may be preserved. The pseudo-membrane is a close-meshed network of fibrin enclosing multinuclear, often fragmented, cells. No bloodvessels are to be distinguished, but a variable number of red blood-corpuscles are mingled with the exudate and lie free upon the surface. The muscularis mucosa is not always distinguishable—indeed it is frequently lost in the exudate. The submucosa is always much altered. From the changes found in it, it is evident that to them is chiefly due the thickening of the gut. The part most affected is the layer next the muscularis mucosa. Here are found hemorrhages of variable size, while in the interstices of the tissues some fibrin appears. More marked, however, are cellular accumulations, which are present, not uniformly, but in irregular areas. The deeper layers of the submucosa show similar cellular infiltrations, although the amount is less striking. On the other hand, at these levels the quantity of fibrin is greatly increased and hemorrhages are numerous.

The character of the cellular exudate is quite uniform. Excluding the red blood-corpuscles, the new cells consist chiefly of plasma-cells. These are collected into foci, often about bloodvessels, veins and arteries, but sometimes occur in small groups or singly. There can be no doubt that these are identical with Unna's plasma-cells; they show the reticulated nucleus, often placed excentrically, and the fine blue granulations of cell-protoplasm in eosin and methylene-blue staining. As the deeper levels of the submucosa are reached, hemorrhages and fibrin are abundant. The size of the foci of plasma-cells gradually diminishes. At the muscular border they have about disappeared. Among the plasma-cells a variable number of eosinophilic cells may be distinguished.

In the submucosa, infiltrations, hemorrhage, and fibrin

formation take place also beneath an intact or almost intact mucous membrane. The nature of the cellular infiltration may be identical with that already described, but in addition accumulations of lymphoid cells may frequently be seen. These exist in the layer of the submucosa immediately next the muscularis mucosae; the deeper cells resemble plasma cells.

The bloodvessels of the submucosa may be patent and congested, the blood containing an excess of white elements; or they may show recent leukocytic and fibrinous thrombi. Hyalin degeneration of the vascular walls was not encountered. Large spaces in the submucosa may contain fibrinous clots; these are probably dilated and thrombosed lymphatic vessels.

The muscular coat shows only hemorrhages, which may be of large size, although they are usually smaller than in the submucosa. The peritoneal tunic is usually unaltered.

From this brief description it is evident that the main pathological changes take place in the mucous membrane and submucosa and it is also clear that the 2 tunics may be affected simultaneously or the submucosa may suffer pathological alterations without involvement of the mucosa. So far as could be ascertained from the material studied, in contradistinction to the condition observed in "amebic" dysentery, ulceration did not begin in the submucosa, but any defect which may have occurred resulted from exfoliation of the necrotic mucosa and the attached pseudo-membrane.

It is interesting in this connection, to emphasize the fact that the polymorphonuclear leukocyte plays a very insignificant part in the process of infiltration in the submucosa, whereas in the affected mucous membrane it is much in evidence. On the other hand, the bloodvessels of the submucosa contain those cells in increased numbers, and the cellular and fibrinous thrombi are rich in them. It would appear, therefore, that these cells do not leave the vessels in the submucosa as readily as those of the mucous membrane. That the bloodvessels of the submucosa suffer great injury from the pathogenic agent is shown by the free hemorrhages and the fibrinous exudation.

Bacteria are abundant in the fibrinous exudation in the mucous membrane. The chief varieties distinguishable are cocci and bacilli. In specimens stained by Gram's or Weigert's methods, large numbers of cocci, in short chains and groups, can be made out. In other specimens, stained in Unna's alkaline methylene-blue, besides the cocci many bacilli may be seen. These are quite uniform in size; they present the morphological characters of the colon-typhoid group, from which they could not be distinguished in sections of tissue. While the bacteria are so abundant in the necrotic mucous membrane, diligent search failed to exhibit either bacilli or cocci in the infiltrated areas of the affected submucosa. The conviction is therefore forced upon one that the lesions in the submucosa are toxic in origin. Amebae were not discovered in the sections.

THE BACTERIOLOGY OF PHILIPPINE DYSENTERY.

In the study of the bacterial flora of the disease acute and chronic cases were utilized. The methods of procedure varied only slightly in different cases. The acutely ill being in bed, the evacuations were collected in bed-pans, which a short time before had been carefully scalded. The patients who were about the wards were taken to the laboratory, where cultures could be

made immediately from the contents of the rectum. The fatal cases were subjected to autopsy immediately after death. The large gut at different levels was burned through with a hot knife, and cultures were made before disturbing any of the viscera. Plate cultures in agar-agar were employed. The average number of plates made from a single case was twelve. The material was mixed with bouillon, so as to afford the advantage of a relatively large amount for plating. It was frequently obtained from several different portions of the evacuation or from several levels of the intestine. Only such plates as contained well-separated colonies were utilized. Control microscopical examinations of the evacuations and intestinal contents were made. It may be mentioned that cercomonades and trichomonades were very common in the diarrheal stools. They did not appear to be of pathological significance.

From the separated colonies, agar-slant cultures were made. The growths of the pyogenic cocci as well as those of *B. pyocyaneus* were not pursued further. The former was never absent, the latter was rarely present. The bacillary colonies, which occurred with regularity in the acute disease, could be distinguished according to two distinct types. Their properties are as follows:

Type I.—Bacillus of the average size of *B. coli communis*. There is variation in length; almost none in thickness. The individuals are usually separate; sometimes they are united in pairs, but only very rarely do they occur as filaments. The ends are slightly rounded. The bacillus shows moderate motility; Gram's stain is negative.

Growth takes place upon all culture mediums at the room temperature, but better in the thermostat. Gelatin is not liquefied. The colonies resemble those of *B. typhosus*, being more nearly like them when first isolated from the dejecta than after a period of cultivation outside the body. After many months of such saprophytic growth the colonies become thicker, exhibit a moist surface and are less translucent. The strokes upon agar-slants show a similar alteration. At first the growth extends but little laterally, but later on it becomes 2 to 3 mm. in width, and generally shows distinct indentations at the edges. Upon gelatin the colonies are more delicate; the stab extends along the line of puncture only, spreading very little at the surface of the medium.

On potato growth it takes place along the line of inoculation and spreads beyond. After some days it is a little elevated and of a pale brown tint. On unfavorable potatoes the growth is slight, moist and membranous, resembling, except for the greater amounts of moisture, that of *B. typhosus* when typical.

Sugars—glucose, lactose, and saccharose—are not fermented gaseously. In glucose media a moderate acid-production takes place.

Bouillon is clouded diffusely and a sediment forms. There is no production of a pellicle.

Litmus-milk assumes, after 24 to 72 hours, a faint lilac tinge. After the lapse of from 6 to 8 days alkali begins to be produced, which increases in amount until the litmus is rendered deep blue in color. No coagulation of the milk ensues.

Indol is not always formed. Even in sugar-free bouillon it may fail to appear, or it may be produced in small quantities only.

Suitable cultures of this organism, when tested for the agglutination reaction with the blood serum of

persons suffering from dysentery—the host or another individual—give, in many cases, a positive result.

The bacillus is pathogenic for the ordinary laboratory animals. It is abundant in the acute cases in which it may be the predominating organism; it becomes more difficult to find as the cases progress towards recovery or chronicity. In the ordinary chronic dysentery of Manila, in which amebae are commonly encountered, it was not found. It can be cultivated from the dejecta during life, and the intestinal contents, mucous membrane and mesenteric glands in fatal cases.

Type II.—Bacilli which are present in all instances. In the acute cases they may not predominate, being less numerous than the members of Type I. In all others it is the predominating bacterium. The properties vary somewhat, but agree well with those of the group *B. coli communis*. The main variations relate to extent and rapidity of growth upon the several culture mediums, the rapidity with which litmus-milk is reddened and coagulated, and the amount of indol produced. The sugars are broken up with the formation of gas. The morphology is also similar to that of *B. coli*; some specimens are motile at the end of 24 hours; in others motility was not demonstrated.

In agglutination tests the results varied according as the blood of the host or of another individual was employed. With that of the host there was frequently a reaction in low dilutions; with that of another person the reaction was rarely and very inconstantly obtained. The pathogenicity was not tested extensively.

The practical operation of separating the several kinds of bacilli which grew in the plates was to inoculate glucose-agar stab-tubes from the different colonies. In those tubes which, after 24 hours at 37° C. showed no gas, the organisms were likely to conform to Type I.

Before proceeding to the assumption that this organism was concerned with the production of the intestinal lesions of dysentery occurring in Manila, it was necessary to establish its absence from the stools of healthy persons and of those suffering from other diseases. Strong presumptive evidence of its being an unusual inhabitant of the intestine of man may be gathered from the facts already known concerning the ordinary intestinal flora. But as such observations would not suffice for a new region and under new conditions, the organism was searched for in other persons who had been in close association with those suffering from dysentery and also in inhabitants of other parts of the Island of Luzon. The organism was not demonstrated in healthy dejecta or in evacuations of persons (native Filipinos) suffering from beri-beri. A further argument in favor of its restricted distribution is furnished by its absence from cases of chronic dysentery or the marked reduction in the numbers present.

Pathogenicity.—The pathogenicity of the bacillus Type I was studied, soon after its isolation, upon mice and monkeys in Manila, and upon various animals in this country with cultures brought from the Philippines.

Monkeys.—Subcutaneous inoculation gives rise to a swelling from which the animal suffers no inconvenience and quickly recovers. Monkeys which were given croton oil and, after purging had been established, 10 cc. of a bouillon culture through a stomach-tube, soon recovered from the effects of the purge, and no further results could be noted.

Mice are susceptible to subcutaneous and intraperi-

toneal inoculations. Death takes place in from 24 to 48 hours—more rarely after several days—the reaction varying according to the dose and the mode of inoculation. The site of puncture shows edema and, in the case of injections made beneath the skin, a hemorrhagic exudate. Inoculation into the peritoneal cavity gives rise to a variable amount of faintly turbid exudate and small white flakes of leukocytes; the pleura contains an excess of clear fluid which is often present also in the pericardium; the serous vessels are injected and small hemorrhages may occur more especially in the subcutaneous tissues. The superficial lymphatic glands are swollen and congested or hemorrhagic; the spleen is enlarged, the kidneys and adrenal glands are congested; the lungs show a marked congestion and the intestines contain an excess of glutinous contents. Coverslips from the peritoneal and pleural exudates show bacilli, often in large numbers, and polymorphonuclear leukocytes. These cells frequently show engulfed bacilli. Cultures prove a general invasion of bacilli with relatively smaller numbers of organisms in the spleen and heart's blood.

Guineapigs react in much the same way as mice, larger doses being required to produce fatal results, while the bacilli show less tendency to invade the internal organs. Subcutaneous injections cause a local swelling consisting of pus-corpuses, serum, and blood; the superficial lymph-glands become swollen, and an exudate appears in the peritoneal and more rarely in the pleural cavities. Intraperitoneal inoculations give more characteristic results. Death took place in from 1 to 6 days depending upon the source and amount of the culture. The inguinal and axillary lymphatic glands are enlarged and reddened; the peritoneal cavity may contain glutinous fluid and floating whitish flakes of pus-corpuses, or with little fluid, there may be grayish-white solid exudates of considerable size over the liver, spleen, and intestines. The bloodvessels are injected, the small intestines are filled with a soft glutinous matter, ecchymoses occur in the mucosa of the intestines, and the Peyer's patches may be swollen and reddened. If death occurs late the swelling of the Peyer's patches may have disappeared and be represented by the "shaven-beard" appearance. The liver exhibits areas of coagulation-necrosis of considerable size; the adrenals and the kidneys are congested. The pleural cavity frequently contains an excess of clear fluid and the lungs are mottled. The pericardial vessels are also injected and the sac contains an increased quantity of clear fluid. The distribution of the bacilli varies. With moderately virulent cultures they occur only in the local exudates in the peritoneal and pleural cavities. In rare instances, indeed, they may disappear even from the abdominal cavity, be greatly reduced in numbers, absent from the internal organs and blood or occur there in very small numbers. This disappearance may have taken place when death has occurred as early as 24 hours after inoculation. Larger doses or intensified cultures give rise to a moderate invasion of the blood and organs. If the autopsy on these animals is delayed, especially in warm weather, an increase of bacilli in the blood rapidly takes place, so that erroneous results may be obtained. Within the local exudates the bacilli are surrounded by capsules and are often contained within polymorphonuclear leukocytes. The bacilli can also be cultivated from the fluid portions of the intestinal contents. The ingestion of cultures gives rise to no results unless the stomach-contents are first

neutralized; in the latter case death may occur; the small intestine is hyperemic; the contents are hemorrhagic and mucoid and the bacilli can be cultivated from them.

The *rabbit* usually responds with a localized swelling at the site of the subcutaneous injection from which the animal usually recovers. When the injection results fatally the local infiltration resembles that in the guineapig, being, however, more marked than in that animal.

Cats also succumb to subcutaneous injections. Feeding alone produces no result. If, however, croton oil is first administered and the culture is then introduced into the stomach, diarrhea sets in, the bacillus is recoverable from the dejections and death may result. In the last case the mucosa of the large intestine is hyperemic and secretes an excess of mucus. The *dog* may succumb to simple feeding of the cultures. In positive instances diarrhea sets in, the appetite is lost and death may take place in 5 or 6 days. The mucous membrane of the intestine is hyperemic; hemorrhages occur, and the cavity of the gut contains a great excess of mucus from which the bacillus may be recovered.

The dead cultures are also toxic. Certain results of the inoculations into guineapigs suggest that the fatal effects are due to a toxic agent rather than to an infection *per se*. Cultures killed by exposure to temperatures of 60° C. for from 15 to 20 minutes are still active. In the course of certain immunization experiments one of the goats of a series succumbed to inoculation with dead cultures. On November 22, 20 cc. of a bouillon culture, killed by heating to 60° C., was given under the skin of the shoulder. Considerable induration developed at the site of inoculation; diarrhea set in from which the animal seemed to recover. On November 29, a second injection of 20 cc. of the culture was given; on the next morning the animal was dead. The *autopsy* showed edema over the site of inoculation. The nates were covered with thin, partly dried fecal matter. The mucous membrane of the gut was hyperemic and presented numerous punctiform hemorrhages.

Dead cultures injected into rabbits and guineapigs cause: (1) Elevation of temperature; (2) symptoms of intoxication (especially in guineapigs) which may come on within two or three hours after the injection; and (3) in rabbits, rapid recovery with a localized and decreasing swelling; in guineapigs, similar phenomena or death in a few hours or after 4 to 6 weeks. In the last instance the animals show great emaciation. In the case of those that have recovered from the immediate results of the injection agglutinating properties for the bacilli appear in the blood.

Has this Bacillus Been Found in Other Epidemics of Dysentery?—If the bacillus described is of significance in the etiology of dysentery it must occur with regularity in the disease. Whether or not it will be found to have the distribution that is necessary in order to establish this relationship, can only be determined from studies carried on in widely different places and in all forms of the disease. That the bacillus is identical with the organism obtained by Shiga in the epidemic of dysentery which prevailed in Japan, there can be no reasonable doubt. In morphological, cultural, and pathogenic characteristics the two organisms are indistinguishable.

Through the courtesy of Dr. J. H. Musser I have been enabled to study, bacteriologically and pathologically, a case of chronic dysentery contracted during

the Spanish war in Puerto Rico. The patient, a soldier, entered the hospital of the University of Pennsylvania in December, 1899. His dysentery dated back some months; the movements were frequently examined for amebae with negative results. A brief abstract of the autopsy protocol is as follows:

The body is that of a greatly emaciated man about 35 years old. Dorsal decubitus. The peritoneal cavity contains a small amount of reddish fluid. The colon is thickened and in the peritoneal surface, especially along the sigmoid flexure, shows dark points and lines of discoloration. The rectum and sigmoid flexure are contracted; the transverse colon, on the other hand, is dilated. The mucosa of the large gut is thickened throughout; in addition there are small, recent hemorrhages into its substance. There is no pronounced ulceration; the mucous membrane presents a granular aspect; there are superficial areas denuded of epithelium, and others which are slate-colored and show dark pigmentation. The submucosa is not especially thickened except in the lower part of the gut, where there is much contraction. The mucous membrane of the transverse colon is edematous; the cecum is less affected than the colon, while the small intestine has entirely escaped. No pseudomembrane is present except upon a small portion of the lower parts of the sigmoid flexure.

The bacteriological examination made from the contents of the hepatic and sigmoid flexures gave growths in which the two general types of bacilli already described were contained. The predominating form agreed with Type II (*B. coli communis* group); in addition, there were colonies of an organism which in morphological, cultural and pathogenic characters and in the agglutination reaction corresponded with the variety of bacilli represented by Type I. The histological appearances in this case differ from those in the acute disease and equally from those of the amebic variety. The changes are found more particularly in the mucosa and submucosa and represent, it would appear, a later stage in the course of the acute disease. Before describing the other changes it should be mentioned that a striking feature in the case is the congestion in the mucosa, submucosa, and muscularis. Numerous large veins, distended with blood, occupy the field of the microscope. Whether these vessels are newly formed cannot be stated positively; but they certainly are many times larger than any preexisting vessels normally met with in the same situations. In a few places the surface of the mucosa shows a necrosis of the hyalin or coagulative variety, there being no appearances of exudative fibrin in these areas. The necrotic tissue is dense and hyalin. These necroses do not include the entire thickness of the mucous membrane, but cap superficial foci. There can be no doubt that this tissue-death indicates an exacerbation of the acute disease, with which, indeed, the great congestion may be partially associated.

The chief and, as I take it, characteristic changes in this stage of the disease are proliferative in character. The mucous membrane is not markedly altered in volume. Its structure is, however, greatly modified. Very few glandular structures remain. The membrane is represented by a mass of spindle and epitheloid cells together with a reticular and coarser intercellular network, enclosing the remains of the crypts of Lieberkühn. The submucosa, also, shows a new growth of tissue, in which, however, appear much more advanced changes.

The submucosa is composed of dense, almost hyalin, and structureless tissue, taking a vivid eosin stain and enclosing foci of epithelioid cells. The hardening and distortion of the gut were, doubtless, caused by this new growth of tissue and its subsequent contraction. The dilated bloodvessels, mentioned above, occupy a prominent place in this coat. A variable number of lymphoid, plasma, and eosinophilic cells occur, especially about the veins.

The muscular coat is also the seat of a multiplication of connective-tissue cells, which is shown by the masses of epithelioid cells separated by muscle-fibers, as well as an increase in foci of the fibrous tissue.

Blood-pigment is present both in the muscular and the subperitoneal coat.

The careful bacteriological studies in Egyptian dysentery, made by Kruse and Pasquale, contain numerous references to typhoid-like bacteria. Critical examination shows the majority to belong to the groups of *B. coli communis*. The typhoid characteristics depend merely on cultural resemblances—most marked in growths on agar-agar. Fermentation and their effects upon milk eliminate the suspicion that they may be typhoid bacilli, or the organism obtained by Shiga in Tokyo, or by myself in Manila. Still other examples of bacilli, similar to and possibly identical with *B. dysenteriae* (Shiga), have been found in dysentery, though they are not suspected of standing in any etiological relation to it. Pansini studied 4 cases of abscess of the liver, 3 of which followed dysentery. The bacilli, which were isolated, resembled *B. typhosus*—indeed, Pansini could not distinguish between the two series. Babes also, although only in a single instance, isolated such an organism from a case of dysentery.

Since the publications of Shiga's studies, Escherich and Celli have both attempted to show that the organisms obtained from their respective epidemics of dysentery are identical with the *B. dysenteriae*. In both cases they have proceeded upon the false assumption that Shiga's microorganism was a variety of *B. coli communis*, whereas, in point of fact, it is much more nearly related in its cultural and physiological properties to *B. typhosus*.

The question naturally arises, In what ways does it differ from *B. typhosus*? Comparison of the Eberth-Gaffky and Shiga bacilli show the criterions of difference to be by no means numerous. The main features, however, are as follows: The latter shows less marked motility when first isolated and a tendency to lose motility rapidly in artificial cultivations; it displays a more uniform generation of indol; after a brief preliminary acid production in milk it gives rise to a gradually increasing alkalization; it is inactive to blood-serum from typhoid cases; but reacts with serum from dysenteric cases to which *B. typhosus* does not respond.

The Agglutination Test.—While the absolute value of this test in determining the specificity of bacteria may be open to doubt, its use in differentiation is now unquestioned. Undoubtedly there are limits to its usefulness, and experience (gained especially in typhoid fever) has shown that the changes upon which the property of the blood-serum depends for its evolution in certain instances may fail to take place. The tests in the case of the bacillus isolated in Manila were made at the time with blood obtained from acute and chronic cases of dysentery, occurring there and in the surrounding country. For carrying out the tests the blood was obtained in capillary tubes from the lobe of the ear of the

living, and in larger quantities directly from the cavities of the heart by means of sterilized pipets from the fatal cases of dysentery. The tests were made under the microscope and by growing the organisms in mixtures of bouillon and blood-serum. After our return to this country, the blood-serum from the case of Puerto-Rican dysentery was employed and gave positive results. Through the courtesy of Assistant Surgeon Craig, stationed at the Presidio at San Francisco, I obtained capillary tubes filled with blood taken from convalescents and other soldiers suffering from chronic dysentery acquired in the Philippines. The present status of the agglutination reaction may be summed up as follows:

Positive results were obtained with cases definitely known to have been infected with the microorganism in question. The results obtained from the blood derived from chronic dysentery were more variable. Dr. Osler has written me of his experience. In several cases of amebic dysentery which have come under his charge in the Johns Hopkins Hospital, the blood-serum failed to produce the reaction with the bacillus obtained in Manila; in one case of the Puerto-Rican disease a positive reaction was given.

The above results tend to emphasize the distinction of types of dysentery occurring in the tropics. They further tend to confirm the possibility that the acute dysenteries are caused by *B. dysenteriae*. To what extent the organism is concerned with the production of chronic dysentery remains to be established. That we must recognize a chronic form of tropical dysentery, that is not in its entire course associated with the presence of amebae in large numbers, and that possesses totally different pathological lesions, is certain. I am inclined to the opinion that this type is not the commonest form of chronic tropical dysentery, and that it is less frequent than the amebic type. As it appears to be the form that gives a positive serum reaction with *B. dysenteriae*, its extent and distribution may now be open to investigation.

Bearing directly upon these considerations are the results of Lieutenant Strong's studies continued after our departure from Manila. He writes: "After you left we had a large number of acute cases of dysentery. It seems certain that this form, which we have begun to speak of as *acute infectious dysentery*, is independent of amebae. I have now records of 14 cases (not all were fatal) which I studied bacteriologically. From the stools in all of these, there has been obtained a bacillus which agrees with the organism obtained by you. I have also obtained the organisms from the mesenteric glands in three fatal cases. In one case of acute dysentery with secondary acute fibrinous peritonitis I obtained it from the exudate. The agglutination reaction is not invariable. Amebae were never demonstrable in any of these 14 cases. On the other hand, in every case with certain anatomical lesions we always find the amebae. In some cases of dysentery in which the amebae were absent and the bacilli present, that have lasted four to five weeks (one case lasted nearly two months) and then resulted fatally, we see a continuation of the same process that is observed in the acute fatal cases. The lesions are those of necroses of the mucous membrane and induration of the gut."

Protective Inoculation and Serum Therapy.—It is not unreasonable to hope that with the discovery of the specific cause of dysentery, particularly if it proves to be a bacterium capable of being artificially cultivated, means will be found by which protective inoculation

may be carried out with effect and safety. The fundamental conditions underlying such immunization are now fairly established, and two general methods of accomplishing such results are open to investigation. In the first place, an active immunization may be achieved through the use of cultures of a determined grade of activity; in the second the serum of animals may be employed either as a therapeutic agent or to provide a passive immunity.

It has been found possible, through the use of cultures destroyed by heat or the addition of chemicals (trikresol), to protect small animals from subsequent inoculations with virulent bacilli. Larger animals, such as the goat, when treated first with the dead and afterwards with the living cultures, develop a gradually increasing resistance to the inoculations; their blood-serum assumes highly agglutinating qualities for the bacillus, and coincidentally acquires protective and healing properties. My own experiments relating to this topic have been carried out on small animals only. Shiga, has, however, been able to test the serum upon human cases. Dr. Eldridge in his report gives the following figures: Up to November 1, 1899, Shiga had treated with the serum, in 1898 in Laboratory Hospital, 65 cases, death-rate 9%; in 1899 in Laboratory Hospital, 91 cases, death-rate 8%; in 1899 in Hirowo Hospital, 110 cases, death-rate 12%. During the same period of 1899 there were under ordinary treatment at Tokyo, at Hirowo Hospital, 116 cases, death-rate 37.9%; at Hirowo Hospital, 53 cases, death-rate 37.7%; at Komagome Hospital, 398 cases, death-rate 34.7%; in private houses, 1,119 cases, death-rate 28.5%.

I should, however, expect greater benefit from a species of vaccination, especially to those exposed to the endemic or endemo-epidemic dysentery of the tropics. The encouraging results of the injections of the dead bacilli of Asiatic cholera and typhoid fever render justifiable the use of a similar procedure in persons exposed to dysentery. The practical details of such inoculations will, of course, be established only after trials, preferably upon human beings who are anxious to submit to this method of treatment. I have found it possible to prepare cultures which after being killed possess a definite degree of toxicity for guineapigs. The only examples of an experiment upon man yet available is that performed by Shiga, who directed that about $\frac{1}{2}$ of an agar-culture, suspended in bouillon and killed by heat, should be injected into the subcutaneous tissues of his back. The immediate results of the injection were pain in the head, slight chill and fever, and local infiltration. After five or six days—the symptoms having in the interim entirely disappeared, except for some slight swelling—this area of infiltration increased and called for incision. The subcutaneous tissues were found thickened, indurated, and infiltrated with pus, which was sterile to cultures. The local lesion, similar to those in animals, was, it is thought, produced by the toxic substance contained within the dead bodies of the bacteria. Immediately after incision, all disagreeable symptoms except the local infiltration disappeared gradually.

If this experiment can be taken as an index, the poison of *B. dysenteriae* is more active than the analogous substance contained in the bodies of the typhoid and Asiatic cholera organisms. This objection, if true, could be eliminated by dosage, or, if necessary, by combining the vaccine with immune-serum, as has recently been recommended by the German Plague

commission in carrying out the inoculations with the plague bacilli. Shiga's blood-serum, 10 days after the injection, showed active agglutination of the bacilli.

An interesting, if somewhat disagreeable, accident was experienced by one of the laboratory assistants in Baltimore. In studying the acid production of the Manila bacillus a small quantity of fluid culture was aspirated into the mouth. The culture was expectorated and the mouth rinsed with a weak carbolic-acid solution. Notwithstanding this precaution a severe diarrhea, with bloody and mucous stools, pain and tenesmus developed within 48 hours. I was in Philadelphia at the time and the scientific ardor of the patient was so greatly depressed as a result of his discomfort and suffering that cultures were not made from the dejections, nor was I notified of the accident until several weeks afterwards.

Very little remains for me to say at this time. It is only natural to ask whether the foregoing considerations justify a belief in a specific organism of dysentery. My own sense is against that belief, although it must be conceded that the varieties of the disease are fewer than the clinical and pathological-anatomical conceptions of the time would lead one to suppose. Excluding the sporadic cases, which need a much closer bacteriological study than has been yet accorded to them, it is entirely possible that two specific organisms may be responsible for the epidemic and endemic diseases *per se*. I think that I have shown that tropical dysentery consists of a bacillary and an amebic form, separable in their early and their later stages by their clinical histories, their etiology and pathological anatomy. It is important to know whether the epidemic disease is more uniform in its causation and pathological anatomy. The studies of the Japanese disease by Shiga are highly suggestive of this conclusion, but additional observations will be required before we can accept as final his conclusions.

New Staining Method.—Yamagiwa (*Virchow's Archiv*, Band 160, Heft 2) has devised a new method for staining the neuroglia, which, given briefly, is as follows: The tissue, cut in very thin sections, is hardened in Müller's fluid for about a month, changing the fluid in the beginning, daily for 5 or 6 days. For this solution the tissues are transferred directly, without washing in water, into absolute alcohol, where they remain for from several days to a week, the alcohol being changed daily. After imbedding in celloidin and cutting, the sections are stained in a concentrated alcoholic solution of eosin for 12 or more days, then in a concentrated watery solution of anilin-blue for from 4 to 6 hours, then differentiated in dilute alcohol rendered feebly alkaline with a 1% potassium hydrate solution. The deep-blue sections become reddish-brown. They are then washed in distilled water and the excess of blue removed in diluted alcohol. The sections now are reddish. They are then dehydrated in absolute alcohol, cleared in oil of origanum, and mounted in balsam. Thus treated, the axis-cylinders are deep-blue, the glia fibers and red blood-corpuscles dark-red, the myelin sheaths bright-red, the protoplasm of the glia cells pale-violet, the bodies of the ganglion cells pale bluish-gray with greenish granules, connective tissue fibers, adventitia, intima of bloodvessels sky-blue or pale-greenish, the media bluish-red, the nuclear membranes all bluish. Regarding the **nature of neuroglia fibers**, Yamagiwa believes, on the basis of his results with the new stain, that the fibers are differentiated intercellular substance derived from the glia cells. This is practically the view of Weigert. He finds, however, that the fibers are not all entirely divorced from the cells, but that they generally touch the cells at some point. [D.R.]

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A Suggestion to American "Ophthalmotricians."

—During the recent gathering of ophthalmologists at Paris, in connection with the International Medical Congress, an American oculist amused himself by observing the adjustment of the spectacles and eyeglasses worn by these masters of the science and art of optics. One American was present with properly fitted spectacles; of the remainder, the few who wore glasses must have been served by blacksmiths or shoemakers instead of opticians. And yet these scientific men had shoes that were made for their feet, they did not wear their collars over their ears, and their hats were suited to their heads. Everywhere in Europe the American dentist is in evidence, and we suspect those "stomatologists" without American diplomas have scant pickings. Can anyone explain why the European oculist is not only ignorant of practical refraction, but positively scornful of it? There is, probably, not a scientifically prescribed, surely not a properly adjusted, pair of glasses in all Europe. One of the greatest English physicians recently said he was convinced that headaches were never caused by eyestrain. Another said, "We have no ocular muscle troubles; how is it that you Americans have so many?" The answer was, that misfitted glasses probably gave the proper prismatic correction. We have been guilty of believing that the American "ophthalmotrician," in his desire to be a physician without a diploma, was indifferent to the scientific adjustment of glasses. We are inclined to hedge and advise him to emigrate and play medical missionary to our professional continental confreres. Two excellent results would follow his expatriation.

Filters as Microbe Breeders.—Many hotels, office buildings and other institutions throughout the land are supplied with mechanical filters which are generally supposed to purify the drinking-water used in the respective places, and upon which special stress is laid in all announcements pertaining to them. That most of these filters are actual detriments has been clearly demonstrated by the bacteriologist of the Buffalo Health Department, in a series of examinations covering a period of one month. Samples of water were taken daily from the city reservoir, from ordinary taps, and from taps the water of which had passed through a mechanical filter. This filter was established in the basement of a building for which it was intended to be

used, of sufficient capacity to filter all the water required in the building, and connected with the main supply-pipe, so that filtration was carried on under continuous pressure. The number of bacteria in the reservoir samples ranged from 180 to 220 per cc., in the ordinary tap water from 160 to 560 per cc., and in the filtered water from 1,180 to 3,800 per cc. This is not surprising; it is astounding! It is a matter to which public attention cannot be too strongly directed. Any filter which will multiply the danger from drinking-water seventeen times, while ostensibly minimizing the danger, is worse than the most fatal pestilence, of whose existence the public is aware and which it can avoid. This filter clarified the water, and that was about all that could be said in its favor, while apparently the number of bacteria increased with the length of time the filter was in use, making it a veritable germ-breeder. Regular tests should be made of all filters, and those found ineffective or detrimental should not only be condemned, but their sale prohibited, on the same principle as that of unsanitary food-stuffs. This is a subject in which few people are proficient. Hearing and reading so much about the necessity of water-filtration, the average person assumes that any filter answers the purpose, and no one can tell which filter is good or bad except by scientific tests.

Tonsorial Hygiene.—The question of strict regulations for barber shops has received much attention by sanitarians, but only in a few instances have the health authorities had the moral courage to adopt and enforce rules which must of necessity meet with great opposition and in many instances bring ridicule upon those who promulgated them. In fact, even the medical profession, represented in the American Public Health Association, is not averse to enjoy a little tilt at the expense of one of its members who perennially hammers away at this subject with commendable persistency. Barbers and hair-dressers are public necessities, and the public has a right to insist that their work be performed according to sanitary principles. Any one who patronizes a barber whose establishment is open to all comers runs great risk of becoming infected with diseases from the razor, shaving-brush, scissors, clippers, comb, or hair-brush having been used previously on a sick or convalescent person, especially those suffering from diseases of the skin or scalp. Barbers and

hair-dressers should be required to wash their hands with soap and use a nail-brush immediately after attending to a customer, the razor, clipper or scissors should be dipped in boiling water or a disinfecting solution, while the use of the shaving-brush should be entirely abolished and wads of wool-cotton substituted. To the general practitioner the necessity of such restrictions is self-evident, but the general public needs instruction. Such instruction, however, is slow and ineffective unless obligatory rules are enacted, making it a sort of compulsory education. It is stated by a medical authority, who has made this subject one of his life-objects, that he once treated a man who was covered with specific eruptions, and that the patient went from the doctor's office directly to the barber. As this also happened to be the doctor's barber the lightning struck home.

New Reflexes.—The occupation of discovering new reflexes goes merrily on. Only a few years ago, Babinsky described his curious toe-reflex and the literature on the subject would now fill a respectable volume. More recently still, Gifford, Piltz, and Westphal made many interesting observations upon pupillary phenomena, and at least a dozen articles treating this subject have appeared since the original communication. During the present year, v. Bechterew (*Neurologisches Centralbl.*, March 1, 1900), described a reflex that could be elicited by striking the median edge of the scapula below the external angle. This causes slight adduction and occasionally external rotation of the arm as a result, of course, of contraction of the infraspinatus muscle and perhaps also of the teres minor. Occasionally, the deltoid or the flexors of the forearm are also involved. The center of the reflex according to him is probably about the level of the cervical swelling of the spinal cord. The reflex is remarkable in its constancy. It occurs almost invariably in healthy persons, and therefore its unilateral diminution or complete abolition should be regarded as invariably pathologic. It disappears in cases of the spinal form of progressive muscular atrophy, in polymyelitis, and in neuritis involving the shoulder region, and in the various types of muscular dystrophies, it is weakened or completely abolished according to the intensity of the process. In cases of stiffness of the spinal column (rhizomelic spondylosis) it is also diminished. It is valuable for the purpose of distinguishing between atrophy of the shoulder muscles due to cerebral and that due to spinal or neural lesions. Two months later, Hanel (*Neurologisches Centralbl.*, May 1, 1900) has been able to report a series of observations that he has carried out upon various persons with special reference to this reflex. He criticises v. Bechterew for not having stated whether the reflex is due to mechanical irritation of the tendons or periosteum. He believes that when the deltoid and biceps are involved, the periosteum

must be irritated, but he thinks it not unlikely that, in general, the twitching is merely due to direct mechanical stimulation of the body of the infraspinatus muscle, particularly as he has frequently been able to observe the so-called idiomuscular tumor when the reflex was unusually pronounced. For this reason the reflex is most readily elicited by striking near the inferior angle of the scapula where the muscle-substance is in considerable quantity. If, however, the inner border of the scapula is struck in such a manner that the muscular substance is not irritated, there is usually no twitching. In 120 cases he found that this reflex was comparatively infrequent, occurring in only 43.4%, while the triceps reflex was present in 80%, and several other reflexes of the upper extremity exceeded the scapulohumeral. He, therefore, does not believe that the latter is of much value in the diagnosis of diseased processes in the region of the upper extremity. He calls particular attention to the fact that in these 60 cases that presented the reflex, 3 showed marked difference between the two sides.

Lithiasis Preputialis.—This exceedingly rare affection is described in a letter to the *Boston Medical and Surgical Journal* (June 21, 1900), by Dr. Albert N. Blodgett. The patient, aged 22 years, had a deposit of stony material beneath the foreskin. There was extreme phimosis of a greatly elongated prepuce. It was impossible to retract the foreskin. The swelling was elongated and the shape of a pear, and the opening was small and directed to one side. The tumor was very hard and unyielding to pressure and was the seat of much pain. A greenish puriform discharge constantly issued from the opening, which was excoriated and painful. No cause could be assigned for the condition. On incision, a perfect collar of a stony material was found surrounding the base of the glans, filling the sulcus, except at the frenum, and prolonged upon the surface of the glans towards the meatus. This calcareous collar was perfect at the time of operation, but was unfortunately broken in removal. The effect of this condition on the mental state of the patient was highly injurious. The young man, who was of neurotic ancestry, had already spent a short time in an asylum for an attack of *folie du doute*, and this anomalous condition of the foreskin threatened to unbalance his reason once more. Dr. Blodgett quotes another and similar case from *La Grèce Médicale* (No. 7, 1899), reported by Dr. Alex. Louis, of Velessa, Macedonia. In this case, which occurred in a married man, aged 45 years, 110 stones were removed from beneath the prepuce. Thirty of these reached the size of a pea, the others diminishing to that of a grapeseed. The condition had lasted seven years, and was marked by great distention of the prepuce, so that this attained a circumference of 25 centimeters. Pain was an acute symptom, and the sense to the touch was that of a bag filled with stones. A sound was readily

introduced beneath the foreskin, where it came in contact with a mass of stones, but these could not be removed without incision of the foreskin, because of the phimosis. A complete cure was obtained. The primary cause of this condition is probably a persistent phimosis, with retention of smegma which undergoes calcareous changes. These preputial calculi, by which term they are generally known in literature, are rare but not unheard of. At least 24 cases are reported according to the *Index Catalogue*.

Crime, Pauperism, and Mental Deficiency.—The great questions involved in the proper disposition and treatment of the criminal; the arrest, if possible, of pauperism; and the care of the mentally deficient are of special interest to the broadminded physician, for it is he who must take the initiative in the proper scientific solution of these problems. As we ascend in the social scale, with the present state of society, especially in the large cities, the number constituting a family becomes smaller and smaller. It requires no mathematician to discover that the shiftless, the thriftless, the indigent poor—the class which produces, relatively, the greatest number of criminals and paupers, if not of the mentally deficient, are increasing out of all proportion to the thrifty, the well-to-do—the class which produces relatively few of the paupers and criminals. How can we account for this disproportionate increase? The sociologist would probably give as the prime cause the growing dislike on the part of parents of the middle and upper classes to be burdened with numerous children. Recent years have added an additional cause, one specially interesting to the physician. We refer to the lavish free-treatment by hospitals, dispensaries, and lying-in institutions to all who apply. Never was such organized and persistent effort put forth to save the weakling, the physically incompetent, those who with less care would perish in the battle for life. This effort at saving life is well, it is our duty; but it has its evil consequences. Parents relieved from much that is onerous in child-rearing are encouraged to beget others of their kind. Thus is beginning a multiplication of the indigent population which threatens serious consequences for the future.

What is to be done with the confirmed criminal, the pauper, the idiot,—the fruits, in too many instances, of this life-saving and life-multiplying process? Our duty to humanity will not allow us to refuse medical aid, but there remains a means under proper circumstances, to prevent the multiplication of certain of these wrecks, these derelicts of humanity. If the confirmed criminal, the pauper, the degenerate—those who have ceased to have a regard for law and the consequences of their own acts—must be supported by the State, then society certainly has the right to say that such at least shall not propagate their kind. It is stated that Michigan has legalized asexual-

ization for certain of these unfortunates. Other States and countries will in time follow her example. To state that a measure like this would affect such a small increase of the population of this baser sort as to be without appreciation, has its partial refutation, at least, in the personal observations of most of us. How many in the course of a lifetime have not seen one or more families composed wholly or in part of degenerates who owe their existence to the want of such a law?

Asexualization will be held by some to be a harsh measure, but it becomes incumbent upon those who would discourage it to offer something better, for the future will compel us to act. Regulation of the marriage law would be ineffectual, because these lower classes have ceased to have respect for the law and the consequences of their own acts.

If society by her philanthropic efforts is forced to annul the law of the survival of the fittest, then self-interest, nay self-preservation, will compel her to adopt measures that will prevent the multiplication of those who at best can only add degeneracy to the race.

Dental Caries.—The report made by the committee appointed by the British Dental Association to investigate and report on the condition of the teeth of school children contains some interesting points. It appears that only about 10% to 13% of school children from 6 to 16 years of age have "sound dentition," i.e. a condition in which no permanent tooth had been attacked by caries at any time. This appears significant, and it would lead to the conclusion that the average child knows little of the toothbrush, and that proper instruction from parents and others whose duty it is to teach along this line has been sadly neglected. For, notwithstanding the influence which heredity, the constitution of the individual, the character of the food, etc., undoubtedly have upon the teeth, surely no one will assert that all these causes combined could cause 90% of growing, and presumably fairly healthy, children to have defective teeth if proper care was observed in keeping them clean. The teeth of poor children were found to be in better condition than those of the well-to-do, and the country-bred child was less liable to dental caries than his cousins in the towns. This is one of the penalties which we pay for getting away from the simplicity of Mother Nature. The Scotch children possessed better teeth than the English. A difference in the habits of the people and in the character of their food probably accounts for this. A study of the skulls and teeth of ancient races did not yield a result so much in favor of primitive man as we might expect; for although their teeth were found much sounder than the average civilized person of today, yet caries was not unknown to them and in some races it was quite marked. The meat-eaters had sounder teeth and better developed jaws than those who lived chiefly on fruit and vegetables. This holds true of the

uncivilized and semicivilized races of the present time. Those races which live upon cooked starches suffer most from dental caries. And yet with respect to the soundness of teeth much seems to depend on the physical constitution and virility of the race.

Dr. W. D. Miller, of Berlin, has shown by careful investigations that the exciting cause of dental caries is lactic acid. Its presence in the mouth causes decalcification of the enamel of the teeth and soon leads to decay. He found that the presence of this acid in the mouth depends largely on the character of the food eaten. With proteids and hydrocarbons no lactic acid is produced in the mouth, but with a carbohydrate food it is produced in abundance unless the mouth is kept free from particles of decomposing food. Here again, the demand for the toothbrush and for oral cleanliness is made manifest. It is time the voice of the physician as well as the dentist should be heard in behalf of those measures which conduce to sound teeth; and one wonders whether it were not better that the public school should give more instruction concerning the ordinary care of the teeth, and less attention to the intricacies of digestion.

Infectious Diseases in Hotels Abroad.—The *British Medical Journal* calls attention to the risk of the dissemination of infectious diseases in the large hotels abroad and to the liability and rights of innkeepers in Great Britain and other countries when such cases occur. Sickness is considered an inevitable accident and is one of the risks which the manager of a hotel takes upon himself when he opens his house to the public. The Public Health Act of Great Britain imposes a penalty upon persons who, when suffering from dangerous infectious diseases, expose themselves in any public place, or if guests at a hotel fail to make known their condition. The Act also imposes a penalty upon the proprietor if he rents a house or part of a house which has been occupied by a person suffering from an infectious disease without first thoroughly disinfecting the same. Concealment of disease is also made punishable by a fine.

British law recognizes no implied contract on the part of a guest at a hotel that he is not suffering from an infectious disease, or that, if he should become ill during his stay, he will defray all the cost and make good the damage to the proprietor. It seems from a case reported that a guest cannot be held responsible for the loss occasioned by the suspicion of infection, although he may be compelled to defray the cost of disinfection. In France the law appears to be much the same as in Great Britain and a similar case is reported.

In the large mountain hotels of Switzerland the risk of the introduction and dissemination of infectious diseases has greatly increased during recent years; the hotels are much larger than they formerly were and

many tourists now take their children with them to spend part of the summer, both being factors in the spread of disease. Only last summer in one of these hotels a visitor was stricken with scarlet fever. The hotel, which was both large and well filled, was immediately deserted by all save the unfortunate patient and his friends. The proprietor in this instance behaved with the utmost courtesy and consideration, and was ready to make certain improvements which would enable him in future to secure the complete isolation of any person suffering from infectious disease. It would appear to be to the interest of both proprietor and guests that suspicious cases of illness in these hotels should be at once isolated and treated in a small detached house, since the vacating of a hotel may cause great loss to the proprietor, who will probably be unable to regain public confidence during the remainder of a short season. In any event the tourist will do well to see that his own condition when ill is made known.

The Plague.—The most serious recent report about the plague comes from Glasgow. Passed Assistant Surgeon Thomas sends a cablegram, under date of August 31, to the Surgeon-General of the U. S. Marine-Hospital Service, stating that the Board of Health of that city had declared the city infected with the disease. Eleven cases had been discovered. While this number of cases hardly warrants such an extreme statement as that the city is infected, yet the intelligence is bad enough, and we trust later reports will not add to its ominous character. In Glasgow there should be found as good sanitary ability to cope with the disease as has been exercised in other cities. Thus in Hamburg, Germany, Passed Assistant Surgeon Greene, under date of August 15, reports that seven days had elapsed since the case of plague was isolated in that city and that no further cases had occurred. The case referred to has resulted fatally. Surgeon Greene thinks Hamburg especially well equipped for stamping out an epidemic, as the experience of the sanitary authorities in the cholera epidemic of 1892 has proved most valuable. There has been in various cities, indeed, well-marked and noteworthy success in stamping out the plague. This has been seen in Japan, for instance, where, according to Assistant Surgeon Eldridge, no new cases of the disease had occurred for several weeks prior to August 1, and the authorities in consequence had closed the inspection offices. Dr. Eldridge thinks that this disappearance of plague must be ascribed to the intelligent and energetic measures employed by the sanitary officials of the Japanese Government, as the natural conditions had been favorable for a spread of plague. The recent epidemic in Japan was strictly limited to the city of Osaka and two or three other localities, these epidemic centers being near to and in frequent communication with several large cities; yet not a single

case occurred outside of the centers mentioned that could by any possibility have been derived from the infected area. Dr. Eldridge says in conclusion that considering all the conditions in Japan favorable to the propagation of plague, this success of the authorities in combating the disease proves that the plague must be considered a preventable disease. In Rio de Janeiro, which has the unenviable distinction of having had more plague than any other place in the Western Hemisphere, the disease was quite active during July, and no very marked success seemed to have been attained in controlling it.

Acquired Immunity Against Zymotic Diseases.—

Archdall Reid (*Physician and Surgeon*, July 1900) believes that the natural process of recovery or immunization from toxic zymotic diseases is: First the individual is infected by the microorganisms, and is poisoned by their toxins. But if death does not ensue, his cells produce enzymes which digest the toxins, and injure the microorganisms producing them. As digestion proceeds a graduated scale of toxins is produced, and up that graduated scale the cells of the individual react till they become indifferent to the strongest toxins, and are then able to destroy the microorganisms. Pasteur imitated this process in his cure of rabies, and in the production of immunity against anthrax. Jenner did it, all unconsciously, when he procured immunity against smallpox by inoculating with the attenuated virus of vaccinia. Immunization against snake-venom is induced by attenuating the poison in the stomach. It may be possible, on the same lines, to cure a disease by swallowing and digesting the toxins of some disease. On the other hand, all toxins are not digested in the stomach; at any rate they are not rendered innocuous. Opium, or rather morphia, is an example. Were it possible to attenuate morphia by slightly altering its chemical composition, this altered product would probably prove of curative value during actual poisoning with morphia. [M.B.T.]

Treatment for Aortic Aneurysm.—William F. Verdi (*Yale Medical Journal*, January, 1900) reports the result of treatment in 2 cases of aneurysm. The formation of a thrombus is necessary to the cure of an aneurysm of the aorta; and 3 conditions tend to its formation, viz: Lesion of the vessel wall; alteration in the composition of the blood; retardation of the blood-current. The first patient had a large aneurysm of the ascending aorta. It was treated by introducing 20 feet of fine steel wire, and an application of an electric current of 100 milliampere meters strength for 20 minutes. No improvement in the patient's condition was noticed and he died 4 weeks later. The postmortem showed a large fusiform aneurysm, commencing at the beginning of the aorta, with vessel-walls hard, atheromatous and calcareous. The wire was coiled up in the sac, but without the least evidence of a coagulum anywhere. Verdi thinks the rapid blood-current prevented the formation of a clot. The second case was treated by injecting hypodermically, a 2% solution of gelatin in a physiologic salt-solution. The patient was a man, 39 years old, who had developed a slowly growing aneurysm of the arch of the aorta for one year. The second, third and fourth ribs and part of the sternum were eroded. He was first given 50 cc. of a 1% gelatin injection under the skin of the abdomen. After 2 days a second injection of 75 cc. of a 2% solution was used. The pain after the injections was very great and the patient refused to continue after the fifth injection. The patient lived for 3 months, but no improvement seemed to follow the use of the gelatin, though the postmortem showed the walls of the aneurysm covered by older adherent organized coagula. [M.B.T.]

The Fourteenth International Medical Congress will be held in Madrid. Owing to climatic reasons the Congress will meet about Easter, 1903, and will be under the presidency of M. Calleja, Dean of the Faculty of Medicine, with M. Fernández Caro, Inspector-General of the Spanish Navy, as General Secretary.

Reviews.

L'Année Chirurgicale. Revue Encyclopédique de Chirurgie Générale et Spéciale. By DR. A. DE PAGE, of the University of Brussels, Surgeon to the Brussels Hospital, with the collaboration of many eminent surgeons. First volume. Pamphlet form, 672 pages. Bruxelles: Henri Lanertin, Libraire-Editeur, Rue de Marche au Bois, 20. 1900.

With the aid of a very competent corps of assistants Professor De Page undertakes a review of the entire literature of surgery for the past year. The book is divided into three main parts; the first dealing with generalities, such as history, surgical encyclopedias and treatises, a discussion of the use of the x-rays, anesthesia, etc. To this part 136 pages are devoted. The second part deals with subjects connected with the principles of surgery, ulceration, gangrene, embolus, thrombosis, etc; 139 pages are devoted to this section of the book. The third or greater part takes up the special surgery of various organs. The plan followed is to give first a bibliography of the subject under consideration. The articles are arranged according to the authors' names, in alphabetic order. The title is given in the original followed by a translation in French and a careful reference to the page and volume of the original. After the bibliography comes a review of the various articles noticed, the thoroughness with which the subjects are treated depending upon the importance of the article under consideration. But rarely is more than half a page given to the consideration of any article. The classification under the authors' names has some advantages, and with the division of the book into so many headings it is not very difficult to refer to any subject. However, it would make the work more valuable for reference if there were an index of diseases with cross references. Also in most of the subjects considered everything is bunched together without any attempt at subclassification. For example, in the section on the surgery of the brain and meninges, the discussion of abscess, tumor, hemorrhage, etc., is all given together and in order to refer to any one of these subjects it will be necessary to go through the entire list. The abstracting seems to have been most thoroughly done, and the division space seems judicious for the most part. In doing this work Professor de Page has rendered a great service to all students of surgical literature. We can unqualifiedly commend the book not only to those engaged in research, but to all who desire to find in concise form a review containing the essentials of practically all articles with regard to any subject in which they may be specially interested, which have appeared during the past year. We hope that the work will receive sufficient recognition so that it will be continued.

Clinical Examination of the Urine, and Urinary

Diagnosis. A Clinical Guide for the Use of Practitioners and Students of Medicine and Surgery. By J. BERGEN OGDEN, M. D., Instructor in Chemistry, Harvard University Medical School; Assistant in Clinical Pathology, Boston City Hospital; Medical Chemist to the Carney Hospital; Visiting Chemist to the Long Island Hospital, Boston. 416 pages with numerous illustrations and several full-page colored cuts. Philadelphia: W. B. Saunders & Co., 1900.

In addition to the usual contents of a book on urinary analysis the author has added a general discussion of the condition of the urine in the diseases of the kidney and in other general diseases in which the urinary changes are of sufficient importance to merit special attention. The author emphasizes the fact that most of the books on the urine at the present time are devoted almost exclusively to urinary chemistry, and since a knowledge of urinary diagnosis is obtainable only by an extended search through various works on medicine, surgery, and pathology he believes that there is a need for a treatise which takes up in detail urinary diagnosis and the application of information furnished by

careful chemical and microscopical examination. The first part of the book is devoted to a discussion of the chemistry of the urine according to the general plan of the books of this kind. All the usual tests and methods are satisfactorily described, the more important ones being given special attention and the comparative merit of various tests is judiciously discussed. The second part is devoted entirely to the conditions of urine found in various diseases and we believe that the author's idea is an excellent one. In concise form he has collected a great deal of information which will be of the greatest value to the practitioner who would otherwise have to consult numerous authorities in order to obtain the same knowledge. The discussion of the urine in diseases outside of the urinary tract is also a desirable feature which is too often neglected, although highly valuable information may often be obtained in this way. In addition to the two main parts there is an appendix which contains cuts of blanks for recording urinary examinations, a discussion of the order of applying tests and the method of making diagnoses of diseases of the kidneys from the urine; there is also a list of the reagents needed for ordinary work and an excellent index. The author shows that he has studied the literature of his subject most thoroughly and that he has an extensive practical knowledge of his subject. We can heartily commend the book to students and practitioners who are in need of a special treatise on this subject.

A Manual of Operative Surgery. By LEWIS A. STIMSON, B.A., M.D., Surgeon to the New York and Hudson Street Hospitals; Consulting Surgeon to Bellevue, St. John's and Christ's Hospitals; Professor of Surgery of Cornell University; Corresponding Member of the Société de Chirurgie, Paris; and JOHN ROGERS, Jr., B.A., M.D., Surgeon of Gouverneur Hospital, New York; Instructor in Surgery in Cornell University. Fourth revised edition, with 293 illustrations, 614 pages. Philadelphia: Lea Brothers & Co., 1900. Cloth, \$3.75.

In the brief space allotted the author attempts to give a description of general surgical technic and of all usual surgical operations. It may be easily understood that within these limits it is impossible to give extended descriptions. The aim of the book seems to be to give concisely one or two well-established methods without discussing the merits of other possible methods. The book is divided into 7 parts; the first 29 pages being devoted to the accessories of operations; the second part, 30 pages, to ligation of arteries; the third part, 54 pages, to amputations; the fourth part, 90 pages, to the excision of joints and bones; the fifth part to neurotomy, tenotomy, osteotomy and miscellaneous operations; the sixth part to operations on the face and the seventh part to special operations. For the most part the methods selected are satisfactory and the descriptions quite adequate. In these days of specialists it would seem that the chapters on operations on the eye and ear might have well been omitted and the space devoted with advantage to a more thorough description of the other general surgical operations. Some of the methods advocated might scarcely meet the approval of all surgeons; for example, we venture to believe that few would advocate simple ligation of the appendix, excision and treatment of the stump with a cautery or pure carbolic acid without any further precautions. This method is described although others are mentioned. In the operations of gastrostomy the excellent methods of Witzel and Kader are described, but the Frank method, which is perhaps more generally used at present than any other, is not mentioned. Among the operations for pyloric stenosis, Loreta's operation is given considerable space, a method which is now generally discarded. Among the operations for hemorrhoids, ligation and Whitehead's operation are the only ones mentioned, though perhaps more surgeons prefer to use the clamp and cautery than any of the other methods. While there may be differences of opinion as to the importance of various methods and the best ways of performing them the book on the whole is very satisfactory. When any book passes through three editions it is sufficient evidence that it has real merits and that it is likely to prove helpful to those interested in the subject discussed.

Manual of Pathology, including Bacteriology, the Technic of Postmortems and Methods of Pathologic Research. By W. M. LATE COPLIN, M.D., Professor of Pathology and Bacteriology, Jefferson Medical College Hospital and to the Philadelphia (Blockley) Hospital; Bacteriologist to the Pennsylvania State Board of Health. Third edition, revised and enlarged. With 330 illustrations and 7 colored plates. Octavo, 846 pages. Philadelphia: P. Blakiston's Son & Co. Price, \$3.50 net.

The task of collecting the results of the observations of others and of selecting those facts which are of greatest value to the student and general practitioner is quite a different one from that of carrying out an independent investigation in pathology or that of writing an exhaustive treatise on the subject. Both tasks are necessary and useful, and in performing the former task the author of this manual has been unusually successful. The book is well arranged, clearly written, freely illustrated and so comprehensive that few points will be found left altogether untouched. The manual will be found especially suited for the needs of the student and general practitioner and in writing the book the author shows the evidence of his extensive teaching experience and knowledge of the practical bearing of the subjects considered.

The manual is divided into three general parts; the first 133 pages are devoted to pathologic technic. The method of performing postmortem examinations is briefly described, bacteriologic technic, histologic methods, and the examination of the urine and sputum are discussed. In the brief space devoted to this section will be found a description of very satisfactory and practical methods of performing all the more necessary manipulations in pathology without any confusing discussion of numerous, complicated methods.

The second part, 156 pages, is devoted to general pathology; hypertrophy, hyperplasia, infiltration and degeneration, necrosis, circulatory disturbances, inflammation and repair, tumors and temperature changes are clearly and concisely treated. The remaining 453 pages, necessarily by far the greater part of the book, is devoted to special pathology. The examination of the blood, the condition of the vascular, respiratory, urinary, digestive, and nervous systems, the bones, joints, muscles, and mucous membranes, serous membranes, etc., each has a chapter devoted to them. The many interesting and valuable original illustrations deserve special mention. The manual is not designed for a book of reference for the skilled pathologist, but as a working manual for the student and for this use it is admirably adapted, as is evidenced by the appearance of this third edition within so short a time after the publication of the first edition of the book.

Epithelioma of the Esophagus Involving the Pneumogastric Nerve.—McKendrick (*Glasgow Medical Journal*, July, 1900), relates a case in which all the symptoms pointed to aneurysm of the aorta and in which, postmortem, an extensive epithelioma of the esophagus was found involving the pneumogastric nerve. The case was that of a woman admitted with symptoms of dyspnea, stridor, cough, and aphonia, with a swelling in the neck the size of a duck's egg. Under the opinion that this was aneurysmal, potassium iodid was given with good results. Following this some dysphagia existed, and symptoms being aggravated by personal worry; pain in the chest was never present, the cough was of a brassy, clanging nature. She died from dyspnea and general weakness. Prior to death there was no sudden onset of symptoms such as might be expected from hemorrhage into the pericardium or respiratory tubes and no change in the physical condition of the heart and lungs. The growth involved the upper part of the esophagus and had the form of an irregularly outlined, sloughing ulcer. On the right side the pneumogastric nerve lost itself in the growth above the clavicle; the recurrent laryngeal branch of the right pneumogastric was also involved in superficial secondary glandular mass, and the left recurrent laryngeal nerve was involved in deeper glandular mass in continuity with the esophageal tumor. Had an esophageal bougie been passed the question of diagnosis would have been cleared up, but McKendrick doubts the justifiability of the procedure. [M.B.T.]

Correspondence.

DISLOCATION OF THE JAW IN HEMIPLEGIA.

By DEWITT C. GREENE, M.D.

of Buffalo, N. Y.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

THE cases of dislocation of the jaw in epilepsy, reported by Charles J. Aldrich in a recent issue, remind me of a case of dislocation of the jaw following hemiplegia.

Mrs. B., aged 48 years, suffered an attack of hemiplegia with total loss of consciousness; her mind cleared a little and on the fourth day she would answer questions by a nod of the head, but on the sixth day she suffered a second attack, which left her in completely comatose condition, with her jaw dislocated. At first I diagnosed simply a spasm of the muscles; upon a more careful examination I found jaw to be dislocated. As I did not desire to give an anesthetic in her condition I decided to make an attempt at reduction (which I feared however would be futile), by putting the thumbs back between the teeth after having been protected by cloth and following out the technic as laid down in textbooks for reducing dislocation of jaw. To my surprise, after making the second effort at reduction, I could feel the jaw snap back into position, and the teeth came together; but on the tenth day she died.

PNEUMONIA AT HIGH ALTITUDES.

By HENRY W. HOAGLAND, M.D.

of Colorado Springs, Colo.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

COMING recently from the Atlantic Coast, where the prevailing opinion in regard to lobar pneumonia at high altitudes is one of great mortality, I have been surprised at the following cases that have come under my care at St. Francis Hospital. Since the 1st of May we have had 8 cases with no deaths, and in looking up the records of the hospital since January 1st I find 37 cases with 5 deaths—a mortality of but 13%.

The majority of these were men from the mines and railroad-camps on the Colorado Springs and Cripple Creek Railroad; of course they came from a high to a lower altitude, which does influence favorably the course of the disease. But the majority were drinkers and living where the hygienic surroundings were not of the best and exposure to wind and snow more severe than in individual life. Of the cases that came under my care none came in sooner than the third day of the disease. As the treatment was practically the same I will cite but one case, which, however, was migratory in character and the most severe.

J. D., 42 years old, laborer, family and previous history negative, except that he had rightsided pneumonia 8 years ago. He was admitted May 7, the third day of disease, temperature 104 $\frac{1}{2}$ °; respiration 42; pulse 110; physical examination showed consolidation of the base of right lung posterior. Sputum was viscid, "prune juice" in color. On examination pneumococci in great numbers. Patient was sponged and temperature fell to 102.6°, where it ranged from 102° to 103.6°. Pulse never over 140, nor respiration over 52. On the morning of the ninth day temperature fell to 97.6° and the patient slept, but the respiration remained high. That afternoon he had a chill, and the temperature rose to 105°, respiration 52, pulse 140. The sputum again assumed the prune juice color, but where the pneumococcus was in abundance the first involvement the second showed streptococci in abundance. The following day a consolidation developed in the upper lobe anteriorly of the left lung. This attack lasted five days, followed by a rapid lysis. Patient made a slow but complete recovery.

While I believe at altitudes higher than the neighborhood of 6,000 feet pneumonia is more fatal even in those acclimated, in my experience I am inclined to believe that while pneumonia is pneumonia everywhere and as such is to be dreaded, it is no more fatal in altitudes as high as Colorado Springs than at sea level.

A SIMPLE METHOD OF REDUCING LUXATIONS OF THE SHOULDER.

By THOMAS M. PAUL, M.D.,

Assistant Surgeon, State Hospital, Hazleton, Pa.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

THE method invariably pursued in treating recent luxations of the shoulder-joint at this institution is as follows:

The patient is chloroformed; practical experience with this drug having taught us that its use is not attended by the dangers usually ascribed to it, and it produces greater relaxation of the muscles. The arm is held at a right angle with the body and drawn straight outward with one hand at the wrist, while the finger tips of the other slip the head of the bone into its socket by simply pushing it upwards.

Occasionally this is unsuccessful. The method is then slightly modified by using the finger tips on the head of the bone as a fulcrum, while downward lever-like motions are made with the arm; the upward pressure of the finger-tips and outward traction on the arm being meanwhile continued.

The above description applies to the subglenoid variety of the injury, but it may be easily further modified by any intelligent surgeon to suit the exigencies of the case.

This method is, as far as I know, entirely original with Dr. Lathrop. It may be claimed by some surgeons that it is simply manipulation and only applicable to certain cases, but Dr. Lathrop, during a large experience with this traumatism, has never known this procedure to fail.

Cases have been brought to this hospital which resisted every effort at reduction, and in which so much force had been used as to cause great contusion of the superficial tissues of the shoulder and axilla, and yet the above method produced the desired result with the same degree of ease as is expressed by its description.

DOES LIFE IN THE PHILIPPINES PRODUCE A SPECIES OF INSANITY DUE TO PHYSICAL DISTRESS?

By ARTHUR T. ABERNETHY, Ph.D.,

of Philadelphia.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IN the PHILADELPHIA MEDICAL JOURNAL, April 7, there appeared from the pen of Dr. Charles E. Woodruff, assistant surgeon of the U. S. Army, one of the most interesting contributions upon life in the Philippines that has ever been given to the American student. Not only the practical physician, skilled to appreciate the technical and professional learning shown in that article, but as well the layman must have read that contribution with the deepest interest. The recent appearance of the news-item announcing the illness of the redoubtable Captain Coghlan, of the *Raleigh*, recalls to mind a discussion along the line indicated in Dr. Woodruff's article which may interest the medical profession. Does this tropical life—especially such as is experienced by the sailor soldier—produce a kind of mental disorder, which

I should term Philippine insanity? There is no questioning the fact that whatever may be the claims set by enthusiastic space-writers in Sunday magazines, mere military life, even at sea, will not produce the physical and thereby consequent mental distresses which have been painfully numerous in the lives of our soldiers in the Philippines; for the observer must have noted in the reports from the Santiago campaign that there has been little or, indeed, no complaint upon these grounds, while among our army and navy representatives who have been identified with the Philippine campaigns there has been an abundance of material to compel an entertainment of a strong belief in the theory advanced. Having known Lieutenant Hobson for years—indeed since boyhood—I noticed a particular and marked improvement in his physical and mental constitution after his return from the naval duties of the Santiago campaign. From a weak, almost unhealthy, lad of angular proportions, he looked, when in Philadelphia at the Peace Jubilee, just subsequent to his return to the United States, like an athlete trained for an international contest. I was with him in his rooms at the Walton when he was dressing for the parade, and saw him stripped to the waist. This physical improvement, indeed, could have been traced in all the participants in the Santiago campaign, barring, of course, occasions when physical debaucheries interfered with natural growth and development.

But the returning heroes of the Philippines have shown a remarkable tendency toward insanity, physical distress, and general breakdown.

Dr. Woodruff says, in his article in the PHILADELPHIA MEDICAL JOURNAL: "Everywhere we hear of some means taken to avoid exhaustion. It is the country of *manana*. The symptoms of exhaustion are everywhere. I never heard so many complaints of persistent insomnia as I did in the Philippines. One young, vigorous staff officer complained to me one day that on the previous afternoon at 5 o'clock he found that he could not remember anything he read. When he got to the end of a sentence he had forgotten the beginning. He was completely disabled until the next morning. A surgeon informed me that before he was half through his rounds he daily discovered that he could not remember the patients' answers, and he always had to lie down 30 to 60 minutes before the brain would again work properly. It was rumored that a general officer one day at an early hour found himself in the same condition, he could act on no papers because he could not remember what was to be acted on." Further on Dr. Woodruff says: "A very high percentage of soldiers have gone insane."

Continuing, Dr. Woodruff tells us that the children of Europeans reared in Manila and the Philippines become thin, sallow, unhealthy, and that it is an impossibility to rear a third or fourth generation of these races. He declares that in Manilla he saw no healthy white children at all, and that the average life of a white child in that section is only 25 years and rarely that. He says, continuing: "The higher intellectual life is lost, is impossible in fact, . . . the heat paralyzes the will, and though men live, they live somewhat like vegetables. Mental deterioration is inevitable under such conditions. . . . If there is one thing then that medical science can prove, it is the deterioration of white men in a continued moist heat (referring to the Philippines)." When we consider the fact that the Mediterranean races furnish in our slums the largest proportion of rickets and other diseases due to degeneration, and that the Spanish nation is at present confessedly the most degenerate in Europe, we can well believe the claim laid by the writer that a prolonged stay in the

Philippines is disastrous to the physical and thereby mental condition of Americans.

Another and seemingly convincing argument favoring my assertion that the brain power and the brain activity are dwarfed by this tropical life is the comparative difference between the sizes of the brains of people living in the tropical sections and the colder countries like the United States—its northern and northwestern portion. The tables of Dr. Joseph Sims, published in *Popular Science Monthly*, and to which reference is made by Dr. Woodruff, show that while the capacity in cubic inches of the brains of the Lapps and Swedes is over 100, and that of the Americans 94, that of the Egyptians, Fellahs, and Bengalese is below 78 at their very highest. All of which shows that the warmer the climate the smaller the development of the brain. When we consider, too, that, notwithstanding the general belief, more ingenuity and brain work is required to earn a living in a savage country where there are no mills, factories, nor machinery to afford routine work and where every man must be a hunter, artisan, or soldier—and thus there is a kind of mental development even among savages that must not be forgotten in this computation—we are able to see the bearing these statistics have upon the case in question. Dr. Dawalt, at one time, I think, the Coroner of San Francisco, and one of the prominent physicians who went to Manila to study the Filipinos, declares that their minds are so dulled to the existing state of their feelings that they would frequently come to him for bandages for mortal wounds and would tear them off and expose the wounds to the sunshine and heat as soon as they were bandaged—and apparently without the slightest sensibility to the awful pain.

Now, it is reasonable to suppose that physical distresses of such magnitude must naturally drain and strain the brain power and impair it perhaps seriously. It requires no medical skill to see that intense heat is destructive to clear reasoning, and disturbs mental activity. This distress draws upon the vital currents of the brain, and will in time completely outwear them. If men may eat, drink or do things which impair the mind, it is equally as reasonable to suppose that they may do things that will improve the brain, and vice versa, and it naturally follows that these continuous tropical adventures will produce a mental exhaustion followed by mental wreckage and some sort of dementia. I do not maintain that this is always of a violent nature—insanity is not always confined to a delirium and dangerous classification. But I believe the facts show that a few years' stay in the Philippines almost invariably damage the mental activity of those who go there. In many of our men, this mania assumed suicidal tendencies. I learn that in one month 39 officers and men of rank in the army committed suicide in the Philippines. As previously stated, hundreds—probably thousands if we could know the facts—have become violently insane. Hundreds became dazed and groped about like blind men. Many more were overtaken even after their return to America by complete physical and mental exhaustion in a form milder because of the bracing American climatic influences, and died of influenza, or after complaints that under ordinary circumstances would not have indisposed them.

Captain Gridley, of the *Olympia*, died before returning to the United States. Flag Lieutenant Brumby, Dewey's bosom companion at Manila, died only a short time after his return to this country.

Lieutenant Hobson, who gained over 50 pounds weight in the naval service, and was the hale and healthy man of the Santiago campaign, was sent to the Philippines, where, although accustomed to naval service in every sort of climate, he suddenly collapsed and he is now confined to a hospital in the Orient for treatment for physical disturbances of a serious nature. I recall, too, in conclusion, the pathetic suicide of Commander McGiffen, who took part in the Yalu River engagement of September 17, 1894, near this section. He returned to America, and after 3 years' effort to overcome the effects of the climate wreckage, he shot himself to death in the Post-Graduate Hospital of New York.

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Diphtheria in Camden.—An epidemic of diphtheria threatens Camden, N. J. Recently 12 cases have been reported.

Pennsylvania Military College.—Dr. William B. Ulrich, of Chester, has resigned as chief surgeon of the Pennsylvania Military College, after nearly 30 years of service.

Guard Against Plague.—The steamship *Corean*, which is now due at Philadelphia from Glasgow, will probably be held in quarantine for several days on account of the bubonic plague raging in that city.

The Children's Hospital and Dispensary in Germantown was dedicated and formally opened recently. At present there is accommodation for 25 patients, but the Board hopes to double that number in the near future.

Impure Water at Mount Holly.—The water now used at Mount Holly, Pa., is said to be unfit to drink and the company organized some time ago is considering the question of establishing a new water system, the supply to come from artesian wells.

Boys Drank Pint of Whisky.—Two drunken lads, aged 11 and 12 years respectively, were recently taken to the Pennsylvania Hospital in the patrol wagon. They said two other boys had given them a pint of whisky, all of which they drank.

Typhoid Fever. No Physician.—Surrounded by faith curists, Miss Amelia Pearce, of New Castle, Pa., died recently of typhoid fever at the Alliance Home. She had been ill for 2 weeks, and, it is said, no physician was called. The coroner is investigating the case.

Sanatorium at Red Bank.—The present season's work of the Sanitarium Association, of Philadelphia, is drawing towards its close. For the 65 working days since the opening of the Sanitarium to date the total number of admissions is 163,102, an average of 2,509 daily. The hospital cared for 73 cases.

Dangers of an Epidemic.—Through the neglect of the Bureau of Health of Philadelphia, to quarantine a house near Broad and Annin streets, the neighborhood is in danger of an epidemic of diphtheria. For 15 hours a child who had died of diphtheria was allowed to lie by an open window and 5 other children allowed to remain in the house. The attending physician claims to have promptly notified the Bureau.

Dust Plants Inspected.—Dr. J. Howard Taylor, of the Philadelphia Board of Health, recently inspected the concerns of the Alcatraz Paving Companies which have been declared a nuisance on account of the dust. The Board of Health has yet to take action in the matter. Resolutions adopted over 6 weeks ago condemned the dust nuisance and ordered the health officer to close the plants if the nuisance was not abated. Whatever is done will be the consequence of Dr. Taylor's report.

Association of Hospital Superintendents.—The second annual convention of the Association of Hospital Superintendents was held in Pittsburg, Pa., August 21-23, at Hotel Schenley. An interesting paper was read by T. Sutton, of Detroit, on the growth and development of hospitals in the United States during the past 3 years. He stated that in the last 3 years about \$245,000,000 had been spent in the United States in the erection and equipment of new hospitals, in enlarging and improving old hospitals and in general expenses. Over 1,000 hospitals were built during that time, the approximate cost of which was \$50,000,000. There are now about 65,000 persons employed in the 2,500 hospitals and asylums in the United States. The hospitals pay yearly in salaries about \$23,332,000. Over 1,600,000 patients are treated every year and 37,500 physicians attend them. The following papers were also read: "Hospitals and Dispensaries," by J. S.

Knowles, of Cleveland; "Some Responsibilities of a Superintendent," by C. S. Howell, of Pittsburg; "Hospital Sanitation and Ventilation," by Lewis R. Curtis, of Chicago, and "Civil Service as Applied to Municipal Hospitals," by Dr. Duryea. The membership is now about 100. Charles S. Howell, of Pittsburg, was elected chairman for the ensuing year. The next meeting will be held in New York.

Vital Statistics of Philadelphia for the week ended September 1, 1900:

Total mortality		413
Disease.	Cases.	Deaths.
Inflammation of appendix 2, brain 8, bronchi 1, kidneys 15, heart 1, lungs 19, pericardium 3, peritoneum 4, stomach and bowels 17, spine 3		73
Tuberculosis of lungs		49
Cholera infantum 42, morbus 1		43
Marasmus 24, inanition 9, debility 5		38
Heart—disease of 30, dropsy of 1, fatty degeneration of 3		34
Carcinoma of bladder 1, face 1, liver 2, cecum 1, omentum 1, prostate 1, rectum 1, stomach 5, uterus 4, lymphadenoma 1		18
Bright's disease 4, uremia 7, diabetes 5		16
Apoplexy 11, paralysis 5		16
Diphtheria	61	13
Casualties		12
Convulsions		10
Typhoid fever	60	8
Brain—congestion of 4, disease of 1, dropsy of 1, softening of 1		7
Sunstroke		7
Old age		6
Drowned		5
Burns and scalds		5
Obstruction of bowels		5
Alcoholism		4
Cyanosis		4
Diarrhea 2, dysentery 2		4
Scarlet fever	20	3
Septicemia		3
Jaundice		3
Childbirth		3
Whooping-cough 2, gunshot wounds 1, ulceration of rectum 1, tetanus 1, teething 1, suicide—arsenic 1, laudanum 1, electric shock 2, retention of urine 1, leukemia 1, hernia 1, hemorrhage from stomach 2, uterus 1, fistula 1, epilepsy 1, croup 1, cirrhosis of liver 1, carbuncle 1, anemia 1, asthma 1, psoas abscess 1		

NEW YORK.

The Cornell Medical College is now nearly completed. It has cost, including the site, more than \$600,000.

Sues for Damages.—Dr. Justin Herold, of New York, has brought suit for \$100,000 damages against the Metropolitan Street Railway Company for injuries received in a collision.

Vessels from Glasgow Detained.—Since August 31, all vessels arriving in New York from Glasgow have been detained and will be for a period of 12 days from their embarkation on account of the plague in that city.

Hydrophobia in New York.—Edward Peterson, who died recently in the Harlem Hospital from hydrophobia, was the seventeenth case in New York City in 5 years. The disease reached its climax in 17 days, an unusually short period.

To Isolate Tuberculous Patients.—In February, 1901, the hospital on Blackwell's Island, New York City, will be relieved of its insane patients, who will be apportioned among the different State hospitals near the city. This will then be made a general isolation hospital for cases of tuberculosis under the care of the Department of Charities.

The Home for the Friendless of Northern New York is an institution in Plattsburg which has been maintained and conducted for 25 years by the women of that place. It is one of the most practical and successfully conducted institutions in the State. The inmates are all children—deserted or destitute—for whom good homes are found, if possible, and if not they are carefully trained in the Home.

Moving Pictures.—One hospital in New York has adopted a camera to record minutely the action of patients, and many moving pictures have been taken, showing the movement in walking of persons afflicted with locomotor ataxia. They are produced slowly on the screen, so that physicians are enabled to study the symptoms carefully.

NEW ENGLAND.

Newton Hospital.—Plans have been drawn for an entirely new structure to take the place of the contagious department of the Newton Hospital at Newton Lower Falls, Mass., which was partly destroyed by fire last May. The new building is planned for 52 patients.

Contract and Association Physicians.—Dr. W. O. Dunham, of Springfield, Mass., was recently prevented from caring for a patient of his, suffering from typhoid, after his removal to Mercy Hospital. The staff physicians are members of the local medical association and are therefore arrayed against the 4 physicians who are outside the association and are doing work for societies at "contract" prices. The question of who will be allowed to practise in the hospital is determined entirely by the staff physician.

CHICAGO AND WESTERN STATES.

Scarlet fever is spreading in the eastern portion of the city of La Crosse, Wis. The cases thus far have been mild.

A Low Death-Rate.—Milwaukee's death-rate, as shown by the late U. S. Census report, is 14.27% ; that of Chicago 16.56%.

Fined for Selling Putrid Food.—W. E. Gilbert, of St. Joseph, Mo., was fined \$50 recently for selling impure and putrid food to the poor, many of whom were made dangerously ill.

The Rocky Mountain Interstate Medical Association, at its recent session in Butte, Montana, selected Denver, Colo., as the next meeting-place, in September, 1901. Dr. C. R. Fleming, of Denver, was elected president.

University of Illinois.—Dr. George P. Dreyer, of Johns Hopkins, has been elected professor in charge of the physiologic department of the College of Physicians and Surgeons, the medical department of the University of Illinois, Chicago.

Health Department's Demands Refused.—The Board of Health of San Francisco recently presented 6 demands, aggregating \$700, which they desired to be paid out of the appropriation set aside for emergencies in the small-pox hospital. Auditor Wells refused to audit the demands on the ground that the fund of \$1,000 is intended only for an epidemic, should one ever occur.

Medical School to be Established in Dallas.—At a recent meeting of physicians in Dallas, Texas, it was proposed to establish a medical school in that city. The majority of those present voted against the proposition. However, a number of those present held a supplementary meeting after the adjournment of the regular meeting, and committees were appointed to formulate plans for the establishment of a school.

Poisoned by Ice-cream.—The Odd Fellows of Glendale, Ind., held their annual reunion festival recently, and shortly after ice-cream had been served, more than 100 persons showed symptoms of poisoning. Every physician in the vicinity was summoned, and the I. O. O. F. hall was transformed into a temporary hospital. The sufferers were soon got out of danger. It is supposed that the cream was frozen in cans which had not been well cleaned.

Indians Dance for Charity.—The Winnebagoes near Black River Falls, Wis., began the medicine and "give-way" dance. Food, clothing, and money were donated to the aged and helpless members of the tribe. The dance is an old custom among the tribe, and while not so swell as the charity ball in the big cities, the motive is the same. A young Indian who wishes to shine in society will beggar himself, in order to be generous during the excitement of the dance.

Charity Hospital for Albuquerque.—The Mayor of Albuquerque, N. M., has received a letter from the mother superior of the Order of the Sisters of Charity, Cincinnati, O., stating that the proposition made by the City of Albuquerque to them for a hospital and sanatorium had been accepted, and that they would commence work on the institution in September. The citizens of Albuquerque have presented the order with \$5000 toward the institution, and ground was given to them by Father Gentile.

To Prevent Spread of Tuberculosis.—In his annual report to the common council Health Commissioner Schultz, of Milwaukee, recommends legislation that will control marriages and thus lessen the ravages of tuberculosis. For the same reason he recommends the examination of teachers applying for positions in public schools. The report also states that wells are a positive menace to the welfare of the community. Out of 118 examined by the department, the water in but 16 was fit to use. There were 1,100 cases of scarlet fever in the city in 1899, with but 36 deaths from that disease, and 722 cases of diphtheria with 109 deaths, the lowest percentage of fatalities since 1891.

A Business Association Formed by Detroit Physicians.—A "Physicians' Business Association" has been formed in Detroit to promote professional and fraternal goodwill; to correct the abuse which the profession has long suffered through nonpayment of legitimate fees; to agree upon a uniform fee bill, and to regulate the relations of the members to each other and to the public hospitals, dispensaries and public charities. It is also purposed to found a mutual aid fund for members in full standing. The affairs of the association are to be conducted by the officers and a board of governors, which will be composed of one representative from each ward of the city, each governor to be elected by the physicians residing within the ward which he represents. Should any physician decline to join the organization after being duly solicited the members will be forbidden to consult with the offender. It is proposed to circulate each month among the members of the association, a printed "black list" of persons who refuse to pay their physician's bill. It is reported that nearly 400 signatures to the call for organization have already been secured. A preliminary meeting which was held at the Hotel Cadillac was presided over by Dr. J. J. Mulheron.—[*New York Medical Journal*.]

A Journalistic Reform.—The publisher of the *Brown County Herald*, of Hiawatha, Kansas, has this to say of medical advertising and advertisers: "We have at last done what we have wanted to do for many years—we have thrown out of this paper every advertisement that can be by any chance considered objectionable in any degree. And hereafter we shall print no offensive advertisements. We have an idea that every advertisement is read, and this being so, we don't want any one to read or to put any faith in the cure-alls and nasty nostrums that are always conspicuous advertisements in every possible newspaper and in every possible public place in America. If persons are ailing, they should not hesitate to consult a reputable physician. Another thing: From this time on we will not print advertisements of traveling quack doctors. We want clean advertising matter, or else we want none. This means a loss to us of not less than \$800 a year. We believe that the people who have glanced at Lydia Redham's offensive propositions, and at Slow's Specific, Bradshaw's Regulator, et al., including the bids of various quack doctors to cure weak and suffering men and women, will miss them in this paper with not a little pleasure. It makes no difference what ails you, don't be afraid to tell an honorable physician about it, and submit to his advice and treatment. Beware of quack doctors. Don't read filthy ads. Don't buy quack medicines. Don't have anything to do with strange doctors. They are generally disreputable, and entirely unable to do any more for you than to mercilessly take your money."

SOUTHERN STATES.

From a Bubonic Port.—On the way to Baltimore is the steamer *Orthia*, which sailed from Glasgow about the time the bubonic trouble had developed. Dr. Heiskell will take charge of the vessel upon her arrival and detain her for a period if he thinks it necessary.

Maryland General Hospital.—The clinical amphitheater at the Maryland General Hospital, Baltimore, and the two operating rooms are being improved.

Baltimore University School of Medicine.—Dr. Benjamin S. Hayden has been elected to the chair of materia medica and therapeutics in place of Dr. E. Eilau resigned.

Clarence Barker Hospital.—George W. Vanderbilt has started an endowment fund for the Clarence Barker memorial hospital at Biltmore, N. C. The hospital was formally opened September 4.

Yellow Fever on Steamer.—The German fruit steamer *Holstein* has arrived in quarantine at Old Point, Va. The mate in command reported that Capt. Arhoos died of yellow fever and was buried at sea. The Marine Hospital surgeons have boarded the *Holstein*. It is reported that others of the crew are down with yellow fever.

Experiments with a Weed.—The faculty of the Chattanooga Medical College is making experiments with the weed known as "gall of the earth," with which a mountaineer lately cured himself of a mad-dog bite, and by which he cured others of the effect of the venom of poisonous snakes. In some places it is known as the "rattlesnake master." Quantities of the weed are being transplanted for cultivation and experiment. It is now in bloom and bears a small white flower. The horticultural department of Clemson College, at Charleston, S. C., is experimenting with it also.

New Orleans Isolation Hospital.—The Board of Health of New Orleans recommends that, should an isolation hospital be built, the institution be under the immediate supervision of the Board of Health; that the physician in charge be of the board's selection, and removable for cause by the board; that his services be utilized in other directions by the board in the absence of any infectious disease; that his salary be fixed and budgeted for by the city, and that all other expenses attached to the operation of the hospital be met by the city, on the approved vouchers of the Board of Health. The board further recommends that the hospital should be centrally located and that it should be on the pavilion plan.

Orleans Parish Medical Society.—At a meeting, held August 11, 1900, Dr. S. L. THEARD submitted diagrams and plans for the proposed isolation hospital to be erected in New Orleans in the near future. Dr. O. L. POTHIER read on the **Pathology of the kidney**.

At the meeting of August 25, Dr. L. G. LEBEUF read on **Medical diseases of the kidney**. Dr. RUDOLPH MATAS made a lengthy report of a case of **Aneurysm of the aorta near the celiac axis, treated by wiring and electrolysis**. The patient was a white male, 23 years of age, in whose history there could be found nothing to account for the presence of the aneurysm. Absolute rest in bed with low diet was tried, but failed to benefit the case. Gelatin was injected once, but the febrile reaction and systemic disturbance was so great it was not repeated. An exploratory laparotomy was done, the relations of the neighboring viscera to the tumor determined, and the peritoneum of the anterior abdominal wall stitched to that covering the aneurysmal sac in such a manner as to wall off a small area from the general peritoneal cavity during further operative treatment. Wiring and electrolysis having finally been determined upon, about 10 feet of a specially prepared coil of silver wire was introduced into the aneurysmal sac and electrolysis maintained for a space of over 4 hours, occasioning the patient but little pain or discomfort. The tumor shrunk in front, but a diverticulum formed on the left posterior side and terminated the case fatally in a few days.

Dr. E. J. HUHNER exhibited drawings of a **specially devised brace for correcting talipes calcaneus**, reporting the case in connection.

MISCELLANY.

A Chilean Medical Congress is announced for December of the present year.

Plague in South America.—A case of bubonic plague has been officially reported at Buenos Ayres and another at Rio Janeiro. Several cases have been reported at Ceara.

Sick Soldiers from Manila.—The United States transport *Thomas* arrived recently at San Francisco, 29 days from Manila, via Yokohama. She has on board 261 sick and wounded soldiers. During the voyage 7 deaths occurred.

University of Havana.—Dr. John Guiteras, who resigned the chair of pathology in the University of Pennsylvania to fill a similar position in the University of Havana, has established there a journal, entitled *Revista de Medicina Tropical*.

Yellow Fever Suspect on Havana Liner.—Ignacio Garcia, a steerage passenger on the *Leon XIII*, which arrived in New York recently from Havana, was removed to Swinburne Island for treatment and observation. Garcia shows symptoms indicating yellow fever. The steamer and 124 passengers are held at Quarantine.

Soldiers Leave Hospital.—From the General Hospital at the Presidio, San Francisco, 31 soldiers, fever stricken or wounded in the Philippines, were discharged recently and given transportation to Washington, D. C. Most of the complaints are incurable, and the men have applied for admission to the Soldiers' Home at Washington.

Foreign Physician Accused by Medical Society.—An agent of the County Medical Society charged Louis Capobianca, of New York, with practising medicine without being registered. The defendant asserted that he received his diploma in Italy, and did not know that he would have to register in this country. He was held for trial.

"Lawton" to Relieve Miners.—The United States transport *Lawton* is to be sent to Cape Nome to relieve the destitute miners, many of whom have petitioned through General Randall for transportation south before the hard Alaska winter sets in. The *Lawton* will sail for the North as soon as she can be got ready, probably within a few days. She has accommodations for about 700 men.

Disease Decimates Eskimos.—Mr. Jackson, the Interior Department representative in Northern waters, reports that grip, pneumonia and measles have been epidemic all summer among the Eskimos. The ravages extended from the Aleutian Islands to Point Barrow. Out of a population of 400, on the Island of St. Lawrence, 36 Eskimos died. The revenue cutter *Bear* was loaded with supplies, and sent to the relief of the natives.

One Thousand Dollars from Red Cross Auxiliary.—Surgeon-General Van Reypen, United States Navy, has received, through Mrs. Whitelaw Reid and Mrs. W. S. Cowles of the Red Cross Auxiliary No. 3, a check for \$1,000 for the relief of the sick or wounded sailors, marines, and soldiers in China. He has cabled \$500 to the fleet surgeon of the Asiatic Station and \$500 to the medical officer in charge of the United States Naval Hospital at Yokohama, to be used in accordance with the wishes of the donors.

No Base Hospital for China.—The large base hospital which the U. S. Government proposed to build at Nagasaki, Japan, has been abandoned since it is probable that our troops may soon be recalled. Our sick and wounded soldiers will be brought from China to the general hospital at the Presidio, San Francisco. The physicians and nurses who had been ordered to Nagasaki will remain in San Francisco until it is definitely decided that their services will not be required in China or the Philippines.

Ambulance Corps Praised.—A Japanese correspondent with the allied forces sent the following to his paper after the battle of Tien Tsin: "The American ambulance corps has done some excellent work. Their stretchers are the best in the field and show the wonderful inventive faculty of the Americans. The handles of these stretchers are so arranged that they can be formed at once into supports by a clever mechanical contrivance, so that these stretchers can be used as beds or benches for surgical operations. The advantage of this system cannot be too much commended, for on ground so swampy and hot as the soil of China the wounded men cannot safely lie long pending the treatment on the spot; and this inconvenience is removed by the American invention. Sixty men were thus treated directly where they fell who otherwise would have died. The Japanese medical staff refer to the fact in most praiseworthy terms."—[*Army and Navy Register*.]

Object to Vaccination.—Owing to the unusually heavy westward passenger traffic, many American citizens have recently been compelled to take steerage passage in returning to the United States. The physicians of the North German Lloyd Steamship Company have insisted on vaccinating all these, to meet the requirements of the United States laws. Recently an American filed strong objections with the United States Consul at Bremen, who wrote to Washington for instructions, meanwhile forbidding the physicians in question to vaccinate Americans in the steerage, on the ground that the law was intended to apply to immigrants only.

Yellow Fever in Havana.—The chief quarantine officer in Cuba reports 204 cases and 34 deaths from yellow fever in Havana from August 1 to 26. The disease is very mild, and for this reason the various quarantine stations on the Atlantic and Gulf Coasts have been instructed to use particular care to detect such cases. The outbreak is confined to a large extent to the Spanish colony. The best quarters of the city are affected, the lower portions being almost exempt. The authorities contend that cleanliness is of no effect in preventing the contagion, and local conditions seem to substantiate this. At present 85 cases are under observation.

Smallpox.—The spread of smallpox continues throughout most of the States. Up to the present time there have been reported 3,346 cases of this disease as compared with 805 cases reported during the same period of time in 1899. The increase is particularly notable in Alaska, Colorado, Indiana, Louisiana, Minnesota, Texas, North Carolina and Ohio. These last two States show a marked increase. In North Carolina, from May 1 to June 30, 440 cases were reported, as contrasted with 68 during the same period of 1899, while during the first 6 months of 1900 Ohio has reported 1,353 cases, contrasted with a total of 20 cases for 1899 during the corresponding months.—[Medical News.]

Obituary.—FERDINAND E. CHATARD, of Baltimore, Md., August 27, aged 61.—R. L. MAYFIELD, of Water Valley, Miss., August 28.—FRANK STEPHEN MILBURY, of Brooklyn, N. Y., August 29, aged 44.—ISAAC C. DETWEILER, of Reading, Pa., August 29, aged 70.—JOSIAH S. BOWEN, of Mount Washington, Md., August 29, aged 69.—WILLIAM R. AMICK, of Scipio, Ind., August 29, aged 50.—J. TRAVIS TAYLOR, of Richmond, Va., August 31, aged 26.—WILLIAM S. WARD, of Newark, N. J., September 1, aged 79.—J. A. GORE, of St. Joseph, Mo., August 30.—J. K. MCLEOD, of Moss Point, Miss., August 30, aged 60.—FREDERICK HENRY DUPELIER, of New Iberia, La., August 18, aged 67.—WILLIAM BOYCE, of Auburn, N. Y., August 17, aged 67.—A. W. GRIGGS, of West Point, Ga., August 16, aged 72.—CHARLES W. PARSONS, of Louisville, Ky., August 18, aged 68.—JAMES H. ROBBINS, of Hingham, Mass., August 22, aged 60.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended August 31, 1900:

SMALLPOX—UNITED STATES.			
		CASES.	DEATHS.
ALASKA:	Cape Nome . . . From beginning of outbreak to August 23 . . .	23	
COLORADO:	Denver Aug. 11-15 . . .	3	
"	Garfield Co. Aug. 4	1	
"	Las Animas Co. Aug. 7	1	
LOUISIANA:	New Orleans . . . Aug. 18-25 . . .	9	2
NEW YORK:	New York Aug. 18-25 . . .		1
OHIO:	Cleveland Aug. 18-25 . . .	4	
"	Dayton Aug. 18-25 . . .	1	
"	Portsmouth . . . Aug. 18-25 . . .	2	
SMALLPOX—FOREIGN.			
AUSTRIA:	Prague July 28-Aug. 1 . . .	8	
BELGIUM:	Antwerp July 28-Aug. 4 . . .	2	
EGYPT:	Cairo July 22-29 . . .	1	
ENGLAND:	London Aug. 4-11	5	
FRANCE:	Lyons July 26-Aug. 4 . . .		2
GERMANY:	Berlin Aug. 10	3	
GIBRALTAR:	Aug. 5-12	2	
INDIA:	Bombay July 21-31 . . .	2	
RUSSIA:	Moscow July 28-Aug. 4 . . .	2	2
"	Odessa July 28-Aug. 11 . . .	108	29
"	Warsaw July 28-Aug. 4 . . .		7

YELLOW FEVER.			
COLOMBIA:	Barranquilla . . . Aug. 5-12 . . .	1	
"	Panama Aug. 13-20 . . .	4	
COSTA RICA:	Port Limon . . . Aug. 22	1 on S. S. "Cunard," from Colon.	
CUBA:	Havana Aug. 4-11 . . .	18	
"	Matanzas Aug. 26	1	
FRANCE:	Havre Aug. 11	1 on S. S. "Caravallas," from Lorenzo Marques, via Senegal.	
	Aug. 13	Several cases on S. S. "Santa Fe," from Lorenzo Marques, via Senegal.	
MEXICO:	Madrid July 3	7	4
"	Tampico Aug. 16		1
CHOLERA.			
INDIA:	Bombay July 22-31 . . .	379	
"	Madras July 21-27 . . .	5	
PLAGUE.			
AUSTRALIA:	Sydney To July 28 . . .	302	102
INDIA:	Bombay July 24-31 . . .		45
SCOTLAND:	Aug. 31		11
TURKEY:	Smyrna From outbreak to Aug. 6 . . .	22	11

Changes in the Medical Corps of the U. S. Army for the week ended September 1, 1900:

McHENRY, G. A., acting assistant surgeon, now at Holguin, Cuba, will proceed to Santiago, Cuba, for duty at the yellow fever hospital.

COONEY, DANIEL C., acting assistant surgeon, will proceed to the headquarters of Second Artillery, Vedado, Havana, Cuba, and report to the commanding officer, artillery defenses of Havana, for duty at that place.

WHEATE, J. M., acting assistant surgeon, is relieved from duty at Santa Clara, Cuba, and will proceed to Rowell Barracks, Cuba, for duty.

ARTHUR, Major Wm. H., surgeon, will proceed on the army transport "Warren" for duty in China.

CALDWELL, ROBERT E., acting assistant surgeon, is assigned to duty on the transport "Rosecrans."

MAZZURI, PAUL, acting assistant surgeon, is granted leave for one month, with permission to go beyond the limits of the division of Cuba.

IVES, Major FRANCIS J., surgeon, will stand relieved from temporary duty in San Francisco, Cal., on the day of the sailing of the transport "Warren," and will on that day assume command of the hospital corps detachment ordered to sail on that ship, and proceed with the detachment to Nagasaki, Japan. Upon arrival at Nagasaki Major Ives will proceed with troops to China, reporting upon arrival to the commanding general U. S. forces, for instructions.

USHER, First Lieutenant FRANCIS M. C., assistant surgeon, is relieved from temporary duty at the Army general hospital, Presidio, and will report to the commanding officer, Third Battalion, Fifth Infantry, in camp at that station, for duty with that battalion.

LOWER, WILLIAM E., acting assistant surgeon, now at the Army general hospital, Presidio, is assigned to temporary duty with troops on the Army transport "Warren," to sail about August 16. Upon arrival at Taku, China, Surgeon Lower will report to the commanding general, U. S. forces in China, for assignment to duty.

POPE, Lieutenant-Colonel BENJAMIN F., deputy surgeon-general, is relieved from temporary duty in San Francisco, Cal., and will proceed to the Presidio for duty, to relieve Major Philip F. Harvey, surgeon.

HARVEY, Major PHILIP F., surgeon, will proceed to Nagasaki, Japan, on the Army transport "Sherman," to sail about August 20, to establish a base hospital at that place.

COMEGYS, Major EDWARD T., surgeon, will proceed on the Army transport "Sherman," to sail about August 20, to Nagasaki, Japan, for duty as medical supply officer at that place.

The following-named acting assistant surgeons, now at the stations designated, will proceed on the mail steamer "Gaelic," to Nagasaki, Japan, and, in event that there is no Army transport sailing at once from Nagasaki for Manila, P. I., the medical officers named will continue the voyage to Hong Kong, China, on the "Gaelic," and thence by mail steamer to Manila, where upon arrival they will report for assignment to duty: ALBERT W. DUMM, DAVID W. OVERTON, JAMES W. THORNTON, FREDERICK A. DALE, GRAHAM E. HEMSON, JAMES KENAN, LOUIS W. PEASE, HARPER PEDDICORD, THORNTON W. PERKINS, and FRANCIS M. WELLS, Army general hospital, Presidio; JOHN M. FEE-NEY, and JOSEPH PINQUARD, Presidio.

The following-named acting assistant surgeons, now at stations designated, are assigned to temporary duty with troops on the

Army transport "Sherman," to sail about August 20: GEO. B. WALLACE, LEWIS P. BLEASEBY, JAMES F. EDWARDS, JAMES F. KEMPF, W. TURNER WOOTON, LOUIS BRECHEMIN, Jr., WM. C. MABRY, ROBERT E. NOBLE, LUKE B. PECK, J. RALPH SHOOK, GEORGE WILKLOW, JOSEPH A. O'NEILL, LORIN B. OHLINGER, HARRY J. WATSON, and HOWARD H. BAILY, Army general hospital, Presidio.

MACDONALD, CHARLES E., acting assistant surgeon, Fort Yates, N. D., is granted leave for one month from September 15, provided he furnishes an acceptable substitute during his absence.

JOHNSON, DAVID J., acting assistant surgeon, is relieved from duty at Plattsburg Barracks, to take effect upon the arrival at that post of First Lieutenant William E. Richards, and will proceed to Fort Ontario for duty to relieve Acting Assistant Surgeon George M. Bradfield.

BRADFIELD, GEORGE M., acting assistant surgeon, will proceed to Philadelphia, Pa., and report by letter to the Surgeon-General of the Army for annulment of his contract.

SHELBY, WILLIAM D., acting assistant surgeon, will, upon the expiration of his present leave, proceed from Fort Thomas to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

DEWITT, Lieutenant-Colonel CALVIN, deputy surgeon-general, upon expiration of the leave granted him April 21, will proceed to St. Paul, Minn., and report to the commanding general, department of Dakota, for assignment to duty as chief surgeon of that department, to relieve Colonel Joseph P. Wright.

BRECHEMIN, Major LOUIS, surgeon, extension of leave on surgeon's certificate granted to him, is further extended 2 months on surgeon's certificate.

PURVIANCE, Captain WILLIAM E., assistant surgeon, is relieved from further duty at Fort Egbert, and will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

SHAW, Captain HENRY A., assistant surgeon, orders of August 21 are amended so as to direct him upon his relief from duty at the U. S. General Hospital, Presidio, to report to the commanding general, department of California, for transportation to Manila, P. I., where he will report to the commanding general, division of the Philippines, for assignment to duty.

SCHLAGETER, HERMAN J., acting assistant surgeon, is relieved from duty in the department of Alaska, and will proceed to Vancouver Barracks for temporary duty.

MARCH, ROBERT J., acting assistant surgeon, is relieved from duty in the department of Alaska, and will proceed to Portland, Oreg., and report by letter to the Surgeon-General of the Army for annulment of contract.

LITTLE, WILLIAM L., acting assistant surgeon, will proceed from Fort Clark to San Antonio, Tex., and report for assignment to duty with troops of the Twenty-fifth Infantry under orders for the division of the Philippines.

ASHBURN, JAMES K., acting assistant surgeon, will proceed from Batavia, Ohio, to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for the division of the Philippines.

WILLIAMS, ABRAHAM D., acting assistant surgeon, will proceed from Jacksonville, Fla., to San Juan, P. R., and report to the commanding general, department of Puerto Rico, for assignment to duty.

CURRY, JOSEPH J., acting assistant surgeon, is granted leave for 1 month on account of sickness.

WINN, Major WM. B., surgeon, the order of July 30 which directs him upon being relieved from further duty in the department of Western Cuba, to proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service, is so amended as to direct him to report to the commanding general, department of California, for transportation to Manila, P. I., to report to the commanding general, division of the Philippines, for assignment to duty.

FIELD, P. C., acting assistant surgeon, leave granted to him is extended 15 days.

SEAGER, HOWARD W., acting assistant surgeon, will proceed from Des Moines, Iowa, to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

POPE, Lieutenant-Colonel BENJAMIN F., deputy surgeon-general, now on temporary duty at the Presidio, is assigned to permanent station at that post.

HIGGINS, AUBREY F., acting assistant surgeon, is relieved from duty in the department of California, and will proceed to Philadelphia, Pa., and report by letter to the Surgeon-General of the Army for annulment of his contract.

CURRY, JOSEPH J., acting assistant surgeon, now at Zanesville, Ohio, will upon the expiration of his present sick leave, proceed to Hot Springs, Ark., and report to the commanding officer of the Army and Navy General Hospital for duty to relieve Acting Assistant Surgeon William F. Bernart.

BERNART, WILLIAM F., acting assistant surgeon, will report by letter to the Surgeon-General of the Army for annulment of his contract.

COWPER, HAROLD W., acting assistant surgeon, is relieved from duty in the department of Puerto Rico, and will proceed to Fort Ontario for duty to relieve Acting Assistant Surgeon George M. Bradfield.

BRADFIELD, GEORGE M., acting assistant surgeon, will proceed to Philadelphia, Pa., and report by letter to the Surgeon-General of the Army for annulment of his contract.

The following-named medical officers are detailed to represent the medical department of the Army at the meeting of the American Public Health Association, to be held at Indianapolis, Ind., October 1-5: Major CHARLES RICHARD, surgeon, and Major WILLIAM O. OWEN, surgeon. The officers named will proceed to Indianapolis, Ind., in time to reach there on or before October 1, and upon the adjournment of the Association will return to their proper stations.

Changes in the Medical Corps of the U. S. Navy, for the week ended September 1, 1900:

RIXEY, P. M., medical inspector, commissioned medical inspector from August 24.

SMITH, G. T., surgeon, commissioned surgeon from August 24.

McCORMICK, A. M. D., passed assistant surgeon, detached from the "Chicago," and ordered to the "Montgomery."

WHITING, J. R., assistant surgeon, detached from the "Montgomery," and ordered to the "Chicago."

PIGOTT, M. R., passed assistant surgeon, ordered to the Naval Academy immediately.

CRAWFORD, C. A., assistant surgeon, detached from the "Chesapeake," and ordered to the "Eagle."

SPRATLING, L. W., passed assistant surgeon, detached from the Naval Hospital, Yokohama, upon reporting of relief, and ordered to report to the commander-in-chief of the Asiatic Station for such duty as may be assigned.

BENTON, F. L., assistant surgeon, detached from the Naval Hospital, Cavite, P. I., and ordered to the Naval Hospital, Yokohama, Japan, for duty.

Changes in the U. S. Marine-Hospital Service for the week ended August 30, 1900:

McDOWELL, DR. ALEXANDER, of New York, has been appointed an acting assistant surgeon in the service for duty at Havana, Cuba. This appointment is made at the request of Passed Assistant Surgeon ARTHUR E. GLENNAN. Dr. McDowell has been connected with the service previously as an acting assistant surgeon.

CARRINGTON, P. M., surgeon, granted leave of absence for one month from September 4.

WILLIAMS, L. L., surgeon, to assume charge of purveying depot for 2 days.

VAUGHAN, G. T., surgeon, granted leave of absence for 15 days from September 1.

STIMPSON, W. G., passed assistant surgeon, granted leave of absence for 15 days from August 27.

EAGER, J. M., passed assistant surgeon, granted leave of absence for 4 months from November 30 (permission to go beyond sea).

THOMAS, J. M., passed assistant surgeon, to proceed to Glasgow, Scotland, for temporary duty.

CORPUT, G. M., assistant surgeon, granted leave of absence for 7 days.

THORNBURG, F. J., assistant surgeon, granted 3 days' extension of leave of absence.

FOSTER, J. P. C., acting assistant surgeon, granted leave of absence for 16 days from August 28.

STEVENSON, J. W., acting assistant surgeon, granted leave of absence for 21 days from September 3.

MORRIS, GEORGE A., hospital steward, to proceed to New York (Stapleton), and report to medical officer for duty and assignment to quarters.

WATTERS, MARK H., of Vermont, appointed junior hospital steward August 29.

Stump Pregnancy.—John C. Morfitt (*Journal Alumni Association, College of Physicians and Surgeons*, Baltimore, July, 1900) details a case of extrauterine pregnancy occurring in the portion of the tube, the stump remaining from an old operation for removal of ovary and tube on the right; operation was performed while the patient was in the state of collapse with all symptoms of a ruptured tubal pregnancy. Morfitt having removed the right ovary and tube concluded that the symptoms must be due to left-sided pregnancy and, as a preliminary step in the emergency operation removed the left ovary and tube. He then discovered in the stump of the tube formerly removed the existence of a placenta, identifying this as the seat of the pregnancy. From the appearance at the time of operation Morfitt concludes that the fertilizing ovum came from the left side, passed through the left tube and the uterine cavity up into the remains of the tube on the right side where it finally ruptured into the abdomen. He presents the case as evidence that ectopic pregnancy is not necessarily due to mechanical or inflammatory hindrance to the normal downward passage of the fertilizing ovum. [M.B.T.]

foreign News and Notes.

GREAT BRITAIN.

The University of St. Andrews has received a gift of £20,000 from the Marquis of Bute to establish a chair of anatomy.

The Union Hospital, Belfast.—The late report of the Union Hospital, Belfast, shows that the admissions there during the last 3 years have been larger than in any other hospital in the United Kingdom during the same period.

Drug Adulteration.—A Birmingham chemist has been fined £10 and costs for selling milk of sulphur adulterated with 49% of sulfate of lime, £5 and costs for selling camphorated oil which contained 25% of mineral oil instead of olive oil and 10% instead of 20% of camphor.

A Handsome Hospital Gift.—Mr. John Corbett, of Droitwich, has given a further sum of £10,000 to the Corbett Hospital at Stourbridge, thus making his benefactions to that institution over £25,000. This is irrespectively of the value of the house he is erecting in the hospital grounds—a handsome building intended for the dwelling of a medical officer.

Ireland Threatened with Famine.—Ireland is threatened with another famine this winter, due to the failure of the corn and potato crops. Tourists say that the outlook for the natives of the Green Isle this winter is becoming as serious as that of the famine years of 1846-47, when nearly 2,000,000 of people died as the result of the blight of the potato crop.

London Mission Hospital, Chung-King.—A medical branch of the London Missionary Society was started in Chung-King in West China on the Yangtse river in 1892, Chinese buildings being utilized for the purpose. A new building of 3 stories to accommodate 80 patients was opened on December 23, 1899, by Mr. F. A. Fraser, the British consul, including the consuls of France and the United States, Chinese officials, both civil and military, and many others.

David Lewis Northern Hospital.—The completed portion of the David Lewis Northern Hospital at Liverpool was opened on July 30 for the reception of patients without any formality. All the patients have been removed from the old building into the new quarters, which are in every way well adapted to their purpose. There are 150 beds in the portion of the hospital just opened and it affords far greater facilities for the treatment of the sick than were experienced under the former régime.

London School of Medicine for Women.—The rebuilding of the Medical School for Women, in London, is now almost completed. The number of students is about 200, and a very large proportion among them take up the course for the degree of the University of London. The school is unusually rich in scholarships, some of them being of considerable value, though the best of them appear to be reserved for students who are willing to combine missionary work with medical practice.

Plague in Glasgow.—There are 13 cases of plague at present; 3 doubtful cases, and 103 under observation. The disease has spread to Govan, a suburb of Glasgow, where a recent death is reported. A report is current that 2 cases of plague have been discovered near London docks, but the medical officer, when questioned, said he knew nothing about the matter. The Austro-Hungarian Government has ordered a medical examination of all ships arriving from English ports. The presence of plague at Glasgow is commented upon indignantly in Berlin as going to show criminal negligence on the part of British authorities.

Inebriate Homes.—The report of the first year's experience at the Bentry Homes near Bristol has just been issued. The board of management are hopeful of success. They call attention to the difficulties met with owing to the violent character of some of the persons committed to the homes and appeal for them not to be sent. The subject was brought before the Birmingham Justices, August 13, when it

was stated that in the absence of any state reformatory it was not possible to send these cases elsewhere. An opinion was expressed that the violent drunkard might be sent to prison, but it was shown that a short term of imprisonment had no curative effect upon the habitual drunkard.

Consanguineous Marriages and Tuberculosis.—Dr. C. A. Davies, of the Isle of Man, read an important paper on the above subject at the recent meeting of the British Medical Association. Consanguinity in marriage among the Manx people had led, he said, to much illness in the offspring. There has been but little crossing of races among them since the twelfth century, and a custom exists on the island today of discouraging marriages between persons living even in different parishes. Hence there exists all over the island a condition of close "inbreeding." As a consequence the general death-rate from consumption is 25.70 per 10,000, double that of England and Wales. In Lonan the rate is 41.77 per 10,000, while in Peel, where many more strangers come, it is only 15.19.

Marston Green Homes.—These homes were established about 21 years ago by the guardians of the parish of Birmingham in the hope of raising to good citizenship those who had sunk by no fault of their own. They had the merit of being the first homes of the kind established in the kingdom. About an average of 300 children are in residence, with from 20 to 30 boys or girls in each cottage. For the boys a foster father and mother are provided, and for the girls a foster mother. The training is conducted by experienced masters and mistresses and the work is carried out with much zeal and interest. The good result of the management is shown by the fact that there has been only one death, and that there are at present only 6 patients among some 400 children who have gone through the homes during the past year.—[*Lancet*.]

CONTINENTAL EUROPE.

The New German Pharmacopeia.—The fourth, revised, edition of the German Pharmacopeia has just been published. It contains 628 articles, of which 26 are new, while 10 articles, official in the third edition, have been dropped in this.

The Moscow Society of Physiologists has undertaken to issue a journal entitled *Le Physiologiste Russe* which is intended to make the work of members of the society in physiology, physiological chemistry, histology, embryology, general pathology, and pharmacology known to that large section of the scientific world to which Russian is an unknown tongue. Original papers will be published in French or German; and summaries of all Russian work appearing elsewhere will be given in French. The first volume has already been issued.

Typhoid in Paris.—Statistics show that typhoid fever prevails in almost an epidemic form in Paris. There were recorded, from the beginning of the year to August 13, 3,148 cases of this disease, of which 568 resulted fatally. This is a considerable increase over the records of previous years. One of the sources from which Paris is furnished with water is known to be infected with the typhoid bacillus, though the water from all the others is pure. The authorities are compelled to utilize the contaminated source, because the others are inadequate. These statistics may spur the responsible authorities into seeking fresh sources. Parisians are recommended to boil the water they use, or to drink only mineral waters.

Free Clinics and Lectures in Paris.—According to the *Medical Age*, a system whereby all French and foreign physicians may hold clinics, lectures, and scientific demonstrations without cost to themselves has been established at the International Hospital, Paris. The idea which has led to the establishment of this services of conferences is that, owing to the great number of international congresses held in Paris, the attendance of medical men is always large. Many of these have demonstrations to make, for which there is little or no time in the section meetings, and it is for the accommodation of such that the extra service has been organized.

MISCELLANY.

India's Famine.—The Viceroy of India cables that the total number of persons receiving relief is 4,891,000.

Danger of Famine in Tientsin.—Refugees are said to be going to Tientsin, China, at the rate of 1,000 a day. As there is not more than a month's food-supply in the city there is every prospect of a famine shortly.

Quarantine Against Glasgow.—Denmark has declared a quarantine against vessels arriving at Danish ports from Glasgow. The port authorities of Southampton, Liverpool, and elsewhere have already started a special inspection of vessels from the Clyde.

Obituary.—THOMAS HOWDEN, at Maitlandfield, Haddington, August 7.—FRANCIS ALEXANDER MACPHERSON, at Liverpool, August 12, aged 50.—PIERCE ADOLPHUS SIMPSON, of Glasgow, August 15, aged 63.—F. MICHL, of Prague, aged 50.—JOHANN KJELDAHL, of Alt-Karlsberg.—DR. FALCONI, of the Cagliari Medical School.

Medical Congress in Poland.—The universal movement in favor of medical congresses has reached Poland, where a very successful meeting was recently held. The opening address was delivered by Professor Kostanecki, of Cracow, who chose as his theme the universality of medical science. The two principal points discussed by him were the means of combating tuberculosis and alcoholism. The scientific work of the Congress was divided among 24 sections.

Some Old People.—According to the *Indian Medical Record*, more people over 100 years old are found in mild climates than in the higher latitudes. According to the last German census, in a population of 55,000,000, only 78 have passed the hundredth year. France, with a population of 40,000,000, has 213 centenarians. In England there are 146; in Ireland, 578; in Scotland, 46; in Sweden, 10; in Norway, 23; in Belgium, 5; in Denmark, 2, and in Switzerland none; Spain, with a population of 18,000,000, has 401 persons over 100 years of age. Of the 2,250,000 inhabitants of Servia, 575 have passed the century mark. It is said that the oldest person living is Bruno Cotrim, born in Africa, and now living in Rio de Janeiro. He is 150 years old. A coachman in Moscow has lived for 140 years.—[*Medical Age*.]

The Australian Natives Association.—In all the Australian colonies an association exists called the Australian Natives Association, membership of which is restricted to native-born Australians. Its main object is to forward the interests of the native-born and "mutually improve the minds of members by discussing subjects connected with the common weal." In New South Wales the association confined itself to this object, but in Victoria and South Australia the association is registered under the Friendly Societies Act as a benefit society, affording medical attendance, medicine, sick pay, etc., to members. In Victoria the association has flourished, having 17,500 members and assets of about £100,000. In Victoria the A.N.A., as it is called, is the most objectionable of all friendly societies from the point of view of the medical officers. It gives the least remuneration to its lodge surgeons and it admits the largest proportion of well-to-do members who join on the plea that they do not want the medical benefits but are joining a political organization. Once members, however, they always take the fullest advantage of their privileges and are the most exacting of lodge patients.

A Tax for the Tuberculous.—Dr. Phicque has proposed the establishment of an additional tax upon alcohol, of which the profits should be applied to the expenses of the fight against tuberculosis. An additional penny to the present tax of 156 francs per hectoliter would bring in 25,000,000 francs per annum. The French duties are at present much lower than the American, 245 francs; the Dutch, 252 francs; and above all the British, 477 francs per hectoliter. The creation of this duty upon alcohol would be perfectly justifiable, for alcoholism is the principal cause of pulmonary phthisis. With the duty sanatoriums could be built and all the expenses of disinfection could be defrayed.—[*Lancet*.]

The Latest Literature.

British Medical Journal.

August 18, 1900. [No. 2068.]

1. Rate-Supported Sanatoriums for Consumptives. NATHAN RAW.
2. Can Modern Systems of Sewage Treatment be Depended upon to Remove the *Bacillus Typhosus* and Allied Organisms? A. C. HOUSTON, J. C. THRESH, J. GROVES, ALDERMAN WARD, A. S. GRÜNBAUM, and H. COOPER-PATTIN.
3. The Action which can be taken by Local Authorities for the Prevention of Tuberculous Disease, apart from the Control of Milk and Meat Supplies. HENRY KENWOOD, ALFRED HILL, T. F. S. CAVERHILL, JOSIAH OLDFIELD, E. BARNARD FULLER, FRANCIS J. J. ALLAN, HERBERT PECK, HERBERT JONES, JOHN W. COOK, and CHARLES R. DRYSDALE.
4. Rural Phthisis and the Insignificance of Case-to-Case Infection. H. R. BEEVOR.
5. The Provision of Cottages in Rural Districts, and its Bearings upon Public Health. J. S. TEW, JOSEPH GROVES, HERBERT PECK, H. R. BEEVOR, DONALD G. SUTHERLAND, JOHN HADDON, and HERBERT JONES.
6. Diet in Relation to Cancer. JOSIAH OLDFIELD.
7. Cancer Mortality in East Essex. GEORGE MELMOTH SCOTT.
8. "Should Municipalities Provide Common Lodging-Houses and Workmen's Dwellings?" H. COOPER-PATTIN, ALFRED HILL, EDWARD R. P. MANBY, WALTER SMITH, JAMES SCOTT TEW, and JOHN THRESH.
9. Food Preservatives and Coloring Matters in Food. A. S. GRÜNBAUM.
10. The Hygienic Aspect of the Use of Water Gas. JAMES C. MCWALTER.
11. On the Presence of Members of the Diphtheria Group of Bacilli other than the *Klebs-Löffler Bacillus* in Milk. J. W. H. EYRE.
12. The Supply of Sterilized Humanized Milk for the Use of Infants in St. Helen's. F. DREW HARRIS.
13. The Housing of the Working Classes. WILLIAM BERRY.

1.—The danger of one consumptive in a household infecting his fellows by his sputum is great. As a general rule, the unfortunate member or members of a family who are attacked are young and naturally command a great deal of sympathy. They are looked upon as hopelessly stricken, and consequently are nursed and pampered, to their great detriment. Carefully located in the best room of the house, the fresh air religiously excluded, the windows sealed up, the air impure and overheated, the patient is loaded with woollen clothing and his bed with eiderdowns, he is provided with the very best conditions for his destroyers to flourish. Tubercle bacilli enjoy this treatment, and under these circumstances their work is rapid. The only cure known at present for pulmonary tuberculosis is fresh air and sunlight in a proper sanatorium. The erection of large numbers of sanatoriums throughout the country will do more to solve the difficult problem of how to reduce the mortality from pulmonary tuberculosis and to prevent its spread than anything else. Raw expresses the hope that the day is not far distant when every town and district will have a well-equipped sanatorium in its midst for the treatment of consumption. [J.M.S.]

2.—In nearly all cases, the size of the particles in bacterial filter-beds is such as to preclude the possibility of the mere mechanical separation of the germs. Therefore it may be stated in general terms and with comparative safety that the mechanic separation of the microorganisms in sewage by the use of such bacterial beds is virtually impossible. Whatever chemic and bacteriologic changes may have taken place in the sewers, the sewage is still nearly as dangerous from the epidemiologic point of view when it reaches the filter as it was when it left its objectionable source. If one desires to form any concept of the probable fate of the typhoid bacillus and other pathogenic germs during the biologic process at work in bacterial beds it is necessary to see how other microorganisms, more easily recognized and identified, fare in the strug-

gle for existence. Houston chose *Bacillus coli communis* and *Bacillus enteriditis sporogenes* for the purpose of studying the action of these beds on microorganisms in general. Cultures were made from the sewage as it reaches the bacterial beds and from the effluent as it left the beds after the filtering process was completed. The studies showed that the biologic processes at work in the bacterial beds did not effect any constant or striking reduction in the number of either of the organisms. It may, therefore, be considered as proved that some **pathogenic microorganisms pass through the filters in undiminished numbers**, and until positive evidence to the contrary is forthcoming, it would be wise to regard **the effluents from bacterial beds as no more safe in their possible relation to disease than crude sewage**. It is further possible that a bacterial filter may act as a storehouse for pathogenic germs. Certain animal experiments have shown that the tetanus bacillus and the tubercle bacillus retain their virulent properties in the filter-bed. In the discussion that followed the reading of the paper, Dr. J. C. Thresh said that so much stress was being laid upon the improvement of sewage from the chemic point of view that there was a possibility of forgetting that the real danger from sewage arises from the nature of the microorganisms present in it. Dr. A. S. Grünbaum said that he thought that by further examinations with Dr. MacConkey's bile-salt medium it might be possible with comparative ease to isolate *Bacillus typhosus* and that in all probability it will be found to **pass through the bacterial beds**. Dr. H. Cooper Pattin asked what should be done with the effluents as they leave the filter-beds. Should they be passed over land or over sand beds similar to those used for the purification of water? Dr. Houston said that filtration of the effluent through land of the character mentioned would very materially lessen the danger of such effluent getting into rivers. [J.M.S.]

3.—Kenwood opened the discussion on **the action which can be taken by local authorities for the prevention of tuberculous disease, apart from the control of milk and meat supplies**, at the section of State Medicine of the British Medical Association. In the first place we all recognize that none of the efforts must be relaxed in the direction of removing those conditions of site, dwelling, occupation, and food, that promote the prevalence of the disease, since the work of sanitary authorities in that direction has reduced such prevalence some 40% among males and 54% among females. We must more especially direct our energies toward enforcing the provisions of sanitary law (1) for the prevention of overcrowding, (2) for securing healthy homes for the lower classes, and (3) for an improved general scavenging. The education of the public as to the circumstances favoring the individual susceptibility to the disease and the conveyance of its infection from the sick to the healthy is essential to any action tending to further reduce the incidence of the disease. Arrangements may be made with the registrar of deaths to advise the medical officer of health of all deaths from phthisis as soon as possible after registration, when the house can be visited, an offer made to disinfect, and a handbill of advice left. The employment of consumptives in the cooking or selling of food should be prohibited as far as possible; and in any case where consumptives must work along with healthy people the superintendent of the works should make the rule with reference to expectoration an absolute condition on all workers. The provision of some measure of hospital isolation is an essential part of an effective scheme to deal with the disease; and what is particularly needed is an isolation home or hospital for each district, and where the medical officer of health and the medical attendant are both able to certify the isolation of the patient is the only measure by which others can be protected. Power should be given and means provided to secure such isolation. The measures already indicated do not reach that desirable standard so far as the masses who occupy lodging houses, poor class tenements, work-rooms, etc., are concerned. It is necessary to know where the infected homes are, and this information can be obtained by **notification** only. We have, moreover, to bear in mind that a large proportion of the community is by nature indifferent and careless and with these knowledge is rarely acted upon. On this account power is required to enforce certain precautions in homes where the occupants cannot or will not adopt the necessary precaution-

ary measures. In Manchester the following method is in use: Handbills of information and advice are freely distributed as opportunity presents itself. Placards dealing with expectoration are affixed as often as possible in work-rooms and public places. All premises in which a death from phthisis has occurred are visited, advice is tendered, and an offer is made to disinfect. Voluntary notification is in force, for which a small fee is paid to the one making the return. On receipt of the notification a visit is paid to the premises by a medical officer specially appointed and exclusively engaged in this work. The expenditure of about £300 per annum would suffice to operate such a system in a town of 100,000. In the discussion that followed, Dr. E. Barnard Fuller said that in Cape Town they were presented with a problem that did not affect any community in England to the same extent. He referred to the fact that every week large numbers of fresh cases of phthisis seeking health in South Africa arrive in the city. It becomes a question as to whether some restriction should not be put upon this wholesale intake into the city of these vast quantities of virulent cultures of tubercle bacilli which constantly reinfect the place. At present no restriction is put upon this influx, but the time will come when some regulations must be insisted upon in order to ascertain where these infected units go, so that their power for harm to the community at large may be at least modified. [J.M.S.]

4.—In studying the death-rate of rural communities since 1861, Beever concludes that the **insignificance of case to case infection of pulmonary tuberculosis is evident**. [J.M.S.]

5.—Tew opened the discussion on **the provision of cottages in rural districts, and its bearing upon the public health**, at the section of State Medicine of the British Medical Association. The bad influence that unsanitary and overcrowded cottages have upon the public health can hardly be overestimated. The foremost evil is the lowering of the individual stamina of those living under bad conditions, rendering them liable to be an easy prey to any general disease to which they have any susceptibility, reducing the working capacity, and inducing premature old age. Next to this come those two most formidable diseases of infant life, whooping-cough, and measles. The cases of phthisis and other diseases nursed at home can only be expected to have the worst chances of recovery, cooped up as they are in rooms often giving less than the cubic space insisted upon in a common lodging house. [J.M.S.]

7.—Figures tend to show that there has been some actual increase in the number of deaths due to carcinoma in the past 30 years, but Scott's impression is that the increase has been much more marked in the professional skill of the medical men certifying. Havilland's theory postulates (1) that in the countries having a high mortality from carcinoma we find that the tributaries of the large rivers rise from soft marshes or easily disintegrated rocks, and these fall into sheltered valleys through which the main rivers flow; (2) these rivers invariably flood their adjacent districts during the rainy season and generally have their waters colored by the suspended alluvial matters; (3) that the districts "characterized by the tertiary and more recent clays and other retentive soils" have a very high mortality from carcinoma. After studying the **mortality from carcinoma in East Essex**, Scott concludes that we must look for the causes of carcinoma in some other direction than in an alluvial and clayey soil subject to floods, for (1) the disease is less common within the county of Essex, with its clay soil and numerous estuaries, than it is in England as a whole; (2) although two of the unions of this county contain an excessive proportion of marshy land and estuary, yet their death-rate is below that of the county; (3) those parts of the two unions that include the greatest extent of muddy foreshore, creek, and saltings have a mortality below that of the two unions taken together; and (4) the disease is not especially prevalent in those places that are situated on the banks of the fresh water rivers. [J.M.S.]

8.—Pattin thinks that with very definite limitations **municipalities should provide common lodging houses and workmen's dwellings**. It is desirable, wise, and prudent for a municipality to say: "We will not, out of regard alike for the healthiness of our city and for the welfare of common humanity, suffer any person to be lodged in a common lodging house within our boundaries below a

certain minimum standard of healthiness and comfort; and, to insure this, we will provide such minimum ourselves and leave it to private enterprise to attract custom by offering a higher standard of comfort, etc., for the same money, and for those who desire, and who can pay for it, a higher sum of money." [J.M.S.]

9.—Grünbaum believes that as regards **coloring matters in food** the public is chiefly to blame, but it could soon be educated to a sanitary level. If brightly-colored foods could nowhere be obtained, the public would buy the other. As regards **preservatives in milk, cream, etc.**, the blame seems to rest chiefly with the railway companies and with the ice-vendors. Ice is used far too little in England, principally on account of its exorbitantly high price. The cow-keeper would probably use a refrigerator if ice could be obtained at a reasonable price. The railway companies, however, are the chief offenders. They do not supply refrigerator vans; they require milk cans to be sent open, unless they are full, in spite of the obvious risk of contamination; the rates are too high; and their servants are too careless. These latter seem almost to take a malicious pleasure in putting milk cans in the sun. It would appear, therefore, that we may do some injustice by legislating too hardly for the purveyors of our perishable foods, unless at the same time we require rational treatment of the same from their carriers. [J.M.S.]

10.—The increasing use of **water-gas** by many companies is a source of distinct danger to the consumers. The dangers are very considerable for more than one reason. The leaking of the mains, the leakages from the house-fittings, and the occasional omission to turn off the taps, are sources of great danger. McWalter suggested that carbon monoxid together with other gases might leak through the leaden and composite pipes by osmosis. He suggested that the former gas might get through at a greater rate than the other constituents. [J.M.S.]

11.—As a result of his studies during the past year, Eyre has obtained from **5 specimens of milk, organisms that microscopically appeared to be the typical diphtheria-bacilli**. None of them, however, was capable of initiating lesions in the guineapig resembling those produced by the Klebs-Löffler bacillus. The interest of these observations lies in the fact that it would be quite easy to be deceived by the microscopic appearances of any one of these organisms, and it is imperatively necessary to make biologic and inoculation experiments in order to confirm or to disprove a diagnosis founded upon a morphologic resemblance, no matter how striking. The studies seem to show (1) that several groups of bacilli, exhibiting segmentation, metachromatism and clubbed involution forms, are occasionally present in retail milk; (2) that the bacilli of these groups agree in resembling the bacillus diphtheria to some extent, but are capable of being differentiated from it, and also from each other; (3) that these bacilli arrange themselves, according to their color-production, into three well-defined groups, which are characterized by the coloration of the colonies themselves, yellow and white respectively, in groups 1 and 3, without the nutrient medium being affected, and by the infiltration of the medium by a pinkish color in group 2, the colonies themselves being only slightly chromogenic; (4) that the members of these three groups are nonpathogenic; (5) that the identity of the Klebs-Löffler bacillus can only be established by careful consideration of its biologic and pathogenic characters. [J.M.S.]

12.—During the past 5 years in **St. Helen's**, of the children under 6 months old who have died from diarrhea, 81% were bottlefed. This mortality led Harris to arrange for the supply of **sterilized humanized milk for the use of the infants** of the locality. When the milk arrives at the sterilizing house it is tested to ascertain, roughly, its percentage of cream. It is then diluted by $\frac{1}{3}$ its bulk to reduce the proteids to the proportion usually found in human milk. Cream and sugar are then added to the extent of 2 ounces of each to the gallon of mixture, and a small amount of salt is also added. The milk is then placed in stoppered bottles and sterilized. As soon as sterilization is complete the bottles are put in baskets that hold nine each, each basket representing the necessary amount of food for the child for one day, that is 6 feedings for the day and 3 for the night. Each bottle contains the quantity proper for one feeding adjusted for the age of the child. The baskets are given out to the

mothers, who come for the food, instructions are also given, and data taken for future reference. Two nipples are supplied which must be returned at intervals to be inspected in order to guard against dirt. On Wednesday afternoons the mothers are requested to bring their babies to be weighed. As a result of this system, of the 24 deaths that occurred among 232 children since August, 1899, only 4 were from diarrhea. The cost of installation of this system was £235 2s. 5d. The current expenditure has been £264 11s. 1d. [J.M.S.]

13.—Berry believes that sooner or later municipal and local bodies will be required to deal with the question of the **housing of the working classes**. Private enterprise will not touch it and philanthropy will fall short. The carrying out of the scheme presents many obstacles, but these should not be insurmountable. Overcrowding can be dealt with in this way and where there is an insufficiency of dwellings for the population and private enterprise fails to supply the demand, the local authority ought to step in. It has been stated that 900,000 people live in an overcrowded condition in London and this forms nearly one-fifth of the population. The medical officers of health should carry out the provisions of the Act that has already been passed, taking the worst and most insanitary property first. [J.M.S.]

Lancet.

August 18, 1900. [No. 4016.]

1. Professional Organizations. W. G. DICKINSON.
2. Report on the Physiological and Therapeutic Action of Digitalis and its Active Principles. SIR T. LAUDER BRUNTON.
3. The Danger to the Community of the Workmen's Compensation Act, 1897. ALBERT BENTHALL.
4. Measles, German Measles, and the "Fourth Disease." ROBERT CRAIG.
5. Preliminary Rashes in Measles. J. H. THURSFIELD.
6. The Hot-Air Treatment of Eczematous, Gouty, Rheumatic, and Other Affections. DAVID WALSH.
7. Some Remarks on Cancer of the Breast. SKENE KEITH.
8. Note on an Unusual Case of Scarlet Fever. A. J. RICE OXLEY.
9. Note on a Case of Strychnin Poisoning. THOMAS LETTIS.
10. A Case of Dislocation of the Shoulder-Joint produced by Muscular Action Alone. J. GRIMMOND SMITH.
11. A Case of Intussusception in an Infant 10 Months Old; Laparotomy; Rapid Recovery. HARRY LUPTON.
12. A Case of Transperitoneal Ligature of the Left Common Iliac Artery for Hemorrhage Following Exploratory Incision of a Sarcoma of the Innominate Bone. H. ALEXIS THOMSON.

2.—Some of the discrepancies in the opinions of different authors as to the **physiologic and therapeutic action of digitalis** have arisen from the consideration of its action upon frogs and mammals to be exactly alike. The action of digitalis on the heart of the frog is chiefly due to the effect of the drug on the cardiac muscle. In mammals, on the other hand, the effect of the drug is not only due to its influence on the cardiac muscle, but also to its stimulating effect upon the inhibitory center in the medulla oblongata, and to the indirect action of the drug through the rise of bloodpressure that it produces, which is known to be a stimulant to the inhibitory center. Brunton believes that the contraction of the bloodvessels produced in mammals by digitalis is very well marked, and that it depends partly upon the peripheral action on the muscular wall of the vessels and partly upon the stimulation of the vasomotor center in the medulla oblongata. The diuresis that digitalis produces is probably due to increased bloodpressure within the glomeruli of the kidneys. According to Schmiedeberg, the chief components of digitalis are digitoxin, digitalin, digitalein, digitonin, and digitin. Digitin and digitonin have little, if any, physiologic action, while the action of the other substances is nearly alike in kind, but different in degree. Many of the discordant results obtained by observers may be traced to the variety of the preparation used, since even when one preparation has the same name as another preparation the action may be different on account of the lack of standard methods of manufacture. The **therapeutic**

action of digitalis or of its active principles is as follows: (1) It regulates the heart's action; (2) it assists the failing circulation; and (3) it acts as a diuretic. In cases of palpitation and functional irregularities of rhythm without organic disease, small doses of digitalis are sometimes very useful. The good effects of the drug are well marked in cases of palpitation that have come on from physical strain, or from anxiety or worry. In cases of aortic regurgitation, where compensation is complete, digitalis is quite unnecessary. It is of the utmost service, on the other hand, when the mitral valves become incompetent either in consequence of damage to the valves themselves or in consequence of dilation of the cardiac orifices. It may be of service before the period of complete dilation by lessening the ventricular dilation during diastole and thus diminishing the amount of blood that can regurgitate into the ventricle. At the same time, by contracting the arterioles, it lessens the onward flow and thus in a twofold manner retains the blood in the aorta during diastole, and renders pressure more steady. To get the best results the use of the drug should be accompanied by rest in bed and by massage. In cases of fatty heart and very high tension, digitalis is dangerous. When we find that the heartbeats are feeble and that its sounds are weak disproportionately to the size of the organ we will do well to be on our guard against possible injury from digitalis. If the drug causes contraction of the arterioles as well as of the heart and the latter organ has muscle-fibers in its walls that have undergone fatty degeneration, while the former organs have normal muscle-fibers in their walls, the resistance to the cardiac contractions will be increased and a heart that is already hardly able to carry on the circulation may be still farther hampered by the drug. In such cases if we wish to stimulate the heart by the use of digitalis we ought to lessen the resistance in the arterioles by the simultaneous administration of the nitrites. The same precaution should be adopted when the arterial tension is high and the heart is just beginning to fail. [J.M.S.]

4.—Craig reports the cases of 4 children who had rashes resembling those of scarlet fever, but which he considers not to be scarlet fever. The opinion is based on the absence of sore throat, strawberry tongue, and the atypic desquamation, in one of the cases; and the absence of strawberry tongue, the mild fever, and the absence of desquamation in the other 3 cases. Three of the cases were considered to be instances of **German measles**. [J.M.S.]

5.—A boy in the preeruptive stage of **measles** was admitted to a ward in which there were 19 other patients. Seven of these contracted the disease and of these 5 had well-marked **preliminary rashes**. In 2 cases the eruption was composed of fine papules, 2 were scarlatiniform, and 1 was a blotchy eruption mixed with papules. With the exception of the rise in temperature, the rash was the first manifestation of the disease in 4 of the patients. Koplik's spots were looked for and not found. One of the patients had convulsions before the appearance of the preliminary rash. [J.M.S.]

6.—Walsh has found that **treatment by superheated dry air** is beneficial in (1) nervous affections, such as sciatica, lumbago, writer's cramp, chorea, and local atrophy; (2) painful and stiffened joints and gonorrheal rheumatism; (3) anemia, Bright's disease, asthma, chronic bronchitis, dropsy, dysmenorrhea, and some forms of heart disease; (4) eczematous and other skin troubles; and (5) gout, rheumatism, and osteoarthritis. Four case histories are given. [J.M.S.]

7.—Keith believes that there are 3 questions with regard to **carcinoma** which are of general interest: Whether it is increasing, is it hereditary, and is it curable by operation? The first 2 questions he believes cannot be answered at the present time, but the third he answers in the affirmative. However, he considers 3 years too short a space of time to determine whether a cure is permanent. He cites several cases which have come under his observation. He considers Halsted's operation too extensive for weak subjects. The removal of the breast and axillary glands is not accompanied by any serious risk to life. The removal of the superficial fat of the breast he considers more necessary than the removal of the pectoral muscles as the lymphatics pass freely into the superficial fat, and he believes that the improved results from the modern extensive operations are due to this free removal of fat, more than to the removal of muscles. [M.B.T.]

8.—Oxley reports the case of a boy who was suffering from **scarlet fever**. The patient did well; desquamation began

on the sixth day, and on the tenth day he was allowed to sit up. Two days later the cervical glands became enlarged and tender, and 5 days after that fever appeared which was followed by effusion into the right knee joint and later by subcutaneous extravasation of blood which extended from the nipple to the knee on the left side of the body, and was accompanied by smaller extravasations on the left arm at the insertion of the deltoid muscle; on the back, from the nates to the lower thoracic region; and on the right side from 2 inches above the popliteal space to the crest of the ilium. The urine contained a slight amount of albumin but no blood. [J.M.S.]

9.—Potts was called to see a woman suffering from **tetanic convulsions due to the ingestion of strychnin**. He passed a stomach tube and washed the stomach with mustard and warm water and with plain warm water and the convulsions ceased gradually. Potassium bromid was then administered and at 4 o'clock in the afternoon, about 7 hours after the beginning of the trouble, the patient was able to walk about her room. Twitching continued for 24 hours, but with that exception, recovery was uninterrupted. The symptoms were produced by an overdose of *strychnos ignatii*. [J.M.S.]

10.—Smith reports the case of an inmate of an asylum, 46 years of age, who, during an attack of excitement, produced a **subcoracoid dislocation of the shoulder** by muscular action alone. [M.B.T.]

11.—A male infant was admitted to the hospital with symptoms of **intussusception**. An attempt to reduce this was made by administering high enemas without result. **Celiotomy** was performed and the ileum was found invaginated at the cecum, and extending into the descending colon. It was firmly held, but was reduced by pressure on the colon behind with gentle traction. Uneventful **recovery** followed. [M.B.T.]

New York Medical Journal.

September 1, 1900. [Vol. lxxii, No. 9.]

1. Fibroid Tumors of the Uterus Complicating Pregnancy. LEWIS S. MCMURTRY.
2. Atrophic Rhinitis. JAMES E. LOGAN.
3. Report of a Case of Nephrectomy for Ascending Tuberculosis, with Some Remarks on Cystoscopy and Catheterization of the Ureters in Women. HIRAM N. VINEBERG.
4. A Case of Acute Glaucoma with Subhyaloid Hemorrhage Supervening upon Unilateral Retinitis Albuminurica. DAVID WEBSTER and EDGAR S. THOMPSON.
5. The Treatment of Tuberculous and Purulent Joints with Large-Glass-Speculum Drainage and Pure Carbolic Acid, with a Report of Seventy Cases. A. M. PHELPS.

1.—**Fibroid tumors of the uterus**, according to McMurtry, when associated with pregnancy, have a much more rapid growth corresponding to the rapid growth of the uterus itself under the stimulus of an increased blood-supply. The bulk of the tumor alone, or an induced peritonitis may necessitate operation; also the presence of the tumor may predispose to vicious insertion of the placenta and to malpresentation of the fetus; or degenerative changes may weaken the uterine wall and lead to rupture; or the tumor by interfering with contraction of the uterus may cause postpartum hemorrhage. The dangers arising from fibroid tumors during pregnancy depend largely upon their position. Quite large tumors located at the fundus may be carried upward with ease and offer no obstacle to delivery, after which they recede with the general atrophic changes in the uterine tissues and sometimes so diminish in size as scarcely to be detected a few weeks after parturition. When the tumor grows from the lower and posterior part of the uterus and has fallen into the Douglas pouch, as it increases in size it will occupy the pelvic basin and absolutely block the pelvic outlet; such a condition requires immediate operation. [W.K.]

2.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1004.

3.—Vineberg reports a case of **nephrectomy for ascending tuberculosis**. The patient, aged 47, came under his care after she had been suffering 6 years with painful and frequent micturition. A cystoscopic examination showed an area of redness studded with papules in the left side of

the bladder. Under topical treatment, her condition improved for a time, the papules disappeared but only to reappear higher up in the bladder, until they reached the left ureteral orifice, which ceased to emit jets of urine. A **catheterization of the right ureter** showed the right kidney normal and healthy, but indications all pointed to tuberculosis of the left kidney. The patient at length consented to surgical interference, and the left kidney was removed. The cavities of the excised kidney contained pus and caseous products, the pus having tubercle-bacilli in abundance. After the operation, the condition of the patient rapidly increased, and a year later she had gained 40 pounds, and is now enjoying good health. Vineberg thinks that chronic tuberculosis of the kidney is not an uncommon disease in women, but fortunately, as a rule, it is unilateral, which makes the prognosis of surgical interference very favorable. In this connection, he testifies to the great value of examination by cystoscope in detecting cystitis, and considers the Kelly cystoscope far superior to that of Casper; it is better adapted to aid in diagnosis of the real condition of the bladder; and while the usefulness of the Casper instrument ends here, Kelly's affords us one of the greatest aids in bladder therapeutics by permitting direct applications, with the aid of the sight, to the diseased areas. A case is reported in detail, in which an obstinate cystitis of long standing was successfully treated through local applications of silver nitrate to the diseased parts of the bladder, this being made possible by the use of Kelly's cystoscope. [W.K.]

4.—Webster and Thompson reports a case of **glaucoma** accompanied with subhyaloid hemorrhages coming on after an iridectomy had been performed. The urine of the patient was loaded with albumin and contained numerous casts and glaucoma was supposed to have resulted from an albuminuric retinitis though the unocular variety is very rare. The eye was finally enucleated because of the oft-occurring hemorrhages and the pain felt in it. Some trouble was experienced in controlling the bleeding after the eye had been removed and pressure bandages had to be used for several days. [G.B.W.]

5.—Phelps says that in treating tuberculous and suppurating joints, the use of **pure carbolic acid** is superior to all other methods of handling these cases that he knows of. He also urges an early operation, to be done just as soon as the diagnosis of abscess can be made, and if done many cases which either die or later require more serious operations would be healed within a comparatively short space of time. [G.B.W.]

Medical Record.

September 1, 1900. [Vol. 58, No. 9]

1. The Relative Bearing of the Conjoined Tendon and the Internal Oblique Muscle upon the Radical Cure of Inguinal Hernia. JOSEPH A. BLAKE.
2. The Significance of the Bacillus Coli Communis in Drinking Water. J. H. LINSLEY and B. H. STONE.
3. Pathological Physiology or Experimental Pathology, its Scope and Significance in Medicine. ISAAC LEVIN.
4. The Discovery of "Ureine," the Principal Organic Constituent of Urine and the True Cause of Uremia. WILLIAM OVID MOOR.

1.—Blake calls attention to what appears to be a difference of opinion as to what constitutes the conjoined tendon, so frequently referred to in the operation for radical cure of inguinal hernia. He says the conjoined tendon is usually understood to be the insertion of the lower fibers of the internal oblique and transversalis muscles, extending along the iliopectineal line laterally for a variable distance from the rectus insertion. A careful dissection of this region, especially if the internal oblique be well developed, reveals that as a rule the lowermost fibers of the internal oblique do not enter into the formation of the conjoined tendon, but, arising from Poupart's ligament, in front of the cord, pass parallel with the ligament to be inserted in front of the rectus. The author says a careful examination of the literature on the subject has convinced him that the Baltimore surgeons have referred to the thickened transversalis fascia, when it forms the dorsal wall of the inguinal canal, as the conjoined tendon. He further says this fascia is entirely distinct from the **historic conjoined tendon**, being separated from it by

the main aponeurosis of the transversalis. Although forming the main support of this region it has nothing to do with the operation for radical cure, except in so far as to determine an operative method, inasmuch as only structures that lie in front of it are sutured. The **true conjoined tendon** is ordinarily such a weak affair that it is negligible in operative procedures. It is only exceptionally that either it or the transversalis are included in the sutures in the Bassini operation, except that the sutures placed in the neighborhood of the internal ring may include the transversalis. [A.B.C.]

2.—Linsley and Stone urge the great importance of careful **bacteriologic examination of drinking-water**, in order to determine whether it has been polluted with sewage. They consider that the discovery of Bacillus coli communis is sufficient proof of this. In 509 specimens of water that they examined, they found typical colon-bacilli in 56, and atypical colon-bacilli in 8. Altogether, they said, 78 of these examinations were positive bacteriologically, and only 31 chemically, showing the superior delicacy of the bacteriologic test. They then discuss the colon-bacillus, calling attention to its importance as a pathogenic germ, and describe several cases of enteritis that resembled typhoid fever, but failed to give the typical Widal reaction. They found in the milk-supply of these patients a peculiar actively motile microorganism, that produced gas in glucose media, and gave a typical Widal reaction with the blood of the patients. The source of this bacillus was found to be an old well in the barnyard, the water of which was employed in washing the milk-cans. They believe even in cases of typhoid fever there may be an added infection from the colon-bacillus. The failure to find typhoid bacilli in the water is not necessarily very significant. [J.S.]

3.—Levin writes a long article upon **pathologic physiology**. He believes this is an important branch of pathology, but is more closely related to normal physiology than to morbid anatomy. He then gives in brief form an outline of the pathologic physiology of the circulation including the blood in connection with which he discusses the question of immunity, of respiration, of digestion, of metabolism, in connection with which he discusses autointoxication, of excretion, and the mechanism of heat production and control, and finally pathologic physiology of the nervous system, which is discussed in less than a column. In his conclusions he argues that the study of this subject must be largely experimental, that is, the introduction of new conditions which act upon the certain organs in such a way as to produce abnormal functional activity. [J.S.]

4.—Moor appears to have made the discovery that ordinary urine contains an organic liquid substance that is about twice as abundant in volume as urea, and to this he gives the name **ureine**. The method of its isolation is very complicated. It depends essentially upon evaporating the urine at low temperatures, precipitation of the salts, precipitation of the urea by oxalic acid, and finally extraction of the ureine with alcohol, which is subsequently evaporated. This leaves only the substance itself and the coloring matters, and the latter can be removed by nitrate of mercury. It is about the color of olive-oil, has a slightly bitter taste, and seems somewhat fatty. The specific gravity is 1.270. It mixes freely with water and alcohol, no matter what their reaction. Moor believes that it belongs to the alcohols of the aromatic series. It is easily disintegrated at a temperature of 80° C., has a remarkable power of absorbing oxygen, and in one case of diabetes it was present at the rate of 6% by volume, and in a case of pregnancy about 2.3%. The power of absorbing oxygen varies considerably in different specimens. Fermentation of the urine—that is, the ammoniacal fermentation of the urine—cannot proceed in its absence except in the presence of considerable heat, and Moor estimates that its potential energy is about 130° C. [J.S.]

Medical News.

September 1, 1900. [Vol. lxxvii, No. 9.]

1. Improved Technic for the Cure of Ventral Hernia. M. M. JOHNSON.
2. Differential Diagnosis of Chronic Rheumatism. JAMES J. WALSH.

3. The Essential Conditions for Habitation to Develop and Maintain Healthful Family Existence. ROSA ENGELMANN.
4. Gastrop-tosis with Special Reference to a New Mechanical Support. H. W. LINCOLN.
5. The Advances in Medicine. MARTIN M. KITTELL.
6. Music Equivalents in Epilepsy. L. PIERCE CLARK.

1.—In speaking of **ventral hernia** Johnson mentions as a frequent cause the division of the motor nerves, supplying the rectus muscle, in extramedian sections. Johnson goes on to say that the various methods tried up to the present time are of little value for the prevention of these hernias which occur in from 5% to 10% of all cases. He proposes the following operation for the cure of this variety of hernia: An elliptical incision is carefully made a little within the border of the opening in the abdominal wall. The rectus and external oblique are then exposed by dissecting back the skin and superficial fascia. The edges of the opening are trimmed and a No. 25 silver-wire suture is inserted at the upper angle of the opening by lifting the abdominal wall and passing the needle through the peritoneum, rectus muscle and skin, about 1 inch from the free border of the opening. A needle on the other end of the wire suture is similarly passed on the opposite side of the wound. These sutures are inserted at intervals of an inch throughout the entire length of the incision and the subcutaneous tissues and skin are united by continuous sutures of kangaroo-tendon. The ends of the wire sutures are then fastened to a piece of ivory on either side of the wound after the manner of the old-time quilted suture. He reports 2 cases operated on in this way. [G.B.W.]

2.—Walsh describes a number of painful conditions to which the term **chronic rheumatism** is ordinarily applied. The infectious arthritides are now generally distinguished from acute articular rheumatism; that is, the condition whose etiology is not definitely known. Among the forms of so-called chronic rheumatism are recurrent, subacute rheumatism; the abarticular types in children, often called growing pains; persistent joint lesions after acute attacks; and finally chronic painful conditions not due to rheumatism at all. The fact that many of these are temporarily relieved by the coal-tar analgesics is no proof that they are rheumatic. Among these are the pains in the leg in flat-foot, occupation neuroses, traumatic neuroses, varicose veins in the legs, and neuralgia paresthetica. [J.S.]

3.—Engelmann insists that the **unsanitary housing of the poor** is a menace to the health and morals of the community and to the future of the race. She quotes statistics to prove that model tenements are profitable, but believes that suburban homes are a more desirable solution of the problem. [J.S.]

4.—Lincoln supports the abdomen in cases of **gastrop-tosis** by applying long strips of rubber adhesive plaster, cut into two parts by a curved line. The original piece is 36 x 7 inches. The convex piece is applied so that the ends overlap in the back. The reinforcing curved piece is divided and the broad ends overlap in front. This support cannot slip and is usually quite comfortable. [J.S.]

5.—Kittell mentions briefly some of the modern **advances in medicine**. [J.S.]

6.—Clark reports an interesting case of **epilepsy** in which the patient, a man of 40, and feeble minded, would become rigid and sing for about 30 seconds; he would then stop abruptly, and recover consciousness with anemia, but rapidly become stupid and fall profoundly asleep. In a second case, a girl of 20 years, there were both singing and pseudo angino-pectoral attacks. The former were preceded by gastric aura, then loss of consciousness, and the singing of some religious tune. During this there were sometimes passionate attitudes or states of partial catalepsy. The attacks lasted 20 to 40 minutes. [J.S.]

Boston Medical and Surgical Journal.

August 30, 1900. [Vol. cxliii, No. 9.]

1. The Surgeon in the Nineteenth Century. FREDERICK TREVES.
2. Results of the Operative Treatment of Cancer of the Breast. HOMER GAGE.

3. The Injurious Effects of Improperly Constructed School Chairs. J. S. STONE.
4. A Case of Parovarian Cyst, with Twist of the Pedicle Occurring During the Fourth Month of Pregnancy; Operation; Recovery; Normal Delivery at Term. F. B. LUND.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. VI, p. 183.

2.—If the mortality of **operations for carcinoma of the breast** be usually 10% or more as statistics from certain leading hospitals show, there is doubt, Gage believes, as to the advisability of urging patients to submit to operation. However, many operators have reported long series of consecutively successful cases. Personally Gage has operated on 56 consecutive cases without a death. Inasmuch as recurrences have followed as late as 30 years after primary operation it is more exact to speak of prolonged immunity than cure, and this is an object worthy of our highest endeavor. This is best attained by the most complete operations. Of late Gage has copied Halsted's technic, removing the breast, underlying muscle, and axillary contents in one mass, endeavoring not to cut across the infected tract anywhere from the lower margin of the breast to the apex of the axilla. Out of 57 operations which Gage has performed, 10 are too recent to have statistical value; local recurrences resulted in 27; 8 died from internal carcinomatous disease; 2 from other diseases; and 9 are well and free from recurrence past the 3-year limit, a percentage of immunity of 23½%. Though these results are not what they ought and might be they convince Gage that the complete operation offers long immunity from carcinomatous infection in a large proportion of patients with the hope that this may be permanent. [M.B.T.]

3.—Stone discusses the most desirable **shape for the school chair**, and urges the great importance of this subject in the development of the individual. The chair should be adjustable to different positions and should support the lumbar spine. [J.S.]

4.—Lund reports a case of **parovarian cyst with twisted pedicle** occurring in the fourth month of pregnancy. The symptoms were severe pains in the inguinal region, and vomiting. The diagnosis was obscure, but the pain persisting an operation was performed, showing a cyst behind and above the uterus with a pedicle twisted on itself 3 times. The cyst was tapped and removed and the pedicle tied off in section with silk. The patient made an uneventful recovery and 5 months afterward was delivered of a boy baby in excellent condition. The swollen turgid pedicle simulated a swollen appendix, preventing an accurate diagnosis, but the wisdom of opening the abdomen in the presence of acute abdominal symptoms even without an exact diagnosis was indicated. Lund attempts to explain the twisted pedicle upon the hypothesis that the tumor lay in such a relation to the pedicle that the movements of the abdominal wall, intestines, etc., twisted it in a given direction, becoming gradually turned several times until finally some slight movement of the woman gave the final twist which produced strangulation and made its removal necessary. [W.K.]

Journal of the American Medical Association.

September 1, 1900. [Vol. xxxv, No. 9.]

1. Traumatism and Malformations of the Female Genital Apparatus, and their Relation to Insanity. GEORGE HENRY NOBLE.
2. The Causal Relation Intraabdominal Diseases Bear to Nervous Disturbances Recognized by Gynecologists, Ignored by Neurologists. HENRY O. MARCY.
3. Autointoxication from Defective Menstruation. ARTHUR W. JOHNSTONE.
4. Tubo-ovarian Adhesions.—Their Reflexes. A. L. BEAHAN.
5. Gallstones and Diseases of the Gallbladder and Nervous Symptoms Resulting Therefrom. EDWIN RICKETTS.
6. Pelvic and Nervous Diseases. The Third Element in Equation Between Pelvic and Abdominal Disease in Women and Disturbance in the Nervous System. H. A. TOMLINSON.
7. Pelvic Disease as a Factor of Cause in Insanity of Females and Surgery as Factor of Cure. EUGENE G. CARPENTER.
8. The Relation of Surgery to Diabetes. C. P. GILDERSLEEVE.

9. Fracture of the Superior Maxilla in a Man 70 Years Old, with Recovery. VIDA A. LATHAM.
10. The Physiologic Training of the Feeble Minded. SAMUEL J. FORT.
11. Keratolysis, or "Skin-Shedding." R. M. STONE.
12. Imperfect Development. GEO. F. KEIPER.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1278.

2.— " " " " " " " "

3.— " " " " " " " "

4.— " " " " " " " "

5.— " " " " " " 1279.

6.— " " " " " " 1278.

7.— " " " " " " 1279.

8.—Gildersleeve observes the following rules as to **operations** on diabetic patients. He does not operate on any patient suffering from **diabetes** without first explaining to the patient or some one the possibilities which might follow. He refuses to operate on elderly diabetic subjects for any simple affections, such as benign tumors, unless there is some special reason for operating. In painful, rapidly-spreading gangrene, which often occurs, and which is bound to cause death if left alone, he believes in prompt and high amputation. As a rule, wait until a line of demarcation forms; but in some cases, although the line has not formed, one can judge fairly well about how high it is going, and operate before the line has actually formed. The dry, comparatively painless gangrene, which often affects the toes in these patients, will often run its course and the toes will be cast off. As a rule, such cases should be let alone. [M.B.T.]

11.—A case of **keratolysis** or skin-shedding is reported as occurring in a strong healthy man of 50. He came from a long-lived healthy family with no history of such disease. During every summer he has always shed all the skin of his body and sometimes he sheds it a second time about one month later. The period of shedding is ushered in by a feeling of malaise and chilliness, followed by fever, which has risen as high as 103° F. The skin of the body generally scales off, while that of the palms, elbows, buttocks, penis, and scrotum, the knee-caps and feet comes off in mass. The hair of the head, eyebrows, and mustache all are lost. He is not rendered bald each year by the loss of hair, but it comes out little by little as it does after typhoid fever. A few times only has there been a shedding of masses of the skin of the legs. The nails participate in the shedding, and the new nail is more sensitive than any other part of the body, and somewhat slower in renewal. He has been examined by many physicians, but has never been able to secure any suggestions as to relief. [M.B.T.]

12.—Keiper reports a case of lack of development of the right side of the head with congenital microphthalmus, coloboma iridis, lack of external auditory canal and imperfect formation of auricle in a child of 17 months, the entire right side of whose body was imperfectly developed. [M.B.T.]

American Gynecological and Obstetrical Journal.

May, 1900. [Vol. 16, No. 5.]

1. Personal Reminiscences Associated with the Progress of Gynecology. THOMAS ADDIS EMMET.
2. Removal of the Bladder as a Preliminary to or Coincidental with Hysterectomy for Cancer, in Order to Extend the Possibilities of Surgery for Malignant Disease of the Pelvis. FRANKLIN H. MARTIN.
3. Fetal Malformation; Symelus. A. McDIARMID.
4. Intraperitoneal Hemorrhage Considered in Relation to Ectopic Gestation. J. CLARENCE WEBSTER.
5. Malformation of the Uterus. FRANK T. ANDREWS.

2.—Martin regards the operation for **removal of the bladder** as a most formidable one; but after viewing the subject from a literary, experimental, and practical standpoint, he has reached the following conclusions: 1. Removal of the bladder as a preliminary to or accompaniment of hysterectomy for cancer in order to extend the possibilities of surgery for malignant disease of the pelvis is a justifiable operation under certain desperate circumstances, and the recorded cases in the literature of ureterorectal and vesicorectal surgery encourages one to predict that the operation may become something better than a desperate alternative. 2. In the removal of the bladder the ureters should be trans-

planted into the rectum or sigmoid flexure in order to provide reservoir-room or a substitute for the bladder, to obtain continence, and to obtain emptying power under the control of the muscles of the individual. 3. The principal objection to making the lower bowel a substitute for the bladder is the supposition that nephritis, as the result of ascending ureteritis, will invariably occur as the result of ureterointestinal anastomosis and early death will be the inevitable outcome of the procedure. This supposition is supported by theoretical grounds based upon the assumption of the inherent inability of the ureters to resist the septic bacteria always found in the intestines; on the result of the innumerable experiments upon animals which show, almost without exception, destructive infection of the kidneys; the death of 3 cases from nephritis and pyonephritis in the 48 cases on record which convalesced from the primary operation. 4. The negative to the supposition that destructive nephritis will invariably occur as the result of ureterointestinal or vesicointestinal anastomosis is supported by theoretic grounds, based on the assumption that nothing but actual experience in human individuals can prove that the ureters and kidneys may not immediately resist or rapidly acquire an immunity to infectious material found in the intestines if they are artificially deflected into these organs; the record of 48 human patients with vesicorectal and ureterorectal transplantation living and a large percentage still well at periods varying from a few months to 24½ years; the record of human patients with skin implantation of the ureters living at varying periods from 1 to 18 years. 5. By the removal of the bladder and the transplantation of the ureters into the bowel the amount of pelvic tissue which can be safely removed is materially increased compared with ordinary hysterectomy, it being possible to remove the broad ligaments to the verge of the pelvis, thus gaining fully an inch laterally, and the removal of the bladder, the lower end of the ureters and the urethra when necessary, materially enlarging the field of operation anteriorly. 6. The operation of extirpation of the ureters and bladder should not be undertaken by one not thoroughly experienced in pelvic and abdominal surgery and by one who has not thoroughly familiarized himself with the details of ureterointestinal anastomosis by a thorough preliminary apprenticeship in experimental operations on animals. [W.K.]

3.—McDiarmid describes with illustrations a remarkable **malformation** known as **symelus**, and belonging to a rare variety called the siren formations. There was in this instance a complete fusion of the lower extremities, also the obliteration of the anus and the genitourinary system. Trauma has been assigned as a possible cause of malformation; the existence of amniotic bands and adhesions has also been suggested; but the more probable cause lies in a primary defect in the germinal area of the ovum. [W.K.]

4.—Webster thinks there can be no doubt that the most frequent cause of **intraperitoneal hemorrhage in women** is the escape of blood from a pregnant tube. Cullingworth performed abdominal section in 20 cases for hematocele and in every instance the escape of blood was associated with **tubal pregnancy**, the blood in most of these cases escaping through the outer end of the tube into the peritoneal cavity where it became clotted and encapsuled so as to form a localized mass. The most favorable cases of hematocele are of this class, occurring very early in the tubal pregnancy. Intraperitoneal hemorrhage from ruptured tubal pregnancy is most liable to occur in second, third or fourth month, since the walls of the tube do not respond to the demands of the growing ovum as those of the uterus do. The earlier the rupture the less dangerous to the mother, as the ovum may be more readily absorbed in the peritoneum, and the hemorrhage is usually less extensive. [W.K.]

5.—Andrews reports 2 cases of **malformation of the uterus**, the first a girl of 12 years, whose symptoms led to an examination showing an absence of vagina with much enlarged uterus and tubes. It was decided to make a vagina, but as the necessary incision and further exploration revealed the absence of both external and internal os and the occlusion of both tubes, it was deemed advisable to remove all these organs and the patient promptly recovered. The second was a case having bicornate uterus, double vagina, double vulva, imperforate anus and recto-vaginal fistula. Two unsuccessful attempts were made to form an

artificial anus during infancy, but the fecal discharges continued per vaginam. A functionally perfect anus was afterward formed at the age of 19 and the rectovaginal fistula closed. The woman subsequently married and after tedious labor gave birth to a perfectly-formed dead child. The manual removal of the retained placenta showed $\frac{3}{4}$ of it in the right horn of a double uterus, and a cord attached to the upper part of the placenta had been compressed where it had passed out of the upper segment. The rectovaginal septum was torn completely through, but was afterward successfully repaired. [W.K.]

Deutsche medicinische Wochenschrift.

July 12, 1900. [26. Jahrg., No. 23.]

1. The Pathology of Influenza. A. WASSERMANN.
2. The Diagnostic Staining of Malarial Parasites. REINHOLD RUGE.
3. Typhoid Meningitis. A. HOFMANN.
4. Enucleation of the Bulb with Substituted Methods, with Especial Review of Sympathetic Ophthalmia. H. SCHMIDT-RIMPLER.
5. My Experience with Light-Therapy. H. STREBEL.

1.—Wassermann found in making **bacteriologic examinations** in cases of **influenza** in the past year that bacilli were very difficult to find in the sputum, and it was often difficult to say that the cases were actual instances of influenza. This he found to be true in the cases from several hospitals, and he refers to the work of Clemens, as yet unpublished, in which the same fact was observed. It was also found that though the bacilli were present they vanished very rapidly, and often disappeared after 24 hours. Together with this rapid disappearance of the influenza-bacilli there were often outspoken signs of intoxication. Experimentally the rapid disappearance of the infectious agents and a coincident intoxication always corresponds to the production of bactericidal immunity. Practically all the patients from whom the bacilli rapidly disappeared stated that they had had influenza about ten years before. It was concluded, therefore, that these persons had a remnant of their immunity left which was not sufficient to prevent a new infection, but was sufficient to destroy the bacilli rapidly, and hence in many cases to cause a rapid outbreak of toxic symptoms. Wassermann believes that the peculiar appearance of these cases, differing so largely from those of previous years, indicates that the immunity acquired in the pandemic of ten years ago is being lost, and he considers that we are probably beginning to reach a time when we are once more susceptible and that we may be on the verge of a new pandemic of influenza. [D.L.E.]

2.—Ruge heats the cover-glass in the flame in order to free it entirely from fat, etc., touches the upper edge of the cover-glass to the blood-drop on the finger, and strokes it along the drop so that the lower edge shows a streak of blood 1 to 2 mm. in thickness. The cover-glass is then touched by the under edge to the slide, and while held at an angle of 45° is drawn along the slide, the result being that a thin smear of blood is left along the slide without any pressure having been used upon it. It is then fixed in absolute alcohol for about a half hour only. He then stains with **methylene-blue**. Prepare the stain by adding 0.2 grams of soda to 100 cc. of water; heat to boiling; add 0.3 grams of absolutely pure methylene-blue; allow to cool, filter, and after 48 hours the stain is ready. Pour a little blood on the preparation and wash off with water at once. The red blood-corpuscles stain yellowish-green to bluish-green, the ring-forms of the **parasites** bluish-black, and the larger forms of parasites grayish-blue; and, according to the time which the stain has been allowed to act, the nuclei of the white cells take a more or less intense blue stain. The basophile granules in the red cells come out very clearly. If the stain is to be used with fresh preparations, methylene-blue should be added to the strength of 1%; if old preparations are to be stained, the methylene-blue solution should be largely diluted. [D.L.E.]

3.—Hofmann describes the case of a man of 24 who in the early part of an attack had violent headache. When admitted, at the beginning of the third week, he had the usual symptoms of typhoid fever with marked nervous symptoms. This disappeared after a few days with the exception of slight tremor, this vanishing after about two weeks. Three days

later fever came on again, and there were all the signs of a relapse. There was severe vomiting, but this soon disappeared and there was no headache and no stiffness of the neck. A week later there was severe delirium and stupor, marked restlessness and severe tremor. Five days later the fever disappeared, the patient was clear mentally, and seemed much better. Suddenly there were clonic contractions of the right side of the face and the right extremities, and this continued until death occurred in deep coma 6 hours later. The postmortem examination showed nothing macroscopically except some edema of the membranes and increase of the fluid. Microscopically there was some round cell infiltration of the pia and arachnoid, and some round-cell collection in the subarachnoid space, a round-cell infiltration about the vessels of the brain substance with a few **typhoid** bacilli in the pia and subarachnoid space. Hofmann speaks of the difficulty of diagnosis. The final convulsions suggested a Jacksonian epilepsy and also uremic convulsions. There were otherwise absolutely no signs of uremia, and this could be excluded. He diagnosed a beginning **meningitis**, and the post-mortem showed that this was present. He discusses the question as to whether the symptoms in such cases are caused by the direct action of the typhoid bacilli or by the typhoid toxin, and states his belief that this case is strong proof of the fact that the toxin is active. He considers that there are but quantitative differences between the usual tremors seen and the more advanced nervous symptoms, up to the actual convulsions seen in this case; and since in numerous cases typhoid bacilli have been apparently entirely absent upon bacteriologic examination, this is a strong negative evidence that the toxin must have caused the symptoms. Even if typhoid bacilli are found in some instances it is usually only in severe cases, such as this, and this only means that since the bacilli are present in the cranial cavity the toxins are produced more rapidly in this region, and have a more direct and violent action. [D.L.E.]

Neurologisches Centralblatt.

July 15, 1900. [No. 14.]

1. Rainbow Vision. ADAMKIEWICZ.
2. The Treatment of Epilepsy According to Toulouse and Rechet. NACKE.
3. Nerve Stretching in Thomsen's Disease. SEIFFER.
4. Pachymeningitis Carcinomatosa. HELLENDALL.
5. Contribution to the Knowledge of the Commencing Stages of Multiple Neuritis. POPOFF.

1.—Adamkiewicz calls attention to a peculiar series of phenomena which he believes are the result of **constriction of the central artery of the retina**. It commences with a feeling of tension in the eye, and then a slight veiling of the field of vision. If now the subject looks at a luminous object, the latter appears surrounded by rings which show the colors of the spectrum. The commonest cause of this appears to be a cold douche after a sojourn in a steam bath. Occasionally it may be produced by heat, as for example if a patient sits under a gas flame in the winter and the head becomes warm. It is particularly common at night. It appears to have no clinical significance, but is interesting as showing in certain cases that the sympathetic system may act upon a single small bloodvessel, and it constitutes the first definite proof hitherto offered of the effect of psychical excitement upon the caliber of the bloodvessels. [J.S.]

2.—Toulouse and Rechet have recently devised a method for the **treatment of epilepsy** which consists essentially of rendering the tissues of the organism more susceptible to the influence of bromin by depriving them of the physiologic quantity of the chlorin, that is, a hypochlorination. The clinical tests have apparently been carried out under every precaution and seem to show astounding results. The deprivation is accomplished by submitting the patients to a particular diet consisting of milk, eggs, meat, flour, and potatoes, or else simply a milk diet. In addition, from 30 to 60 grains of sodium bromid are given daily. Nacke, who visited the hospital in Paris in which the experiments were carried out, is delighted with the results and urges all others engaged in the treatment of epilepsy to test this method thoroughly. [J.S.]

3.—Seiffer reports the ultimate results in a case of **Thomsen's disease** that had been operated upon in the fall of 1899, at which time both crural nerves had been stretched. He was able to determine in March of 1900 an atrophy of the right quadriceps, marked hyperalgesia of the inner side of the right thigh, hypesthesia of the inner side of the leg and the lower third of the thigh, and diminution of the myotonic reaction in the right quadriceps with loss of electric contractility in the right vastus internus. On the right side the only change was diminution of the patellar reflex. As far as could be determined, the gait was as typically myotonic as previously and the patient was much disabled by the disease. Therefore, he did not experience any permanent relief and although there was disappearance of the myotonic reactions, it does not appear to have had any beneficial result. The atrophy which was produced in the affected muscles may ultimately lead to serious motor disturbances. [J.S.]

4.—Heldendall reports the case of a woman who had had a cancer of the breast removed, followed by recurrence, and who later complained of headache and slight weakness in the right arm. When examined this was confirmed. There was tenderness in the left frontal region, slight weakness of the left facial nerve, and some papillitis in the left eye. At the autopsy metastases were found in the liver, lung, lymphatic glands, and there was a diffuse thickening of grayish-red color in the dura of the left frontal and parietal regions. Typical carcinomatous-cell groups were found in the dura and also some bony tissue. This condition of **cancerous infiltration of the dura** is exceedingly rare. There was no involvement of the brain itself. [J.S.]

5.—Popoff reports the case of a man of 57, a chronic alcoholic, who had fallen in the street and injured the right arm, giving rise to brachial plexus palsy. Careful examination, however, showed also a slight alteration in the electrical reactions of a few of the muscles on the left side, indicating the existence of **multiple neuritis**. Popoff then quotes the experiments of Siemerling and concludes that various poisons, such as lead, alcohol, etc., may produce changes in the peripheral nerves that can only be detected by alteration in the electrical reaction. He has devised a diagram designed to show the course of an attack of multiple neuritis that consists essentially of a horizontal line from which two inclined limbs descend. The more vertical these are the more rapid the onset or the decline. [J.S.]

Deutsches Archiv für klinische Medicin.

[Band 67, Heft 3 u. 4.]

9. Zenker's Pulsion Diverticulum (Pharyngo-esophageal). STARCK.
10. Experimental and Clinical Investigations of the Tests of the Functional Activity of the Intestines; Further Investigations Upon the Fermentation of Feces, with Some General Remarks Upon the Diastatic Ferment in Human Feces. STRASBURGER.
11. A Suggestion for the Graphic Registration of the Physical Changes in the Lungs. FREUDWEILER.
12. The Leukocytes in Typhoid Fever. NAEGELI.
13. Results with the Gruber-Widal Reaction; Contribution to the Subject of Agglutination. KOHLER.
14. Fibrinous Bronchitis, with Special Consideration of the Pathologic Conditions of the Lung. SCHITTENHELM.
15. The Relations Between the Granular Degenerations of the Red Blood-Corpuscles and the Other Morphologic Changes of the Blood, and Special Consideration of Lead Intoxication. HAMEL.
16. Brief Communication. Remarks Upon the Article of His, Force and Action of the Acid Sodium Urate. ZAUDY.

9.—After describing a group of cases that apparently arise as the result of **distention of the sinus pyriformis**, which had practically the same symptomatology as the typical Zenker's diverticulum, Starck tabulates 93 cases of the latter condition, and then gives a summary of the results of his investigations. In 79 cases in which the sex was given, 60 occurred in men and 19 in women. In the latter group of cases, however, a distinct cause was given in half. The diverticula varied in size, from a pouch not larger than a

pea to one of the dimensions of an orange. Sometimes the opening into the esophagus is constricted; at other times it is as large as the cavity of the sac. The wall varies considerably in thickness and construction, but up to the present, according to Starck, no case has been reported in which there was a complete layer of muscular fibers surrounding it. The mucous membrane is usually somewhat thicker, and in the submucous tissue there are numerous smooth muscle-fibers and an enormous number of elastic fibers. Sometimes there is in this situation a leukocytic infiltration. Some modification in the position of the surrounding organs, particularly the esophagus and trachea, may be caused, and the wall of the diverticulum is frequently firmly attached to its surroundings. [J.S.]

10.—Strasburger after having noted that in some cases feces that contain considerable quantity of starch failed to ferment, attempted to estimate the amount of **amylolytic ferment** that was present, which he believes may be derived from the pancreas or from the intestinal glands. He employed Robert's method, which consists essentially of mixing the diastatic fluid with a solution of starch, that was always 1% in strength. This was then exposed to a temperature of 40° for a sufficient length of time to enable it to reach the point at which the addition of iodine no longer caused discoloration; 10 ccm. of the starch solution was mixed with 80 ccm. of water, and 10 ccm. of the solution of the feces, and placed in a thermostat. The feces were extracted with water and then thymol added to the subsequently diluted mass in order to prevent the action of the bacteria. The measurement was made by knowing the amount of starch-solution that the feces would act upon or rather the length of time required to convert all the starch into a substance that did not react with iodine. It was found that the amount of amylose in the feces is considerably influenced by pathologic conditions, that it is increased in diarrhea, often decreased in febrile diseases, but apparently is never entirely absent. Certain drugs appeared to have a pronounced effect in diminishing the activity of the ferment, particularly salts of mercury and of silver. The citrate of silver was particularly efficient, and in dilution of 1 to 100,000 caused complete cessation of the action. It appears as the result of some experiments that this ferment arises almost exclusively in the lower portion of the small intestine, although it is possible that in pathologic conditions its source may be more extensive. [J.S.]

11.—Freudweiler, who has had occasion to record the physical condition of patients suffering with pulmonary tuberculosis, has devised a method for **graphically recording** the findings which is based somewhat upon the method proposed by Sahli. There are, however, several very interesting modifications. The diagrams extend from the spine to the axilla, and from the axilla to the sternum. There are therefore 4 for each chest, 2 for each side, and it is possible to make far more complete and more satisfactory records than by the old method of an anterior and a posterior diagram. These diagrams consist essentially of the outlines of the ribs and of the body; a blank space being left for the shoulder. Separate diagrams are employed for percussion and for auscultation. Dulness is indicated by lines crossing each other at right angles, the thickness of the lines and not their closeness indicating the degree of the intensity of the process. A series of curved lines indicates tympanitis. The respiratory rhythm is indicated by a series of squares with alterations in the different lines. In the sides of these squares, marks are introduced which indicate the alterations discovered during inspiration and expiration. The method of recording these changes is somewhat complicated and will require considerable practice before it can be applied to clinical work. Various figures are also suggested to indicate the different forms of rales. The diagrams that accompany this article are not clear. The author, however, states that in the figures ordinarily furnished, the ribs are given in a pale yellow tint, they do not interfere with the distinctness of the records. Even then, they would scarcely equal in distinctness the diagrams that have recently been published by Dr. Musser. [J.S.]

12.—Naegeli has carried out a great number of investigations upon more than 50 cases of **typhoid fever**. The blood was examined in each case often more than 15 and sometimes more than 25 times. Differential counts were made. The number of **leukocytes** was estimated and the

conditions found compared with the changes in the clinical course of the case. The technic was painstaking. The conclusions are as follows: Systematic counting of the leukocytes is of value both for the diagnosis and prognosis of the disease. The alterations in the numbers (not necessarily the percentages) of the neutrophile, the eosinophile cells, and the lymphocytes are characteristic in the different stages of the disease, and are produced by the action of the typhus toxins upon the bone marrow, which hinders the formation of neutrophile and eosinophile cells. It is probable that the functions of the lymphatic tissues are also disturbed. The changes are for the first stage—a neutrophilic leukocytosis of moderate degree which rapidly decreases until the neutrophiles are diminished. The eosinophiles disappear and the leukocytes are moderately decreased. In the second stage, the neutrophiles and leukocytes are still further decreased, although the latter towards the end begins to increase again. In the third stage, the increase in the lymphocytes continues, the neutrophiles become even fewer and a few eosinophile cells appear. In the fourth stage, that is during defervescence, the neutrophiles reach their minimum, the lymphocytes are greatly increased and the eosinophile cells gradually return to their normal number. As soon as the fever disappears the neutrophiles commence to increase in number and there is often for some time a considerable lymphocytosis. All these blood-changes are much more pronounced in childhood. In cases of suppurative complications there is usually an increase in the number of neutrophiles. When this fails, the prognosis is exceedingly grave. Favorable indications are the early reappearance of the eosinophile cells, the moderate diminution of the neutrophiles and the extreme increase in the lymphocytes. [J.S.]

13.—Kohler has performed a series of **Widal reactions** with the blood of typhoid-fever patients, using in all instances the quantitative method and repeating the test frequently on the same patient. The blood was obtained by thrusting a minute canula into the vein of the arm. It was allowed to coagulate, and then the serum mixed with the typhoid-culture in various proportions, from 1 to 20 and up to 1 to 180. The cases were all tested in the early stages. The earliest reaction, however, occurred on the third day. In 3 cases reaction occurred after the ninety-seventh day. Altogether 62 cases were tested. Kohler does not believe that the serum-reaction persists for a long time in the blood. In one case the reaction was positive in a dilution of 1 to 20 and doubtful in a dilution of 1 to 40, but the clinical symptoms served to exclude typhoid fever. He therefore believes that unless a positive result is obtained with a dilution of 1 to 40, a diagnosis of typhoid fever cannot certainly be made. During convalescence the blood of the majority of cases showed complete loss of the power of agglutinating typhoid bacilli. Kohler is not of opinion that the Widal reaction will ever be of much use in practical general medicine, partly on account of the difficulties of the technic, partly because the dry method which has been generally employed for this purpose is not sufficiently certain. He gives in tabulated form the results of his investigations. [J.S.]

14.—Schittenhelm reports 2 cases of bronchitis in which firm masses were found in the expectoration. The second case, in particular, expectorated large masses of **bronchial casts**. After various periods of residence in the hospital, he finally died and at the autopsy the bronchi showed cylindrical dilation, but there were no tubercles upon the mucous membrane. The bronchial glands were swollen and cheesy. In the first case, microscopic examination of the expectoration showed the presence of fibrin but not of Charcot-Leyden crystals. In the second case the larger quantity of sputum made it possible to perform some chemical reactions which were as follows: The casts were insoluble in water, ether, or alcohol, although in the latter substance they contracted considerably. They were also insoluble in acids, but dissolved readily in alkaline solutions and were almost completely dissolved by digestion. In hydrogen peroxid they caused rapid evolution of bubbles. It is therefore probable that they contain a considerable amount of fibrin, and as a matter of fact staining by Weigert's fibrin solution showed the presence of this substance. Microscopic examination of the lungs showed a rather extensive tuberculosis of the pulmonary tissue, but no tuberculosis of the bronchi. In fact, the mucous membrane of the bronchial tubes was

practically normal. In the pulmonary tissue a considerable quantity of fibrin was also present. Bacteriologically, only streptococci were found. Apparently there is desquamation from the alveoli of the lung, and masses of fat and epithelial cells are sometimes found in the casts. In regard to the nature of these conditions, Schittenhelm expresses himself as agreeing to the view that they occur acutely and by a process analogous to that in cases of asthma, that is to say—as a result of desquamation itself, an exudation due to nervous influence, and a subsequent coagulation. The nature of the irritation is very various. [J.S.]

15.—Hamel stains cover-glasses fixed in absolute alcohol with Löffler's methylene-blue solution until they have a clear blue color. By this means he has been able to study very readily the **basophilic granulations** of the red cells. These occur, of course, most frequently in cases of **lead-poisoning**, of which he reports 25, and it appears from these that the occurrence of these granular cells is one of the earliest diagnostic signs of lead-intoxication in the human being. If, however, patients have been free of the poison for a long time they may disappear. He also discovered them in one case of pernicious anemia; successive examinations showed a gradual disappearance, and recovery ensued. In 8 cases of carcinoma they were found only in those cases in which there was a very profound cachexia. In 12 cases of chlorosis they were not present with the exception of one in which there was extreme coprostasis. In 9 cases of tuberculosis they were practically not present. They were not found in 7 cases of acute febrile disease, but were present in 2 cases of extreme atrophy with anemia in children, and in a case of purulent perityphlitis. They were not found, however, in 26 patients suffering from various diseases, such as cirrhosis of the liver, myoma of the uterus, degenerative conditions of the heart, nephritis, diabetes, etc. In 24 cases of syphilis the results were always negative. Examination of the other constituents of the blood showed that the presence of these basophilic granules bore no relation to any other form of alteration, which indicates that this is a peculiar form of degeneration. [J.S.]

Revue de Médecine.

June 10, 1900. [20me Année, No. 6.]

1. The Pericarditis of Nephritis. P. CHATIN.
2. Malarial Neuritis. E. SACQUÉPÉE and CH. DOPTER.
3. Agglutinating Curves in Typhoid Fever. Applications of Serum-prognosis. P. COURMONT.
4. Concerning Causes of Error in Experiments for the Determination of the Toxicity of the Urine. T. BERNARD.

1.—Chatin reports 4 cases of **pericarditis** that developed in patients suffering from **nephritis**. Clinically the condition may be acute, subacute, or chronic. In 3 cases with effusion bacteriologic examination showed the fluid to be sterile. In these 3 cases the serum was hypertoxic and, in one in which there was a pleural effusion, that fluid was of a normal toxicity. The toxic elements supposed to be responsible for the inflammation of the pericardium have been found neither in the circulating blood nor in the effusions; and the existence of aseptic and amicrotic pericarditis in certain cases of Bright's disease is well established. The pericarditis of nephritis may sometimes develop as a complication of an ordinary infection. It is usually aseptic or sterile. There is no proof in the cases reported that it is of toxic nature. [J.M.S.]

2.—Sacquépée and Dopter conclude their paper on **malarial neuritis**; they consider the symptoms, the characters, and clinical forms, the pathologic anatomy, the etiology, the pathogenesis, the diagnosis, the prognosis, and the treatment of the condition. [J.M.S.]

3.—The studies of Courmont, which were partly reported in the last number of the *Revue de Médecine*, are concluded in the current issue. The author believes that there is a certain relation between the course of the agglutination and the course of the disease. In a general way, the progressive and regular ascension of the agglutinating power is seen in the normal forms and seems to be parallel with the establishment of the different processes of defense of the organism. If, on the contrary, the defense of the organism is inefficient or irregular the agglutinating power, in the majority of cases,

is slight, becomes lowered, or presents an irregular course. There are, undoubtedly, great individual variations in the determination of the height, form, etc., of the agglutinating curve for unknown reasons. These variations are exercised on a scale more extensive than those that limit the thermic curve. The author concludes that the formation of the agglutinating substance appears to be one of the methods of defense of the organism, or at all events it is parallel to the defensive humoral reactions that mark the curve of the disease. There is, in the **curve of the agglutinating power**, an element of **prognosis**, that, added to the elements already known, may be of service in predicting the outcome of a given case. Complications are more frequent when the agglutinating curve is of the type common to grave forms of the disease. The agglutinating curves with a maximum height at the time of defervescence or in the first days of apyrexia, with more or less progressive ascension during the fastigium and a fall, often very rapid, at the end of the febrile period or during convalescence is seen in the great majority of cases of typhoid fever that are benign or of medium severity, terminated by a cure and without serious complications. Curves that are continually low, with or without a fall of the agglutinating power below the maximum, are very often found in hyperinfectious forms of the disease, in prolonged cases, or in those that end fatally. Irregular agglutinating curves, with great oscillations, and early fall, are frequently seen in fatal cases and in grave or prolonged forms of the disease. The fall of the agglutinating power before defervescence is seen in fatal, grave, and prolonged cases. Its significance seems to be more unfavorable when the agglutinating power was originally not high and when it does not subsequently rise. Many transitions are possible between these typical curves. In cases of relapse the agglutinating curve often presents two distinct types, as though they were curves from two different patients. When cure is to be the result the curve is often very high; when death will result the maximum of the curve is ordinarily low during the entire disease and often lower during the relapse. In cases of typhoid fever abnormal either on account of their mildness or their torpidity, the agglutinating power is very variable. [J.M.S.]

July 10, 1900. [20me Année, No. 7.]

1. Tuberculosis. Attempt at Open-Air Cure in Normandy. RAOUL BRUNON.
2. Gastrointestinal Disorders of Nervous Origin. DUBOIS.
3. The Lightning-Stroke Symptom ("Coup de Foudre"). CH. FÉRÉ.
4. Tabetic Nasal Crisis. HENRI JULLIAN.

1.—Brunon draws the following conclusions from a study of the **open-air cure of tuberculosis in Normandy**: 1. Out of 50 tuberculous patients who have been under observation since 1892, all commenced their cure in Normandy and all have been benefited at the beginning of the treatment. The benefit has raised from several months to 4 years. 2. Fourteen patients have been cured or have received benefit that corresponds to a cure, since they have been able to resume work. 3. The others have died after a varying interval of from several months to 4 years for the following reasons: too late application for treatment, lack of intelligence or refusal of discipline on the part of the patient, laryngeal or other complications. 4. Among the 14 patients cured it is necessary to distinguish two classes: the first class has been cured while living in Normandy winter and summer, and includes 8 patients, 4 cured and 4 greatly ameliorated, but invalids on account of the lung condition. The patients of the second group have lived in Normandy in the summer and in the mountains or at the seashore in the winter. This group includes 6 patients, of whom 5 have been cured and 1 has been lost sight of just when cure appeared certain. 5. The "mixed cure" patients living in the country in the summer and in the mountains or at the seashore during the winter, appears to give the better results. 6. Pulmonary tuberculosis may be treated in all its forms by the open-air method in Normandy, both in winter and in summer. The gravest manifestations, such as laryngeal accidents, are curable in the climate of Normandy, if the treatment is applied methodically and at the proper time. [J.M.S.]

2.—It is puerile to see in the functional disorders of the

digestive system that supervene in the course of nervous affections, nothing but a simple complication or a coincidence. The concomitance is so frequent that it is necessary to seek to establish a relation of cause and effect between these **gastrointestinal affections and nervous manifestations or psychoses**. The cardinal symptoms of "nervousism" are exaggerated fatigue, exaggerated sensibility, exaggerated emotion, and exaggerated suggestibility. These symptoms may be poorly marked in the healthy individual, but they are well marked in the nervous patient and are, indeed present in some degree in almost every human being. The physician forgets the moral causes that serve to produce these symptoms and seeks often to explain mental disorder by the state of the blood, by diathesis, or by intoxications. Dubois believes that the various functional gastrointestinal disorders are but symptoms of the general lowered tone of the nervous system and that the treatment should be directed toward the nervous system and should not be local. [J.M.S.]

3.—Sexual attraction manifests itself sometimes in an intense manner, under a form of impulsive distraction known as lightning-stroke ("coup de foudre.") Féré gives the history of two patients who presented this symptom. One was a man of 24, in whom it was a manifestation of epilepsy and was accompanied by vertigo and false recollections. The other patient was also a man, of 52. This patient was a neurasthenic following mental emotions and his neurasthenia was accompanied by a confusion of wants. [J.M.S.]

4.—Jullian reports the case of a man of 55 who had been given to alcoholic and venereal excesses, but who had not contracted syphilis. In this patient the symptoms of **locomotor ataxia** developed and for 4 years he was subject to crises of sneezing that developed unexpectedly without coryza. The crises were frequent and long; each one was announced by a sensation of tingling and pricking deep in the nasal fossae. There was no paresthesia in the cheeks. These special sensations lasted about 3 minutes and then the attack of sneezing commenced and lasted about a quarter of an hour, during which time he would sneeze 20 times or more. After the crisis ended, the patient experienced no abnormal sensation in the nasal fossa. The crisis was never accompanied by hypersecretion of the pituitary mucous membrane. For several years the patient said that he had no taste when he took food. Very often he had a bitter sensation in his mouth, particularly on the tongue, which was noticed principally at night, and was sometimes so intense that it would waken him, at the same time his saliva, like soapy water, would be secreted abundantly. At the end of about an hour the bitter taste and sialorrhea would disappear altogether. Examination of the sensibility revealed an anesthesia and analgesia of both cheeks, which was complete up to the alae of the nose. There was total anosmia, the sensibility of the mucous membrane of the nose was considerably diminished, the patient scarcely feeling tickling, and there was no sneezing following such stimulation. There was no nasoconjunctival reflex. Taste was practically abolished; the tongue looked normal; the pharyngeal reflex was abolished; there was no trouble with deglutition; and sight and hearing were not modified. The author considers the case to be one of **tabetic nasal crisis**. [J.M.S.]

Revue de Chirurgie.

July 10, 1900. [20me Année, No. 7.]

1. Abdominal Hysterectomy in the Treatment of Cysts and Solid Ovarian Tumors. E. QUENU and L. LONGEUT.
2. Rhabdomyomas. EDOUARD GENEVE.
3. Pneumonotomy with Costal Resection for Gunshot Injury of the Lung; Recovery. M. CHRISTOVITCH.
4. Interstitial Cells in the Adult Testicle. B. CUNEO and P. LECÈNE.
5. Carcinoma of the Large Intestine. R. DE BOVIAS.

1.—Nine cases of **abdominal hysterectomy** are reported. From a study of these cases and the literature of the subject the following conclusions are drawn: Hysterectomy with ovariectomy is not more grave in its results than the simpler operation. The advantages are the possibility of removing adherent ovarian cysts and of satisfactory autoplasmic treatment of the pelvic organs. This gives security

from postoperative accidents, particularly intestinal obstruction. The operation is indicated in case of cysts and ovarian tumors complicated with inflammatory uterine lesions or lesions of the tubes. In case of ovarian cysts complicated by new formations of the uterus or in case of bilateral ovarian cysts in which it is difficult to obtain a satisfactory pedicle to prevent postoperative hemorrhage. It is contra-indicated in unilateral cysts in young women; also in case of bilateral lesions of the adnexa in which the uterus is healthy and it is possible to secure a satisfactory pedicle by simpler procedures. [M.B.T.]

2.—Genevet defines a **rhabdomyoma** as not simply a tumor of striated muscular fiber, but one in which we find striated muscular fibers of new formation mixed with a greater or less quantity of other tissues. Five cases of tumors of this kind are reported, the first occurring in a child of 2 years, in which there was a tumor the size of a nut in the lumbar region. Operation was performed with a fatal result. In a second case, a man of 58 had a tumor in the upper and lateral part of the neck of 2 months' duration. The patient was cured by extirpation of the growth. In a third case, a man of 32 had a tumor of 6 months' duration in the calf of the right leg. Death resulted 3 months after the operation, from cachexia. In a fourth case, a woman of 50 had an extremely large tumor, extending from the right iliac spine to the left border of the sacrum and outward toward the trochanter. The growth was extirpated, but recurrence occurred and death followed in 6 months. In the fifth case, a woman of 22 had a tumor in the region of the internal condyle of the femur. Extirpation was followed by perfect recovery. On microscopic examination the growth has the appearance of tuberculosis or a musculofibrous lipoma. [M.B.T.]

3.—A man of 22, while quarreling with a companion was shot with a revolver at the level of the third left intercostal space. When first seen he was pale from loss of blood. The wound of entrance was immediately closed by an antiseptic dressing. No wound of exit could be found and it was concluded that the bullet must be lodged in the lung. An expectant treatment was followed with the application of ice, small doses of morphia, and stimulants. Three days later there were symptoms of a large pleural effusion with considerable depression and some rise of temperature. On the sixth day the condition had become so bad that the patient seemed about to die from suffocation. In this desperate condition operation was considered advisable. On exploratory puncture in the seventh intercostal space purulent fluid tinged with blood escaped. A free incision was followed by excavation of a large amount of blood and pus. Three centimeters of the chest-wall was resected. The bullet was felt with the finger. A V-shaped flap was then raised over the upper part of the lung, the lung was incised and the bullet removed with forceps together with 3 fragments of gangrenous lung. Hemorrhage was arrested by gauze tampon, and 2 drainage-tubes were inserted. The operation lasted 20 minutes and the patient was freely stimulated and gradually recovered, leaving the hospital completely cured at the end of 2 months. [M.B.T.]

4.—Cuneo and Lecène report the results of **histologic examination of the testicle** in 2 cases in which these organs were removed during operations for the radical cure of hernia. The seminiferous tubules were found atrophic and did not present the figures of spermatogenesis; in other parts of the organs there was remarkable augmentation of interstitial cells. These cells are interesting from their morphologic and physiologic significance and from the fact that pathologic degeneration into neoplasms so often occurs. The authors from their studies incline to the belief that these cellular elements arise independent of the process of spermatogenesis and they suspect that careful histologic examinations in tumors of this kind would furnish direct demonstration of the origin of sarcoma from ectopic testicles. From a practical standpoint tendency to malignant degeneration renders castration desirable in all these cases. [M.B.T.]

Sundry French Journals.

1. The Action of Iodoform on the Normal Tissues. v. CORNIL and COWDRAY. (*Sem. Méd.*, May 9, 1900. 20me Année, No. 20.)

2. Fatal Hematemesis from Esophageal Varices of Alcoholic Origin. G. MULLER. (*Gaz. Heb. de Méd. et de Chirur.*, May 20, 1900. 47me Année, No. 40.)
3. Galop Rhythm. POTAIN. (*Sem. Méd.*, May 23, 1900. 20me Année, No. 22.)
4. Human Hematolysis. METCHNIKOFF. (*Sem. Méd.*, May 30, 1900. 20me Année, No. 23.)
5. The Corpus Luteum and the Determining Cause of Labor. ANTOINE LACOUR. (*Gaz. Heb. de Méd. et de Chirur.*, June 10, 1900. 47me Année, No. 46. Paris Thesis, 1899-1900, No. 202.)
6. Contribution to the Study of Typhoid Myocarditis. (Clinical and Anatomopathologic Considerations). GEORGES GUYARD. (*Gaz. Heb. de Méd. et de Chirur.*, June 17, 1900. 47me Année, No. 48. Paris Thesis, 1899-1900, No. 25.)
7. Encysted Pericarditis with Retrocardiac Effusion. ADOLPHE MASSIP. (*Gaz. Heb. de Méd. et de Chirur.*, June 17, 1900. 49me Année, No. 48. Paris Thesis, 1899-1900, No. 28.)

1.—The experiments made by the authors have consisted in injecting about one part of iodoform emulsified in 11 parts of oil into dogs, guineapigs, and rabbits. In 4 dogs 8 cc. of the solution were injected into the peritoneum and 2 cc. into the knee-joint; in an adult rabbit 2 cc. of the solution were injected into the subperitoneal cellular tissue; and in several guineapigs iodoform powder was introduced into the subcutaneous tissue after an incision, which was subsequently sutured. As a result of the injection of the iodoform oil into the serous membrane it is found that an inflammation of a certain intensity is first produced which is characterized by the death of the fixed cells that are in contact with the iodoform and by a more or less considerable attraction of leukocytes. On the second or third day the fixed cells begin to multiply and take on an increased activity. The reaction does not differ materially from that following irritant or necrotic agents generally. The multiplication of cells and the increase of their nutritive activity, which persists for about a week after the iodoform injections, makes an excellent agent for substitutive inflammation. The reaction of the subserous cellular tissue and of the subcutaneous cellular tissue is analogous to the inflammation produced by a traumatism or by an aseptic irritant. While **iodoform acts on the tissues**, on the one hand, and on the microorganisms and their products, on the other hand, the action on the latter is not very rapid and the disappearance of the microorganisms should not be attributed to its bactericidal power alone. The principal factor in the action of iodoform is the formation of new cells with a tendency to sclerosis, that constitutes a ground unfavorable for the growth of microorganisms. It is possible that the formation of polymorphonuclear leukocytes, plasma cells, and giant cells may play an important part. The following formula is recommended: Iodoform and ether, of each, 10 grams; creasote, 2 grams; sterilized oil, 90 grams. [J.M.S.]

2.—Muller reports the case of a man aged 73, a merchant by occupation. The patient was in the habit of drinking liquors, absinth in particular; for 2 years he had been drunk at least 3 times a week. This habitual state of inebriety was often accompanied by abundant vomiting. In November, 1899, the patient began to complain of violent intermittent pain in the epigastrium which was accompanied by the vomiting of mucus, later of bile, and still later of food after eating. In the night of March 3, 1900, the patient vomited without warning between 2 and 3 liters of black blood. Following this the patient lost consciousness. On admission to the hospital he was found to be much emaciated, his complexion was a dirty yellow, his eyes were haggard, his face was covered with cold sweat, his pupils were very much dilated, and his rectal temperature was 36° C. (97.1° F.). The heart was feeble and frequent, and the liver was slightly increased in size, but beyond this physical examination revealed nothing. The patient died 15 hours after his admission to the hospital. The clinical diagnosis was gastric ulcer, carcinoma, and terminal hematemesis. At the necropsy the stomach was found to contain a brownish-green fluid, and microscopically presented the classic symptoms of acute gastritis. The most instructive lesions were found in the esophagus, just above the cardiac end of the stomach the superficial veins were found to be dilated, and in their immediate neighborhood numerous whitish patches studded

with linear ulcerations, recalling the lesions of mucous membrane produced by contact with a caustic. In the upper part of the esophagus, just below the pharynx, there were other varicose veins, but the condition was less marked, although the mucous membrane in their neighborhood presented the same yellowish-white color. The liver presented a marked fatty degeneration. The author considers the following to be the evolution of the case: 1. The local caustic action of alcohol on the mucous membrane of the esophagus and the stomach; **alcoholic phlebectasis**. 2. Subacute and chronic alcoholic intoxication produced an intense fatty degeneration of the hepatic cells. 3. The alterations in the liver resulted in a marked hemorrhagic action. The case also seems to show 1. that cirrhosis is not necessarily the cause of esophageal varices. 2. That phlebectasis may be of alcoholic origin. 3. That fatty degeneration of the liver of ethylic origin may be added to the local lesions due to the action of alcohol as a factor in the production of hemorrhage sufficient to explain the gravity thereof. [J.M.S.]

3.—Potain defines the **bruit de galop** as a "triple sound of the heart consisting of the addition to the two normal constituents of a third factor foreign to either of the others which is neither a whistle nor a rub, but a striking noise interposed between the normal sounds in one of the periods of silence." The abnormal sound may be heard either in diastole or in systole from which the designations diastolic, *bruit de galop* and systolic *bruit de galop* are obtained. It may be best marked in the neighborhood of the left cavities or of the right cavities of the heart. Diastolic *bruit de galop* may be differentiated from doubling of the diastolic sound by the fact that in the former, between the added sound and the first normal heart-sound, there is an interval of silence. Further, simultaneously with the added sound there is an impulse appreciable on the chest-wall which has its maximum intensity when produced in the left cavities at the left border of the heart, in a line drawn from the apex to the third interspace. It is best made out with the single stethoscope because the binaural stethoscope will not transmit the chest-wall impulse. The *bruit de galop* is always accompanied by increase of the volume of the heart, although often slightly marked. Among the affections that are accompanied by diastolic *bruit de galop* hypertrophy of the heart from interstitial nephritis holds first place; indeed the occurrence of the *bruit de galop* is a very useful indication of this condition. The phenomenon is frequent in the hypertrophy that accompanies aortic insufficiency; it may also be looked for in exophthalmic goiter and in scarlet fever. In the latter case the occurrence of the *bruit de galop* indicates that the disease has a tendency to involve the cardiovascular system. Diastolic *bruit de galop* produced in the right cavities of the heart has its maximum sound in a line drawn from the apex to the second piece of the sternum, and is then usually accompanied by accentuation of the pulmonary second sound. It is usually due to transitory dilation of the heart of dyspeptic origin. It is often seen in patients suffering from chlorosis accompanied by a large heart, in whom it is also due to dyspepsia; and as a complication in pericarditis. The systolic *bruit de galop* is best heard at the base of the heart near the aorta, whence it is transmitted into the carotids, but it does not extend to the pericardium. It is seen in arterial sclerosis with atheroma, in typhoid fever, in influenza of the typhoid type. The systolic form is of arterial origin, while the diastolic form is a phenomenon of ventricular diastole. [J.M.S.]

4.—A goat into which Metchnikoff injected at several intervals defibrinated human blood, furnished a serum that rapidly dissolved the human red blood-corpuscles. This serum was injected into several leprosy patients with their consent and with great care. Following each injection of **hemolytic serum** there was a certain increase of red blood-corpuscles and of hemoglobin that remained for several days and that increased after repeated injections in increasing doses. The injections were well borne by the patients. When, after more than 2 months of study, the stimulant property of the hemolytic serum and its freedom from danger were determined, it was decided to make a decisive experiment. One leprosy patient received $\frac{1}{2}$ cc. of the serum and another received 5 cc. of the same serum. Both injections caused an increase in the number of red corpuscles and of the amount

of hemoglobin, but to a different degree. Whilst in the first patient the hemopoietic superactivity was kept up for several days only; in the second patient it persisted for 3 weeks, at least. Fifteen days after the injection the number of red corpuscles and the amount of hemoglobin had returned to normal in the first patient and he was given a second injection of 3 cc. of the same serum with like result. At the end of 3 weeks the second patient was given a second injection of 8 cc. with like results. The patients experienced no difficulty during the injections, but said that they felt better, particularly with regard to the neuralgic pains. These results should be interpreted as an example of the general law of the stimulant action of cellular toxins on the corresponding elements. [J.M.S.]

5.—According to Lacour, the **initial phenomenon of labor** is an uteroovarian congestion that sends to the uterus a great quantity of blood, rich in carbonic acid, which, in its turn, acts upon the uterine fiber to set up contractions. Now, the uteroovarian congestion is dependent upon the following mechanism: the **corpus luteum of pregnancy** secretes a substance that paralyzes the uteroovarian vasodilator nerves, the sensory nerves, and the muscle-fibers of the uterus. When this substance disappears, the vasodilator nerves, the sensory nerves and the muscle-fibers regain their physiologic properties; the muscle contracts, and finally expels the ovum. These contractions supervene even when the uterus is empty, as in cases of extrauterine pregnancy. Inevitable abortion may be explained by the same mechanism; women subject to this condition being those in whom the corpus luteum undergoes a hasty physiologic evolution. The uteroovarian congestion and the precocious contractions bring about the premature expulsion of the fetus. In such cases ovarian opotherapy may sometimes prove useful. [J.M.S.]

6.—Guyard concludes that **typhoid myocarditis** is the rule, so far as histologic lesion is concerned, in typhoid fever patients who die, even though they have presented no marked signs of cardiac weakness. It attacks, by preference, those that are predisposed by a cardiac condition that antedates the attack of typhoid fever, and debilitated or aged subjects. Weakness of the first sound of the heart combined with a tachycardia that persists above 100 pulsations per minute, suffices to diagnose the condition. The different signs that characterize the condition are of no diagnostic or prognostic value, when they are isolated. Typhoid myocarditis is a parenchymatous myocarditis and needs often to be carefully sought for with the aid of high powers of the microscope. Its lesions, scattered in patches, involve particularly the muscle-fibers, and, secondarily, the connective tissue and the vessels. Its evolution is extremely variable and a definite prognosis cannot be made in a given case nor at a given period. From the viewpoint of termination the cases may be classed as (1) benign forms, often called nervous troubles or passing unnoticed, seem to be cured without leaving a trace; (2) grave forms, that produce myocardial cicatrices and that may serve as the starting point of a chronic myocarditis; and (3) fatal forms. Death, although it sometimes results from syncope, usually takes place by progressive adynemia. It seems particularly to occur in cases in which the heart was attacked by lesions before typhoid fever developed. [J.M.S.]

7.—There is a special form of pericarditis in which one finds a more or less complete symphysis in the anterior portion of the pericardium and an effusion which may be serous, hemorrhagic, or purulent, collected behind the heart. Massip calls this form **encysted pericarditis with retrocardiac effusion**. The usual causes of pericarditis are the etiologic factors in the production of this form of the disease. Adhesions form easier in front where the heart beats against the chest-wall energetically; then the effusion will be produced behind the heart only. Clinically, the symptomatology is very obscure, and often pericarditis is the only diagnosis that can be made. The gravity of the functional symptoms, the signs of compression of the lung, of the esophagus, dulness in the left posterior region of the thorax, muffling or disappearance of the heart-sounds in the same region coincident with the signs of pericarditis, often slightly marked, are the principal manifestations of the condition. Usually the condition is very grave, even in cases that have been treated surgically; in acute cases fatal termination is the rule. [J.M.S.]

Practical Therapeutics.

Under the charge of

A. A. STEVENS, A.M., M.D.

Largin.—Stephenson (*The Therapist*, May 15, 1900) believes that largin is in some respects the best of the synthetic silver compounds. As it contains 11.10% of silver combined with protalbin it is richer in the metal than any of the other compounds. It appears as a gray, granular powder, soluble in hot water. Its solutions are precipitated neither by albumen nor by chlorids, so that it is likely to penetrate in active form more or less deeply into the tissues of the conjunctiva. In most cases the author employs a saturated (10%) solution. In a few cases, such as phlyctenulæ of the cornea or conjunctiva, he dusted the powder itself over the inflamed parts. The results of his experiments in 100 cases of eye-diseases are thus summarized: In gonococcal ophthalmia largin was distinctly inferior both to protargol and to silver nitrate. On the other hand, in acute contagious ophthalmia, due to the Koch-Weeks bacillus, cure soon followed the daily application of a 10% solution. In this affection largin has two advantages over lunar caustic: it causes little, if any, pain; it never gives rise to a conjunctival eschar. In acute trachoma largin acts admirably. In diplo-bacillary ophthalmia the zinc salts are preferable. In acute blepharo-conjunctivitis, often the result of infection by pus-organisms, largin renders good service, applied both as a 5% ointment and a 10% lotion. In some cases of lacrimal trouble excellent results were obtained from injections of largin in addition to the classical treatment. Under such circumstances the drug seemed to exert almost a specific action against the products of suppuration. The only drawback to largin is its liability to stain the conjunctiva if applied for more than a few weeks. It seems even more likely to cause the discoloration than either lunar caustic or protargol.

Inhalations of Formalin.—Green (*New York Lancet*) claims to have obtained excellent results from inhalations of formalin in phthisis and chronic bronchitis. He recommends the following combination:

R.—Formalin 1 dram.
Glycerin 4 drams.
Water 5 ounces.

To be used from 4 to 6 times in 24 hours. The addition of 10 minims of aromatic spirits of ammonia is recommended when the air-passages are unusually sensitive.

Salipyrin.—Bendtner (*Correspondenz-Blatt für Schweizer Aerzte*, No. 2, 1900, and *The Therapist*, April 16, 1900) concludes that salipyrin has a favorable influence on uterine hemorrhages, if there are no severe anatomic changes present. It has a soothing effect upon menstrual troubles and others accompanying uterine hemorrhage. Salipyrin acts exceedingly well in premenstrual and menstrual psychical conditions of depression, although the action is but temporary. The drug is indicated in menorrhagia (with or without diseased adnexa), if not due to cancerous processes, or large tumors, or hemorrhages following parturition and abortion; in climacteric hemorrhages; in hemorrhages occurring some considerable time after confinement or abortion; in threatening abortion; in dysmenorrhea; and in uterine disturbances accompanied by neuralgic and periodical symptoms, and also in menstrual troubles in which no severe disease of the uterus is present.

Rules for Paracentesis in Acute Pleurisy.—J. Mitchell Bruce (*Treatment in Practical Medicine*, 1900) says there are two great clinical guides to the performance of paracentesis: First, lapse of time or duration of the effusion; second, urgency. First, no considerable effusion should, under any circumstances, be kept for more than 3 weeks, unless signs of ebb have commenced and are progressive. Fourteen days would probably be a wiser limit; and, indeed, cases have done well which were not permitted to pass the tenth day, although there was no urgency and fever was still present. If fluid be allowed to remain indefinitely in the chest, the lung and the chest-wall both become steadily more impaired in function, and the difficulty of spontaneous

absorption increases with thickening of the pleura. Only harm can result from leaving it longer. Second, urgency of symptoms demands immediate operation, however long or however short the duration of the case. Urgency is recognized by—(a) Universal dullness of the affected side. This evidence is otherwise described as disappearance of Skodaic resonance at the apex. Some authorities do not wait for complete collapse of the lung, but operate when the fluid signs reach the level of the second rib in front. (b) Signs of pleurisy on the opposite side. (c) Development of rales in the opposite lung. (d) Signs of bronchitis, or of pneumonia. (e) Signs and symptoms of serious embarrassment of the heart, whether by simple dislocation or by associated endo-pericarditis, or by previous valvular disease, or adherent pericardium: pallor, faintness, cold extremities, palpitation, great anxiety, and failing pulse. (f) Signs and symptoms of grave involvement of other organs; subdiaphragmatic abscess, acute or chronic Bright's disease, with severe symptoms, etc. (g) Urgent symptoms of intrathoracic pressure, whatever their cause; persistent dyspnea, even in bed, with cough, frothy serous expectoration, lividity and sweats. (h) Signs and symptoms of increase of effusion after previous arrest or decline.

The Treatment of Whooping-Cough without Drugs.—Norton (*Archives of Pediatrics*, April, 1900) states that 150 children under his care in the New York Foundling Hospital were treated by Bergeon's method, which consists in the administration of carbonic acid by the rectum. Of the whole number 143 were decidedly benefited. The vomiting ceased in a day or two, and the paroxysms rapidly decreased in severity and frequency, but the duration of the disease was not lessened. In 7 cases there was no relief from the treatment. In 20 other cases gas supplied by a manufacturer in tanks was used instead of the nascent gas, and in this series the results were absolutely negative. The good results have been attributed by Ephraim to the extra amount of oxygen that reaches the air-vesicles, where it is exchanged for the extra amount of carbonic-acid gas. Norton also reports 3 cases in which a laryngeal tube was used for intercurrent diphtheric stenosis. The use of an intubation tube of hard rubber was first suggested by O'Dwyer in grave cases accompanied by frequent vomiting. In Norton's cases the cough, so far as expiration was concerned, was not modified, but glottic spasm being prevented by the tube air could freely enter during expiration, and thus the paroxysm terminated abruptly without distress or vomiting. The good results confirmed O'Dwyer's view of the efficacy of the hard rubber tube in severe cases.

Orthoform.—According to the *Medical Review*, June, 1900, Manquat (*Archiv Gén. de Med.*, April, 1900) writes that orthoform may be applied without danger to ulcerations of the mouth, pharynx, and larynx. It is also particularly useful as an analgesic in dysphagia due to cancerous ulceration of the epiglottis or esophagus. Two and a half grains in cachet will ease the pharyngeal pains of gastric ulcer in five minutes. Orthoform is a reliable analgesic application in cracks of nipple and skin, hemorrhoids, intertrigo, stomatitis, and ulcerations of the tonsils. In dentistry it diminishes the pain of extraction, and when combined with arsenic it lessens the pain from the caustic action of the latter in destroying the pulp. Ginestoux recommends the following application for the destruction of cutaneous epitheliomas:

R.—Orthoform..... 1 dram.
Arsenous acid..... 1 dram.
Alcohol..... 5 ounces.
Water..... 5 ounces.

Orthoform is incompatible with silver nitrate.

Hypodermic Injections of Pilocarpin for Gallstones.—Popham (*British Medical Journal*, June 30, 1900) writes that at the suggestion of Dr. Mitchell, of Durban, he has recently employed in several cases of biliary colic pilocarpin hypodermically in ascending doses. The results were undoubtedly encouraging and only once did the drug give rise to any unpleasant symptoms. The writer regards pilocarpin as more efficient than morphin in hepatic colic, and attributes the good results to the increase of secretions whereby the passages are lubricated and the expulsion of the stone facilitated.

Original Articles.

THE ETIOLOGY AND PATHOLOGY OF EMPYEMA.¹

By JOSEPH McFARLAND, M.D.,
of Philadelphia.

1. THORACIC empyema, or purulent pleurisy, is an infectious inflammatory condition of the pleura, characterized by a purulent accumulation in its cavity.

Etiology.—The condition is always infectious but not always specific, as a variety of causes may lead to it. Thus may be mentioned, (1) traumatic injuries of the chest-wall; (2) local disease of the chest-wall and lung; (3) lymph metastasis; (4) blood metastasis.

Traumatic Injuries.—In the greater number of cases, it is comparatively easy to explain the occurrence of empyema after traumatic injuries of the chest-wall by the presence of an external or pulmonary wound through which the infectious agent shall enter. Such lesions are evident in punctured and gunshot wounds, compound fracture of the ribs, hypodermic and paracentesis wounds, etc., but in some few cases it is extremely difficult to see in just what manner the trauma acts. This is well illustrated in a case mentioned by J. G. Sutton (*Lectures on Pathology*, p. 235), who speaks of "having performed an autopsy upon the body of a young muscular man, who died rapidly from suppuration of the pleura after a blow on the side. There were no other lesions."

A traumatic nonspecific purulent pleurisy may be experimentally produced by the introduction of irritating chemical substances—oil of turpentine, etc.—into the pleural cavity. In the traumatic empyemas the cause of infection seems to enter the chest from without, and examination of the pus in such cases usually reveals the presence of staphylococci and other familiar microorganisms.

In speaking of chest-punctures as causes of empyema, some mention should be made of the exploration of the chest by the hypodermic needle, and the withdrawal of fluid through an aspirating needle as sources of infection. Griffiths (*British Medical Journal*, 1887, vol. i, p. 831) in 1887 carefully studied 151 cases of aspiration and found that in two cases only did the fluid become purulent. One of these was complicated with tuberculosis, the other with erysipelas.

2. *Local disease* of the tissues contiguous to the pleura is a fruitful source of empyema. Bronchopneumonia, especially the forms occurring in influenza and tuberculosis; croupous pneumonia, tuberculosis, carcinoma, gangrene, cavity formation, and abscess of the lung may lead to empyema under appropriate conditions.

In tuberculosis, which is the most fruitful source of the disease in adults, the tuberculosis itself may excite empyema, the condition having been observed in primary tuberculosis of the pleura as well as in tuberculosis of the lung, or the disease may lead to empyema by the escape of infectious material from small superficial cavities. If these cavities rupture pneumothorax usually results. In tuberculosis it is possible for empyema to depend upon extension of infection along the lymphatic channels from lung to pleura, but this seems to be quite unusual; for, in tuberculous empyema, the tubercle-bacillus is commonly the only microorganism present, and not infrequently careful search fails to discover any organisms in the pus. The tuberculous em-

pyema commonly develops as a serofibrinous pleurisy which subsequently becomes purulent.

Carious ribs and vertebrae sometimes lead to empyema, though probably more frequently the reverse condition is true and the empyema leads to caries and necrosis of the bone.

Perforation of the diaphragm and the evacuation of a hepatic abscess into the pleural cavity has been known to excite empyema. Carcinoma of the esophagus and even of the stomach may by perforation into the pleural cavity cause purulent inflammation.

The rupture of echinococcus cysts and the escape of their contents into the pleura may lead to pus formation.

Sometimes mediastinal abscesses and suppurating or tuberculous bronchial or mediastinal lymphatic nodes break down and evacuate into one or the other pleural cavity with resulting empyema. In rare cases gumma of the lung, liver, pleura, chest-wall or other tissue may by rupture or otherwise act as exciting causes of purulent pleurisy.

As in the traumatic empyemas, no one specific microorganism covers all these cases, and in each particular condition the present microorganisms are easily accounted for by the primary condition.

3. *Lymphatic metastasis* is probably an important means by which bacteria reach the pleura from neighboring but not contiguous tissues. In some cases it may be that primary inflammatory diseases of the pericardium extend to the pleura by the lymphatics. It may be by the lymphatics that the pleura becomes infected in pneumonia. Sometimes the source of infection seems to be much more remote. Sutton mentions the occurrence of pleurisy in middle-ear disease by an extension of the inflammation to the cellular tissue of the pleura along the sheath of the jugular vein. Wounds of the neck and ligations of the great vessels of the neck have been followed by pleurisy of similar occurrence.

In rare cases peritonitis may extend to the pleura by lymphatic extension through the diaphragm.

4. *Blood metastasis* is typically illustrated by pyemia. The bacteria circulating in the blood may be deposited directly in the pleura with the production of small abscesses which open into the pleura and infect it, or there may be a previous hematogenic septic pneumonia with miliary abscesses and escape of bacteria into the pleura. In some of the infectious fevers empyema occurs either as a complication or a sequel. This is most common in scarlatina, but also occurs in typhoid, measles, whooping-cough and pneumonia. The microorganisms present may or may not be those specific for the respective diseases.

In diseases characterized by diminished resistance to infection, as nephritis, the microorganisms which enter the blood and fail to meet with prompt destruction, may accidentally lodge in the pleura and excite empyema.

I. BACTERIOLOGY.—The bacteria most frequently discovered in the pus of empyema are the streptococcus, pneumococcus, tubercle-bacillus, staphylococci, typhoid bacillus, influenza bacillus, Friedländer's bacillus and *Bacillus coli communis*.

The microorganisms found in the pus vary considerably with the time of life at which the empyema occurs. Thus, in children the pneumococcus is most frequently met, while in adults it is the streptococcus. In adults the number of tuberculous empyemas is nearly twice as great as in children. The following table from Netter, who has done the best bacteriologic work upon the subject, will amply explain the differences:

¹ Read April 11, 1900, before the Philadelphia County Medical Society.

	Children.	Adults.
Pneumococcus	53.6	17.3
Pneumococcus and streptococcus ...	3.6	2.5
Saprophytic organisms	10.7	
Staphylococci		1.2
Tuberculous cases	14.3	25.
Streptococci	17.6	53.

1. *Pneumococcus empyemas*.—According to Netter these may be primary or secondary. He thinks the primary forms may depend upon the penetration of the air-cells of the lung so that the pneumococcus may enter the pleural cavity without exciting pneumonia. It is not impossible that the infection is hematogenous.

Netter found the pneumococcus in 53 out of 156 cases studied; Levy found it in 9 out of 17 cases studied, and Prudden found it in 9 out of 24 cases. Netter found that out of 127 cases of empyema of adults 32 (about 25%) were caused by pneumococci, while of 29 cases in children 21 (or nearly 75%) were caused by it. It is, therefore, vastly more common as a cause of empyema in children than in adults.

Koplik found the pneumococcus in 60% of the cases he studied. Hold found pneumococci only in 14 out of 19 cases studied. In the remaining cases the streptococcus only in 3, pneumococci and streptococci in 1, and staphylococci only in 1.

Netter believes that the greater number of pneumococcus empyemas are of secondary origin, though out of 53 cases he could only secure a history of pneumonia in 19.

The pus which characterizes the pneumococcus empyema is usually of the variety known to the older writers as laudable pus. It is thick, rich in corpuscles, and is apt to be viscid. Sometimes it has a peculiar greenish color, though none of these peculiarities are constant and there may be nothing about the pus to suggest from what infection it springs.

2. *Streptococcus empyema* is the most frequent form met with in adults, comprising 56, or 44% of the cases in Netter's group of 127. In 24 cases studied by Prudden the streptococcus was present in 7,—29%. Ferdinand studied 12 cases and found the streptococcus in 6,—50%.

Summing up the subject Whitney (*Twentieth Century Practice of Medicine*, vol. vii, p. 39) finds that the streptococcus is present in about 40% of the purulent pleurisies of adults.

The streptococcic form of the disease is usually secondary to suppurative foci elsewhere in the body. The most frequent seat of these lesions Netter believes to be the lung. The pulmonary lesions may be unnoticed or may occur as bronchopneumonia, croupous pneumonia, tuberculosis, bronchiectasis, abscess, gangrene, and neoplasm.

Streptococcus empyema also occurs from suppurations in the mediastinum, peritonitis, subphrenic abscess, and in various infectious diseases, especially scarlatina, erysipelas, diphtheria, and measles. It may also succeed suppurative processes of the limbs.

This form of empyema is usually of acute occurrence and leads to rapid pus-formation. The fluid of the exudate begins as a slightly clouded exudate which soon becomes opaque and purulent. Upon standing the fluid readily allows the contained pus-corpuscles to sediment, and separates into two layers, one of clear fluid and one of thick yellowish purulent deposit.

3. *Tuberculous empyema* is by no means as frequent as was at one time supposed. Of Netter's 156 cases only 15,—10%—were of this nature. Prudden found the

tubercle-bacillus in only 1 out of 24 cases, Koplik in 1 out of 12 cases in children; Ehrlich in 7 out of 19 cases. In the tuberculous empyemas, however, judgment cannot always be based upon the presence of the tubercle-bacillus, as in many cases so few of the organisms are present that their detection is attended with much difficulty.

Ziemssen, Levy, and Ferdinand agree with Netter as to the infrequency of pure tuberculous empyema, while Kelsch and Vaillard believe it common. Tuberculous empyema may in rare cases be acute and rapidly fatal, Osler having seen such cases. Usually it is chronic and often develops to an advanced stage before it is noticed. Usually the patients die of tuberculosis, but in some cases a fair degree of health returns after the evacuation is complete. The pus in this form of empyema is like that of cold abscesses and tuberculous lesions generally, *i. e.*, is thin, watery, curdy, and deposits a powdery or flocculent sediment. It may be somewhat hemorrhagic.

4. *Staphylococcus empyema* usually depends upon the *Staphylococcus pyogenes aureus* which enters the chest from without in most cases, though it may be derived from other staphylococcus foci. The organism is not frequent. Netter met with it in 21 out of 156 cases, 6 times in pure, 15 times in mixed culture; Grawitz encountered it twice out of 48 cases; Prudden in 1 out of 24 cases; Koplik in 1 out of 12 cases.

Whitney says that the organism is always of secondary importance and its associate nearly always determines the character of the suppuration.

5. *Typhoid empyema*. *Bacillus typhosus* has been found in pleuritic pus by Valentini and by Lorigu and Pensuti in one case each and in two cases by Weinbraud and Spring. The bacillus is usually in pure culture, though it has been found together with staphylococci.

6. *Colon-bacillus empyema*.—Observations are on record in which colon-bacilli have been found in the pleural pus by Widal, Dumontpallier, and Wendrix. I have been unable to secure the details of these cases.

7. *Friedländer's-bacillus empyema*.—The bacillus of Friedländer has been found in empyema in two cases, one of which is reported by Letulle, the other by Netter.

8. *Gonococcus empyema* has been reported by Bordoni-Uffreduzzi and Mazza. The patient was a young girl, 11 years old, who suffered from blennorrhagia and blennorrhagic polyarthritis.

9. *Influenza empyema* probably commonly depends upon the streptococci and pneumococci, but Pfeiffer has succeeded in isolating the influenza-bacillus from the exudate of empyema in two cases which he investigated.

Bareggi has also done the same in a case of purulent pleuritis following bronchopneumonia.

10. *Miscellaneous*.—Occasional interesting observations upon the microorganismal inhabitants of empyemic pus merit brief mention. Osler says that occasionally psorosperms have been found. Spirilla were unexpectedly encountered in one case and corresponded with the form frequently met with in the mouth. They could not be cultivated. A case of leptothrix empyema in a dog is on record.

Diphtheria-bacilli have been found in empyema occurring as a sequel of diphtheria, though usually the streptococcus would be expected in these cases.

11. *Putrid empyema* is caused by the entrance into the pleural cavity of saprophytic bacteria. The condition usually occurs from cancerous processes of the gastro-

intestinal apparatus which work their way into the mediastinum and gradually invade the pleura, or from gangrene of the lung.

The process is characterized by extreme fetor. The odor is sometimes like that of a privy, ammoniacal and disgusting; sometimes nauseating, sometimes like pickled alcoholic specimens, or sulfuretted hydrogen.

The bacteriologic flora is very mixed, many species both aërobic and anaërobic being present. Of the cultivable forms Würz mentions *Vibrio septique*, the colon-bacillus, *Micrococcus tetragenus*, *Staphylococcus pyogenes*, *Streptococcus pyogenes*, and a proteus common in the intestine.

Of the noncultivable forms *Spirochaeta denticola* of the saliva and others are mentioned.

Würz points out that considerable practical prognostic importance attaches to the bacteriologic study of the pus of empyema. Thus empyema in childhood, caused by the pneumococcus, is quite benign and runs a rapid course to recovery, while that caused by the streptococcus runs a slower course and is more serious. Tuberculous pleuritis is a chronic process usually terminating fatally or lasting for years until tuberculosis or an intercurrent affection carries off the patient or he gradually succumbs to prolonged hectic amyloid disease and asthenia.

Empyema is more frequent in children than in adults. Mackey found that 40% of all the pleural effusions of childhood were purulent, while only 5% of those of adults were so. The disease may occur at any age. Pleuritis has been found in the fetus and in the newborn. The greatest number of cases in adults occur between the twentieth and fiftieth years.

The affection is usually unilateral, though both sides may be affected. The left side is more frequently affected than the right.

II. MORBID ANATOMY.—The pleural cavity in empyema contains pus. The quantity may vary from a few cubic centimeters to several liters, and the quality will vary according to the mode of formation, the duration, and prognosis of the affection.

In the cases which begin with a serofibrinous exudate and later develop into empyema the formation of pus is indicated by a clouding of the liquid, depending upon the presence of a few corpuscles. Later the great increase in the corpuscular elements gives the exudate the typically purulent appearance.

In these cases the amount of exudate is usually considerable before it becomes distinctly purulent.

The cases which begin with pus-formation may be observed at any stage of accumulation, and the quantity of pus may be very small.

In ordinary cases there is a distinct tendency for the pus to separate into layers by the sedimentation of the contained corpuscle. This leaves a fairly clear fluid with a thick, crumbly or flocculent sediment below.

Errors in diagnosis may be occasioned by this sedimentation, as unless care be exercised an exploring needle may withdraw clear fluid instead of pus.

The appearance of the pus varies with different conditions, and in the different infections. It has been shown that in the pneumococcus empyema of children the pus is apt to have a greenish color. In the ordinary streptococcus empyema of adults, it presents the appearance of laudable pus. In the tuberculous cases it is somewhat variable, though usually flocculent and curdy and lacking in healthy morphologic constituents.

The pus has a specific gravity varying from 1.023 to

1.015. It is, of course, rich in albumin and contains glycogen, paralbumin, urea, uric acid, and cholesterin (Naunyn). Sometimes leucin, tyrosin, and xanthin are present. In rare cases crystals similar to those of spermin are present and are thought by some to indicate that the empyema originates from ruptured hydatid cysts.

The pus usually has an acid reaction, but, if infected by saprophytic microorganisms, may become alkaline.

The progress of the disease is frequently associated with changes in the exudate. In individuals with good absorbing powers, as in children, it is possible for the entire exudate to be absorbed. In the greater number of cases, and especially in adults, however, the fluid is absorbed, leaving the corpuscular elements to undergo subsequent degenerative changes. Fatty degeneration, the formation of fatty acids, leucin, tyrosin, cholesterin, etc., take place in the corpuscles, and the inspissation of the solid part of the exudate by the absorption of the fluid, changes the contents of the pleural cavity into a cheesy or crumbly mass of grayish-yellow color. In the course of time lime-salts usually precipitate in this mass, which then becomes dense and gritty.

Changes in the pleura.—In pneumococcus empyema of children the pleura may show surprisingly little alteration, its surface being smooth and shining or slightly dulled and congested. Upon microscopic examination the subendothelial tissue of the pleura is found infiltrated with pus-cells.

More commonly in empyema the pleura participates in the disease-process, and upon its congested and thickened surface flakes of fibrin and shreds of degenerating endothelial tissue are observed. As the empyema continues to increase in size and the pus to act upon and macerate the tissues the pleura may become more and more distinctly covered with a pseudomembranous formation of grayish-white color and loose attachment. When stripped off, this sometimes leaves a shining surface, which indicates that the endothelium is intact, but more frequently leaves a dull, eroded surface, which indicates that the endothelium is destroyed. The nature of the pseudomembranous formation is uncertain. It is thought by most pathologists to originate from the inflammatory exudate by coagulation upon the surface. By others it is looked upon as a product of the degenerating endothelium; by still others, who find that the endothelium is sometimes elevated and covers the so-called fibrin formation, as a product of subendothelial connective-tissue degeneration of the pleura.

In many cases of empyema pleuritic adhesions are observed. They probably depend in a majority of cases upon antecedent troubles. Their formation usually begins at the apices of the diseased lungs, probably because of the quiescence of that part of the pulmonary tissue during respiration, and because the accumulating exudate separates the surfaces lower down.

The adhesions may be inconspicuous, but quite frequently descend nearly to the fluid which becomes circumscribed so as to more closely resemble an abscess-cavity than a purulent collection in the pleural cavity. The corroding action of the pus upon the pleura is quite evident and from prolonged contact it loses the endothelial covering, becomes greatly thickened, infiltrated with pus-cells and forms a true "pyogenic membrane."

In this thickened and altered pleura lime-salts are deposited earlier than in the inspissated pus of the cases terminating by absorption, and sometimes true bone-formation—pleural bones—has been observed.

The pulmonary pleura is even more diseased than the costal pleura, so that in the chronic cases the lung becomes covered with a thick rind which is soft and edematous, necrotic and lacerable so long as there is fluid in the chest, but which transforms into an unyielding callous rind when evacuation or absorption bring about regenerative changes.

Contact with the pus not only affects the pleura, but seems to affect the subjacent tissues as well. We find the tone of the muscles is lost so that in empyema the diaphragm is more depressed than in other fluid accumulations in the chest, and the intercostal muscles indicate loss of tone by permitting the spaces to bulge.

The erosions sometimes progress so that the subpleural and deeper tissues are destroyed and the empyema like other abscesses "burrows" its way to the surface to evacuate. This form is described as an *empyema necessitatis*. Such an empyema usually "points" and if not surgically treated, spontaneously evacuates its contents. By the greater number of writers it is said that the "pointing" and evacuation usually take place, as was first pointed out by Cruveilhier, in the space between the sternal end of the lower costal cartilage and the sternal border, the reason given for this being that the external intercostal muscle is absent and resistance diminished. Eichhorst found that his experience with spontaneously evacuating empyemas did not coincide with this observation, for in nearly all of his cases the perforation of the chest-wall took place in the fifth and sixth intercostal spaces between the mammillary and axillary lines. Osler says the perforation of the chest-wall may occur anywhere from the third to the sixth interspace. According to Marshall, it is usually in the fifth. While usually distinctive enough, the burrowing and pointing of an empyema may become most perplexing by making its appearance in unusual places. Eichhorst mentions a case in which the pus burrowed down behind the peritoneum and suggested a paranephritic abscess. Cases are not lacking in which it descended to Poupart's ligament and simulated psoas abscess. It has been known to reach the knee before pointing. Bouveret described a case that pointed in the lumbar region and simulated a lumbar aneurysm.

When the abscess points the appearances are usually sufficiently characteristic, though they may be mistaken for aneurysm, especially in the cases which pulsate. The skin assumes a reddish or purplish tint and becomes edematous and boggy over the projecting eminence that forms. The tumor fluctuates and not infrequently pulsates.

Spontaneous rupture is usually sudden and a liter or more pus may escape with a gush. In some cases, however, the opening is very small and the pus escapes in drops.

The evacuation may take place from a single opening or there may be several, which may communicate beneath the skin. In a few cases evacuation is followed by closure of the fistula and recovery, but the majority of cases exhibit fistulous communications with the chest, remaining for years. Osler mentions a case given in Copeland's Dictionary of Medicine, of a Bavarian physician who had a pleural fistula for 13 years and enjoyed fairly good health.

As long as the fistula remains open it continues to discharge pus, and the drain upon the system thus incurred ultimately may lead to constitutional involvements such as amyloid disease, of which complication the patients may die if not carried off in advance by

the tuberculosis occasioning the cold abscess or by intercurrent affections.

The erosions caused by empyema are always exerted upon the external tissues, and their movement and evacuation are not always toward the outer surface of the body. Sometimes the lung is eroded and a fistulous communication with a bronchial tube set up. This is a dangerous accident, for in the escape of pus from the tube more pus may enter than the patient can expectorate and he becomes overwhelmed, aspirates pus into the healthy part of the lung and drowns in it. When this is not the case, pneumothorax is nearly always sure to follow.

Sometimes the perforation occurs into the esophagus or into the stomach and the pus is vomited or passed with the feces. The pericardium is sometimes perforated. The mediastinum is not infrequently involved, and an empyema of one side may find its way to the opposite side by fistulae through the mediastinum.

The presence of pus in the pleural cavity gives rise to more or less well-marked constitutional symptoms such as loss of appetite, hectic fever, sweats, and there is always pain of greater or less intensity in the affected side. So soon as the pus is evacuated these symptoms subside. If, however, the fistula heals and pus reaccumulates the symptoms again make their appearance.

Changes in the lung.—It is almost impossible for empyema to occur without incommencing the action of the lung and except in the benign pneumococcus empyema of childhood and possibly a few of the rapid streptococcus empyemas of adults, they cannot occur without leaving permanent changes in the lung. The chronic tuberculous empyema is particularly damaging to the pulmonary tissues.

The immediate effect of empyema is to occupy space so that complete expansion of the lung becomes impossible. As the empyema becomes larger the expansion becomes less and less until atelectasis is almost complete and in exaggerated cases the organ becomes inconspicuous in size, flattened in form and may later not only be atelectatic but also compressed by the increasing fluid. The tissue is solid, airless, tough, leathery, and grayish or reddish-brown or even blackish in color. When incised it is noncrepitant and carnified. The bronchial tubes may appear larger than normal and may contain mucopus.

Few cases reach such a stage of compression and destruction as this, partly because few empyemas become large enough, and partly because of the early formation of adhesions between the pulmonary and costal pleurae in the upper part of the chest. In the event of an increase of pus accumulation after the adhesions form a loculated empyema may result.

When the chest cavity is opened in cases of empyema the lung may not appear and the cavity of the empyema may seem to occupy the entire pleural cavity. This appearance depends upon the fact that adhesions have formed between the lung and less diseased parts of the pleura, while over the exposed pulmonary and costal surfaces the macerated, thickened, and infiltrated pleura is completely changed into a "pyogenic membrane."

In still less marked cases when adhesions are not extensive and the process less chronic, the surface of the pleura becomes infiltrated and thickened and in the repair that follows recovery the thin edges of the lung suffer most.

In chronic empyema the macerating and corroding effect of the pus is exerted in large measure upon the

pulmonary pleura which sometimes become so softened and infiltrated that the pus is permitted to enter the alveolar structure of the lung without actual perforation and be expectorated. That this process is one of infiltration and does not depend upon perforation is shown by the fact that in these cases pneumothorax does not occur.

The absorption of the pus and its entrance into the lymphatic structure of the lung is followed by inflammation of the interstitial tissue of the lung so that pleurogenic pneumonia is usually present in such lungs. If this process is active the dissecting effect of suppuration is very marked, if chronic, the fibrosis predominates and the trabeculae of the lungs are thickened.

The recovery of empyema is followed by further disaster to the pulmonary tissue by the fibrosis that takes place. In mild cases of moderate duration the thickened pleura by its contraction rounds off the sharp inferior edges of the lung and offers some impediment to complete expansion. In bad cases the expansion is greatly or completely hindered by the firm callous rind which forms upon the compressed lung and by its almost cartilaginous consistency prevents expansion.

In the very chronic, exaggerated cases, the atelectasis, carnification, fibrosis, and calcification all cooperate to make any improvement in the condition of the lung impossible.

When such cases recover or improve after evacuation, the lung is unable to expand and occupy its normal position, so the ribs fall, the side sinks in and a marked deformity of the thorax follows.

Empyema with atelectasis and compression of one lung is always accompanied by vicarious action of the other lung, whose tissues are more or less inflated in consequence. In breathing exercises directed towards the expansion of the diseased lung, it is the sound lung that is chiefly influenced, and care should be taken not to have the inspiratory efforts so forcible as to occasion emphysematous changes in the sound lung.

Changes in the thorax.—The formation and continuance of empyema are accompanied by enlargement of the affected side. The diameter of that side is greater than that of its fellow and the intercostal spaces bulge. The diaphragm is pushed down and with it the liver on the right side or the spleen on the left. The heart is usually dislocated toward the opposite side and may embarrass the movements of the normal lung.

During the time that the pus is present in the chest the various adhesions, excavations, ulcerations and perforations already described progress, and in addition there may be erosions of the cartilages and bones with caries and necrosis.

After evacuation and recovery the affected side of the chest usually collapses, and the ribs sink in, the shoulder droops, and the spinal column makes a scoliotic twist toward the empyemic side.

The hope of improvement by gymnastics will often be defeated by the further contraction of the new fibroid tissue in the chest, and all hope of causing the lung to expand in exaggerated chronic cases may as well be abandoned.

Effect upon the respiration.—The empyema with the collapse of pulmonary tissue which it involves is an important hindrance to respiration, so that dyspnea and insufficient aeration of the blood are usual symptoms. In addition to the compromised breathing-space on the diseased side the dislocation of the heart toward the other side increases the difficulty, and from the time

the empyema forms it becomes a source of respiratory deficiency. The described subsequent changes make it impossible for this ever to be overcome and the patient will remain a more or less feeble breather. In some cases, especially in children, the dyspnea may be so slight, however, as to escape observation.

Effect upon the circulation.—The dislocation of the heart by pressure of the accumulating pus is noticeable in most cases, and the pressure and proximity effect is often palpable in the transmission of the cardiac impulse to the purulent accumulation and the occurrence of the so-called *pulsating empyema*.

The dislocation of the heart also makes traction upon and may kink the great vessels, especially at the diaphragmatic orifices, so that the circulation in the lower extremities is disturbed and may show itself in venous congestions.

General disturbance of the venous circulation is also occasioned by the obstruction of circulation in the diseased lung and increased labor of the right side of the heart. Right-sided cardiac hypertrophy is not infrequently observed in consequence of this increased labor.

The disturbed pulmonary circulation, as has been pointed out by Orth, is not infrequently associated with compensatory venous collateral circulations which form between the pulmonary vessels and those of the thoracic walls.

PROSTATIC CALCULUS.*

By JOHN C. SPENCER, A.B., M.D.,
of San Francisco, Cal.

Late Professor of Pathology and Histology, Medical Department University California; Chief of Clinic for Genitourinary Diseases, Medical Department University of California.

A CLEAR distinction should be drawn between essential and adventitious, or so-called exotic, calculus of the prostate. By essential, is meant that form which has its origin in the gland substance, and may eventually, in the course of development, break through into the prostatic urethra. By adventitious is meant that form which originates externally to the prostate, as, in the urinary bladder for instance, and being of relatively small size, finds its way into the prostatic urethra, and thence into the prostatic sinus, or by trauma after lithotripsy, directly into the gland substance. Once lodged, it will increase in size by the accretion of urinary salts in solution, and eventually invade the gland parenchyma, involving the latter to a great extent, and protruding into the prostatic urethra to a small extent. While still in the gland, the composition of the essential form differs chemically and morphologically from that of the adventitious form. This paper will treat of the essential variety chiefly.

From the literature at command, it would seem,—although their presence was observed by Morgagni, who likened them to “small grains of snuff” in appearance,—that one of the earliest, if not the earliest investigation as regards the nature of these calculi, was that of R. Virchow.¹

Again Iversen,⁷ nearly 20 years later, took up the study of the nature and origin of these minute bodies. He describes certain epithelial cells, containing yellowish or brownish pigment. The cell-envelope being dissolved or absorbed, the granules are set free in the parenchyma of the gland. These then form a nucleus

* Read at the Thirtieth Annual Meeting of the California State Medical Society, April, 1900.

about which homogeneous concentric layers are deposited, of a substance giving an amyloid reaction.

Stillings²⁷ also regards the beginnings of these concretions as being due to degenerated protoplasm of gland epithelia. Around these masses, colloid material is deposited and subsequently, after amyloid degeneration has taken place, the iodine reaction is obtainable. It is not obtainable in the case of the more recently formed bodies. He further considers only such colloid bodies as are formed in adult life, as forming the nucleus of a concretion. Such as are found in childhood or early manhood are usually expelled through the acini and duct by muscular contraction. In advanced age any mechanical interference with the emptying of the gland acini, through muscular weakness or degeneration, results in the formation of a hyaline substance first described by him.

Posner,¹⁶ in 1889, investigating along similar lines, regarded this deposit as due to a coagulation of albuminous fluids, or the saturation of albuminous bodies with lecithin.

The conclusions arrived at by Eastman²⁰ in a very thorough study of the origin of prostatic calculi leads him to the opinion that "Since a positive amyloid reaction appears almost constantly, and since no proofs that the degeneration is of other than amyloid character, are at hand, I believe I may conclude with Hildebrand, that the presence of amyloid matter in the concretions may be fairly assumed."

It would seem fair, therefore, to deduce, from the observations of these various investigators, that the origin of prostatic calculi is to be found in the protoplasm of degenerated gland epithelia, about which colloid material is deposited. This eventually undergoes amyloid degeneration. Subsequently, various mineral salts are deposited about this minute amyloid mass, chiefly calcium phosphate (basic), calcium carbonate, animal matter and some yellow or red pigment. The chief constituent is the basic calcium phosphate—84 parts in 100 according to analysis. The presence of uric acid, ammoniomagnesium phosphate, or calcium oxalate, indicates a communication with the bladder or prostatic urethra, as the last named salts have their origin in the urine.

These calculi may vary in size from $\frac{1}{100}$ of an inch up to the size of an orange. The latter size is usually obtained, however, only after communication is established with the urinary passages, in which event salts from the urine are rapidly deposited.

Upon section, the minute concretions sometimes impart a gritty sensation to the knife, and appear as minute brownish or reddish-yellow, more or less translucent, areas. Upon attempts to section a portion of the prostate, the microtome is usually precipitated into momentary mental anguish as he hears the edge of his blade sacrifice its keenness against one or more minute calculi.

When lying discrete in the substance of the gland, the usual form is more or less spheroidal. When several of increased size are lying in close approximation, the sides become faceted, much after the fashion of biliary calculi.

The consistence of the essential calculi is exceedingly hard, and they present a polished appearance. These qualities are usually wanting in the adventitious variety because of the presence of urinary salts.

The diagnosis depends to some extent upon the symptoms, to some extent upon the size. The small

calculi cause no symptoms whatever; even comparatively large calculi may exist without producing any subjective symptoms. Objective symptoms, such as either an intensely hard mass upon rectal palpation of the gland, or this, coupled with obstruction to the outflow of urine from the bladder, should arouse suspicion of the presence of a calculus. I have found an intensely hard mass in the lateral lobe of the prostate in a man aged about 26, seen through the courtesy of Dr. G. W. Davis, in which the sensation imparted to the finger was that of a calculus deeply imbedded in the gland parenchyma. This eventually proved to be composed of some benign tissue, not calculous, although no microscopic examination was made. In some doubtful cases a sound in the bladder may afford assistance.

When an essential prostatic calculus may have attained such size as to have eroded through into the prostatic urethra, or when a vesical calculus lodges in the prostatic sinus, the tip of a metallic instrument striking against the projecting portion would reveal its presence readily. When the calculi are multiple and lying in a closely investing pouch, or in a cyst or abscess, a crackling sensation may be imparted to the finger examining by rectum. The only other condition which might simulate the presence of prostatic calculus would be the presence of tuberculous nodules in the gland.

The symptoms only become manifest when the calculus may have eroded through into the urinary passages, or, by its size, either paralyzes the vesical sphincter causing incontinence; or produces vesical irritation and tenesmus, simulating the presence of vesical calculus and its concomitant symptoms; or produces, as in my case, an obstruction to the outflow of urine.

Prostatic calculi have been observed in youth and at varying ages up to very old age.

R. Virchow² describes the occurrence of prostatic concretions in the female prostate—the existence of such an organ having been described by Leukart.³ They are uniformly found in the gland acini and crypts, surrounded by epithelia. Externally they are soft, internally more dense, brown in color and formed of concentric layers.

Friedel⁸ reports a case occurring in the prostate of a man dead at the age of 52. On cutting into the gland, the knife came in contact with some substance producing a gritty scratching sound. Secretion collected by scraping the gland parenchyma revealed many crystals, fragments of minute calculi, which were composed of calcium phosphate.

Paulicki⁴ found at autopsy upon the body of a 73-years-old man, 240 calculi above the size of a barley-corn. The largest was 6 mm. in diameter and weighed 2.7 grams. Many were faceted. The majority showed the formation by concentric layers. Only the smaller ones gave the iodine reaction. The composition of the larger ones was not given. The largest had perforated through the floor of the prostatic urethra and protruded about 1 mm.

Edward Morris⁵ reports a case in which from a cyst in the middle lobe of the prostate 5 calculi of a total weight of 20 grams were removed.

G. Gross⁶ reports a case of urethroprostatic calculi operated on by a perineal button-hole incision. In all 67 grams were removed, of which the heaviest weighed 40 grams.

Von Thaden⁸ describes a case in a patient aged 70. The man had had bladder-symptoms for 4 years. The

prostate was enlarged and of stony hardness on rectal palpation. A metallic bougie introduced into the urethra impinged upon a calculus in the prostatic portion which it could not pass. A cut into the gland through the anterior rectal wall revealed a pear-shaped calculus imbedded in the gland, 51 mm. in diameter, weighing 40 grams, which was removed. Result was a cessation of dribbling with a slight remaining rectourethral fistula. The calculus had a uric-acid nucleus with a calcium carbonate envelope. (This calculus must have had an extraprostatic origin.)

Hattute⁹ operated upon a patient aged 45 years, by a Nelaton preanal incision. Two small calculi were removed. Supplementing this with a lithotripsy through the bladder-floor, through an opening previously present, a calculus the size of an orange, weighing 150 grams, was crushed and removed. It was composed of calcium carbonate and oxalate, uric acid and triple phosphates. The only sequel was incontinence due to pressure-atrophy of the sphincter vesicae.

Stöcker¹⁰ reports a series of interrupted lithotripsies on an individual aged 64 years, from two pouches situated in each half of whose prostate he removed calculous contents. Finally, with a spoon-shaped Civiale lithoclast he removed the balance, 12 grams in all. The composition was calcium phosphate and carbonate, triple phosphate, a small amount of calcium oxalate, uric acid and albuminous material.

Van Inshoort¹¹ reports the case of a patient aged 29 years, who had suffered for 5 years from dysuria and latterly enuresis. He had frequently voided faceted calculi with his urine. A sound introduced evoked grating, but no evidence of a vesical calculus. Rectal palpation revealed a hard, nodular, painful tumor about the size of a child's fist. By a perineal incision 9 calculi, 8 grouped about a central one, were removed. The composition was calcium phosphate, with a small amount of calcium carbonate and oxalate and the result, an unimportant fistula.

Mr. Christ. Heath¹² describes the conditions in a patient aged 58, as follows: He had been passing a catheter for 17 years; had complained of various urinary difficulties referred to urethra and bladder. Six days after admission to hospital, the presence of prostatic calculus was suspected. Through a perineal incision the finger touched a calculus in the prostatic urethra. Three in all were found. They were smooth, of a reddish-brown color and faceted; their total weight about 6.5 grams; composition calcium phosphate and carbonate.

Naumann¹³ reports a case in a boy, aged 13, with symptoms of stone in the bladder. A lateral perineal section into the bladder failed to reveal a stone. Two months later through a median section, a walnut-sized stone, in a diverticulum of the prostatic urethra, was found. Later the patient evacuated small concretions.

Philip Emmerling¹⁴ performed a prostatotomy through a lateral perineal incision on a boy, aged 12. A calculus the size of a hen's egg was removed; composition not given; recovery complete.

Underhill¹⁵ removed a calculus from the prostate of a boy, aged 6, with symptoms of incontinence and dysuria. A metal instrument failed to discover calculus; soft instrument gave a grating sensation. A median perineal incision revealed where the prostate had been. In its place was a calculus which had apparently come from the bladder and lodged in the prostatic sinus. Its weight was nearly 10 grams; its diameter a little over 4 cm.

Delépine¹⁷ gives the history of a case, in which there was 6 years of difficult urination. Examination revealed a prostatic and periprostatic abscess, cystic dilation of the gland and the presence of calculi in the cyst.

Keyes¹⁸ reports a case in which he removed many concretions the size of a hemp-seed from a prostatic abscess, by perineal section.

Moullin¹⁹ under the title of "Suprapubic prostatectomy," describes two cases, in both of which calculi existed in retroprostatic pouches.

Eastman²⁰ in a careful investigation regarding the nature and origin of prostatic calculi, examined 24 prostates postmortem from individuals between the ages of 14 months and 74 years. Concretions were found in all but the youngest and in a boy of 7 years.

Bangs²¹ quotes Ashhurst, who in turn refers to Barker of Bedford, England, who removed a calculus from the prostate of a patient, aged 29, who had suffered from incontinence for 4 years. This calculus consisted of 29 pieces, white in color, very hard and cemented together, measuring about 12 cm. across. According to Bangs, Henry Morris²² removed between 200 and 300 concretions from the same prostate at different sittings; Bangs also refers to a case reported by Erichsen, in a patient, aged 19, with two calculi in his prostate.

In Bangs' own case, 29 calculi were found. Their composition was given as calcium phosphate.

Estes²³ reports a case of multiple prostatic calculi coupled with an encysted vesical calculus.

Mastin²⁴ removed numerous calculi from the prostate of a patient, aged 46.

White and Martin²⁵ describe the removal of 10 prostatic calculi from one patient by means of a slightly curved urethral forceps.

Lydston²⁶ refers to a case of Thompson, in which 9 fragments of prostatic concretions were found, weighing nearly 100 grams.

The above references cover a period dating back to 1851. Undoubtedly prostatic calculi have existed sporadically in human beings, but little or no authentic cognizance of their presence was taken, up to within comparatively recent times.

My own case occurred in a man, aged 59, with an unusually exemplary history of temperate and continent living, having raised a family of 13 children. He was very well preserved, and did not look his age by several years. His symptoms dated back something over 5 years. At first there was some slowness and difficulty in micturition. Examined at one time by W. T. Bull, in New York, a prostatic hypertrophy was diagnosed, and a radical enucleation proposed, but refused. No mention was made at that time of the presence of a calculus in the prostate and its presence was evidently not recognized. Vesical calculus was searched for, but not found. Something over a year ago, he was examined by a physician in his own city. A cystoscopic examination was made, which caused him great distress at the time, and which was followed by traumatic double epididymitis. No calculus was discovered at this time. His case was regarded as one of simple prostatic hypertrophy. From the date of the cystoscopy, he was unable to pass his urine voluntarily, and became an unwilling votary of the catheter. Referred to me by his family physician for radical treatment of the prostatic hypertrophy, I examined him carefully for a vesical

calculus without finding one. The urine showed only moderate turbidity, due to a small amount of mucopus and phosphates. Residual urine about 50 grams, acid in reaction. His bladder-symptoms at no time amounted to more than his inability to urinate spontaneously. He used the catheter between 4 and 6 times in the 24 hours. Rectal palpation failed to reveal more than a uniform prostatic enlargement, one lateral lobe being slightly larger than the other. The searcher sound entered the bladder with comparative ease, indicating no excessive degree of middle-lobe enlargement. A galvanocautic prostatotomy with the Bottini-Freudenberg incisor was advised, as affording a reasonable prospect of relief from his symptoms. The operation was performed under strict antisepsis with eucain-B. anesthesia. The progress of the blade through the central lobe seemed to meet with rather unusual resistance, but no sound was heard or sensation imparted to the instrument which seemed other than due to its passage through tissue. Upon removal of the instrument, an examination showed the cutting blade to be slightly bent and partially covered with what appeared, to the eye and touch, to be calcareous or phosphatic material. It was evident that the blade had passed through, and probably split, a calculus imbedded in the substance of the middle lobe of the prostate. Judging by the mark on each side of the blade of the incisor the calculus must have been at least as large as a large-sized hazelnut. The patient's retention was not relieved, although for the first few attempts at urination immediately after the operation, there was very slight dribbling. The first few catheterizations brought away a small amount of calculous detritus. Catheterization was obligatory and has been continued up to the present. The patient took a radically conservative view of any further attempts to relieve his disabilities, not even permitting an examination of any character. Catheterization was not at any time painful after operation. Reaction was nil. Patient returned to his home in a distant city with the, to him, melancholy satisfaction of having passed through a fairly formidable surgical procedure, and having learned that he had a prostatic calculus which was presumably the cause of his retention. For his subsequent relief, my preference would have been for epicystotomy, and an attempt, by this route, to shell out the two halves of the split calculus. As his hypertrophy was not of an excessive degree, it seemed, that simply removing the calculus, coupled with the contraction incident to the galvanocautic incisions, might afford him the desired relief.

A diagnosis of calculus having been made, depending somewhat upon the size, it would seem as though the method of relief affording the least difficulty would be by the perineal route, and by means of the preanal, semilunar incision. In the case of certain of the very large adventitious calculi the combination of both the superior and inferior routes might be advisable. As seen by the cases of Hattute and Stöcker, a lithotripsy was successful in removing the calculi and their detritus.

One striking fact stands out in the case of my patient: the ease with which a fairly large calculus was completely overlooked. It is only fair to assume that, according to the natural history of prostatic calculi, this one must have been many years in developing. The fact that its presence was not detected by competent observers should serve as a stimulus to more painstaking methods of diagnosis.

In this case the presence of the calculus probably explained the obstruction in urination, in which the lateral gland hypertrophy played only an unimportant role.

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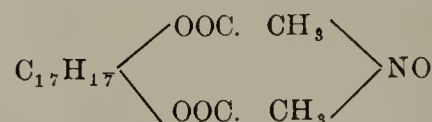
HEROIN IN THE TREATMENT OF PHTHISICAL COUGH
AND WHOOPING-COUGH.

BY M. LOEWENTHAL, M.D.,

of Brooklyn, N. Y.

At the present time the therapeutic properties of heroin are being so widely discussed in medical journals that I have thought it of interest to place on record here my personal experience with this new drug in a class of cases in which no extended mention has thus far been made in the literature, namely, the treatment of whooping-cough. The few histories of cases of phthisis which are subjoined will also serve to illustrate its action in the latter disease.

Heroin is a white crystalline powder, soluble with difficulty in water, but freely soluble by the addition of acetic acid without chemical change. It is a new morphin-derivative, having the chemical formula:



being a morphin $\text{C}_{17}\text{H}_{19}\text{NO}_3$ in which the two hydroxyl groups are substituted by acetyl radicals, thus producing a diacetic acid ester of morphin.

The results published by Floret, Dreser, Strube, Eulenberg, Leo, Manges, Lang, Weiss, Freudenthal, Fulton, Daly, etc., show heroin to be a cough sedative, analgesic, and antispasmodic. It is less narcotic than morphin, produces no disagreeable effects, such as nausea or vomiting; neither is there any danger of producing a toxic action with medicinal doses. Sometimes it will produce a feeling of lassitude which quickly passes off. In some cases there is a slight tendency to constipation, but by combining the drug with extract of rhubarb or aloin this is remedied. I noticed a dryness of the throat in some instances, which was relieved by a draught of hot water, or by the suspension of the remedy for a day. A few cases showed pruritus, which also passed away when the drug was discontinued for a day or so, and did not reappear upon recommencing its use.

In comparison with codein, heroin has been found to be more powerful and uniform in action. It acts as a sedative to the cough centers, stimulating the respiratory muscles and centers. The checking of the cough by heroin is due to its effect in reducing the number of respirations per minute and increasing the length of inspiration; thus the respirations become more prolonged owing to a larger amount of air being inspired into the lungs with greater force. The dosage of heroin is from $\frac{1}{12}$ to $\frac{1}{6}$ grain. Heroin hydrochlorid being easily soluble in water can be used hypodermically in doses of $\frac{1}{24}$ grain, the dose by the mouth being the same as heroin.

I have used heroin in 13 cases, 3 being cases of tuberculosis, and 10 cases of whooping-cough. In the latter disease few observations have been published, and when I began treatment with heroin, I looked upon it rather sceptically; for previous to the introduction of this remedy we have had hundreds of drugs, all claiming to be specifics for this malady. While I do not say that heroin is a specific, it certainly is most excellent in the treatment of pertussis. The following are the results of cases treated with heroin. In the complications noted below, as asthma, etc., heroin acted admirably.

CASE 1.—Joseph H., aged 28, pulmonary tuberculosis, has been coughing for five months. Before the present trouble began he weighed 137 pounds; but has since declined steadily, lost strength and appetite and felt miserable, his weight being reduced to 99 pounds. Examination showed consolidation on the right side in the lower lobe; respiration increased; heart regular, but very rapid (115); frequent palpitations; no organic lesion. He has consulted various physicians. His treatment previous to the time he came to me consisted of cod-liver oil, guaiacol, creasote, expectorants, codein, and, lastly, hypodermic injections of morphin sulfate, $\frac{1}{8}$ grain every four hours, for the relief of the cough. I saw him for the first time on January 28, 1900. He had a constant cough and would expectorate large quantities of a mucopurulent discharge. I immediately stopped all tonic treatment, and put him on heroin, $\frac{1}{12}$ grain three times daily. He reported on February 6, stating that he felt a little improved, and that the cough was not so frequent, but complained that he could not sleep. Heroin, $\frac{1}{12}$ grain, was prescribed three times daily, and he was told to report to my office every day. The following shows the results of the treatment: February 7, cough slightly diminished; had slept better; pulse, 100. February 8, cough the same; appetite returning; weighs 101 pounds; pulse, 100. February 9, coughs very little now, with slight mucous expectoration; feels better than he has for five months; pulse, 95. February 10, only coughed twice during the day, and slept all night; pulse, 90. February 11, has little cough; complains of dryness of throat; reduced heroin to $\frac{1}{24}$ grain, twice daily; pulse, 90. February 12, dryness still persists; cough easier; no expectoration. February 13, cough has nearly gone; has no pain whatever; dryness of throat slightly perceptible; weighs 103 pounds; normal appetite; pulse, 85; gave him heroin $\frac{1}{30}$ grain twice a day and placed him on malt extract. February 16, improving daily; no cough; no dryness; weighs 103½ pounds; feels well; pulse, 85. Will go to Colorado in a few days. February 19. Before leaving for the West to-day he came to see me, and stated that he felt himself improving.

CASE 2.—Patrick L., aged 35, pulmonary tuberculosis, came to me for treatment November 16, 1899, with the following history: He had enjoyed excellent health until September, 1899, when he was taken with a chill, began to cough and expectorate yellowish-green sputum; appetite very poor; tongue coated; slight hemorrhages, and evening temperature of 100°. His father and mother died of consumption. On examination the following physical signs were found: Impaired percussion resonance, sibilant rales in left apex, crepitation in lateral area at base of left lung. Examination of sputa showed tubercle-bacilli. Treatment: Quinin, 6 grains, every three hours; atomization of turpentine vapor;

moderate chest exercise, diet of milk, eggs and wine. On November 20, 1899, the temperature (evening) was 101°; cough much worse; prescribed quinin sulfate, 10 grains every three hours, and mixture of tinct. opii 10 drops, mist. glycyrrhiz. comp., 1 dram every four hours. On November 28 his temperature was slightly reduced (100.6°), felt worse, and cough no better; weight, 114 pounds. Prescribed quinin sulfate 8 grains, and codein $\frac{1}{4}$ grain, every four hours. December 7, no better; same condition; appetite worse; prescribed creasote carbonate, 5 grains every three hours. I saw him on December 30; temperature, 101°; cough same; weight, 113½ pounds. Stopped all treatment and placed him on buttermilk, and poulticed his chest with flaxseed. January 15, the same condition existed; evening temperature, 102°; appetite poor and strength reduced. Prescribed antifebrine, 6 grains, every four hours. January 17, temperature reduced to 100.4°; felt slightly better; weight, 113 pounds, but cough still persisted very annoyingly; sputum still showed tubercle-bacilli in large numbers. Continued same treatment. January 29, he presented himself at my office; appetite better; cough worse; temperature, 101°; said he felt stronger, nevertheless. Prescribed quin. sulf. 5 grains, and heroin $\frac{1}{8}$ grain, every four hours, with liberal diet. The results of the last prescription astonished me. February 5, he came to my office much improved; temperature, 99.4°; weight, 114 pounds; cough considerably lessened; now slept well at night, and stated that he had never felt so well for five years. Prescribed heroin $\frac{1}{10}$ grain, every six hours. February 10, reported to my office; temperature, 98.8°; cough much improved; has gained in strength, and weighs 115 pounds. Prescribed heroin, $\frac{1}{15}$ grain every six hours. February 12, evening temperature normal; appetite good; no cough at all; present weight 116 pounds. February 16, temperature normal; appetite normal; has not coughed for four days; has gained strength and weight daily (116½ pounds). Examination of the chest showed one or two rales, few crepitations at seat of trouble; increase of chest-movements. Has gone to work. Prescribed $\frac{1}{20}$ grain heroin twice a day. February 18, reports feeling splendidly. Examination of sputum showed no bacilli.

CASE 3.—Mrs. L., aged 39, married, chronic tuberculosis; came to my office on December 15, 1899, complaining of shortness of breath; has suffered for two years and has been gradually getting worse. Her trouble began with cough, but she does not bring up as much now as formerly. About six months ago she began to spit blood. She has lost weight; has no night-sweats, temperature, nor pain, except occasionally a slight pain in the right side which was first noticed in October. Family history is good. Physical signs reveal the following: Marked anemia, labored respiration, normal heart-beats, prolonged inspiration and expiration, bronchial rales in the smaller bronchi on inspiration and expiration; microscopical examination of sputum shows tubercle-bacilli; patient is cyanotic. Diagnosis, chronic tuberculosis with marked dyspnea. Treatment: creosote 10 drops, three times daily, with whisky; fluid diet. December 25, 1899, no better; continued treatment. January 2, 1900, no improvement; her cough is now very troublesome; also dyspnea; prescribed $\frac{1}{8}$ grain morphin sulfate, three times daily. January 10, 1900, no improvement; patient getting weaker and worse; prescribed quinin sulfate 5 grains, morphin sulfate $\frac{1}{4}$ grain, whisky, three times daily. January 16. Patient progressively worse; prescribed codein $\frac{1}{12}$ grain, digitalis $\frac{1}{10}$ grain, three times daily. January 30, 1900. Same condition; continued treatment. February 3. Patient very bad; prescribed heroin $\frac{1}{15}$ grain every three hours. February 4. No improvement; patient complains of dryness of throat and constipation; gave magnesium sulfate, continued heroin. February 6. Patient thinks she feels easier; dyspnea not so marked; continued heroin $\frac{1}{12}$ grain, three times daily. February 8. Patient again in bad condition; hectic fever, cough and dyspnea intense; very little expectoration; prescribed heroin $\frac{1}{15}$ grain and tincture digitalis 10 minims every four hours. February 10. No improvement; in fact, patient is worse. February 11. Same condition. February 12. Patient very low. February 14. Moribund. February 15. Death of patient.

In this case heroin was of no benefit; while at first it seemed to have relieved the dyspnea it failed entirely

as the remedy was continued. Nevertheless, I cannot take this case into very great consideration, as the condition of the patient and her death did not give sufficient evidence that the drug would prove unsatisfactory.

The remaining 10 cases all consisted of whooping-cough in children. I give below a condensed history of these cases treated with heroin.

CASE 4.—Jessie G. F., female, aged 3 years, whooping-cough, was brought to me on January 10, 1900. Nothing did good as far as internal remedies went; local treatment as inhalations, steam cabinet, applications to nasal cavity of silver nitrate availed but little. January 31, 1900. I prescribed heroin hydrochlorid $\frac{1}{80}$ grain, every four hours. February 4. Improvement quite marked; child sleeps better at night, is bright and takes an interest in affairs. February 7, improving nicely; gave heroin hydrochlorid $\frac{1}{80}$ grain, 3 times daily, in a dram of raspberry syrup; coughs about three times day. February 10. Improvement constant; child whooped once in 24 hours. February 12. No cough since yesterday; gave heroin $\frac{1}{80}$ grain morning and evening. February 14. Child gets along nicely; has only coughed once; this completes the sixth week of her trouble; and as the child seems much improved I discontinued treatment. February 16. Was called to see the patient at 10 P.M., and found her quite cyanotic and coughing severely; gave her hot bath and quinin sulfate, 1 grain. February 17. Child better, but whoops constantly; prescribed heroin hydrochlorid $\frac{1}{80}$ grain every 4 hours. February 18. Child has only coughed once since taking heroin; feels pretty good. February 19. Child better; cough has ceased. Heroin in this case gave results highly satisfactory. On February 14, I stopped the drug and coughing began as severe as before; when I began giving heroin again the symptoms and whooping subsided quickly.

CASE 5.—W. R., male, aged 11 months, whooping-cough; third week. Heroin $\frac{1}{80}$ grain was given three times a day; improvement noticed on second day. The cough ceased entirely in ten days. In this case heroin acted like a specific.

CASE 6.—J. R., female, 2½ years old, sister of above; whooping-cough following scarlet fever; second week of trouble. Heroin $\frac{1}{80}$ grain every four hours, eased the paroxysms and stopped the vomiting on the fourth day of the treatment; the whoop was reduced to one a day and one a night after taking the drug for 8 days. She sleeps well at night, has a good appetite. The dose of heroin was changed from $\frac{1}{80}$ to $\frac{1}{100}$ grain, three times daily. I saw her on February 17, and she was progressing nicely.

CASE 7.—T. M., male, aged 3½ years, whooping cough. On the second week I gave heroin hydrochlorid $\frac{1}{80}$ grain, every four hours. No change or improvement after a week, so that I discontinued heroin and introduced local measures with no perceptible results. On the fourth week I again gave heroin $\frac{1}{80}$ grain, every four hours; child began to improve gradually, and had an uneventful recovery in two weeks.

CASE 8.—B. L., male, aged 4 years, whooping-cough, with complications; cerebral hemorrhages. I exhausted the materia medica in attempts to relieve his condition. The paroxysms were pitiful to witness, and vomiting was incessant. At last I tried heroin hydrochlorid, $\frac{1}{80}$ grain hypodermically, every four hours; after three injections a change was noticed in his condition; he seemed somewhat relieved. The next day the boy felt a little better; he then developed bronchitis. Heroin $\frac{1}{80}$ grain was prescribed, three times daily. No other treatment was employed, and the boy made a complete recovery in three weeks.

CASE 9.—R. M., male, aged 2 years, whooping-cough. I prescribed heroin $\frac{1}{80}$ grain, three times daily, and local measures. No improvement occurred; the dose was increased to $\frac{1}{60}$ grain every four hours without any improvement. This case was not benefited by heroin or any local measure. In fact, heroin seemed to have aggravated his trouble. The child developed a pruritus of the anus also. Complete recovery took place without any medicine.

CASE 10.—X. M. P., male, aged 6 years, whooping-cough following measles. Heroin acted very well in this case, easing the paroxysms wonderfully. After the third day the child could sleep at night with only one or two whoops to

disturb its rest. It got well progressively in five weeks. In this case heroin only was employed.

CASE 11.—P. C., male, 6 years old; CASE 12.—T. C., 5 years old, and CASE 13.—W. C., female, 2 years old, all of same family, developed whooping-cough within one or two days of each other. Heroin was given in appropriate doses with the following results: Cases 11 and 13 progressed very nicely, and went on to recovery. In case 12, however, heroin had no effect whatever, but the child made a good recovery in seven weeks.

SUMMARY OF CASES IN WHICH HEROIN WAS EMPLOYED WITH RESULTS.

Case.	Name.	Age.	Diagnosis.	Duration of Treatment.	Results.
1	Joseph H.	28 yrs.	Pulmonary tuberculosis.	3 weeks.	Improvement.
2	Patrick L.	35 yrs.	Pulmonary tuberculosis.	3 weeks.	Improvement.
3	Mrs. L.	39 yrs.	Chronic tuberculosis.	12 days.	Patient died. Heroin gave some relief.
4	J. G. F.	3 yrs.	Whooping-cough.	3 weeks.	Recovery.
5	W. R.	11 mos.	Whooping-cough.	10 days.	Recovery; heroin acted as a specific.
6	J. R.	2½ yrs.	Whooping-cough.	10 days.	Improving.
7	T. M.	3½ yrs.	Whooping-cough.	15 days.	Recovery; heroin at first showed no effect.
8	B. L.	4 yrs.	Whooping-cough and bronchitis.	21 days.	Improving.
9	R. M.	2 yrs.	Whooping-cough.	18 days.	Child recovered; heroin did not act well in this case.
10	X. M. P.	6 yrs.	Whooping-cough.	15 days.	Improvement.
11	P. C.	8 yrs.	Whooping-cough.	20 days.	Improvement.
12	T. C.	5 yrs.	Whooping-cough.	20 days.	No effect whatever with heroin.
13	W. C.	2½ yrs.	Whooping-cough.	20 days.	Improvement.

These histories will do to show what the virtues of heroin are, especially in the treatment of whooping-cough. It is superior to anything we have for this trouble, and I am sure that it will prove a valuable addition to our materia medica; and in conclusion, when you have a case of pertussis, and you desire results, use heroin.

NOTE ON THE FREQUENCY OF RENAL CASTS WITHOUT ALBUMINURIA.¹

By C. F. MARTIN, B.A., M.D.,

Assistant Professor of Medicine and Clinical Medicine, McGill University,

AND

F. B. JONES, M.D.,

Voluntary Assistant, Royal Victoria Hospital,

of Montreal, Canada.

THE presence of casts without albuminuria has been for many years recognized as not uncommon, though associated by most authorities with merely a few pathologic conditions. The diseases specially commented on in this connection are mainly: Acute poisoning, including alcoholism, icterus, arteriosclerosis, convalescence from ordinary nephritis, and pernicious anemia. Eichhorst and Senator, for example, regard the presence of casts in the urine as very uncommon when albumin cannot also be found, while Purdy, on the other hand, asserts that he has never yet met casts in the urine when likewise albumin could not be discovered at some period during the course of the malady.

The fact, however, that various writers take occasion

¹ From the medical clinic of the Royal Victoria Hospital, Montreal.

to note the conditions under which casts are found without albumin, implies the presumption that they are usually absent in most other conditions,—or, to speak more truly—that they have not been found. Von Jaksch, however, considering the subject, notes the frequency of hyalin casts in urine otherwise normal, regards their presence as nonpathologic and cites instances when casts have been found postmortem in perfectly healthy kidneys. He further states that casts of any other variety are extremely uncommon without albumin, except in conditions such as have been mentioned above. To state, however, that even hyalin casts occur in normal urine would seem to be practically begging the question, for the mere fact of their presence is of itself an indication that the urine is abnormal, and the best authorities agree that when-

tainty as regards the appearances found, we have noted that casts without albumin are found far more commonly in the urine than has been generally recognized.

In the examination for albumin the tests employed were mainly the boiling-test with acetic acid, and the so-called triple test with potassium ferrocyanid, and acetic acid. Whenever the slightest turbidity showed itself in the previously clear fluid, the specimen was regarded as containing albumin. In fact, one of us, (Jones) has found it of value to filter the urine after addition of the acetic acid, thereby obviating still more the possible presence of turbidity due to mucin or other ingredients. In other cases Heller's cold nitric-acid test as modified by Ruttan was employed.

The urine removed was collected sometimes as a 24-hours specimen, or in other cases simply one portion of

STATISTICAL TABLE OF CASTS IN URINE WITHOUT ALBUMIN.

NAME.	AGE.	DIAGNOSIS.	CONDITION OF ARTERIES.	PRESENCE OF ALBUMIN DURING PRESENT ILLNESS.	VARIETY OF CASTS PRESENT.		
					Hyalin.	Granular.	Epithelial.
Dolton.	60 years.	Arteriosclerosis.	Sclerosed.	.....	Present.	.....	.....
Corey.	43 "	"	"	.....	"	Present.	.....
Howard.	70 "	"	"	.....	"	"	.....
Beatty.	53 "	Rheumatism.	"	.....	"	"	.....
Private.	.....	Cerebral hemorrhage.	"	.....	"	.....	.....
Hughes.	64 years.	Cancer of stomach.	"	.....	"	.....	.....
MacMillan.	61 "	Typhoid fever.	"	.....	"	Present.	.....
Harty.	64 "	Rheumatoid arthritis.	"	.....	"	"	.....
Bonnin.	56 "	"	"	.....	"	"	.....
Houston.	55 "	Rheumatoid arthritis.	"	.....	"	.....	.....
Lesson.	52 "	Rheumatism.	"	.....	"	.....	.....
Dequire.	60 "	Asthma.	"	.....	"	Present.	.....
Smith.	65 "	"	"	.....	"	"	.....
Plouffe.	78 "	Cancer of stomach.	"	.....	"	Present.	.....
Lyster.	57 "	Typhoid fever.	"	.....	"	"	.....
Doré.	41 "	"	"	.....	"	.....	.....
Glennon.	18 "	Typhoid fever.	Normal.	Present.	"	.....	Present.
King.	21 "	"	"	"	"	.....	.....
Farmer.	25 "	"	"	"	"	Present.	.....
Huppertone.	38 "	"	"	"	"	"	.....
Johnstone.	23 "	"	"	"	"	"	.....
Sweeney.	14 "	" c. relapse.	"	Absent.	"	.....	Present.
Arnold.	15 "	Rheumatism.	Normal.	"	"	Present.	"
Tivian.	25 "	"	"	"	"	.....	"
Mercure.	50 "	"	Sclerosed.	"	"	.....	.....
Miller.	58 "	Lumbago.	"	"	"	.....	.....
MacGinn.	36 "	Puerperal sepsis.	Normal.	"	"	Present.	Present.
Private.	.....	Erysipelas.	.....	"	"	"	.....
Private.	.....	Acute alcoholism.	.....	.....	"	"	Present.
MacLeod.	40 years.	Alcoholic neuritis.	.....	.....	"	"	.....
Lavoie.	.....	Fibroids and cystic ovary.	.....	.....	"	"	.....
Private.	44 years.	Retroverted uterus.	Normal.	.....	"	.....	.....
Russell.	41 "	Cirrhosis of liver.	.....	.....	"	.....	.....
Sheldron.	52 "	"	.....	.....	"	Present.	.....
Cullens.	21 "	Pneumonia.	.....	.....	"	"	Present.
MacIntosh.	5 "	"	Normal.	.....	"	"	.....
MacPherson.	28 "	Pneumonia and alcoholism.	Normal.	Present.	"	"	Present.
Stafford.	34 "	Reichmann's disease.	.....	.....	"	"	.....
Burr.	31 "	Achylia gastrica	.....	.....	"	"	.....
O'Brien.	17 "	Cerebral tumor.	Normal.	Present.	"	"	.....
Boyd.	74 "	Tuberculosis (pulmonary).	Sclerosed.	.....	"	"	.....
Gouldson.	39 "	Pott's disease.	Normal.	.....	"	.....	.....
Gaynon.	25 "	Nephritis.	.....	Present.	"	Present.	.....
Riley.	43 "	Asthma and bronchitis.	Sclerosed.	.....	"	"	.....
Reddy.	50 "	Gallstones.	"	.....	"	"	.....
Private.	.....	Diabetes mellitus.	.....	Present.	"	"	.....

ever casts exist, some lesion of the kidney, be it ever so slight, must be present. If casts are found in the kidneys in sections that show no alteration in the cellular structure, it does not preclude the possibility and probability that somewhere higher up where the casts were formed the secreting structures were pathologic.

A careful examination of the urine in the wards of the Royal Victoria Hospital has shown that in quite a variety of conditions casts have been found when no recognizable amount of albumin was present. It has been our custom as a matter of routine to examine the urine of each patient chemically by the ordinary tests and in most cases microscopically after duly obtaining a specimen by means of the centrifugal machine. Observing all due regard to the cleansing of our tubes, and absolute cer-

the specimens, though in every instance the same specimen of urine in which casts were found was simultaneously examined for albumin. In this way we were enabled to satisfy ourselves that even were it true that at certain periods of the day albumin was present (and this seemed in our cases very uncommon), that nevertheless under all conditions noted in our table the same specimen of urine which had showed an absence of albumin very frequently contained casts, not only of the hyalin form, but epithelial and granular varieties as well.

The subjoined statistical table, which covers merely the positive results from some 80 cases examined, will serve to illustrate in this primary note the frequency with which casts may be found in the urine when albumin is absent.

Under such conditions, then, it would seem difficult to estimate the true importance of casts in the urine, while it cannot but be believed that their occasional occurrence is devoid of the gravity in prognosis usually associated with their presence—*i. e.*, without other significant symptoms. This applies, at all events, to the hyalin and granular varieties; the epithelial casts, on the other hand, being more uncommon, and doubtless of more serious import.

Glancing over the conditions in which our few observations have been made, one is, perhaps, struck with the suggestion that irritating conditions are, after all, the main causes associated with the presence of renal casts—*i. e.*, just as bile acts as an irritant to the renal cells, so, too, would toxins, as they may occur in tuberculosis, pneumonia, typhoid fever, sepsis, etc., act similarly and render the cells of the kidneys incapable of performing their proper functions.

Further observations will be necessary to give satisfactory evidence as to the more common causes of renal cast-formation. That their presence, however, without albumin, is more frequent than is usually believed, seems evident from the examinations of patients, as given above.

A NEW FORCEPS FOR HOLDING SLIDES IN STAINING.

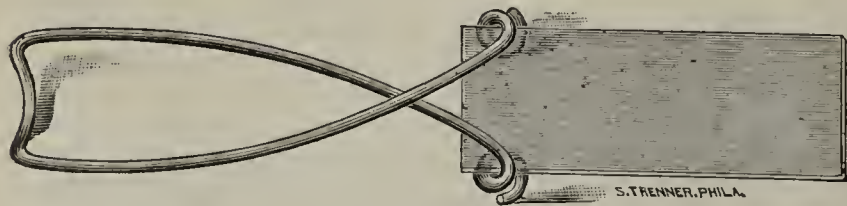
By THOMAS S. KIRKBRIDE, JR., M.D.,

of Philadelphia.

Director of the Polyclinic Laboratories and Pathologist to the Polyclinic Hospital.

ALTHOUGH the staining of bacteria on the slide instead of on the cover-glass has become more and more customary, no attempt has been made, so far as I know, to avoid the staining and burning of the fingers which so frequently occur when the staining-solution is poured on the slide and heated over a bunsen burner. This is the more surprising since the method is daily carried on by almost every practising physician in staining for tubercle-bacilli, and by laboratory workers in staining that and other organisms.

The very simple forceps illustrated by the accompanying cut has been devised to obviate the accidents just mentioned. The slide is firmly held by the forceps which elevates it a short distance above the surface



upon which they rest, and as the slide slopes slightly downward toward the full end, the staining fluid does not tend to come in contact with the arms of the forceps. The elevation of the handle of the forceps makes it easy to lift from the desk without spilling the fluid, and in holding the slide over the flame the fingers are removed from danger of burning or staining. If a pair of the forceps is attached to each end of the slide it may conveniently be rested on a stand and left to heat slowly over a small flame.

The forceps has been made for me by Mr. S. Trenner, Philadelphia, to whom I am indebted for the trouble he has taken in carrying out my idea.

LEGAL AND JUDICIAL DISAGREEMENT AND THE SHORTCOMINGS OF MEDICAL WITNESSES.

By IRVING C. ROSSE, M.D.,

of Washington, D. C.

I AM aware that this is a hackneyed topic, and that of late expert medical testimony has been the subject of many gibes and much ridicule both from lay and medical sources. This is deservedly so, in view of mortifying exhibitions and the irrelevant matter often introduced at trials presumably for the purpose of promoting the ends of justice. Off the bench in the privacy of social converse, the judge will tell of his perplexity on hearing the disagreement of medical men on such occasions, although as a matter of truth and fact lawyers exist as a class only because they see differences in the same occurrences, and judges frequently disagree upon points apparently less recondite than the mental state of an alleged lunatic.

Error and contradiction are not confined to the medical profession alone. Even in such a simple matter as the appraisal of real estate for condemnation purposes there is wide divergence of opinion. In the question of lowering the topmasts of a ship to pass under the Brooklyn Bridge, 18 experienced persons, testifying before a commission a few years ago, gave as many opinions, no two of which agreed. In a railway litigation in which I was lately a witness a number of intelligent practical railroad men were asked on the stand how far a train of cars in certain given conditions would run before it could be stopped. No two of them agreed upon the distance, which they made to vary from a few yards to a quarter of a mile. A recent citation more to the point is that of the New York judges who were invited to a meeting of the New York County Medical Society to take part in the discussion of expert medical testimony. Like special pleaders, no two agreed and they differed widely upon the point at issue, to the merriment of the medical men in the audience, many of whom had reason to smart under the unjust criticism and severe stricture of the New York Bench.

In handling a theme of this kind, one feels inclined to recriminate with errors of judgment, differences of opinion, unfairness, and the like, and to cite innumerable cases showing the disagreements of judges and the fearful muddle that lawyers have made with plain matters of fact.

Pathology is a perennial subject, whether it relates to animal organism or the body politic. Just as it has in many instances thrown light upon physiologic subjects, so may the showing up and frequent bringing to light of certain morbid subjects and abuses help legal insight and contemporary science to bring about needed reforms. In the matter of forensic medicine, the questions affecting criminal responsibility or civil incapacity are largely those of diagnosis. That this diagnosis is often deplorably faulty, the records of many courts taken at random in various parts of the country will attest. Residents of Chicago may recall the case of a wealthy old man whose civil capacity being questioned, two general practitioners testified as to his mental soundness, because he showed accurate memory as to the events of his boyhood. Subsequent examination by an expert revealed the fact that he could not distinguish from one another nor tell the aggregate of three current pieces of money, nor could he add a column of six figures, or tell the time of day by a watch or clock.

Speaking of "Pseudo-Experts in Lunacy,"¹ Dr. S. Grover Burnett, of Kansas City, mentions the case of Myers, who, with premeditation, killed a man, robbed him, and divided the money. Yet the murderer was adjudged insane on the testimony of the general practitioner and was released. He went to the poor-farm for a few days, and then was allowed to go to his home "for fear that he might lose his mind if compelled to remain."

Persons disposed to animadversion may say that these incongruities are not surprising in the "wild and woolly West;" but when it comes to the "effete East," we should scarcely look for such anomalies of justice in the National Capital, where the attainments of the local profession are presumably at such a low ebb that it is necessary to call in outside talent to assist the Court.

At a recent criminal trial in Washington City, where the defense was epilepsy, an asylum superintendent of Philadelphia was employed as expert by the Government. The following gleanings from the stenographic report of the trial is a medicolegal contribution that speaks for itself.

Deposing to 45 years' experience, and that he had testified as expert in 19 capital cases, the witness was asked on cross-examination whether, as a matter of fact, he had not been quite often mistaken in his testimony before the Courts. To which he answered, "I don't know of a single case. If you can point out one, I will be very glad to know it."

"Q. 'Suppose,' queried the lawyer, 'in a case like this, involving the life or death of a fellow-being, you should tell the Court again and again that there were absolutely no physical signs of disease, and that after postmortem examination extensive evidence of disease should be found, would that, in your opinion, be a mistake?'

"A. No, I don't know that it would. It might amount to a mistake if a man exercised his best judgment. I do not know of any such case. I don't believe that any such case has been found.

"Q. You found the defendant, Schneider, if you recall, in sound health, and without any symptom of disease at all—physical symptoms?

"A. No, I didn't say that. *I never testified to that. He was in fair health and was feigning insanity. I only gave testimony in the case, the judges found the opinion.*"

(Aside from the extensive gross pathologic changes found at the postmortem of Schneider, which negated the general conclusions of the "exhaustive" examination made by the experts for the prosecution, the Court record shows that the witness was one of the "three physicians of known eminence" who signed a report which says: "There seem to have been no serious physical changes whatever in his condition;" "An absence of deterioration;" "No corresponding appearance of physical deterioration of any kind;" and concludes with this sentence: "We would say, as the result of our personal examination of and study of the expert and lay evidence presented in Court, that it is our opinion that the prisoner, Howard J. Schneider, is not insane."

This opinion, which the witness swears he did not give, also appears in a supplemental report. Both were subscribed and sworn to before the Clerk of the Court, and in summing up the case Judge Hagner expresses relief to find that the Court's conclusions are in accord with the views of his experts.)

The doctor's testimony in the *Snell* case continues as follows:

"Q. What have you to say generally of epilepsy? May it exist and the seizures occur pretty much in the night?

"A. Yes, I think in certain cases it often occurs in the night, and more frequently than in the daytime.

"Q. That is what you experts term nocturnal epilepsy?

"A. They call it that. There is no significance in it. There are 30 (!) different forms of epilepsy.

"Q. And you think epilepsy in some patients occurs principally at night?

"A. Yes, sir.

"Q. And you always thought so?

"A. Always thought so.

"Q. Have you thought so for some years?

"A. I have always known it to be so.

"Q. Did you ever under oath say anything like this (reading from a case record), in answer to a question from the Court, 'Are epileptic seizures more likely to occur in the night than in the daytime?' And you replied, '*There is no such form of epilepsy recognized as nocturnal epilepsy.*' Did you testify that way in the Taylor case?

"A. I guess I did.

"Q. You are the author of this book? (Holding up a "Compend of Insanity.")

"A. Unfortunately, I am.

"Q. On page 86 I read, 'It would be advisable in such cases to watch the patient at night, as seizures are always more frequent at that time, and sometimes only nocturnal attacks occur.' How do you reconcile the conflicting statements?

"A. It is unfortunate for a man to have written anything. The book was not written to be read in Court. It was intended for physicians.²

"Q. The question is whether there are patients who have only nocturnal attacks?

"A. I am perfectly willing that you put any interpretation you please.

"Q. Then you think you were in error when you alleged herein that sometimes only nocturnal attacks occur?

"A. Perhaps I was; I make some mistakes.

"Q. That would be one error then?

"A. Yes, I've no doubt at all of that. Dr. Rosse, over there, says the book is full of errors."

Despite extensive information on the subject by physicians and medicolegal writers, and the observation of neurologists, we are further informed that there is no such thing as hysterical insanity or witness would have heard of it in his 30 years' experience. He had never heard of Legrand du Saulle, nor of Campbell Clark's recent work on insanity.

Moreover, we are told by the witness that rheumatism is not a constitutional but a blood disease caused by uric acid, when the authorities are that it is a diathetic disease caused by lactic acid.

Attempts to explain the depressed fracture on the prisoner's skull led to several questions of cerebral localization and a description of the dimensions of the motor area. The witness, much nonplussed, said these were "too modern; you must get an expert for that."

"Q. But I thought you were an expert; we wish to get expert knowledge from you.

"A. I say I don't know anything about it. It does not belong to my department.

"Q. You examined the defendant's reflexes?

"A. Yes.

"Q. What did the virile reflex show?

"A. Don't know; that is a new reflex to me.

"Q. Did you test for headache?

"A. No.

"Q. Did you use the Mannkopf test?

"A. I did not apply that. You might put an expert on the stand for that.

"Q. I took you for an expert.

"A. This looks like a civil service examination."

A retarding pulse having been observed in the accused, the witness was asked: "What do you understand by a dicrotic pulse?" To which he gave the fol-

² In the preface to this book the author expresses the hope that it may prove helpful to members of the legal profession, and that it may be understood by the nonprofessional reader.

¹ *New York Medical Journal*, January 16, 1892.

lowing lucid explanation: "It is some indication of the heart's impulse, its condition, its operation, its contraction and expansion;" and he concluded with the astounding assertion that the defendant's epileptic seizures at the age of 23 "might have been due to dentition."

That the Government is not always happy in its medical selections we in Washington have frequent occasion to see. In the matter of Examining Surgeon for Pensions only a short time ago a former Commissioner of Pensions dismissed a competent and experienced man, an ex-army surgeon and a professor in a medical school, who had passed No. 1 at a civil service competitive medical examination, and substituted in his stead a homeopath, who was not only ignorant and illiterate, but had been an inmate of an insane asylum, and was arrested for petty larceny.

Such cases as the foregoing are not cited with a view to question the ability, honesty, or purity of anyone, but rather as a protest against the employment, on the one hand, of old men whose belated knowledge has not kept pace with the discoveries of the last 20 years, and on the other, of inexperienced persons unfamiliar with the newer methods and investigations of technical progress, and of their application to neuropathology; both classes bring ridicule and contempt.

Since the commitment of the New York reporter, Nelly Bly, and of a woman reporter in Washington who simulated insanity, there is, perhaps, no more ludicrous illustration of the entrapment of physicians to the amusement of spectators than that afforded lately at the trial of lawyer Creamer, an alleged parietic, who conducted his own case with considerable ability and even brilliancy. He cross-examined the Attorney-General at some length, and also submitted each of the physicians to rigid cross-questioning. As an inquisitor, who amused the courtroom at the expense of the physicians, the *Washington Post* of March 28 remarks:

He inquired with particularity as to the experience they had had in the line of their profession, and of each of them he asked: "Do you think that during this short time you have become qualified to testify in a case as an insanity expert?"

He further interrogated the two physicians as to what works on insanity they had read, naming several well-known authors. In conclusion he asked each if they had read "Oomah" on the same subject. The response was that they had. At this juncture Creamer burst out in a laugh, saying that there was no such work as "Oomah" on insanity, or on anything else; that he merely propounded the question to test the recollection of the physicians. He stated to the jury, amid great laughter in the court-room, that the term "Oomah" was a figment of his (Creamer's) fancy merely and nothing more. In dismissing the two physicians he created an uproar in the court-room by saying: "The kindergarten class is excused from further cross-examination."

RHEUMATIC FEVER.¹

By J. NEWTON HUNSBERGER, M.D.,
of Skippack, Pa.

SOME authorities, Newsholme for instance, claim that this disease occurs in epidemics without regular periodicity; but I believe this multiplicity of cases met with at times is due entirely to atmospheric conditions; that is, long spells of damp, cool or cold weather with east or south winds certainly favor the development of the

disease. Late winter and spring is said to be the most favorable time for a recurrence of the disease, but I have observed more cases in autumn. Most of my cases have been between the ages of 25 and 35 years. I have rarely met the disease in young children. I have seen it most frequently in males because they are exposed to cold and dampness more than females. I have observed it in a small percentage of cases in young women a month or two after childbirth; these cases invariably occurring in women who had been gross feeders during pregnancy.

Acute rheumatism has been attributed to the entrance of micrococci into the blood; to a specific vegetable organism (*Symotosis translucens* of Salisbury) and to a miasm analogous to that of malarial fevers. Lyden has also found a diplococcus differing from that of pneumonia. But none of these theories has been proved conclusively. Gonorrhea and scarlet fever may occasion the disease.

Heredity plays a powerful and distinct role in the causation of this disease. Rheumatism runs in families and is passed on from parents to offspring just as strongly as is the tendency to gout or tuberculosis.

This tendency is most decidedly marked. In certainly 75% of my cases I elicited a history of acute rheumatism in near blood-relations.

The theory of J. K. Mitchell as to nervous origin has some followers, but seems to be somewhat vague. The most plausible theory of all is, that it is *metabolic* in origin; that is, that it depends on some morbid material produced in the system as the result of defective processes of assimilation. Prout considers this morbid material to be lactic acid or some combination of lactic acid, this acid acting as a distinct irritant to tissues especially of the serous variety. But previous to the formation of lactic acid there is a condition of the blood known as the uric-acid diathesis, which undoubtedly under certain conditions predisposes to attacks of acute rheumatism. This diathesis may be due to an overproduction of urates, but I believe is most frequently due to a lessened excretion of urates—more an error of excretion than of secretion. As an example of overproduction of urates I submit the following:

C. L., male, 32 years, farmer, robust, with a remarkably fine muscular development, had always been well. Always a big meat eater, had during the last year or two eaten regularly about 15 or more pounds of fresh beef a week, besides an enormous quantity of vegetables, pastry, etc. I might add that this voracious appetite was partly the result of a tapeworm, which I removed.

During January, while overheated from cutting timber, he was drenched with rain, and in a very few days was laid up with a most typical attack of rheumatism. He made a good recovery, but lost probably 50 or 60 pounds. I am treating a first cousin of this man at the present time for the same disease. He is of about the same build, age and temperament. The attack was brought on in about the same way as in the previous case.

On the other hand, to show the role that a lessened excretion of urates plays in the production of rheumatism I will report briefly:

A. K., farmer, 55 years old, is thin, nervous, inclined to be bilious, hard worker, exposed to all sorts of weather, and had never taken proper care of himself.

I saw him in an attack about 10 years ago. He had had a recurrence every spring for the preceding 4 or 5 years.

This man would have furious attacks. After the second attack I had seen him in, I put him on a good alkaline mineral water, having him use also large quantities of plain

¹ Read before the Montgomery County Medical Society, April 11, 1900.

water, with the result that he has had no return of rheumatism for 7 or 8 years. I may add I put him on this treatment after the holidays yearly. This man's daughter has had two attacks of acute rheumatism and is subject to periodic attacks of headache.

Uric acid or lithic acid does not exist in the body as such, but exists physiologically in the blood and urine as a quadriurate, a superacid combination. As uric acid exists normally in the body as a quadriurate any change from this state is pathologic, and this may take place in two ways, viz.: either the quadriurate is decomposed and uric acid set free, tending to the formation of calculi; or the quadriurate is evolved into the more stable biurate, which is deposited into the tissues, causing, gout, rheumatism, and that condition known as the uric-acid diathesis. In perfect health the uric acid which circulates in the blood as the quadriurate is removed by the kidneys unchanged, but in the gouty or rheumatic state, either from defective kidney action or faulty digestion and assimilation, the quadriurate lingers unduly in the blood, being transformed gradually into the almost insoluble sodium biurate, which resists removal by the kidneys, and the latter, as the result of undue stimulation, lose to a certain extent their powers of excretion. Under these new conditions sodium biurate continues to accumulate in the blood up to a certain point when it is precipitated in the crystalline form in the joints and through the system, tending to bring on attacks of gout or rheumatism under certain conditions. This is a common condition and one frequently overlooked. Dr. Boardman Reed says regarding it:

In my laboratory, out of many hundreds of urinary analyses made during the past year, albumin was present in only two cases, and sugar in one. On the other hand, in fully one-half the cases indican in excess was found, and in a considerable portion there has been revealed also an abnormally high total acidity, made up largely of uric acid and the products of fermentation. Patients with overacid urine are apt to be sufferers from intestinal indigestion, constipation, rheumatism, neuralgia, headache, or insomnia, and often several of these ailments, as well as a variety of nervous symptoms. Not till the excessively acid condition of the system has been removed by improving the digestion, by alkaline diuretics, and an appropriate diet, including an abundance of pure water, do the patients make any substantial improvement in health.

It is this very condition, common enough as we all know, that gives us the key to the proper treatment of acute rheumatism.

The changes found in the joints on postmortem examination are slight. Synovial membranes are hyperemic, and there is more or less effusion of fluid into the cavities of joints and surrounding tissues. This fluid may be ordinary synovial or diluted with serum containing blood-discs and pus-cells. There is rarely suppuration or ulceration of the cartilages.

The symptoms of acute rheumatism are so well known to all of you, that I shall not attempt to describe them, but shall merely refer to the peculiar way this disease has of making a complete circuit of the joints of the body, during the disease and sometimes in fact making three or four heats out of it.

The temperature in ordinary cases is not particularly high, 102°, 103°, sometimes going as high as 104°; but the profuse perspiration that occurs is nature's attempt to eliminate the urates and acids already in excess, and is not the result of medicine, as some physicians like to tell us. I repeat, this profuse sweat usually takes care of any excessive temperature. I have had very little experience with serious heart-complications, except in

one case, due to the administration of sodium salicylate, to be noted later. The urine is always high colored in the early stages of the disease, reduced in amount, and exceedingly acid, but with proper treatment the urine soon clears up and increases in amount.

Four indications must be met in the treatment of acute rheumatism: 1. To prevent fresh chilling of parts. 2. To keep affected parts at rest. 3. To attempt to modify condition of blood and neutralize the irritant action of the rheumatic poison in joint and other serous tissues. 4. To prevent, if possible, inflammation of the endocardium and pericardium. I might also mention to relieve pain, but with the following treatment I have had so little trouble with pain as not to require special mention.

To prevent chilling of parts, have affected joint well anointed with olive or some other bland oil. Wrap the parts well with two or three layers of absorbent cotton and retain in situ with a few turns of a roller very lightly applied. Cold, blisters, or irritant lotions are absolutely contraindicated for reasons that should be apparent to any thinking physician. I would say further that as the inflammation subsides in a joint, good, thick flannel should be substituted for the cotton. I have flannel bags made for the hands—in fact, mittens which allow the patient the use of his hands without risk of chilling.

The patient should always lie between good, woolen blankets, and in a room well ventilated, but kept at a temperature of 75 or 80°. Good blankets and a hot, well-ventilated room, I consider of the highest importance. It is well to have the patient wear a flannel nightdress open down the front, and with slit sleeves held together with safety pins. If possible, the patient's body, not the affected joints, should be thoroughly rubbed with a rough towel two, three, or more times a day, and once a day bathed lightly with alcohol. It is needless to add the patient should have a good, soft, but somewhat firm bed.

According to Chambers the tendency to endocarditis and pericarditis is much reduced when the patient is kept between blankets.

Fixation of the joints can be easily accomplished by binding them to small, specially made pillows or cushions having in their centers pasteboard or some allied substance.

The third indication, to modify condition of blood and neutralize irritant rheumatic poison, can be best accomplished by a proper diet, ingestion of great quantities of water, and the administration of potassium carbonate. The diet should consist in part of milk, always diluted if you get it pure, ice-cream, stewed fruits, canned fruits, and some of the farinaceous foods. Oranges and lemons when desired. No tea or coffee, positively no beef extracts, which are after all nothing but concentrated urea, and absolutely no meats. A good alkaline mineral water should be freely used in sufficient quantity to produce one or two soft stools a day. If unable to get this action then administer magnesium sulfate, well diluted, in sufficient amount to keep up a good action of the bowels. This is an important part of the treatment.

And then pure water, not ice water, but iced water when you can not procure good, fresh well-water. Don't boil the water. Never give less than a gallon a day and as much more as you can coax, scare or bribe your patient into taking.

If I were asked what one substance met the most

indications in the treatment of acute rheumatism I should most unhesitatingly answer *water*.

It may be necessary to sometimes flavor the water with some harmless substance when your patients rebel, but usually they take to it kindly.

Medicines have little control over the duration of this disease, most cases running from 2 to 6 weeks, or until inflammation subsides. There is no doubt, however, that much can be done to modify its course; and as a modifier there is no drug comparable to potassium carbonate. This is an exceedingly soluble salt, must be given well diluted and, unlike the bicarbonate of potassium, is not irritating to the digestive organs. In fact, it has a particularly soothing effect on an irritable stomach, and is an excellent remedy to relieve vomiting, given in from 1 to 2 grain doses every hour or half-hour.

In acute rheumatism it should be given in from 10 to 15 grain doses every 2 hours until an amelioration of symptoms, and after that every 3 or 4 hours during the entire course of the disease, increasing or diminishing the dose as may be indicated. It acts best when given on an empty stomach, and never should be given immediately after eating. It should be freshly prepared daily.

It has the power of diluting the blood; the amount of urine is markedly increased and rendered alkaline. Free uric acid is converted into soluble urates and speedily eliminated. Its action is rapid. It relieves pain quickly, and if continued regularly seems to modify the inflammatory process. I wish to say regarding pain, that my cases do not average more than 3 small Dover's powders during the entire course of the disease. I never give morphia.

Potassium carbonate has a sedative action on the heart, and under this treatment cardiac and arthritic complications rarely occur; it is *the* drug to use when any cardiac complication is suspected or expected. Personally, I have never had any trouble with heart-complication since using this treatment, nor have I had any thickened or stiff joints remaining as a sequel.

The fourth indication for treatment—that of preventing endocarditis and pericarditis—can be best met by the treatment I have outlined. I have not spoken about hyperpyrexia, or cardiac affections when they occur, pulmonary or cerebral complications, or of the nodules, for these conditions are rare in the average physician's practice.

Before closing, I wish to speak of a drug which I believe has done infinite mischief in this disease; not only do I believe it to be harmful, but absolutely contra-indicated. I refer to salicylic acid and its various combinations.

Fairly large doses, such as are usually recommended in acute rheumatism, reduce blood-pressure and most decidedly weaken the cardiac beat. More than that, the drug has a cumulative action, and some cases of death due to cardiac weakness can easily be traced to a long-continued use of the drug. It is true that in rheumatism you may produce a fall of temperature, by the salicylates, but this fall is always accompanied by a profuse sweat, which is very exhausting. Its antipyretic action being due to a depression of the central nervous system, it is, in fact, a form of shock, and in no way does it tend to eliminate the poison of the disease or modify its course, the temperature usually rising rapidly after sweat is over. It is not a reliable antipyretic, an instance being recorded in Foster's Thera-

peutics in which sodium salicylate sent a temperature of 101° F. up to 107° F. Its action on the kidneys is not what a proper comprehension of the disease demands. It even at times tends to diminish the amount of urine secreted and may bring on hematuria and albuminuria.

Germaine Sée observed no change in the nitrogenous elements in the urine after the use of the drug in health or in disease. It certainly does not increase the elimination of uric acid and thus lead to cure, while it does increase the liability to relapse.

In the early years of my practice I used the salicylates in rheumatism because it was said to be the proper treatment. I used it for a year or two with rather unsatisfactory results, and recall one case whose end was undoubtedly hastened by its use. This was a somewhat mild case of rheumatism and I spent a bad half-hour at her bedside after the third or fourth dose had been taken. I thought she would die, but she responded to stiff stimulation and made a very slow recovery, the heart never regaining its tone. There was some endocardial trouble, but not sufficient to keep it acting so badly.

The case drifted out of the neighborhood and in less than a year I heard of her death, somewhat suddenly, I was told, of heart disease. The case was in a middle-aged woman who had enjoyed fairly good health, except for troubles attributed to an excess of uric acid.

Silver Nitrate Applications to Diseased Uterine Mucosa.—James Stirton (*Glasgow Medical Journal*, June, 1900) advocates the silver salts, particularly silver nitrate deprived to an extent of its water of crystallization and somewhat diluted by the addition of some other nitrate, preferably potash, in the attempt to restore healthy action to diseased uterine mucous membranes. This combination is not caustic in destructive effect upon the mucosa, being nothing more than a rapid oxidizer; the hemorrhage, which sometimes ensues 3 or 4 days after the application, he considers distinctly beneficial. He deprecates the generally growing use of the curet instead of the local applications at one time so popular, on the ground that this is the employment of mechanical means used in the dark on a surface whose pathologic condition is comparatively an unknown quantity in its entire extent. There is great risk of scraping off a thicker layer than would be beneficial, thus doing serious mischief to the physiologic action of the organ during pregnancy. He has often seen abortions which were clearly referable to contractions after cicatrization when excessive cureting had been done. A reaction will come about soon in favor of the older method. [M.B.T.]

When to Tie the Umbilical Cord.—James Stirton (*Glasgow Medical Journal*, June, 1900). Vigorous circulation through the funis implies defective circulation through the lungs or nonestablishment of this function; tying the cord under these conditions is immediately followed by complete arrest of the flow of venous blood through the umbilical arteries, and as these trunks are large, the shock to the circulation, or rather the sudden arrestment of the blood through the pelvis, in the first instance, is followed by a congested condition, which tells mostly on the bladder, as the anatomic relationships clearly indicate. The liver is secondarily affected, since the supply of arterial blood from the umbilical vein is suddenly cut off before oxygenation of blood through the lungs has been established, and congestion ensues, with often attendant jaundice. The brain suffers, although less frequently, but convulsions may ensue owing to the blood circulating through it being less oxygenated than is necessary to its due nutrition. Due closure of the foramen ovale of the heart is delayed, and irregular action of the heart induced in after-life, under the influence of slight shocks to the system, such as would not have had any appreciable effect on it in its ordinary condition of health and action. [M.B.T.]

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GEORGE M. GOULD, M.D., *Editor*

Collaborators

JOSEPH SAILER, M.D.
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D. RIESMAN, M.D.
J. M. SWAN, M.D.

M. B. TINKER, M.D.
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The Relation of the Courts to Administration of Sanitary Laws.—Persons interested in sanitation often think that a desired end is attained when a law has been passed making certain requirements. That is indeed the first step, but it is only a step. It must be followed by the appointment of an intelligent and earnest health-officer, having all the instincts of a combined diplomat and fighter. And this man's efforts may succeed or fail according to the amount of cooperation he can obtain from the community at large and from those specific agents appointed by it, viz., prosecuting attorneys and judges. An old maxim has come down to us from past centuries to the effect that the "king can do no wrong." We sometimes laugh at the condition of mind and morals that could have led any large number of people to accept such a dictum. It is a fact, however, that we still preserve and act upon the spirit of the old maxim at this time, substituting for the one infallible person a whole class of men whom we call judges and who are supposed by the laws to be incapable of doing wrong. The most nondescript, shameless and vile character, publicly recognized as such when simply a member of the bar, becomes before the law incapable of error when he is by the misfortune of politics or the favor of the appointing power elevated to the bench. To these modern infallibles are left the decision, in common with all other questions of importance, of the propriety, wisdom or safety of measures necessary to be adopted for the public welfare from a sanitary standpoint. To say that judges are simply human suffices to call attention to the fact that they may be either good or bad, ignorant or wise, faithful or unfaithful in the performance of their duties. Criticism of them and of their judicial acts should therefore be limited to instances of errors committed; praise should be limited to instances when duty is well and faithfully performed. But in any event we have a right to insist that that mock divinity which has so long hedged them about shall be torn aside and that the bench shall submit to the same process of learning to which all the rest of the world has submitted and by which it has certainly profited.

Careless prescription-writing is an evil to which some physicians are said to be subject. It may be looked upon as an evil, but it is certainly more—it is criminal! Worry, care, oversight, overwork, and every-

thing else that may be advanced, are no excuse for the offense. Were it not for the check placed upon such prescription by the pharmacist no end of trouble might result. Even as it is there are doubtless many fatalities which may be charged up to careless prescription-writing.

The Growth of Hair and the Menstrual Function.—Many of the medical profession in France seem to have become infatuated with *médication cacodylique*, i. e., the administration of sodium cacodylate, an organic arsenic preparation which apparently possesses remarkable alterative properties. Thus, for example, Gautier at a recent session of the Académie de Médecine made a report of the case of a young woman in whom the use of sodium cacodylate produced a more abundant growth of hair on the scalp, a disappearance of pigmentary spots, and a noteworthy regularity and a freer flow of the menses. This observation led him to study, in collaboration with Donser, the disassimilation of iodine and arsenic in the system. The arsenic contained in the menstrual blood was first estimated. Computation in four cases gave an average of .28 mgm. of arsenic per kgm. of blood. As about 500 gm. of blood is discharged during a catamenial period, the amount of arsenic eliminated at each menstruation is 0.14 mgm. This corresponds practically to the entire quantity of arsenic normally contained in the thyroid gland of a woman. The iodine estimations showed that the menstrual blood contains four times as much as the normal blood. Both of these substances—the iodine and the arsenic—are furnished by the thyroid gland. Gautier claims to see a relationship between the growth of hair and the menstrual function, and states that among nuns who cut their hair menstrual troubles are frequent, especially if the cutting of the tresses coincides with the menstrual period. Many women, he states, have noticed certain peculiarities in their hair, by which they recognize the approach of the menses. In the male sex the hair continues to grow at puberty, while in the female, in which puberty corresponds to the establishment of the menses, the growth of hair is arrested at that period. During pregnancy certain alterations take place in the skin which Gautier believes are prevented by arsenic. The cacodylates have also a favorable influence on the pigmentations of the skin seen in tuberculosis. Gautier's conclusions

regarding the value of arsenic were challenged by Fournier, who pointed out that arsenic had been of no value whatever in prurigo gestationis, the only remedy for which is accouchement; but Gautier contended that the action of organic arsenic compounds, like sodium cacodylate, could not be compared with the action of other arsenic preparations. Gautier's theory is interesting; but if it were not supported by a man of his standing, it would, no doubt, be considered far-fetched and fanciful.

Births and Deaths in German Cities.—U. S. Consul General Richard Guenther, at Frankfort on the Main, sends to the State Department a report on the statistics of large German cities. These statistics are compiled in Munich and contain tables for 1899 from 74 cities.

At the head stands Berlin, with a population of 1,800,000; then Vienna, with 1,600,000; Hamburg, 684,700; Munich, 452,000, and Leipzig, 430,600. Regensburg with 43,000 closes the list. The 74 cities have an aggregate population of 12,750,000, and return a total of 418,633 live births and 258,524 deaths, an average birth-ratio, therefore, of 32.8 and an average death-ratio of 20.3.

The ratio of births per 1,000 inhabitants was largest at Königshütte in Silesia, with 62.03. Altendorf was next with 51.1, and Potsdam was lowest with 20.9. For 10 cities the ratio is between 50 and 40, for 48, between 40 and 30; for 14, between 30 and 20. The ratio of still-births was highest at Vienna—6.2; lowest at Königshütte—1.8. Illegitimate births were highest at Vienna—32.7; lowest at Reinscheid—1.7. The ratio is very low in all the cities of the Rhine and Westphalia, nowhere more than 7 per 1,000. It was high (20 and more) at Dresden, Würzburg, Metz, Strasburg and Munich, the latter city, with 27.0, coming next to Vienna. The death-ratio was highest at Königshütte, with 29 per 1,000, and lowest at Schönberg, near Berlin, with 12.9. High ratios were shown in the following cities—Bochum, Regensburg, Elbing, Fürth, Duisburg, Stettin, Halle, Breslau, Chemnitz, Danzig, Posen, and Königsberg—*i. e.*, 24. A low ratio—15.4—was shown by Charlottenburg and Zurich. Of the remaining 58 cities 28 show a higher rate than 20, and 30 cities a lower one. It is noteworthy that the highest birth-rate as well as the highest death-rate was shown by the comparatively unknown town of Königshütte. The reason for this is not apparent.

Infant mortality was especially great, when compared with the number of live births, at Rixdorf, near Berlin, with 50; also at Harburg, near Hamburg, with almost 50. In a few other cities it was as high as 45. It was lowest at Aix-la-Chapelle, with 23.

The most conspicuous causes of death were tuberculosis, inflammation of the respiratory organs, diseases of the heart, catarrh of the intestines, and dysentery.

Typhoid fever was nowhere remarkably prevalent; most so in Berlin and Vienna. The ratio of suicides in 10,000 inhabitants was highest, with 4 each, at Hamburg, Gera, Brandenburg, Leipzig and Breslau.

Other deductions from the tables refer to the various causes of death, and are not specially significant.

Some Definitions of the Word "Crank."—One of the most interesting phases of linguistic studies pertains to the changes in the meanings of words which, as we know, may become better or may become worse. A word may even come to mean precisely the reverse of what it did to a previous age. Deterioration is the usual rule. The term *crank* is a recent coinage, but until now has been uniformly applied to those peculiar people whose fads or whims have not been held worthy of imitation, but rather of contempt. They were thought below normality in intellect and ability. At present among medical men one hears the word applied to those who show very different characteristics, and the fact indicates that the word is undergoing a decided change in significance. A man of character would not call a characterless man a crank, simply because he is a sharper, but the reproachful word is frequently used by the characterless to denote a physician of exceptional honor and integrity. We recently heard a health-officer who has shown heroic zeal and unselfishness in the administration of his office stigmatized as a health-crank. He had no hobbies, except to protect the community from infectious diseases. In all such cases the secret motive is to excuse oneself for lack of professional or ethical spirit by calling the better man by this opprobrious name. One who hates medical politics is dubbed a crank by the politician. The schemer for office thus appears to justify himself. The medical editor who sells his columns to the reading-notice man naturally calls the better journalist who refused to do this a crank. Those who exhibit zeal for professional good, who criticise professional abuses are, by the fact of their existence, a standing rebuke to those who never had or who never obeyed an ideal of duty, and they are naturally anxious to hide their shame by crying *crank!* It is an old bit of psychologic legerdemain which only fools the fool. When these feel the sting of conscience they whisper *Devil, Devil!* or hunt up a scapegoat. It will soon be that all tricksters will call all honest men cranks, and then a new word will have to be devised for the old time fad-rider. All medical reformers are cranks to those who compound with sins they have a mind to, so that soon the word *reformer* will be a useless synonym. It is time that we should have a word to designate all those cunning folk who rid themselves of obligation by sneering at those who believe in duty and labor for professional progress.

Vital Statistics of the State of Maine.—Dr. A. G. Young, Registrar of Vital Statistics of the State of

Maine, has just issued his report, unavoidably delayed, for the year 1898. The report is a very full one, replete with interesting figures, and is an admirable example of the statistician's art. It does great credit both to the State and to the author. If every State in the Union issued such a complete report, we should soon have a body of statistics for the whole nation that would be of incalculable value in the future as a basis for most important studies in some departments of sociology. We have but limited space here to dip into these many pages of figures, but we can at least bear witness to the fact that Dr. Young has the talent for making mere tables of figures tell an interesting story. Among the important facts illustrated is the decrease in the death-rate from tuberculosis in the State at large. This decrease has been steady for the seven years (1892-1898) during which these reports have been issued. Thus in 1898 there were 331 fewer deaths from this cause than in 1892, and 107 fewer than in 1897. During this period the population of Maine has undoubtedly been increasing, so this decrease in the prevalence of tuberculosis is still more significant. In commenting on this satisfactory showing, Dr. Young says that the reasons for this falling-off in the death-rate from consumption are probably more than one, but the principal reason, he thinks, is found in the fact that the people of the State have acquired an intelligent understanding of the disease and its perils. They have been taught that tuberculosis is an infectious disease and therefore a preventable one. This knowledge has been disseminated by the State Board of Health, which in 1889 issued the first edition of its circular on the prevention of consumption. This circular has been issued repeatedly in large editions and has been distributed in every town by local health-boards and even by the clergy from their pulpits. This propaganda has been helped on also by the press, so that Maine has been now for twelve years the scene of a campaign of education on the subject of tuberculosis. This certainly is an interesting fact and well worth noting.

The following figures are important. The population of the State, according to the census of 1890, was 661,086. The number of births in 1898 was 21 less than in the preceding year. The birth-rate for the State was 21.89. There were 187 less marriages than in 1897 and, we regret to say, there were all told 764 divorces; an increase over 1897. The divorce-rate has been increasing since 1892. These figures are not altogether flattering to Maine, for with decreasing marriages and births, and increasing divorces, the State has a slightly blasé look. Hard times preceding 1898 probably account, however, for the lower marriage-rate. On the other hand, the number of deaths in 1898 was 280 less than in 1897, and the death-rate for the whole State was 16.57—a highly satisfactory showing. There were 6 homicides and 56 suicides. Seven persons, whose deaths were recorded, had reached the age of 100

years, but some of these cases were not well authenticated.

Dr. Jacob M. DaCosta.—Dr. DaCosta, than whom no one has done more to make and to keep Philadelphia the medical center of the Western Hemisphere, is no more. Coming to this country an unknown youth from a foreign land, he rose by his labors to be a popular physician, a revered teacher, and a trusted consultant, and became so identified with the institutions of learning and the traditions of this city, that it seemed as if he had always lived here.

Although graduating from the Jefferson Medical College at the early age of 19 years, he had previously found an opportunity to acquire a classical education of rare completeness. His knowledge of the foreign languages at a time when such knowledge was far less common than it is at present, enabled him to keep pace with the progress of medicine in European countries. This widened his horizon and stimulated his clinical studies. During the Civil War, when he had scarcely attained his thirtieth year, his observations on the heart of the American recruit were not only masterly but epoch-making, and secured him at once a name both in this country and abroad.

Realizing the value of pathologic studies, he gave in his earlier years much attention to morbid anatomy; indeed, he never lost his interest in this branch of science and watched an autopsy on a case in which he had been interested with all the zeal of one belonging to a younger generation. Only a few weeks ago he discussed with keen interest the results of a necropsy in an obscure case, and endeavored to explain step by step the clinical symptoms in the basis of the morbid lesions.

When but 24 years old he assisted in the organization of the Pathological Society of Philadelphia, and was its president from 1864 to 1867.

Dr. DaCosta was not a man of visible enthusiasm; he was not demonstrative. Yet under his calm, almost passionless exterior he harbored an intense, unflagging zeal for his profession, and gave to it practically all his time. He utilized, better than most men, private and hospital practice to develop that clinical instinct—the *esprit clinique*—which was the foundation of his fame, and made him the greatest clinical teacher of his day. Medical cases represented to him not isolated experiences; he could recall them at the opportune moment and possessed the power to generalize from them—a rare gift. As a teacher he exhibited a marked individuality and stamped his influence indelibly upon his hearers. He was fond of arriving at a diagnosis by exclusion, and his vast knowledge of medical literature and enormous, well-classified experience, made his results often remarkable.

His book on medical diagnosis, which has passed through many editions and has been translated into a

number of foreign languages, bears the imprint of an original mind, and will forever be looked upon as a pioneer and exemplar. In his journalistic writings he showed his greatest powers—few had the gift of selecting as interesting and timely topics, or of presenting them in as clean-cut and entertaining a manner. There was something of the judicial in the calmness of his reasoning on clinical problems.

Dr. DaCosta was not an experimenter. His contributions to medical knowledge were based on bedside and postmortem observation; he thus approached the great English clinicians of the first half of the nineteenth century, or the illustrious representatives of the French school in its best estate.

The medical profession of Philadelphia has delighted in honoring him: he was president of the College of Physicians; and national honor came to him in the presidency of the Association of American Physicians.

As a consultant, he held a supreme position in Philadelphia—he was par excellence the physicians' physician. In the sick-room he was always cautious and gave his opinion in a quiet tone, entirely devoid of dogmatic quality.

His death is a shock to Philadelphia; a grievous loss to the medical profession, not only of the city, but of the Nation. But his work will live!

English Factories and Workshops.—The annual report of the Chief Inspector of the Factories and Workshops, for 1899, has been published by the Home Office in England. The list of casualties shows an increase over like schedules for 1897 and 1898. This is accounted for by the increased industrial activity during the past year. The number of accidents certified to for 1897 were 15,985, for 1898 were 19,227 and for 1899 were 22,771; during the last year mentioned there were 871 fatal accidents, 858 of the victims being males and 13 being females. From these figures it would appear, fortunately, that the percentage of women employes engaged in dangerous occupations is very small. A less pleasing feature of the report shows that the number of accidents to children has increased.

The act requiring compulsory notifications in factories and workshops handling dangerous and poisonous materials has proved its efficacy by reducing the number of cases of poisoning and death resulting from these substances. This is particularly true of lead-poisoning, and necrosis from phosphorus-poisoning. It appears that the various strict measures introduced, under compulsion, to minimize the dangers to operatives have not only secured the desired result and brought safety where danger once prevailed, but in addition have induced manufacturers to substitute other means and methods which are not dangerous. Thus inventive minds have been stimulated to further research and

new discoveries. This is shown by the fact that match-factories may now dispense with the use of yellow phosphorus, that glaziers have adopted new methods for using lead in glazing, and that in the silvering of mirrors a change in method and materials has been introduced which prevents much of the old-time mercurial poisoning.

The report shows that anthrax, coming from the handling of wool, hides, pelts and horsehair, is more common than formerly. The danger to the operatives depends much on the source whence the materials came. Those coming from China appear to contain the greatest element of danger.

A peculiarity of the English system is that in case a medical practitioner is called to attend a person suffering from poisoning by lead, phosphorus, arsenic, or from anthrax, which can be traced to a factory or workshop, he is required to report the same, together with the name and address of the patient, and the practitioner in turn receives a fee of 2s. 6d., paid by the Home Office.

Conservative Operations on Ovaries and Tubes.

—Burrage (*American Journal of Obstetrics*, August, 1900), from an analysis of 85 cases, deems the following conclusions are justified: 1. It is advisable to do conservative operations in all cases where the ovaries and tubes are not hopelessly diseased in all parts of their structure, except on patients who have pronounced gonorrhea of long standing, and on the rare cases of malignant disease. 2. When a patient is near the menopause (over 35 years of age) and has ovarian or tubal disease of any considerable degree of severity, it is generally wiser to perform complete removal, with or without hysterectomy according as the uterus also is diseased or not. 3. In cases of well-marked gonorrhea of long standing, especially if the patient is constantly exposed to reinfection, if both tubes are seriously diseased and closed, total removal with or without hysterectomy is the operation of choice. 4. In certain cases of this class where the patient thoroughly understands the likelihood that another operation may be necessary at some future time, and wishes to take the chances in the hope of preserving the function of menstruation, conservative operation is permissible. 5. If one tube is patent and healthy in appearance and there is enough healthy ovarian tissue to preserve, a conservative operation ought to be performed even in the presence of gonorrhea. 6. With present methods of performing resection of the tubes, if both tubes are found closed at the time of operation subsequent pregnancy is not to be expected. 7. In severe grades of inflammation of the appendages, irrespective of causation, if the ostium abdominale of one tube is patent, the prospect of subsequent pregnancy after the preservation of a portion of ovary is about 1 in 4½, or 23½%. 8. In the less severe grades of inflammation, under similar conditions of tube and ovary, the prospect of subsequent pregnancy is about 1 in 2½, or 44%. 9. In women who have borne children, in both classes, subsequent pregnancy may be expected in 35%, whereas in the previously sterile it may be looked for in only 5%. 10. If it is necessary to remove both ovaries it is of no advantage to preserve any portion of tubal tissue; but, except under the conditions just enumerated, some ovarian tissue should be preserved in every case. [W.K.]

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Epidemic in York County.—An epidemic in the form of dysentery, from which 17 deaths are reported, is prevalent near Yocumtown, Pa.

Violators of Pure Food Laws.—Arrangements have been made at Harrisburg for the trial of the alleged violators of the oleomargarine and pure food laws. Over 50 true bills await the court's action.

Fifty Thousand Dollars for Wife's Affections.—Dr. J. H. Berlet, of Philadelphia, has brought suit against his assistant, Dr. George W. Betz, to recover \$50,000 damages for the alienation of the affections of his wife.

Living with Broken Neck.—James Lavale, of Erie, Pa., is paralyzed from the shoulders down and has his neck dislocated besides, the result of a plunge from a bridge. An x-ray examination shows that there is a chance for his recovery.

New Jersey State Board of Health.—George P. Olcott, of East Orange, has been appointed to succeed the late Dr. Gauntt as a member of the State Board of Health. It was the wish of the other members of the Board to have associated with them a sanitary engineer, and Mr. Olcott fulfils this requirement.

Building for Nurses Needed.—Secretary Biddle recently inspected the charitable and penal institutions of Harrisburg, Pa., and made a very favorable report. He recommends a new and separate building for the nurses employed in the Harrisburg Hospital. At present the nurses must spend their time off duty in the institution.

Pure Food Case Continued.—The case of Burns & Metzger, spice manufacturers, of Philadelphia, who were arrested recently by order of the State Dairy and Food Commissioners, came before Magistrate Stratton for a hearing. The charge against the defendants was a violation of the pure food law. The firm is prosecuted upon the information of an expert chemist, who reported that he had discovered several mixtures in the pepper and adulterations in the spices. The case was postponed until later.

Vital Statistics of Philadelphia for the week ended September 8, 1900:

Total mortality	370
Disease.	Cases. Deaths.
Inflammation of appendix 4, heart 1, brain 11, bronchi 6, kidneys 9, lungs 1, larynx 1, liver 1, lungs 26, prostate gland 1, spine 2, stomach and bowels 19, uterus 1, veins 1, nerves 1	85
Lungs—tuberculosis of 45, congestion of 2	47
Marasmus 26, inanition 7, debility 7	40
Cholera infantum 29, morbus 1	30
Apoplexy 14, paralysis 7	21
Bright's disease 5, uremia 13, diabetes 2	20
Heart disease	16
Convulsions 13, puerperal 1	14
Carcinoma of breast 2, liver 1, stomach 6, uterus 2, sarcoma of jaw 1	12
Old age	11
Diphtheria	95 11
Brain—dropsy of 2, softening of 5	7
Casualties	6
Anemia	5
Typhoid fever	75 4
Diarrhea 2, dysentery 1	3
Septicemia 2, pyemia 1	3
Suicide—laudanum 1, hanging 2	3
Scarlet fever	18
Psoas abscess 1, abscess of scalp 1, alcoholism 2, asthma 1, aneurysm of aorta 2, burns and scalds 1, cirrhosis of liver 1, croup 2, cyanosis 2, drowned 1, dropsy 1, epilepsy 1, hernia 1, insanity 1, jaundice 1, obstruction of the bowels 2, rheumatism 2, arterial sclerosis 1, scrofula 1, surgical shock 1, structure of esophagus 1, sunstroke 1, syphilis 1, teething 1, gunshot wounds 2	

Jewish Maternity Extension.—By an amendment to the charter of the Jewish Maternity Association of Philadelphia, the operation of the society's work is very much enlarged, adding to its equipment a gynecological ward and operating room.

NEW YORK.

Metropolitan Hospital and Dispensary.—Dr. W. R. Dalton, of New York, has been appointed dermatologist.

The Buffalo Academy of Medicine held its quarterly meeting in the Academy Rooms, Public Library Building, September 11, 1900.

A new medical dispensary will be erected by the St. Bartholomew's Church Corporation near the present mission house of the church. The cost is estimated at \$200,000.

Examiner of Charitable Institutions.—Mary Cashen has been appointed examiner of charitable institutions by the Charities Commissioner of New York, at a salary of \$1,000 yearly.

New York Post-Graduate School.—Dr. I. N. Love will soon remove from St. Louis to New York to accept the position of professor of medicine in the Post-Graduate School of Medicine.

Steamers Held in Quarantine.—The steamers *Californian* and *Glenelg*, recent arrivals at New York from Glasgow, are held in quarantine for inspection. All on board are reported well.

Baths Blamed for Typhoid.—Two boys suffering from typhoid fever are now in Bellevue Hospital, New York, and their illness is attributed by the physicians to using the public baths contiguous to the mouths of sewers.

Toadstools for Mushrooms.—The Coroner's physician of New York recently performed an autopsy on the body of an Italian, and announced that the man died from muscarin poisoning, the result of having eaten toadstools.

Malaria in the Bronx.—Inspectors have been sent to the Bronx by the New York Health Department to investigate the complaint of citizens near Bailey and Sedgewick avenues, that open trenches there are the cause of an epidemic of malaria in that part of the city.

Ambulance Overturned.—Roosevelt Hospital ambulance was recently overturned by coming in contact with a street car. Dr. Frincke received a severe scalp wound, and the driver and a patrolman were also injured. The patient received no injuries, and was very active in helping to revive the driver.

Symptoms of Yellow Fever on the "McClelland."—The transport *McClelland*, which arrived in New York recently from Havana, is still under quarantine in the harbor. One passenger was removed to Swinburne Island for observation and treatment. If no further suspicious developments occur the transport will be released soon.

An operation for a broken back, similar in many ways to that performed about a year ago at Roosevelt Hospital on Walter Duryea for a broken neck, was performed at the Harlem Hospital on Mrs. Annie Smith. An incision was made and fragments of the dorsal vertebra removed that were pressing on the cord. The patient is improving.

At the People's Baths, Central Market Place, New York, during August, 17,124 baths were taken—an increase of 1,645 over August of 1899. Of this number, 11,767 were taken by men, 3,038 by women and 2,319 by children. On August 11 the baths were enjoyed by 1,107 persons, which was the largest number for any one day of the month.

The Spanish-American War Nurses' Association was completed recently in New York, where 60 of the nurses who served in the Spanish War have been in session for that purpose. The constitution adopted makes only those who were in actual service not less than one month during the Spanish War eligible to membership. Of these there are at least 500. Dr. Anita Newcomb McGee was elected president.

Medical Immortals in the New York Hall of Fame.—The Senate of the New York University has submitted to the judges of the Hall of Fame a list of 234 names, from which a final selection of 100 "Immortals" is to be made. The physicians and surgeons whose names are in the list are Valentine Mott, Benjamin Rush, James Marion Sims, Ephraim McDowell, and John Collins Warren.

The "Baltimore's" Sick List.—The United States cruiser *Baltimore* sent 25 men to the Naval Hospital for treatment. The vessel was held in quarantine by Health Officer Doty, of New York, for fear the men might have contracted plague while at Glasgow, but his investigation shows that there was no danger from any of the men on the *Baltimore*. The nature of the illness of these men has not been made known.

Zeta Phi at Syracuse University.—During the past year, the women of Syracuse University, College of Medicine, have organized Beta Phi, the first and only woman's medical fraternity in this country. They esteem it an honor that Dr. Elizabeth Blackwell has consented to become a charter member, she having been graduated from this college and the first woman to receive the degree of M.D. in America. The purpose of the fraternity is to bring the women of the medical profession into closer touch with one another.

The Buffalo Academy of Medicine. Section of Surgery.—At the regular meeting of this section, held September 4, 1900, DR. VERTNER KENERSON read a paper entitled **Lymphangioma** in which he reported 2 cases, both occurring in infants said to have appeared shortly after birth; in one case the left side of the face was involved and in the other the right shoulder. In both cases operation was performed with fatal results from shock, the hemorrhage in both cases was comparatively small. In the second case elaborate preparations were made for supplying the child with normal salt-solution to prevent shock and to supply a substitute for the lymph which was lost in the previous case. The tumors were dingy blue in color, firm, not fluctuating, firmly adherent, no pulsation, no points of tenderness. The affliction in these cases is great, the children are really monstrosities, the tumors increase with age and the individuals are not able to secure ordinary employment. Microscopic examination showed that the skin and lymph spaces were involved and connected with deep lymphatics of the trunk; drawings and photographs were presented. The condition was suggested as being caused by congenital or acquired occlusion of the efferent trunk of a set of lymphatics which supply a particular part. He believes these cases to be operative if done early and with proper precautions. In discussion DR. E. A. SMITH thought that fatality in second case might be due to a possible toxic effect of the salt-solution, as very little blood had been lost and therefore no solution required. DR. H. MYNTER described a case of traumatic origin. DR. C. P. SMITH also thought the salt-solution in this case toxic and described parallel cases. DR. HERMAN MYNTER presented several cases of joint-resection.

NEW ENGLAND.

Charity.—Through the will of the late Barthold Schlesinger, of Brookline, Mass., \$7,000 have been left for charitable purposes.

Protective Societies Uphold Dr. Dunham.—At a recent meeting of the united protective societies of Springfield, Mass., the action of the medical staff of Mercy Hospital, in not allowing Dr. Dunham to treat one of his patients in that institution, was condemned, and it is said the legality of the action will be tested. Dr. Dunham is not a member of the association of physicians.

The Antiarsenic Law in Massachusetts.—The new antiarsenic law which goes into effect in Massachusetts on January 1, 1901, is arousing much criticism among the Massachusetts manufacturers, many of whom claim that the statute is nonsensical and uncalled for. The law imposes heavy penalties for the sale or possession of fabrics or paper containing more than $\frac{1}{100}$ grain of arsenic to the square yard of dress goods or $\frac{1}{10}$ grain of any other article.—[*New York Medical Journal*]

A Physician Cleared.—Dr. Joseph P. St. Germain, of New Bedford, Mass., was recently summoned into court to answer to a charge of assault on a 5 months-old child. Dr. St. Germain is employed by the Board of Health to vaccinate. He had no recollection of this particular case, but the fact that the mother bared the arm of the infant for the operation showed that she gave her consent. Dr. St. Germain was discharged.

United States Hay Fever Association.—The twenty-seventh annual meeting of the United States Hay Fever Association has recently been held at Bethlehem, N. H., where the sufferers from this disorder are accustomed to congregate. Many new members were admitted, and a relation of experiences followed. Whether or not this is good treatment for a disease which certainly has in it a large nervous element would seem to be open to question.—[*Boston Medical and Surgical Journal*]

CHICAGO AND WESTERN STATES.

Smallpox in California.—Two new cases of smallpox have developed at Callahans, Cal. Many of the cases are of a mild form.

Smallpox at Madison.—One case of smallpox is in the isolation hospital at Madison, Wis. The patient came from Calumet, Mich.

Physician Runs for Congress.—The Democrats of the Fourth District, St. Paul, Minn., recently nominated Dr. Alexander J. Stone for Congress.

Pension Medical Examiner Appointed.—Dr. Albert Merrell, of St. Louis, was recently appointed pension medical examiner in that city in place of Dr. R. J. Hill, deceased.

Dr. Tubbs Nominated.—The Republican Senatorial Convention of the Twenty-seventh District met in Rolla, Mo., recently, and nominated Dr. Alonzo V. Tubbs, of Osage County, for State Senator.

Succumbs to Hiccough.—For 3 weeks, John Salmon, of Assumption, Ill., suffered from an attack of hiccough, which completely baffled the skill of physicians. He finally became unconscious and died.

An Epidemic Feared.—Several cases of diphtheria are reported at Menasha, Wis., and it is feared that a number of persons have been exposed. The disease at present is confined to a Polish neighborhood.

The American Academy of Railway Surgeons began its annual convention in the State Capitol September 5 with 100 delegates from all parts of the country present. The convention continued 2 days.

The College of Medicine of the University of Illinois.—Dr. A. J. Ochsner and Dr. Alex. Hugh Ferguson have been elected professors of clinical surgery in the Medical Department of the University of Illinois, Chicago.

Missouri School of the Blind.—Dr. J. Harvey Moore, formerly of Atlanta, Ga., has been appointed surgeon to the Missouri School of the Blind. Dr. Moore also becomes a member of the Board of Managers, succeeding Dr. M. Hayward Post.

Stomach Trouble in Chicago.—Physicians are reported to have said that 75% of the population of Chicago have recently been suffering from gastritis, gastroenteritis, and cholera infantum. For the week ended September 1 there were 111 deaths from these diseases, and 108 the previous week.

Veterinarians and Regular Army.—In his address to the 37th annual convention of the American Veterinary Medical Association held at Detroit, Mich., Dr. Leonard Pearson, of Philadelphia, urged that the efforts of all the members be concentrated during the ensuing year on the securing of commissions for veterinarians in the regular army. Nearly 150 members were present. Dr. Tait Butler, of Indianapolis, was elected president.

Typhoid in Milwaukee.—Many new cases of typhoid have been reported in Milwaukee, and the source of the infection has been traced to the milk-supply. Two members of a dairyman's family are afflicted with the disease and many of his customers are suffering.

Rush Medical College.—Dr. Edwin Klebs, who has been professor of pathology in Rush Medical College, and director of the pathologic laboratory in the Post-Graduate Medical School of Chicago for several years, has resigned and returned to Germany to reside permanently.

Spiders in His Ear.—According to a lay paper the 8-years-old son of James Hawkins of Poplar Bluff, Mo., recently complained of severe, continuous headache. A local physician examined the boy, and removed 96 black spiders from his ear. This equals the famous three black crows.

Dental College Moves.—The nineteenth session of the dental department of the University of California will be held in the new building provided by the State in San Francisco. The histological, chemical, and metallurgical laboratories have also been moved to the same place, which is large and commodious.

Medicine Man Stoned to Death.—Chief Illowahe, an aged medicine man and chief of the Yakima tribe near Yakima, Wash., has been brutally stoned to death in his tent by an Indian. He had been called by the Indian to save his child, who was sick. The old man went through the usual barbaric formalities as best as he could, yet the child died.

Fire in Portland Hospital.—Recently fire broke out in the roof of the Good Samaritan Hospital, Portland, Oregon. The patients were speedily removed and laid upon the grass on the lawn, pending their removal to other places. Meanwhile the fire department had gained control of the flames and the patients who had not been taken to nearby residences were returned to their rooms.

Pennoyer Sanitarium.—Suit has been entered against the Pennoyer Sanitarium Company of Kenosha, Wis., by W. D. Perry, of Chicago, to recover \$10,000 damages on account of the death of his wife. Mrs. Perry committed suicide, and Dr. Pennoyer alleges that she did so because of ill treatment by her husband, and that there was no negligence on the part of the nurses. The suit will be bitterly contested.

Cured by Hypnotism.—George Conrad, committed to Stockton State hospital from Fresno, Cal., 11 months ago, suffering from melancholia, so far recovered after being twice hypnotized that he was allowed to accompany his mother home recently, where the hypnotic treatment will be continued. Conrad's insanity was due to the fact that playmates had made him believe that he was accused of setting fire to a barn at Fresno.

Many Charitable Bequests.—By the will of the late John Pritzlaff, of Milwaukee, Wis., the following bequests have been made: Passavant Hospital, in addition to \$1,000 heretofore presented, \$300; Milwaukee Protestant Orphan Asylum, \$300; Wisconsin Humane Society, \$100; Associated Charities, \$300; Wittenberg Orphan Asylum, now located in Wauwatosa, \$500; Orphan Asylum "Zum Kindlein Jesu" of Des Peres, Mo., \$100; Lutheran Orphan Asylum at Addison, Ill., \$200; Milwaukee Rescue Mission, \$200; and Milwaukee Protestant Home for the Aged, \$200.

Will Complete Hospital.—The hospital which the Lutheran synod started to erect at La Crosse, Wis., some time ago will be completed, the bids for the superstructure being asked for. There is in process of construction a new hospital, being erected by the La Crosse Hospital Association, and it was feared that this would change the plans of the Lutherans. They state, however, that they will not depend on the local patronage entirely, but will draw from all over the synod and from Minnesota, the Dakotas, Iowa, and Wisconsin. Their building, when completed, will cost \$60,000.

Chicago Medical College, and Mercy Hospital Appointments.—Dr. J. B. Murphy has accepted a professorship in surgery and clinical surgery in the Northwestern University Medical School (Chicago Medical College), and has

been appointed surgeon-in-chief to Mercy Hospital, with the direction of the surgical teaching in that institution. The hospital now contains 260 beds with an abundance of clinical material. A new amphitheater with a seating capacity of 300 is in process of construction. Dr. Archibald Church has been recently appointed professor of nervous and mental diseases and head of the neurological department of the same institution.

A Medicolegal Case.—The question as to whether a physician should determine the number of calls he should make when attending a patient, or should call only when and as directed by the patient, is discussed by the Supreme Court of Illinois in upholding the validity of a judgment obtained by a physician who brought an action to obtain payment of his bill for professional services. The court held that the physician was not called upon to prove the necessity of making the number of visits for which he charged. The court followed the doctrine of an earlier case in which it was said: "When a physician is called by a person to treat him or his wife, and he takes charge of the case and attends from day to day, evidently, in view of his responsibility for skilful and proper treatment, he must, in the first instance determine how often he should visit the patient, and so long as the person employing him accepts his services, and does not discharge him, or require him to come less frequently, or fix the times when he wishes him to attend, he cannot afterward be heard to say that the physician came oftener than was necessary. There was no proof that the claimant came when he was forbidden to come, or that he was discharged and continued to attend thereafter."

SOUTHERN STATES.

A Fatal Disease.—A disease is reported in Roanoke County, W. Va., that the physicians have failed to diagnose. It begins something like flux, but quickly proves fatal.

Nurses' Training-School.—The annual graduating exercises of the Nurses' Training-School of the Western Maryland Hospital, Cumberland, occurred September 6.

Fever Steamer Quarantined.—The British steamer *King Gruffydd* has been held at Baltimore until the character of the 4 cases of fever found on board can be determined.

Hospital Benefit.—A benefit for Georgetown University Hospital has recently been given. The first annual report of the Hospital shows that out of 1,397 cases treated, only 93 were pay-patients, which shows in a measure the work the institution is doing.

Arsenic in the Dinner.—Near Long's Shore, N. C., Dr. S. J. Love and family, with 5 farm-hands, were poisoned by arsenic, which is believed to have been placed in the dinner with murderous intent. Dr. Love died within 3 hours; the other victims are alive, but seriously ill.

The Charleston, S. C., Society for the Prevention of Cruelty to Animals, by the will of the late Dr. John L. Ancrum, of Asheville, N. C., will receive, upon the death of Mrs. Ancrum, \$25,000 on condition that its name be changed to "The Ancrum Society for the Prevention of Cruelty to Animals."

New Orleans Charity Hospital.—The August report of the Charity Hospital in New Orleans shows the number of indoor cases to be 1,258, with an admission list of 717. During the month 599 were discharged. The clinics give evidence of a like increase. In the male department of the surgical clinic there were 3,108 consultations and in the department of women and children 3,092. The ambulance corps responded to 148 calls.

To Dispose of Garbage.—The Baltimore Commissioner of Street Cleaning in his annual report will recommend that the city change its method of disposing of garbage. Many cities contract to have the garbage destroyed and are relieved of the expense of building a plant and the trouble of operating it. This plan will be recommended. It now costs \$15,000 annually to dispose of the refuse. It is piled on scows which must remain at their moorings for some time, during which the garbage often becomes very offensive.

Forced to Call a Physician.—Christian Scientists of Baltimore are scandalized over the action of one of their leading healers, who is just recovering from a severe illness. The young woman who has brought reproach upon the cause of Mrs. Eddy did it not only by getting sick like ordinary mortals, but by calling in a physician as other human beings do.

District of Columbia Milk Supply.—The health office has begun a fresh crusade against violations of the law regulating the milk-supply of the District of Columbia. These periodical investigations and prosecutions indicate that although the laws are satisfactorily framed in the interests of the public health as far as the go, there is yet room for improvement in their requirements and restrictions.

New Y. M. C. A. Hospital.—The Railroad Young Men's Christian Association of Texarkana, Texas, has entered into a plan with all the railroad companies interested here to establish an emergency hospital in the association building. A commodious section in the place has been equipped for that purpose, and the management will be under the direct care of the local railroad physician. The hospital will be used in all cases where delays to the general hospital are experienced.

Typhoid in Baltimore.—Last week 39 cases of typhoid were reported in Baltimore, and 4 deaths resulted from the disease. During August, the unusually large number of 189 cases were reported with 37 deaths. An effort has been made by the Health Department to trace the water-supply of the sections where fever exists, but it is learned that the water from the different reservoirs intermingles before it reaches the consumer. The cases are confined to the crowded portions of the city. It is thought that the foul gases arising from the harbor, which have been augmented by the warm weather, may be responsible to a certain extent for the prevalence of the disease.

Maryland Board of Pharmacy.—The members of the State Board of Pharmacy at a recent meeting discussed the ease with which unauthorized persons may purchase deadly poisons in Maryland, and determined to have prepared a more effective pharmacy law for submission to the next Legislature. Dr. David R. Millard, secretary of the Board, said there is now no law which in any way restricts or safeguards the sale of poisons in Maryland, and a druggist may sell what he pleases. Maryland is the only State without a stringent pharmacy law. The Board decided to extend the time for registration of pharmacists to September 15. The names of all those doing business by that time and not registered will be turned over to the State's attorney.

CANADA.

A Tuberculosis-Hospital in Toronto.—The Canadian National Sanatorium Association has agreed to give \$20,000 towards the erection and equipment of a free sanatorium for the treatment of tuberculosis in Toronto, provided that the city gives an equal amount.

The Ontario Association for the Prevention of Pulmonary Tuberculosis met last week. The president, Dr. Thorburn, in his opening remarks pointed out that the association was provincial and not local in its character, and therefore deserved the approval and financial assistance which the Ontario Government has promised. He referred to the ravages of the disease and said that public and medical opinion had changed as to the possibility of practically stamping it out since the discovery of the bacillus. It was stated by the Board of Health that in Ontario alone there are 20,000 cases of tuberculosis. The inaugural meeting of the association had been held early in June, a constitution had been adopted, and a provisional board of officers elected. The draft of the constitution, submitted and formally adopted, defines objects of the association, as follows: The collection and dissemination of information as to the contagious character of tuberculosis, and as to the methods and measures necessary for public protection; the education of public opinion and the stimulation of individual and collective initiative with regard to the means of preventing the spread of tuberculosis; the enlightenment of the public as to

the necessity of the enactment and strict enforcement of sanitary laws as a method of prevention and cure of tuberculosis; the dissemination of information with respect to the danger of contagion in food-supplies, especially in the milk of tuberculous cattle, and the means of preventing the same; to encourage the erection and support of sanatoriums in suitable locations, and to such an extent as to meet the needs of the province; to encourage such cooperation of governments, municipalities, philanthropic organizations, and of individuals as shall provide sanatoriums for the people on the lines made possible by Ontario legislation.

MISCELLANY.

No Yellow Fever in the United States.—The Marine-Hospital Service has no record of any cases of yellow fever in the United States. This is a source of gratification to the Surgeon-General, and, as it is now so late, the danger of an outbreak this season is almost passed.

Obituary.—EASTON BURCHARD, at Nagasaka, Japan, September 2, aged 35.—JOHN LANGDON SULLIVAN, of Ashville, Mass., September 5, aged 73.—JOHN FRANCIS RYAN, of Roxbury, Mass., September 1, aged 29.—J. S. BRECKENRIDGE, of Stanford, N. Y., August 28, aged 60.—SAMUEL T. MCCANDLESS, of Alliance, O., August 27, aged 61.—J. G. MENNIE, of Toronto, Canada, August 24, aged 46.—JOHN A. EARLY, of Reading, Pa., September 2, aged 45.—DR. BOSOID, surgeon of Fort St. Philip, near New Orleans, La.

A Naval Medical Board of Examiners for examination of candidates for admission to the Medical Corps of the Navy is now in session at the Naval Laboratory, Brooklyn, N. Y., and will remain in session for several months. There are now 17 vacancies in the list of assistant surgeons. Congress, at its last session, passed a law, taking assistant surgeons out of the steerage, and making them ward-room officers as soon as they entered the service, giving them the rank of junior lieutenants, and the pay of assistant surgeons in the Army. Candidates must be between the ages of 21 and 30. Circular of information can be obtained on application to the Surgeon-General of the Navy, Navy Department.

Convalescent Volunteers to be Discharged.—The Secretary of War has instructed Major General Shafter to discharge all volunteers now in San Francisco. About 400 are now there, having been sent home from Manila sick or wounded, the most of them are convalescent; all such will be discharged, the service being no longer required. This course will be followed until the volunteer regiments return for final discharge. General MacArthur has been instructed to forward all sick volunteers whom the medical officers report are able to travel or who will be benefited thereby. Those convalescents when they reach San Francisco will be discharged at once, others sent to hospital for treatment and will be discharged as soon as cured.

A Warning Against the Use of Silver-mounted Drinking Vessels.—The United States Consul at Mainz has called the attention of the State Department to the danger to the health of persons using silver-mounted glasses and porcelain wares. Certain kinds of silver-mounted glass and porcelain wares, such as cups, glasses, jars, vases, etc., have been placed upon the market. The silver on these articles, he says, is applied by means of a galvanoplastic process in baths which contain large quantities of potassium cyanid. As glazed wares have innumerable hairlike cracks, this poison enters these cracks, and the articles become a severe menace to the health of anybody using or handling them, and especially as it is impossible in the course of manufacture to remove this poisonous residuum. Only a short time ago a very severe case of poisoning resulted from the use of such ware. These goods are chiefly exported to the United States from Frankfort, Berlin, and Stuttgart.

Leper Colony Report.—The board of army officers detailed by General McArthur to select an island for a leper colony in the Philippines has completed its work and has made a report on its observations. The board was composed of Major L. M. Maus of the medical department, Captain George P. Ahern, and Captain William E. Horton. They made a tour of the islands in the southern archipelago, and

selected sites which were deemed available for the purpose. No information is forthcoming in regard to the recommendation of the board, but the impression prevails that a group of 3 small islands near the coast of Cebu has been chosen. The selection of proper territory for a population of 30,000 leper weaklings was no small matter. It was necessary to find a fertile tract adapted to the production of a variety of products easy of cultivation. These tracts must not be overpopulated, for it is no small undertaking to remove 5,000 or 10,000 people from their homes. The officers found all fertile tracts densely populated, and the land not settled was barren or very mountainous.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended September 8, 1900:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
ALASKA:	Nome	Aug. 11	6	
LOUISIANA:	New Orleans	Aug. 26-Sept. 1	4	1
MINNESOTA:	Minneapolis	Aug. 18-25	2	
"	Winona	Aug. 21-28	2	
OHIO:	Cleveland	Aug. 26-Sept. 1	9	
"	Portsmouth	Aug. 26-Sept. 1	3	
UTAH:	Salt Lake City	Aug. 19-Sept. 1	4	

SMALLPOX—FOREIGN.

AUSTRIA:	Prague	Aug. 11-18	1	
BRAZIL:	Pernambuco	July 1-15		1
ENGLAND:	Liverpool	Aug. 11-18	2	
FRANCE:	Paris	Aug. 5-18		5
GIBRALTAR:		Aug. 12-19	1	
INDIA:	Calcutta	July 28-Aug. 4		10
"	Madras	July 28-Aug. 3		2
JAPAN:	Formosa	June 1-30	39	3
MEXICO:	City of Mexico	Aug. 19-26	8	1
"	Vera Cruz	Aug. 19-Sept. 1		2
RUSSIA:	Moscow	Aug. 5-11	4	
"	Odessa	Aug. 11-18	8	5
"	Warsaw	Aug. 4-11		6
SCOTLAND:	Dundee	Aug. 19-25	1	
"	Glasgow	Aug. 17-24	28	
SPAIN:	Corunna	Aug. 11-18		1
"	Madrid	July 28-Aug. 11		63

YELLOW FEVER.

COLOMBIA:	Bocas del Toro	Sept. 1	1	
"	Cartegena	Aug. 3-17	3	3
"	Panama	Aug. 20-27	3	1
CUBA:	Batabano	Aug. 18-25		1
"	Havana	Aug. 15-20		9
MEXICO:	City of Mexico	Aug. 19-26		1
"	Vera Cruz	Aug. 19-Sept. 1		23
WEST AFRICA:	Dakar	Aug. 15	14	
"	St. Louis	Aug. 15	24	2

CHOLERA.

INDIA:	Calcutta	July 28-Aug. 4		18
"	Madras	July 27-Aug. 3		13
JAPAN:	Yokohama	July 28-Aug. 4	1	

PLAGUE.

CHINA:	Amoy	July 7-28		1150
"	Hongkong	July 14-28		78
INDIA:	Calcutta	July 28-Aug. 4		41
JAPAN:	Formosa	June 1-30	157	127
"	"	July 12-26	10	8
PHILIPPINES:	Manila	July 10-17		1
STRAITS SETTLEMENTS:	Singapore	July 14-21		1

America's First Woman-Graduate in Medicine.

—A pleasant glimpse of the first woman to obtain a medical degree in America comes through a letter written by Margaret Dooris from Hastings, England, to the London (Ohio) *Enterprise*. She says: "We were back in Hastings in time to celebrate July 4. We invited a few especial friends. Dr. Elizabeth Blackwell was the guest of honor. She came decorated in American colors. It was through her exertions that the medical colleges of America were opened to women. She is now in her eighty-first year, but as young in appearance and in mental and physical faculties as most women of 60. She is the most remarkable woman I ever met in conversation. She is brilliantly intellectual. Everything she says is worth remembering, and yet she is not the least stilted or pedantic. Her mornings are strictly devoted to literary work; in the afternoons she receives or visits her friends, and we have had the pleasure of enjoying many interchanges of hospitality with her during our stay at Hastings.

Changes in the Medical Corps of the U. S. Army
for the week ended September 8, 1900:

CRAMPTON, Major LOUIS W., surgeon, will report to the commanding general, department of Southern Luzon, for assignment to duty.

SIMS, GEORGE K., acting assistant surgeon, now at Camp McKinley, Honolulu, H. I., will proceed to Manila, P. I., for assignment to duty.

WADHAMS, S. H., acting assistant surgeon, will upon the abandonment of the post of Humacao, P. R., proceed to the post of San Juan, P. R., for duty.

BAKER, First Lieutenant DAVID, assistant surgeon, is relieved from temporary duty at the Army General Hospital, Presidio, and will report to the commanding officer, First Battalion, First Infantry, now in camp at that post, for duty with that battalion.

DEWITT, WALLACE, acting assistant surgeon, will proceed to the Presidio, where he will report to the commanding officer, First Battalion, First Infantry, now in camp at that post, for duty with that battalion.

ESCOBAR, JULIUS A., acting assistant surgeon, will be relieved from temporary duty at the Army General Hospital, Presidio, in time to enable him to report on the transport "Frederica," for temporary duty during the voyage of that vessel. Upon arrival in Manila, P. I., Surgeon Escobar will report to the commanding general, division of the Philippines, for assignment to duty.

BRADLEY, Captain A. P., assistant surgeon, is granted leave for 15 days, from about September 3.

GODFREY, ALFRED C., acting assistant surgeon, contract annulled at his own request to date August 31.

RICHARDS, First Lieutenant WM. E., is granted leave for 3 months, from about September 15.

HOLMES, THOMAS G., acting assistant surgeon, is relieved from duty at Fort Wright and will report to the commanding officer of Companies B and M, Twenty-fourth Infantry, at that post, for duty to accompany those troops to Manila, P. I.

CARTER, HENRY R., JR., acting assistant surgeon, is relieved from duty in the department of the Colombia, and will report by letter to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

WINNE, Major CHARLES K., surgeon, is relieved from duty at Fort Crook, and will proceed to Fort Porter, for duty.

DUCKER, Major ORLANDO, surgeon, is honorably discharged from the service, to take effect September 30, his service being no longer required.

BURKART, JOHN L., acting assistant surgeon, will proceed from Grand Rapids, Mich., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

CLAUSIUS, MAX F., acting assistant surgeon, will proceed from Barrington, Ill., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

LINDSAY, SAMUEL C., acting assistant surgeon, will proceed from Salineville, Ohio, to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

PATTON, IRVINE W., acting assistant surgeon, will proceed from Huntsville, Ala., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

EKWURZEL, GEORGE M., acting assistant surgeon, will proceed from Philadelphia, Pa., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

ROSS, CHARLES A., acting assistant surgeon, will proceed from Leopold, Ind., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

BAKER, CHARLES L., acting assistant surgeon, will proceed from Duffield, W. Va., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

REYNOLDS, CHARLES R., acting assistant surgeon, will proceed from Philadelphia, Pa., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for foreign service.

STEWART, WILLIAM J. S., acting assistant surgeon, will proceed from Vineyard Haven, Mass., to Fort Slocum, and report for assignment to duty with recruits destined for the Philippine Islands.

MANSFIELD, ELMER E., acting assistant surgeon, will proceed from Wilmer to San Antonio, Tex., and report to the commanding officer, department of Texas, for assignment to duty with the Twenty-fifth Infantry, under orders for foreign service.

WOOD, Major MARSHALL W., surgeon, is granted leave for 1 month and 20 days, to take effect after the arrival of a medical officer of the Army, or an acting assistant surgeon at Jefferson Barracks, for duty.

CARTER, HENRY R., JR., acting assistant surgeon, now at Vancouver Barracks, will proceed to Seattle, Wash., and report to the depot quartermaster at that place for temporary duty.

The following named medical officers are relieved from duty at their present stations, and will report on the transport "Thomas," scheduled to leave August 1, to San Francisco, Cal., for duty on that vessel while en route, reporting to the commanding general, department of California, as indicated. First Lieutenant PERCY M. ASHBURN, assistant surgeon, and Acting Assistant

Surgeon WILLIAM J. LEH. Lyster, for instructions to return to division of the Philippines; Acting Assistant Surgeons STEVENS T. HARRIS and WILLIAM R. DAVIS, for annulment of contract. The following-named acting assistant surgeons, now at stations designated, will proceed to the Philippine Islands, via Honolulu, H. I., on the transport "Belgian King," to sail August 27: HOWARD D. LEWIS and CALVIN D. SNYDER, Presidio; LEWIS T. GRIFFITH, CHARLES A. STURTEVANT, BENJAMIN B. WARRNER, JOHN D. BROOKS, JAMES I. MABEE, ROBERT C. MACY, EDWIN W. PATTERSON, VERNON J. HOOPER, JAMES J. EDMONDSON, A. BRUCE HENDERSON and WM. D. PRESTON, Army General Hospital, Presidio. Upon arrival in Manila the medical officers named will report to the commanding general, division of the Philippines, for further orders.

Changes in the Medical Corps of the U. S. Navy, for the week ended September 8, 1900:

ARMSTRONG, E. V., assistant surgeon, is granted sick leave for 1 month.
DEVALIN, C. M., passed assistant surgeon, is ordered to additional duty at the Navy Yard, Portsmouth, N. H.
GRUNWELL, A. G., assistant surgeon, is detached from the "Monocacy," and ordered to the "Brooklyn." (Orders issued by commander-in-chief of Asiatic Station.)
LIPPITT, T. M., assistant surgeon, is detached from the "Newark," and ordered to the "Monocacy."
RUSSELL, A. C., surgeon, is detached from the Naval Hospital, Yokohama, Japan, and ordered to proceed home and to wait orders.

Changes in the U. S. Marine-Hospital Service for the week ended September 6, 1900:

CARMICHAEL, D. A., surgeon, detailed as chief quarantine officer, Territory of Hawaii. August 31.
WHITE, J. H., surgeon, to proceed to New York, N. Y., for special temporary duty. September 1.
THOMAS, A. R., passed assistant surgeon, relieved from duty in London, England, and assigned to duty in the office of the U. S. consul at Glasgow, Scotland. August 31.
LAVINDOR, C. H., assistant surgeon, detailed as chief quarantine officer of Puerto Rico. August 31.
ANDERSON, J. F., assistant surgeon, relieved from duty at Vienna, Austria, and assigned to duty in the office of the U. S. consul-general at London, England. September 1.
KERR, J. W., assistant surgeon, relieved from duty at Honolulu, and directed to proceed to Hong Kong, China, for duty in the office of the U. S. consul. September 1.
CORPUT, G. M., assistant surgeon, granted 5 days' extension of leave of absence. September 1.
MAGUIRE, E. S., hospital steward, upon being relieved by Hospital Steward Charles Miller, to proceed to Fort Stanton, N. Mex., and report to medical officer in command for duty and assignment to quarters. September 6.
MILLER, CHARLES, hospital steward, relieved from duty at Detroit, Mich., and directed to proceed to New York (Stapleton), and report to medical officer in command for duty and assignment to quarters. September 6.
WOODS, C. H., hospital steward, relieved from duty at Cairo, Ill., and directed to proceed to Chicago, Ill., and report to medical officer in command for duty and assignment to quarters. September 6.
LEGRANGE, J. V., on expiration of leave of absence, relieved from duty at Fort Stanton, N. M., and directed to proceed to Cairo, Ill., and report to medical officer in command for duty and assignment to quarters. September 6.
ROGERS, EDWARD, hospital steward, upon being relieved by Hospital Steward C. H. Woods, to proceed to Detroit, Mich., and report to medical officer in command for duty and assignment to quarters. September 6.
WATTERS, MARK H., directed to report to medical officer in command at Chicago, Ill., for temporary duty and assignment to quarters. September 1.

Foreign News and Notes.

GREAT BRITAIN.

Plague at Glasgow.—Another case of plague is reported in Glasgow. The report now shows 12 cases and 112 persons under observation.

Hospital at Tring.—Lady Rothschild has offered to contribute £300 towards the provision of an isolated hospital at Tring, and has promised to furnish the building throughout when it is erected. The offer has been accepted.

Crews to be Examined.—From September 10, 24 hours' notice must be given to the United States Consulate at Liverpool before vessels are allowed to sail for the United States. A special surgeon has been attached to this consulate with the object of examining the crews of outwardbound vessels.

Aberdeen University.—Miss Cruickshank has given to Aberdeen University, in memory of her brother, Dr. Alexander Cruickshank, the botanic garden at Chanoury, Old Aberdeen, extending to 6 acres, and capable of accommodating nearly 6,000 specimens. Miss Cruickshank has devoted to its endowment the sum of £15,000.

Lung diseases are increasing in the Royal navy, says Captain Rason. Since 1883 respiratory diseases in that service have increased 60% despite the abolition of masts and sails and the lessened exposure to cold and wet. Captain Rason suggests as possible causes for this increase, that the men live in hot, unlined steel ships and crowded together.

London Hospital and College.—The hospital has nearly 800 beds in constant use and no beds are closed. Being the only general hospital for East London, the practice is immense. In-patients last year, 13,234; out-patients, 189,638; accidents, 20,068; major operations, 2,568. Owing to the enormous number of patients, more appointments are open to students than at any other hospital.

London School of Tropical Medicine.—Sir W. McGregor, Governor of Lagos, will deliver the opening address at the London School of Tropical Medicine in October. Sir W. McGregor is a director of medicine of the University of Aberdeen, and his double character of physician and Colonial Governor makes him peculiarly qualified to speak with authority on the importance, from a national as well as a scientific point of view, of a special study of tropical diseases.—[*British Medical Journal*.]

A Colony of Epileptics.—The success which has attended the experiment at Chalfont St. Giles has given birth to a huge scheme for the treatment of epilepsy at Warford, near Alderley, in Cheshire. According to the *Physician and Surgeon*, a large estate formerly in the possession of Lord Knutsford has been purchased, and about £50,000 will be expended in making the necessary preparations for receiving a large number of epileptics. It is the intention to make the buildings some of the best equipped in Great Britain.

Opium Eating in England.—The existence of a considerable amount of opium eating in the United Kingdom is a fact well known, according to the *Medical Press*. The wholesale and retail chemists could throw more light upon the point than anyone else, for they are in possession of the facts of local distribution. So far as can be gathered the practice is far more prevalent in country than in urban districts. Recently a case came to light in Liverpool where an inquest was held upon the body of a clerk who died in the workhouse. A letter from the deceased gave a graphic description of the various phases of the opium habit. He stated that he had been taking 50 or 60 grains of the drug daily for 15 years. He had lately tried to commit suicide, but ineffectually, by taking half an ounce of laudanum, then one ounce, and, finally, half an ounce of opium itself. He says that during the 15 years that he took the drug he found his brain, as well as the heart, quicken in action, but that his brain had become quite "soft," he had no more thinking faculties than a boy of 10 years, and had forgotten almost all he ever knew.

Decreasing Birth-Rate in Europe.—New statistics demonstrate the fact that in all the countries of Europe, with the exception of Russia, the percentage of increase by births has been diminishing since 1891, the average decline being 3%. The greatest difference is shown by England, where births have receded from 34% to 29.1%, and the smallest by Norway, namely, 0.1%. From 1871 to 1875 the increase by birth in Germany was 39.9%, but in 1891-95 this had sunk to 36.3%, and in the year 1897 it went down to 36%. The general average from 1881 to 1885 was 36.8%, but is now 36%. More noteworthy is the decrease in Austria where in the course of 25 years it has dropped from 39.5% to 37.4. In Belgium the percentage in 1871 was still 32.1, but in 1897 only 29; and in France the shrinkage in the same period was from 25.5 to 22.4. Next to Norway the most favorable data are reported from Switzerland.—[*Medical News*]

CONTINENTAL EUROPE.

Prof. K. Gegenbauer, professor of anatomy at Heidelberg, has resigned his chair on account of ill health.

Medical men in Italy derive so much of their income from foreigners that most of the students now learn to speak English and German.

Journal for Theater Physicians.—In Paris a journal is published for theater physicians. Nearly every special branch of medical service now has its own particular organ.

The antiseptic qualities of fluorescent bodies are discussed by O. Raab in the *Zeitschrift für Biologie*. Microbes that may live in a solution 100 hours are killed in 6 minutes under fluorescent conditions.

French Hospital Ship in China.—The French Red Cross Society has equipped and sent to China the hospital ship *Notre Dame de Salut*. The medical staff of the ship consists of 9 surgeons, 2 apothecaries, and 12 hospital orderlies. The vessel has accommodations for 300 patients.

German Malaria Expedition.—Prof. Koch in his report (*British Medical Journal*) says that malaria at Stephansort continues to remain at a low level, although the climatic conditions have been particularly favorable to the development of the disease. The results of the experiment, which has lasted over 6 months, have been so uniform and unequivocal that they cannot be regarded as accidental. He thinks that it is directly owing to the measures adopted that malaria there has, in a comparatively short time, almost disappeared. He says further progress than has been made is not to be looked for, but the results already achieved are quite enough to prove that the hypotheses on which he entered upon these researches are correct. They indicate the principles on which a campaign against malaria is to be conducted. This does not imply that some good may not be effected in other ways and by other means. One may imagine an immunity against malaria, which under ordinary conditions is acquired only in 4 to 6 years and after repeated attacks, to be conferred artificially and in a short time. Seeing, however, that as yet we have no idea how to obtain the toxin necessary for the immunizing process, chances of progress in this direction are small. He says the prospect of exterminating the mosquitos—a radical measure were it feasible—seems remote. It is, perhaps, possible to kill the mosquitos in small districts, but to free large tracts of land of them, especially in the tropics, is beyond the means at our disposal. We could also try to protect people from being bitten, as is done to some extent by mosquito nets. None of the substances which have to be applied to the skin in the hope of keeping off mosquitos that he has tried have proved successful. Their effect is transient, and some are injurious if used for a long time. We have left, then, only the plan he has followed, which, to recapitulate briefly, is to search out all cases of malaria (the concealed ones in particular) and to render them harmless by curing them. This method of procedure is no new thing. It is precisely that which is followed successfully in cases of cholera, plague, typhus, etc.

MISCELLANY.

Queensland Food Commission.—The Government of Queensland, Australia, has engaged Dr. Maxwell, the famous sugar expert of Honolulu, for 5 years' service on the Food Commission, at a salary of \$20,000 a year.

Welsh Hospital for South Africa.—Apart from valuable gifts of hospital comforts and stores, £12,000 has been subscribed toward the Welsh hospital in South Africa. The funds in hand are sufficient to keep the hospital at the front for some time, if necessary.

For Valuable Services.—The King of Portugal has conferred the honor of "Knighthood of the Royal Military Order of our Lord Jesus Christ" on Dr. de Montbrun, consul for Portugal and Brazil in Trinidad, British West Indies, "for valuable services rendered to Portugal and to the Portuguese subjects in Trinidad."

The Russian medical service in China is said to be better than those of other European nations. The number and good organization of the Russian ambulances is especially noteworthy. At Moscow 12 new military medical corps have recently been organized and will soon start for China. Each corps consists of 4 physicians, 4 Sisters of Charity, and 82 nurses.

Yellow Fever at Senegal.—It is reported that 15% of the population of Senegal, Africa, have died of yellow fever, and that 1% are dying every day, with hopeless regularity. Experts say that there is a prospect that the present death-rate will continue. The correspondent said they were guarded by a military cordon, which fires upon those who attempt to escape. The mortality is always about 26% in proportion to the number of those attacked.

Obituary.—ROBERT LYLE McKIRDY, of Lossiemouth, August 16.—DAVID J. MACKENZIE, of Inverness, August 17, aged 30.—JOHN TODD, of Lancaster, August 18, aged 46.—JAMES AYMER, of Bervie, August 20, aged 44.—GEORGE GIBSON, at Brierly Hill, August 20.—ROBERT GOSSET BROWN, at Walton-on-Thames, August 27.—WILLIAM EDWARD JAMES WALLIS, at the Cedars, Aldershot, August 19, aged 25.—ARTHUR WEBSTER, at Middleborough, August 18, aged 32.

Swallowing Plague Prophylactic.—Dr. Macdonald, of Adelaide, who has had a wide experience in the East, of bubonic plague, claims to have made an important discovery. He states that, if the prophylactic against the plague be swallowed, the result is as efficacious in preventing the disease as if it had been hypodermically injected, with this additional advantage, that the fever that follows injection does not ensue after swallowing the preventive. After making several experiments on animals, Dr. Macdonald and a colleague swallowed a quantity of the prophylactic, with the result that they put their blood into such a splendid condition that the plague bacilli had no effect on them.—[*Insurance Observer*, London.]

The Plague.—During the week ended August 4, 252 deaths from plague were reported for all India. The returns for the previous week show 198 deaths from the disease. In the city of Bombay 45 deaths occurred, showing a considerable diminution upon the previous week when 81 deaths were reported. The report from Sydney, Australia, shows that on August 11, 13 cases remained for treatment, 5 were discharged during the week, and no new cases were admitted. The total number of cases to August 18 was 303; total deaths 103; total contacts isolated 1,707; total Chinese attacked 10; of these 8 died. From Hong Kong, China, 26 cases are reported for the week ended August 20, and 26 deaths from the disease.

Carcinoma of the Esophagus.—Friedenwald (*Maryland Medical Journal*, September, 1900) reports a case occurring in a woman of 31, whose family history was good and who had previously been in good health. In October she complained of difficulty of swallowing, at first solid food and later also liquids. In attempting to pass a soft tube an obstruction was encountered, 43 cm. from the teeth. Only small hard-rubber tubes could be passed, and these with difficulty. Attempts were made to dilate the stricture by means of the olivary bougie, but without avail. In December following a **gastrostomy** was performed, and at the same time the stricture dilated from below. Something was felt to give way during the forcible dilation. The patient did well for 4 days, when her temperature rose to 104° and her pulse to 140. A pyopneumothorax was discovered and aspirated. The next day a rib was resected at the angle of the scapula and a large amount of pus evacuated. The patient died without rallying from this operation. A limited necropsy permitted the removal of the diseased portion of the esophagus. The lumen was almost completely occluded. A rupture was found which had doubtless been made in the dilation from below, which had evidently permitted the escape of infectious fluid and thus set up the pyopneumothorax. A microscopic examination of the tumor showed it to be adenocarcinoma. [A.B.C.]

The Latest Literature.

British Medical Journal.

August 25, 1900. [No. 2069.]

[This number is entirely composed of editorial and other articles relating to medical education in Great Britain.]

Lancet.

August 25, 1900. [No. 4017.]

1. The Cellular Pathology of Today. J. BURDON-SANDERSON.
2. The Pathology and Therapeutics of Scurvy. A. E. WRIGHT.
3. Eye Disease in Egypt. KENNETH SCOTT.
4. The Pathogeny of Gout. DYCE DUCKWORTH.
5. Diphtheria in the Horse. LOUIS CORBETT.
6. The Increase and Distribution of Cancer in Eastern Essex. GEORGE MELMOTH SCOTT.
7. The Microscopic Appearances of the Motor Ganglion Cells in Five Cases of Peripheral Neuritis. WALTER K. HUNTER.
8. Some Notes on 100 Cases of Enteric Fever Treated at No. 6 Military General Hospital, Naauwpoort, South Africa. DERWENT PARKER.
9. Two Cases of Tuberculosis of the Peritoneum. A. E. KENNEDY and the late E. A. T. STEELE.
10. A Case of Osteomalacia Showing the Effect of Oophorectomy in Checking the Elimination of Phosphates by the Urine. E. O. CROFT.

1.—Burdon-Sanderson delivered an address on **The cellular pathology of today** at the Thirteenth International Medical Congress, held at Paris, 1900. Some of the more striking statements are here given, although as they follow in an abstract they do not make a very connected whole. There can be no doubt but that the tendency of pathologic research has undergone a marked change since the publication of the cellular pathology by Virchow in the '50s. Formerly the histologic characters of morbid processes were the subjects of special interest. Now it is microorganisms. It would, however, be a mistake to suppose that the new science of microbiology had hindered the progress of histology. On the contrary, histologic research has never been pursued with more zeal and success than during what may be called the bacteriologic period. Reference need only be made to the discovery of karyokinesis, and to the wonderful advances made in the microscopic study of the nervous system, which we owe to Golgi and Cajal, and their followers. The cell can no longer be considered as one, but rather as a complicated machine, the working of which is, for the most part, dependent on enzymes, which, however numerous and varied may be the processes in which they are engaged, all follow and obey the universal law of adaptation, and all contribute to the protection and welfare of the organism. Today our pathologic problems relate to the constituent cells of our own bodies, the chemic functions of which present much greater difficulties to the investigator. It is not difficult to understand why more progress has been made in the investigation of isolated cells, such as the colored and the colorless blood-corpuscles, and the nucleated cells that constitute the adenoid tissues than in those relating to the constituent cells of organs. From the study of the adenoid tissues, we have learned that the nucleus not only governs the development of the cell, but that it has chemic endowments that distinguish it from the protoplasm that surrounds it. In all dystrophic conditions—*e. g.*, in the functional disorder of muscle and of liver-cell which renders these structures incapable of holding carbohydrates in reserve—in the autotoxy that manifests itself in the graver form of diabetes, in the "acid intoxication" that is associated with acute disintegration of the liver, in morbid conditions attributable to "internal secretions"; in all of these instances we have to do with disorders of the chemic functions of cells. In our endeavors to ascertain the immediate and determining causes of these disorders, we may, with no less advantage at the present time than formerly, allow ourselves to be guided by the principles and methods of cellular pathology, as Virchow taught them nearly half a century

ago. The principles remain unchanged; as regards the methods, we have only to add to those we then learned the newer ones that the progress of knowledge has placed within our reach. [J.M.S.]

2.—In a former paper, Wright advanced the view that **scurvy** is a condition of acid intoxication, very similar to the acid intoxication that can be produced in the herbivora by the ingestion of a surplus of mineral acids. The condition is, apparently, more rapidly superinduced by a dietary of corned meat, meat that has been rendered hyperacid by the removal in the process of corning of the alkaline salts of the blood and the lymph, than by a dietary of fresh meat, meat that still contains these alkaline salts. Similarly, infantile scurvy would seem to be generally dependent upon the substitution of more acid foodstuffs, such as preparations of cereals sold under the designation of "infant foods" for the less acid foodstuff,—milk. Justification for the identification of scurvy with a condition of acid intoxication would appear to be afforded also by the consideration that the scorbutic condition is remedied or alleviated by the addition to the scorbutic dietary of any one of a whole series of substances which, apparently, have in common only the circumstance that they all contain an **excess of bases over mineral acids**. As estimated by a method already published, the alkalinity of the normal blood is represented by the formula N.35, or the alkalinity of the blood is such that the addition of one volume of a normal acid, 36 times diluted, to an equal volume of serum, just suffices to deprive that serum of its power of bluing sensitive litmus paper. The author reports 7 cases that tend to prove his former statements. In the first case of the series, the patient was a private soldier in the British Army. The symptoms of scurvy were present, subcutaneous ecchymosis, purpura, yellowish discoloration of the skin and edema of the right foot and ankle. The alkalinity of the blood was N.100. Doses of potassium acetate of 45 grains were prescribed for 2 days without reducing the alkalinity, but setting up diarrhea; then 30-grains doses were given, and in 2 days more the alkalinity of the blood was N.70. After 7 days further treatment the alkalinity of the blood remained the same, and 60-grains doses were ordered, and in 6 days' time the alkalinity of the blood had fallen to N.45. The patient became perfectly well. The second patient was a sergeant. The alkalinity of the blood was N.100. Four-grams doses of sodium lactate were prescribed daily, and in 5 days the alkalinity was N.35. The patient subsequently died of typhoid fever. The third patient was a soldier who had contracted scurvy during the siege of Ladysmith. The alkalinity of the blood was N.200. One gram of sodium bicarbonate was ordered 3 times a day, in 4 days sodium lactate in doses of 5 grams daily was ordered, which was later reduced to 2.5 grams daily. Two days after the commencement of the lactic acid salt the alkalinity of the blood was N.40, and the patient improved rapidly. The fourth patient was a private who had also been in Ladysmith. The alkalinity of his blood was N.150. Potassium citrate was prescribed in 2-grams doses twice daily, and in 2 days the alkalinity of the blood was N.55. Then sodium lactate was substituted, 5 grams being given in the first 24 hours and 2.5 grams in the second 24 hours, which lowered the alkalinity of the blood to N.35. The patient recovered. The fifth patient was a private soldier from Ladysmith who was suffering from dysentery and phthisis. The alkalinity of the blood was N.80. In one week, after similar treatment, the alkalinity of the blood was N.35. The patient died from pulmonary tuberculosis. The sixth patient was a soldier. The alkalinity of the blood was reduced from N.110 to N.35 in 3 days. This patient was very ill; he had, in addition to the usual manifestations of scurvy, bedsores on the buttocks, an abscess in the left cheek, delirium, and involuntary passage of feces. The seventh patient was a soldier who died shortly after he was seen. The alkalinity of the blood, obtained from the heart at autopsy, was N.100. Sodium lactate seems to be the most efficient salt for the **treatment** of the condition. [J.M.S.]

4.—Duckworth believes that **gout** as a morbid condition depends upon an inherent vice of nutrition, which is manifested by an imperfect metabolism in various organs or parts of the body, presumably in the kidneys, and probably in the liver. This trophic disorder or inadequacy leads to the formation of uric acid, probably in excess, and to the periodic retention of it in the blood. Histology throws no

light on the intimate nature of this defect, which thus relates to cellular potentiality, possibly under neurotrophic influence, and not, so far as we know, to structural alteration. The textural disability, or a tendency to it, may be primarily acquired and also transmitted as a fault, thereby inducing from time to time uricemia with gouty manifestations in the descendants. In the majority of instances, under conditions that provoke it, and in some cases independently of this, attacks of gout may grow up and come to a crisis. Such crises are attended by an alteration in the solubility of the uratic salt in the blood, whereby irritating crystals of biurate of sodium are produced and precipitated in various parts of the body. A paroxysm of gout, the sites of its occurrence, and its metastases are determined by nervous influences, probably dominated from a bulbar center, and the local attacks alight either in the joints or in the textures which have been weakened or rendered vulnerable by impaired nutrition owing to past injury or overuse. This central neurosis is an essential and transmissible feature in the **pathogeny of gout** and pertains to the arthritic diathesis generally. The uricemia of gout is peculiar and is unlike that which is induced by other morbid conditions, but the occurrence of uricemia in the gouty is by itself inadequate to induce attacks of gout. Uratic deposits in any part of the body may be removed in the course of time, but they are apt to be permanent in the least vascular tissues. These uratic deposits may occur to an enormous extent in gouty persons without the occurrence of any pain or paroxysms. The clinical features of gout indicate that both hemic changes and a neurotrophic disturbance act as pathogenic factors, and that, consequently, gout is to be regarded as a neurohumoral malady. [J.M.S.]

5.—Cobbett received a culture which resembled the *Bacillus diphtheriae* from Portsmouth which had been grown from the nasal discharge of a pony. A little girl had fallen ill with **diphtheria** and the attending physician in seeking for the source of the infection found that a pony on the premises had a purulent discharge from its nose. Subsequently the animal suffered from enlargement of the lymph nodes beneath the tongue and from laryngeal obstruction, with difficulty in breathing and retraction of the abdominal wall. Both morphologically and biologically the microorganism corresponded to *Bacillus diphtheriae*, and, although there is at present but a single observation, the author concludes that the horse is liable to nasal and laryngeal diphtheria. The fact that diphtheria-antitoxin is present in many horses suggests that diphtheria is a common disease among these animals; and this is in accord with the well-known susceptibility of some of them to the action of diphtheria-toxin. It is possible that the **horse** may be found to play a not inconsiderable part in the transmission of the disease. [J.M.S.]

6.—See PHILADELPHIA MEDICAL JOURNAL, Vol. VI, p. 440.

7.—Hunter reports **5 cases of peripheral neuritis** in which he studied the **microscopic appearances of the motor ganglion cells**. The first case was in the person of a man of 30, who was suffering from an alcoholic neuritis. The autopsy showed tuberculous pleuritis and peritonitis. Microscopic examination of the nerves in the feet showed a well-marked parenchymatous neuritis. The cord was examined at 19 different levels, and in the upper sacral segment scarcely one normal cell could be found, and yet in none had the changes caused a complete disintegration of the cell structure. There were examples of all the different stages of chromatolysis, from the almost normal cell to the faint and almost invisible "ghost cell." In about half the number of cells the Nissl bodies had become fragmented, giving the plasma of the cell a powdered appearance, but these fine, powdered granules still stained with considerable intensity. Yellow pigment was found in about 25% of the cells, but it was small in amount, very faint in color, and seemed to be made up of fine granules. A number of sections from various levels were stained with hematoxylin and eosin, but beyond showing an undoubted colloid degeneration in the coats of the vessels there was no abnormality. The second patient was a woman of 42, who suffered from alcoholic neuritis. The microscopic findings varied only in degree from those noted in the first case. In the third patient, a woman of 40, there was, in addition to the alcoholic neuritis, commencing interstitial nephritis. The microscopic appearances were as before described. The parenchymatous degeneration of the nerve-fibers was also found in the right pneumogastric nerve. The

fourth patient was a man of 42. There was tuberculous pleuritis, pulmonary tuberculosis, and beginning interstitial nephritis. The fifth patient suffered from chronic interstitial nephritis that followed a year after an attack of lead-palsy. In this case there were evidences of parenchymatous neuritis in the nerves of both arms. No definite chromatolytic changes were found in the cord of this patient. In studying these cases the author noted that the mesial group of cells remained unaltered throughout the entire length of the cord. This fact bears out the teaching that the cells of this group are commissural and do not send their axons into the anterior roots. In the thoracic region of the cord, where the lateral cells were fused with the mesial group, the lateral cells remained quite normal; but in the cervical and the lumbar enlargements the posterolateral subgroup presented the most marked degenerative changes. The yellow pigmentation in the ganglion cells is possibly another form, if a very chronic form, of chromatolysis. [J.M.S.]

8.—Parker was attached to **No. 6 General Military Hospital**, at Naauwpoort, South Africa, during the Boer War. While on this duty he saw **120 cases of typhoid fever**. One of the first points noted was the great difference in the virulence of the attacks according to the district in which the disease had been acquired. The cases from the Modder River, Norval's Point, Rensburg, and Arundel were the most severe. On the whole, however, no matter what the district, the later cases were less severe than those of earlier date. The most severe cases were infinitely more severe than any that the author had seen in England. Although the patients came from widely different areas and the attacks were of very varying severity, when the patients came to be treated under the same conditions the complications to which they were liable were the same. The patients were treated by the use of 5 minim doses of carbolic acid, 3 times a day. To this treatment the author ascribes the freedom from distention of the abdomen, that symptom having been seen but once; although the fact that the patients were all of considerable muscular development possibly accounted for some of the freedom from this complication. Out of 120 cases of typhoid fever there were 12 cases of hemorrhage, a fact that would tend to bear out the statement that the carbolic acid treatment has a tendency to increase the frequency of that complication. Brandy was the most useful stimulant; with a plentiful supply of this stimulant the patients seemed to be less restless and to sleep more; on the other hand, strychnin seemed to increase the restlessness. Transfusion with normal salt-solution will save a considerable number of lives; it has a wonderful effect in causing the patient to rally, and at the same time, by diluting the blood, it increases the coagulability. The author is of the impression that the individuals that submitted to the preventive inoculation had milder attacks of typhoid fever than those that did not so submit. The death-rate among the inoculated was 23% lower than that among the noninoculated; the average temperature among the inoculated was 0.9° lower for the first 10 days; but in the inoculated the temperature was 5.4 days longer, on the average, in returning to the normal. [J.M.S.]

9.—A boy, 4½ years old, with a family history of tuberculosis, was taken with symptoms of **tuberculous peritonitis** 2 weeks before admission to the hospital. The symptoms increased in severity and laparotomy was performed. The intestines were found matted together and the child's condition was so bad that the abdomen was closed without further intervention. Progressive improvement and recovery followed. In a second case, the peritoneum of the intestine of a male child of 14 months was found studded with tubercles. Union by first intention followed the operation, but nearly 3 weeks after removal of the stitches the scar broke down and caseous matter escaped. The child's condition became gradually worse and death followed about 25 days after the operation. The necropsy showed general peritonitis. [M.B.T.]

10.—Curato and Tarulli suggest that the **internal secretion of the ovaries** has the power of oxidizing compounds of phosphorus, such as those which exist in bone, so that after the removal of the ovaries there is an increased deposit of calcium and magnesium phosphate in the bones, which thus become stronger. Rossner claims to have found hypertrophy of the vessel-walls with extensive hyalin degeneration in the ovaries which had been removed in 3 cases of osteomalacia.

Phosphorus and also bone-marrow have been said to produce great improvement in several cases of the disease, and it is advisable that their action should be further studied. Croft reports the case of a woman of 35 suffering from osteomalacia to such an extent that she was unable to walk or stand alone. Double oophorectomy was performed and 4 weeks after the operation she could move about much more easily and with much less pain, although standing was still difficult. Comparing the amount of phosphoric acid contained in the urine before operation with the amount afterward, a diminution was shown of from 20 to 30 grains of phosphoric acid daily. The result in this case is in accordance with the observations of Curatulo and Tarulli, who in their experiments upon dogs found after oophorectomy the amount of phosphates in the urine was greatly and permanently diminished. Hence Croft considers oophorectomy may check the progress of **osteomalacia** by causing a diminution in the amount of phosphates eliminated by the kidneys. [W K]

New York Medical Journal.

September 8, 1900. [Vol. lxxii, No. 10.]

1. A Plea for Early Naked-eye Diagnosis and Removal of the Entire Organ, with the Neighboring Area of Possible Sympathetic Infection in Cancer of the Larynx. JOHN NOLAND MCKENZIE.
2. Report of a Case of Nephrectomy for Ascending Tuberculosis, with Some Remarks on Cystoscopy and Catheterization of the Ureters in Women. HIRAM N. VINEBERG.
3. The First-aid Packet in Civil Practice, and the Organization of First-aid Societies. M. J. SHIELDS.
4. Feeding the Infants of the Poor with Unsterilized Cow's Milk. GEORGE THOMAS PALMER.
5. Severe Hemorrhage after Operations on the Throat and Nose; Report of Five Cases. ARTHUR AMES BLISS.
6. The Surgical Treatment of Laryngeal Cancer. SOLIS-COHEN.

1.—Mackenzie says that it is impossible to exaggerate the importance of **naked-eye diagnosis in the detection of laryngeal cancer**. Every resource and refinement of clinical diagnosis should be resorted to before an appeal to the microscope is made. And even when there is considerable doubt still existing after all the facts in our possession have been carefully weighed, thyrotomy should be performed, instead of removing through the mouth a piece of the suspected growth for microscopic examination. If after thyrotomy has been done the doubt still exists, as a last resort just before operating it may be advisable to remove a portion of the tumor for microscopic examination. The objections to the removal of tissue for examination are: 1. It favors autoinfection. 2. It stimulates the local growth of the cancer. 3. The method is often inconclusive. As to the treatment of malignant disease of the larynx there is only one course to be considered; total extirpation, through liberal portions of healthy tissue, of the growth, together with the neighboring area of possible infection, for early total removal of the entire organ with its tributary lymphatic glands and vessels, whether the latter are diseased or not, is the only possible safeguard against local recurrence or metastasis. In the hands of a skilful surgeon excision of the larynx and removal of the neck lymphatics is one of the simplest and easiest dissections of major surgery. Excision of only half of the larynx is permissible in very few cases. [G.B.W.]

2.—Vineberg says that **cystoscopic examinations** help in the diagnosis of tuberculosis of the kidney and in cases of ureteral fistula to determine which organ is affected. Also for diagnostic purposes **catheterism of the ureters** is useful to determine whether kidney or bladder is diseased; which kidney is involved; to ascertain the function of the supposed healthy kidney; to find a calculus in either ureter or pelvis; to find a ureteral stricture; a ureteritis; the existence of an abnormal condition, or to give light on an obscure pain in the side. Therapeutically catheterism of the ureters may be of use in certain cases of pyonephrosis caused by irrigation of the pelvis of the kidney, also to dilate strictures and remove small stones from the ureters. In closing, Vineberg reports a case in which the simple passing

of a catheter into the ureter seemed to have a curative effect, but the reason therefore could not be ascertained. [G.B.W.]

3.—Shields suggests the use of a **first aid to the injured package** for men who are exposed daily to bodily injury, such as are the miners of Pennsylvania. He also thinks it would be advisable to have certain men instructed in first-aid methods so that they may be able to help their comrades when the occasion arises. [G.B.W.]

4.—At the Trinity Diet Kitchen, for infants, in Chicago, Palmer has **fed the children of the poor during the past summer on unsterilized cow's milk**. The milk was obtained from one source, which was the best that could be found, and was modified at the kitchen. The bottles of modified milk were packed in large buckets of ice, in which it was carried home by the mother. The infants were seen daily and the weight of the infant, the character of the stools, the condition of the nursing bottles and the nipples were noted. In addition, the nurses attached to the kitchen called at the homes of those being fed to see that directions were followed. By this method the total mortality in 700 cases was $\frac{3}{4}$ of 1%. [This method is feasible only when the milk-supply is absolutely under the control of the physician or dispensary. When the people go into the open market to buy their milk and then modify it at home, either pasteurization or sterilization is essential to a low mortality. J.M.S.]

5.—Bliss reports 5 cases of **severe hemorrhage following operations on the throat and nose**. The first was a septum operation and the bleeding came on after the removal of the packing on the fourth day, and was only stopped by repacking, and even then oozing kept up for 2 days afterwards. The second case was a tonsilotomy in which the bleeding, though not coming from any particular point, was controlled by a large hemostatic forceps, which was left in position for an hour. The third was also a tonsilotomy, in which the hemorrhage came from a point just behind the anterior pillar, and a hemostat easily remedied matters. In the fourth case a small papilloma was removed from the lower turbinate by a cold snare, the removal being followed by bleeding so severe that it was only controlled by packing. The fifth case, and the only fatal one, was a child which had a large adenoid mass filling the postnasal space, and a markedly deformed septum. The brother of this patient was a bleeder. The child died on the fourth day after the operation, though the bleeding had been stopped for 2 days. [G.B.W.]

6.—Cohen says that in **cancer of the larynx** the only treatment is thorough removal of the organ and the connecting lymphatics. He advises, however, that a piece of the growth should be removed with a pair of punch-forceps and a microscopic examination be made before proceeding to operate. During the operation septic pneumonia is best avoided by having the patient in the semi-inverted position. [G.B.W.]

Medical Record.

September 8, 1900. [Vol. 58, No. 10.]

1. Dilation of the Cervix by Means of a Modified Champetier de Ribes Balloon. JAMES D. VOORHEES.
2. Observations on the Gastric Functions Before and After Gastro-Enterostomy. CHARLES S. FISHER.
3. A New Physical Sign in Dislocation of the Heart; Gastrectatic Dyspnea and Pseudo-Angina. ALBERT ABRAMS.
4. Two Cases of Intestinal Obstruction following Vaginal Hysterectomy, and One after Pelvic Abscess, with a Secondary Operation in Each Case. A. GOLDSPOHN.

1.—Voorhees objects to the **Barnes bags** for the following reasons: 1. It is difficult to introduce them into a cervix admitting less than two fingers. 2. Their shape is incorrect. It is of a sort one often sees in a breech or shoulder presentation—an hourglass constriction—which does not dilate the cervix. They slip either into the uterus or vagina without accomplishing anything. 3. The material is wrong. Nature's bag is inelastic. They are very distensible. In filling them one cannot regulate the pressure. The dilation may be too forcible, consequently they burst. They soon crack and rot. 4. They are not reliable in induction of labor. 5. They are too slow a dilator in eclampsia. 6. In placenta previa they do not surely stop the hemorrhage. The author tried the

Champetier balloon, but found it not strong enough. He then had made a balloon on the same plan, but much stronger, and also less expensive. This he strongly recommends, having used it in many cases. The **advantages of the modified Champetier balloons** over others are: 1. They are easier to introduce, less bulky. 2. The shape is more like that of nature's bag. 3. They are inexpandible and cannot burst. 4. They cannot get out through the cervix without dilating it. 5. They are more reliable in starting labor-pains. 6. They keep in the liquor amnii. 7. They do not rot. 8. They surely stop hemorrhage in placenta previa. 9. One can pull on the tube. 10. They are less likely to displace the presenting part. The objections to the balloons are: 1. They may rupture the membranes. 2. They may separate the placenta—only in placenta previa. But the bag either arrests the hemorrhage on being filled or when traction is made on the tube. 3. They may increase the tension in the interior of the uterus. It is not great and no harm is ever done. 4. They may displace the presenting part. This is possible, but by slow distention of the bag and by watching the presenting part during the distention, we can keep it in place. This accident occurred only once in the 72 cases. 5. The cord may prolapse. For this accident to occur, the cord must be long or about the neck. Rule: Always examine when the balloon comes through the cervix. 6. Sepsis. Balloons can be boiled. If the aseptic technic is correct there should be no infection.

Indications.—(1) To start pains, when the membranes have been long ruptured, especially in breech cases; (2) in dry labors, when the child is in bad condition—there is an umbilical souffle, or it is passing meconium, or the heart is slow or irregular; (3) in prolonged and protracted labors, oxytocics and chloral failing; (4) in rigid cervixes of all kinds; (5) in hydramnion, when it is necessary to rupture the membranes; (6) in cases of twins, when it is necessary to rupture the membranes; (7) in shoulder presentations, when a Braxton-Hicks version cannot be easily done; (8) to induce labor: (a) In cases in which a bougie fails, or when the membranes are ruptured in its introduction; (b) in albuminuria; (c) in contracted pelvis—to let the head down against the brim to engage; or preparatory to forceps or version; (d) in case of a dead fetus; (e) in chronic endocarditis; (9) in placenta previa, especially those cases in which the cervix is tough, or in which the placenta is over the os and one cannot turn easily, preparatory to version. [A.B.C.]

2.—Fisher reports 3 cases in which operation was done for **benign disease of the stomach** and in a fourth for atony, in all of which gastric analyses were made for a long period before and after. 1. Pyloric obstruction. Hyperacidity existed before, and was still present 14 months after operation. The size of the stomach was much less and the motility greatly improved, though still somewhat impaired. 2. Pyloric obstruction with hyperacidity before operation, and still present 2 years afterwards. Motility became normal and dilation reduced. 3. Remittent hyperacidity before and still present, and subject to nervous disturbances. He thinks this was a case of primary functional hyperacidity with secondary pyloric spasm and dilation. Other symptoms were relieved by the operation. 4. Dilation due to neurotic atony. There was subacidity before operation and this became much worse afterwards, and the dilation persisted, though the patient gained weight and the motility was improved. In the first 2 cases, prolonged irritation produced glandular proliferation, and as this continued, the hyperacidity was not diminished. In the third case the hyperacidity was primary and functional. Albumin digestion was nearly normal throughout the course of the first 3 cases and in the fourth it showed 42% digestion one year after operation, showing that the changes in the acid-secreting cells was not proportionate to those in the peptic cells. In the first 3 there was delayed starch digestion, while it was complete in the fourth. There was constipation in the first 3 due to spasm induced from the pylorus, and fixation of the abdominal muscles from pain, and the stools were small. In the fourth case, it was atonic and the stools were large. [H.K.P.]

3.—Abrams has frequently cured cases of **pseudoangina** by treatment directed to the stomach for the relief of distention which has caused dislocation of the heart. When the heart is thus dislocated upwards he says there is an area of dulness or flatness, due to compressed lung-tissue on the left side in the interscapular region, midway between the

vertebral spines and the inner border of the scapula. This may include this whole area or be as small as a silver dollar. Bronchial breathing is heard, but this and the dulness disappear when the patient bends forward, which allows the lung to expand. The only signs similar to this occur in pericardial effusions. [H.K.P.]

4.—Goldspohn reviews the literature bearing on the subject of **intestinal obstruction following vaginal hysterectomy**. He reports 3 cases operated by abdominal section for the relief of the obstruction, one of which was successful and 2 were unsuccessful. His observations are as follows. 1. According to the showing of Lenclos, ileus is more frequent after vaginal hysterectomy than after other abdominal sections. This is, as we could expect, chiefly in all cases in which the abdominal or pelvic cavity is not closed; for in these cases two or three of the chief causes of peritoneal adhesions are quite generally present, *i. e.*, (a) raw surfaces, (b) infection, and (c) a foreign body (the drain). 2. The physiologic economy of the abdomen demands that the different portions of the small intestine shall be free to migrate from place to place, therefore any opening of the abdominal or pelvic peritoneal cavity is deplorable, that engages any portion of the small intestine to assist in closing the opening or wound. This is regularly the case in vaginal hysterectomy, as ordinarily performed, and as is necessarily done in all cases of this operation in which there are extensive abraded surfaces, or in which septic features are present in the case. But in all other cases of this operation, when no intraperitoneal drain is needed, it is a just requirement that the peritoneal cavity be sealed by a closure of the wound in the peritoneum by coaptation of its edges; and that the use of hemostatic forceps or clamps, so far as it interferes with such closing of the peritoneum, should be avoided as far as possible. It is not necessary or desirable to close the opening in the vaginal vault, but it and the broad ligament should drain into the vagina. 3. The secondary operation for the relief of postoperative ileus, to be successful, must be performed early, before the mechanical obstruction has caused infection and paralysis of the bowel (peritonitis). 4. When this difficulty arises early—within 3 to 4 days after an abdominal or pelvic operation—it will often be difficult to exclude peritonitis, which also causes similar symptoms. 5. The symptoms and signs which speak mostly for ileus are: Abdominal distention without marked tenderness to touch on gentle pressure; the presence of rhythmic colicky pains; a slow pulse that is not wiry; fecal vomiting; vermicular motion of the small intestine, seen or felt through the abdominal wall; increased proportion of indican in the urine. [A.B.C.]

Medical News.

September 8, 1900. [Vol. lxxvii, No. 10.]

1. Trophic Changes in Consumption; A Contribution to the Symptomatology of this Disease. HENRY HERBERT.
2. The Effect of Flashes of Electric Light on the Eye. DUNBAR ROY.
3. Graves' Thyroid Disease. O. T. OSBORNE.
4. The Status of General Anesthesia in 1900. M. L. MADURO.
5. The Physiology of Sleep. H. H. STONER.
6. An Attack of Urticaria Occurring in the Tropics Simulating Angioneurotic Edema. JACOB S. GREEN.

1.—Herbert calls attention to certain **trophic changes in phthisis**. He says the pathologic importance of some of these changes is increased by the fact that they appear on the same side of the body as the diseased lung. The emaciation in phthisis is due mostly to the disappearance of fat and the atrophy of muscles. There is unilateral muscular atrophy of the chest, and the author appears to think the atrophy is due to reflex activity from the diseased lung. The blood takes part in the general atrophy and shows changes similar to those observed in cachexia and marasmus. The heart is usually small in consumptives. There are usually pathologic changes in the pharynx, tonsils, middle ear, and palate long before a definite diagnosis of phthisis can be made, and these complications in the great majority of cases are on the same side as the diseased lung. Mouth-breathing is a characteristic feature of phthisis, caused by chronic catarrh of the mucous membrane of the nose and by adenoids. Inequality of the pupils is often a valuable sign

of consumption, especially if of nearly constant equilateral appearance. Variation in the pigmentation of the mamilla leads to a suspicion of phthisis. The skin is always affected in this disease. It becomes rough, dry, scaly, and sallow in color. Hypersecretion of the glands of the skin is common. There is generally "atrophy of the hair" of the chest on the affected side. There may be a decided atrophy of the mamma of the affected side. Fatty degeneration of the liver occurs regularly in acute phthisis, and Pitt says that 22% of cirrhotic patients die of consumption. Among the early symptoms of this disease are gastric disturbances, and among the later ones are loss of intellectual power and increase of sexual desire. The author believes these changes are caused by a degeneration of the trophic fibers in the nerves of the parts affected, but that probably the tissue to which the nerves are distributed are primarily affected and the nerve-fibers secondarily. [A.B.C.]

2.—Roy reports 3 cases of temporary injury to the eye caused by an intense electric-light flash. In all the cases there were 2 symptoms which were always present: (1) contraction of the pupil from the retinal irritation which was so strong that it persisted for several days; and (2) pain coming on several hours after the accident. The exciting cause is supposed to be an excess of the ultraviolet rays. [G.B.W.]

3.—Osborne inclines to the belief that Graves' thyroid disease or **exophthalmic goiter** is not so rare as has been supposed, but that it is more likely to prevail in crowded centers of population, where women of the emotional, excitable, and mentally active types are more numerous. He is inclined to think that the initial cause may relate to some disorder of the uterus and ovaries aggravated by worry, overwork or emotional stress, particularly when such stress occurs at the menstrual period or during pregnancy. After a period of chronic overexcitation of the gland by these factors, some particularly violent emotion may produce such exacerbation of symptoms as to first excite the attention of patient and physician, and produce the so-called acute attack. He thinks that there is a tendency to spontaneous recovery within from 2 to 5 years, with a gradual amelioration of all symptoms. After 5 years' duration the prognosis is unfavorable. The older the individual in whom the disease develops the sooner may recovery be expected. Pregnancy after the development of symptoms often causes disappearance of the disease, possibly because this disease requires and uses up a certain amount of the hypersecretion. As to treatment, anything that tends to quiet the circulatory system without putting more blood at a greater tension in the head will do good. Strophanthus, digitalis, and like drugs should be given when there is cardiac dilation, but not otherwise. The best therapeutic agent is absolute rest in bed, mental as well as physical rest. The thymus-gland treatment of the condition has been more than usually successful. Bromids are successful to a certain point, but after that increase the debility of the patient. Theoretically, treatment with sodium phosphate should be satisfactory because of the large loss of sodium chlorid and phosphoric acid caused by the hypersecretion of the thyroid. Permanent good results should not be expected for from 1 to 2 years, and even then relapses may occur. The condition will always be temporarily better during menstruation and during pregnancy, and probably become permanently cured at the menopause. Complications should be treated concomitantly with the goiter. If diabetes occurs, perhaps codein is one of the best remedies for both conditions. All uterine disorders should be treated. [G.C.C.H.]

4.—Maduro says the safest and therefore the best general anesthetics are nitrous oxid and ether, and when given with a Bennett instrument represent the ideal form of an up-to-date anesthetic. He says his own experience with the A. C. E. and Schleich mixtures have always afforded good results and he is indisposed to believe the bad qualities attributed to them. [G.B.W.]

5.—Stoner speaks of the various theories which have been advanced to explain the **phenomenon of sleep**. The latest, the cerebral anemia theory, he discards with all the others. On the contrary, he believes that sleep is due to an inability on the part of the processes of the psychic neurons to be extended so as to bridge over the hiatus between them and thus carry on the functions of intellection. This occurs as the result of exhaustion of the cell of the neuron. [A.B.C.]

6.—Green describes a case of **urticaria** occurring in a man of 23, who was well developed and plethoric. The patient was in a tropical climate, was taking alcoholic stimulants, and very little exercise. His face, body, and limbs were covered with wheals, and there was some gastrointestinal disorder. A day later, the symptoms were more marked, the face, hands, and genitalia being much swollen. Purgative doses of epsom salts, a non-stimulating diet, and the external application of spirits of camphor relieved the condition after 5 days. The itching was very annoying, and always worse at night. At no time was the temperature above 100.5°. The author ascribes the condition to a meat-diet, alcohol, warm climate, and lack of exercise. [A.B.C.]

Boston Medical and Surgical Journal.

September 6, 1900. [Vol. cxliii, No. 10.]

1. The Scope and Aim of the Section's Work. KENNETH MACLEOD.
2. Notes on Dermatitis Venenata. GEORGE F. HARDING.
3. Notes on the Treatment of Ataxic Patients by Coordination Exercises, with the Demonstration of Two Patients. JAMES J. PUTNAM.
4. Two Cases of Abnormal Sexual Development. GEORGE G. SEARS.

1.—See PHILADELPHIA MEDICAL JOURNAL, August 18, 1900.

2.—Harding says in addition to the drugs used in therapeutic applications, there are many common plants that will cause **dermatitis**, idiosyncrasy, however, playing an important part. The eruption may be from a simple erythema to an inflammatory condition of the erysipelatous type. The most common plants are those of the rhus group—the poison ivy, dogwood or poison sumach, and the poison oak. Japanese lacquer may cause it even in handling pictures. Among the ordinary wildflowers are the buttercup, field daisy, goldenrod, wood anemone, clematis, and garden nasturtium. Among the drugs used in applications he has seen dermatitis being caused by tincture of arnica, balm of Gilead, hamamelis, common salt in strong solution, belladonna, and many proprietary remedies containing the essential oils. A case is given in which the "Seven Sutherland Sisters Hair Grower" caused a dermatitis. The principal ingredients of this are extract of hamamelis, hydrochloric acid, salt, and magnesia. Kerosene may cause an eruption, but he has never seen crude petroleum do so. Glycerin, almond oil, iodoform, carbolic acid, salicylic acid, quinin, sulphur, tar, and chrysarobin occasionally cause inflammation. Among substances brought into contact with the skin on account of occupation, and which may cause a dermatitis, are strong alkalis, soaps, pearline, soapine, metal and shoe polishes, paint pigments, arsenic, potassium bichromate, the various salts of mercury and even the metal, and chocolate. Animal irritants are the mosquito, flea, bedbug, black fly, wasp, bee, hornet, spider, caterpillar, and jelly-fish. [H.K.P.]

3.—Putnam advises against the sole consideration of the final outcome of **ataxia**, but urges the treatment of the treatment of the present crippling conditions in the following ways: 1. Not strength, but skill in muscular movements must be developed by massage and exercise so that the brain and lower reflex centers may be taught to respond to the feeble impulses. 2. Elementary forms of movement must be practised and not the more complex ones. 3. Combine amusement in some form in the movements, to avoid fatigue and monotony. 4. Personal instruction is necessary for understanding and obedience. 5. Two cases of tabes are cited in which many authors would consider such treatment contraindicated. One with severe pains and incoordination was taught to walk with crutches or cane and showed marked improvement. Another acute case who was unable to walk without being held up was able to walk miles in 3 months unassisted, and afterwards went back to work. [H.K.P.]

5.—Sears reports two cases of **abnormal sexual development**, one a male of 26, 5 feet 2 inches tall and of good muscular development, with luxurious growth of hair on the scalp, a little soft down on the upper lip, and devoid of a beard. The voice was high pitched, the hips broad, penis and testicles small, breasts pendulous, and nipples and areola well developed. The other was a female of 26, mentally dull, who had never menstruated, but had regular

monthly attacks of vertigo and weakness. She was 5 feet 8 inches tall, had no axillary or pubic hair. The vagina scarcely admitted a finger, cervix was rudimentary, and ovaries could not be felt. There was no development of the breasts, and the hips and general development resemble a man. There is a tendency to gigantism. [H.K.P.]

Journal of the American Medical Association.

September 8, 1900. [Vol. xxxv, No. 10.]

1. Serumtherapy in Croupous Pneumonia. J. C. WILSON.
2. Pseudo (?) or Modified (?) Smallpox. T. H. HAPPEL.
3. Pseudo, Modified or True Smallpox—Which Is It? H. M. BRACKEN.
4. Typhlitis, Perityphlitis and Appendicitis in Infancy and Childhood; Causation and Relative Frequency. JOSEPH HENRY BYRNE.
5. Traumatic Insanity, with Report of Case. E. G. CARPENTER.
6. Measurements of Chicago School-Children. W. F. CHRISTOPHER.
7. Exophthalmic Goiter. F. W. HIGGINS.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1263.

2.— " " " " " " " " " "

3.—Bracken calls attention to a mild form of smallpox which is now prevailing in certain parts of the country and which has been called by some pseudo-smallpox or modified smallpox. He believes that it is all smallpox or all not smallpox; it is absurd to state that because the temperature is low, the eruption atypical, and the prodromal and other symptoms are lacking, that the disease is not smallpox. Some even state that vaccination does not protect against this disease, but it is likely that such vaccinations were old or unsuccessful. There have been over 1,000 cases of smallpox in Minnesota since January, 1899, having the characteristics of the so-called pseudo-smallpox or modified smallpox. There has been a total mortality of a trifle over 2%, although in some localities with many cases there have been no deaths. Some of the fatal cases were of the acute hemorrhagic type, causing death before the fifth day. In several of these cases a correct diagnosis was not made until after death. One can not be too careful in dealing with the present general epidemic of smallpox, and those physicians who have failed to make a correct diagnosis or who are seeking notoriety by suggesting a new name for an old disease can do much toward aiding in the suppression of the trouble by admitting their errors, or ceasing to preach false doctrines. [M.B.T.]

4.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1282.

5.— " " " " " " 1287.

6.— “ “ “ “ “ “ “ 999.

American Journal of the Medical Sciences.

May, 1900. [Vol. cxix, No. 5.]

1. An Analysis of Fifty-one Cases of Pneumothorax. JOHN LOVETT MORSE.
2. The Acute Pneumonic Form of Tuberculosis. ARTHUR W. ELTING.
3. Senile Bronchitis. REYNOLD WEBB WILCOX.
4. A Case of Multiple Neuro-Fibromata of the Ulnar Nerve. W. W. KEEN and WILLIAM G. SPILLER.
5. The Differential Diagnosis of Ectopic Gestation. EDWARD P. DAVIS.
6. Two Cases of Tabes Dorsalis in Negroes—Husband and Wife. ALBERT PHILIP FRANCINE.
7. The Clinical Aspect of Plague. FRANK G. CLEMON.
8. A Critical Summary of the Literature on the Surgery of the Stomach. CHARLES H. FRAZIER.

1.—After analyzing 51 cases of **pneumothorax** Morse comes to the following conclusions: At least 70% and probably 85% of the cases are tuberculous. The prognosis is good when the condition is due to trauma. It is fair when the pneumothorax is secondary to abscess of the lung. The results of excision of the ribs in these cases are very encouraging. Tuberculous pneumothorax is much more common in men than in women. It is about twice as frequent on the left as on the right side. The onset is acute in rather less than half of the cases. Sudden pain and dyspnea are the

most common initial symptoms. The pneumothorax may be the first symptom noted of tuberculosis. Displacement of the heart always occurs, being more marked in the left-sided cases. The pneumothorax is usually complicated by the presence of fluid, but may be simple. Air is rarely present alone in cases living more than a week. The fluid is more often purulent than serous. Recovery may occur in about 15% of all cases. The cases which recover are practically all serous. They usually die later, however, from pulmonary tuberculosis. The pneumothorax is the direct cause of death in 60% of the cases; 80% of all cases die in less than a year, and only 10% live over 5 years. The prognosis is worse in right-sided than in left-sided, and in purulent than in serous cases. It is worse in women than in men. Surgical intervention is at least worthy of consideration in purulent cases. Patients with pneumothorax are sometimes able to be up and about and even to do manual labor. [A.B.C.]

2.—Elting says the **acute pneumonic form of tuberculosis** was first described by Laennec. Traube was the first German to speak of this disease, and he called attention to the green sputum generally accompanying this affection. Hager believes the pneumonia is not due to local irritation of the tubercles, but represents an inflammatory process which, like the tubercles, is caused by the tuberculous poison. Frankel and Troje reported 13 cases, all in men, 11 of whom were between 20 and 40 years old. In more than half of these cases neither the shape of the thorax nor the condition of nutrition suggested in the least the existence of a tuberculous affection. Only 3 were addicted to alcohol, and but one had an hereditary tuberculous family history. The constant way in which the histological findings in the diffuse gelatinous infiltration differ from those seen in areas of tuberculous proliferation of tissue led Frankel and Troje to assume that the diffuse gelatinous infiltration is not the direct result of the tubercle-bacilli, but of their diffusible chemical products. The areas of caseation are always surrounded by a zone of epithelioid tissue, and we may assume that caseation occurs only in epithelioid tissue and not in exudative contents of the alveoli. Elting sums up the main clinical features of the disease as follows: 1. The onset is often without a definite chill, though a definite chill may occur. 2. Fever is often of an elevated, regular character, but very frequently of an irregular or remittent type, and practically always of a remittent character in the later stages. 3. There is usually absence of marked dyspnea and cyanosis. 4. The physical signs indicate consolidation of part of a lobe, a whole lobe, or more than one lobe. 5. Pain in the side, with cough and sputum, at first typically pneumonic, rusty and glairy, but at the end of a week or 10 days may assume a greenish tinge, and it will be found to contain tubercle-bacilli. In a case reported tubercle-bacilli were found 7 days after the onset. 6. There is absence, in some cases at least, of the leukocytosis usually associated with lobar pneumonia. The author gives the history of a case and the microscopic examinations of the various organs postmortem. [A. B. C.]

3.—Wilcox says the tissue-changes incident to old age are (1) a pure atrophy of the constituent elements of the tissues; (2) a progressive infiltration into certain tissues of organic or mineral elements foreign to their normal condition; and (3) an exaggerated production of connective tissue. He says the changed position of the interlobar fissure in the lung of the aged, assuming a position more nearly vertical than in young and middle life, explains that a senile phenomenon may be apical in position and yet the seat of trouble be in any lobe. In searching for **senile bronchitis** it must be remembered that the costal cartilages calcify and become rigid, thus changing the symptomatology, as well as the therapeutics. Of senile pathologic conditions 4 claim our attention: bronchorrhea, bronchitis, pneumonia, and tuberculosis. Bronchorrhea readily runs into bronchitis in the old, and its tendency is to become chronic; and likewise, pneumonia readily supersedes bronchitis. The danger of an insidious course of tuberculosis in the aged is well known. In the treatment of senile bronchitis the expectoration must be lessened. Belladonna, apomorphin, and the nauseating expectorants fail here. **Strychnia** and **ammonium carbonate** are the favorite drugs of the author. The latter drug is given in 5 to 10 gr. doses in 2 ounces of water. It liquefies the secretions, stimulates the heart and the bronchial muscles, thus relieving venous congestion and dyspnea. The strychnia, aside from its other

therapeutic value, is a powerful stimulant to the right heart. The use of opium or any of its alkaloids is strongly condemned. Systematic massage often yields brilliant results. A warm dry atmosphere free from dust is very essential. The general care of the patient's health should be carefully looked after, a thing often neglected. [A.B.C.]

4.—Keen and Spiller report the case of a man of 47, who complained of rheumatism in the knees which had persisted for 20 years. For many years there had been some tender nodules on the palm of the left hand. At first they were painful only when compressed, but gradually the pain became continuous and very severe. Some 7 years ago 2 of these nodules were removed. One nodule in the forearm was painful occasionally. For 20 years the patient had suffered from fistula in ano, for which 2 ineffectual operations had been done. Keen operated, removing the small tumors from the palm of the hand and forearm. They were shelled out without difficulty, and all were **neurofibromas in the substance of the ulnar nerve**, or its branches. The fistula was likewise operated upon and the patient made a good recovery. Keen says that operation is essential for the removal of these tumors, for they steadily increase in size, and there is increasing pain and impaired usefulness of the member. Malignant degeneration in a nerve after neurofibromas have been removed is by no means unknown, but the risk incurred by such an operation is justifiable in view of the symptoms produced by the tumors, and that malignant degeneration may occur in tumors of this kind which are not removed. If they exist on the side of the nerve they should be carefully dissected away, removing as far as possible all the diseased tissue. If the tumor is too large or too intimately connected with the nerve to be thus removed, a resection of the entire nerve, or amputation of the limb may become necessary. Spiller gives an exhaustive report of the microscopical findings in these tumors. It is too long and technical for abstract. [A.B.C.]

5.—Davis reports 2 cases of **ruptured ectopic pregnancy** wherein the symptoms differed materially from those accepted as classic under such conditions. The first was a primigravida of frail physique and highly organized nervous system, who had been 10 years married. She had menstruated regularly and had never been pregnant. She supposed herself to be in perfect health. During a ride of 2 miles on a bicycle at a rapid rate she was seized with a sharp pain in the right lower quadrant of the abdomen. Soon there was manifest shock, which was the only abnormal condition. She soon recovered from the shock. A vaginal examination revealed nothing. It appeared that she had gone 1 or 2 weeks beyond the expected menstruation. There was no tumor, no enlargement of the womb, nor any other evidences of ruptured ectopic pregnancy. A few hours after recovering from the shock, she again grew worse and on opening the abdomen there was found an ectopic gestation in the right tube. The wall of the tube had ruptured and the orifice had been temporarily closed by a clot. Later this had given way and caused the second hemorrhage. A careful operation was done, but the patient perished from shock. The second case was a woman of 40. Her only child was 19 and she had menstruated regularly. For several months there had been pain in the stomach and nausea. Her menstruation had been absent for nearly 2 months. Eight days before coming under observation she had pain in the abdomen. She denied the possibility of pregnancy. She was suddenly seized with sharp abdominal pains and severe shock. On vaginal examination the womb was not enlarged, was freely movable, and there was no tumor, exudate, nor mass in the pelvis. The cervix was unaltered. The author believed, even in the absence of classic symptoms, that the patient was suffering from ruptured ectopic pregnancy. Laparotomy was performed and an early embryo was found just above the right cornu of the uterus. It with a mass of bloodclot was immediately removed. The patient made a good recovery. The author reports a third case in which all the classic symptoms of ruptured ectopic pregnancy were present except shock. A sign of ectopic gestation so often present—a tumor in the pelvis—was absent. By careful investigation and inquiry it was believed that intestinal colic had given rise to the symptoms. The subsequent history of the case proved this to be correct. [A.B.C.]

6.—Francine reports **tabes dorsalis occurring in both husband and wife**, negroes. The author says he

knows of no previous case in which this disease occurred in both husband and wife in the negro race, though Raecke has collected 22 cases of tabes occurring in both husband and wife in which the subjects were white. The man, in this case, aged 48, was very dark and denies the possibility of any white blood in his family. He has been rheumatic since 10 years of age. He is now suffering from phthisis. He had a hard chancre at 17, for which he received specific treatment, and did not suffer a secondary eruption. There has been complete loss of sexual power for 2 or 3 years and he has been married 12 years without children. About 5 years ago the patient began to suffer from difficult vision; he has lightning pains in the legs and body, is ataxic, has girdle sensation and numbness in the soles of the feet. He has bladder trouble, shortness of breath, kneejerks absent, and there is marked dissociation between superficial and deep sensation. Babinski reflex is absent. The wife of the above patient is 52, very dark, and denies any white blood in her family. She has enjoyed good health, except that for the past 10 years she has been nervous. By a former marriage she had 2 children, one of which was still-born at term. She has not been pregnant by her present husband. She has used a sewing machine constantly for the past 35 years, which the author thinks may have some etiologic relation to the disease. About 2 years ago she began to suffer from sharp pains in the legs and body, following which her gait was ataxic. She has the girdle sensation, dimness of vision, ptosis of the right eye, and flattening of the right side of the face. There is a partial double ptosis of the external oculars. There are 2 anesthetic patches on each breast. Kneejerks, plantar reflexes, and Babinski reflex are absent.

7.—Clemow in concluding his article on the **clinical aspect of plague** discusses its effect on other parts of the body. On the **circulatory system** the most noticeable effects of plague are an increase in the pulse-rate, relaxation of the bloodvessels, diminished arterial tension, diastolic of the pulse and exhaustion of the heart-muscle. The latter may be the cause of heart-failure and death. Hemorrhages in various parts of the body frequently occur in plague and give rise to appearances of great diagnostic value, especially postmortem. The presence of these hemorrhages postmortem are next to buboes in diagnostic value. External hemorrhages are rare. Deep hemorrhages around buboes are common. These probably have to do with the presence of the glistening gelatinous infiltration around the buboes. Hemorrhages on serous and mucous membranes are commonly seen in plague-cadavers. Hemorrhages into solid organs are commonly found and are small and punctate in character. The **respiratory system** is characterized by the presence of catarrhal or inflammatory involvement of the air-passages, by ronchi of various characters and not infrequently by loud moist rales. The respirations are more frequent, and if the disease lasts for 3 or 4 days there is hypostatic congestion. Hemoptysis is rare. Among 502 cases of plague, 17 developed secondary pneumonia and 12 developed primary plague pneumonia; those having the latter developed no buboes. Necropsy showed the lungs to contain pneumonic patches of varying size and closely resembling embolic infarcts. The pneumonic form of plague is in most epidemics the most fatal, and generally regarded as the most infectious. The **genitourinary system** is characterized by diminished urinary secretion, by albuminuria, in most cases, and in a few cases tube-casts, indicating nephritis. The presence of blood in the urine is rare. Retention of urine is common, due to the influence of the disease on the nervous system. The **hemopoietic system**: the spleen is occasionally slightly enlarged, but this is not of diagnostic value, in fact the enlargement can be detected during life in but few cases. The enlargement of one or more lymphatic glands, constituting a bubo, is the most valuable diagnostic sign of plague. It is absent in the primary pneumonic form of the disease, but present in over 90% of all other cases. The gland or glands become swollen and tender, but there is no other constant character about them. The tenderness is characteristic. Buboes, as a rule, appear within the first two or three days. Deep sloughs involving the whole bubo and skin over it are apt to occur. Among 446 patients 60% had the primary bubo in the groin, and 80% of these cases proved fatal; 18.3% had the primary bubo in the axilla and 82.7% of these were fatal; and 9.4%

had the primary bubo in the cervical region, and of these 84.1% were fatal; while among patients with multiple buboes the mortality was 79.2%. Other local lesions of plague are (1) collections of pus sometimes giving rise to furunculosis; (2) patches of necrosed skin; and (3) blebs of watery fluid. The author says the remarkable differences between the clinical picture which may be presented by two given patients suffering from plague, or by the same patient on two successive days, find their exact analog in the marked differences in the rapidity of spread, mortality, proportion of persons attacked, relation to climate, soil, altitude, and other concomitant conditions. He says there appears to be little doubt that the toxins of plague are primarily nerve-poisons, and that the affections of other tissues and organs are to a very great extent due to the profound disturbance of the nervous mechanism which controls their action or nutrition, or both. [A.B.C.]

8.—Frazier reviews the literature which has been published within the last year, bearing upon **surgery of the stomach**. That especially noteworthy concerns the establishment of a communication between the stomach and the intestines. Gastroenterostomy has superseded pyloroplasty, pylorotomy, etc. The posterior operation has the choice. Murphy's button is still a favorite. Murray prefers to introduce this button through a linear incision closed with uninterrupted sutures rather than by the purse-string suture. This prevents puckering of the walls of the stomach which may interfere with union at some point. Malignant pyloric stenosis remains the chief indication for gastroenterostomy. Of 38 cases collected up to 1892, in 21 the cause of the stenosis was carcinoma; the remaining causes were benign stenosis, congenital stenosis, gastritis, hour-glass contraction, gastropexia, and motor insufficiency. Observations have been made upon the effect of regurgitation of the bile, which occurs in not a few cases. It appears that this regurgitation has no disturbing influence upon digestion. Masse established a fistulous communication between the common bile-duct and the stomach to determine the effect of bile upon digestion; no evil effects were observed. There has been much literature treating on the subject of surgical interference in gastric ulcer; the subject is still *sub judice*. In cases of acute perforation, the necessity for immediate operation admits of no dispute. According to Lund, the percentage of recoveries during the period 1897 and 1899, in cases operated upon during the first 12 hours, was 86%, and within the first 24 hours was 73%. It appears that 52% of ulcers are on the anterior wall, 31% near the lesser curvature, 27% near the cardiac end, 13% near the pyloric end, and 8% upon the posterior wall. Hemorrhages into the stomach furnish another indication for operation, both repeated copious hemorrhages, and frequent small hemorrhages associated with anemia and stomach dilations. The mortality, according to some observers, varies from 60% to 70%. Operation on the stomach for malignant stenosis at the cardia should be done at once after diagnosis is made without regard to the degree of dysphagia. There have been up to the present time 9 cases of total gastrectomy. Of these, 4 are still living; 2 died, 14 and 7 months after the operation, respectively, and the remaining 3 died upon the table, or within 36 hours. The mortality of this series is 33%. Robson has collected 14 cases of partial gastrectomy, in which at least three-fourths of the stomach had been removed for cancer. In this series, the mortality was 28.5%. [A.B.C.]

Münchener medicinische Wochenschrift.

July 3, 1900. [47. Jahrg., No. 27.]

1. This Year's Influenza Epidemic in Freiburg. CLEMENS.
2. The Finding of Bile-Coloring Matter in the Urine in Heart Disease. FRITZ OTT.
3. Blood-letting in Heat-strokes. CARL KLEIN.
4. A Case of Severe Uremia Cured by Blood-letting. HESSLIN.
5. Atropin Treatment of Ileus. BATSCH.
6. Foreign Body in the Inner Eye, Ascertained by X-ray. MACK.
7. A Simple Incubator for the Practical Doctor. KARL WALZ.
8. Experimental Attempts at Hand Disinfection. PAUL and SARWEY.

1.—Clemens believes that **Pfeiffer's bacillus** is the cause of influenza. In many cases, however, it is doubt-

ful where the bacillus is located. The accessory sinuses of the nose and the nasopharynx should be thought of, as suggested by Bäumler. Clemens found the bacillus in 12.6% of the cases he examined. He shows by curves the **seasonal incidence** of the disease, the majority of cases falling between the end of November and the end of April. [D.R.]

2.—A slight, yellowish discoloration is not rare in grave heart disease. Some have thought it due to bile pigment, and some have ascribed it to other pigments. Ott examined 12 cases, using in addition to the Gmelin test, Salkowski's modification of Huppert's test (precipitation with calcium chlorid). He obtained **positive results** in 12 cases. He was also able to determine that in catarrhal jaundice the elimination of bile pigment outlasts the elimination of urobilin. [D.R.]

3.—Klein reports a case of **heat-stroke** cured by venesection. [D.R.]

4.—A case of **uremic convulsions** followed by coma cured by bleeding. The author also refers to a case of pneumonia in which he believes a timely venesection saved life. [D.R.]

5.—Batsch has treated **intestinal obstruction** with heroic doses of **atropin**, injecting as much as 5 mgm. ($\frac{1}{15}$ gr.) twice in one day. In 2 cases in which stercoraceous vomiting had already set in the atropin seemed to bring about a cure; in a third case the atropin failed and an operation had to be done. It was found that the intestinal obstruction was due to a parametric band. The atropin, however, seemed to prevent gangrene and to facilitate the return of the intestines to the abdominal cavity. Whenever atropin is used careful observation of the patient is always necessary. [D.R.]

6.—Mock reports a case of a **foreign body**, consisting of a splinter of steel, about the size of a pfennig, lodging **within the eyeball**. The symptoms and history of the injury led to the suspicion of its presence and by means of the x-rays it was seen that the foreign body was situated in the dangerous ciliary region. As conservative treatment had failed to reduce the inflammation previous to the localization of the particle with the x-rays, immediate operation was decided upon. Under deep narcosis a broad flap was raised from the conjunctiva, and after one futile effort the particle of steel was successfully removed by the use of Hirschberg's magnet. The wound healed rapidly and the patient recovered a useful eye. The prognosis, however, was not so favorable, because hemorrhages or loosening of the retina could at any time more or less destroy the function of the eye. [G.B.W.]

7.—Walz describes a **simple incubator** for the physician's use. [D.R.]

8.—In this third part of their article on **hand disinfection**, Paul and Sarwey discuss the possibility of varying results which may follow the researches of different observers because of the different methods of removing the germs from the hands to the culture-media. Other sources of error may be due to: (1) Peculiarities of the skin of different hands; (2) the removal of the bacteria from different portions of the hands; (3) the failure to make quantitative tests; (4) the failure to have proper culture-media kept at a proper temperature; and (5) difference in the length of time of observation. But none of these is of as much importance as the employment of different methods of removing the germs. By using a small splinter of wood many more bacteria can be removed than by either a silk thread or immersing the finger directly into the culture-media. Also the method of using a small bit of wood possesses so many practical advantages of manipulation that it is much the best of the three. [G.B.W.]

Berliner klinische Wochenschrift.

July 23, 1900. [37. Jahrg., No. 30.]

1. Our Knowledge of the Anemias and Their Treatment. SENATOR.
2. Concerning Migraine with Coincident Eye-Muscle Paralysis. W. SEIFFER.
3. The Concerted Fight Against Phthisis in Germany. PANNWITZ.
4. The Etiology and Therapy of Tabes Dorsalis. P. K. PEL.
5. The Pathology of Morbid Tumors. O. ISRAEL.

1.—Senator discusses **chlorosis, pernicious anemia, and mountain anemia**. Only the last is really an essential anemia; the other 2 have some extrahemic cause, which has yet to be discovered. In some cases of grave anemia there is a latent carcinoma of the stomach or malignant growth of the bone-marrow. In the latter the presence of albumosuria may aid in the diagnosis. Regarding the **treatment of chlorosis**, he advises that attention be first paid to the gastric catarrh which is often present. For this he gives either hydrochloric acid or mineral waters—either the alkaline or the alkaline muriatic waters, such as Emser, Gleichenberg, etc. Later the saline chalybeate waters are indicated, viz.: Elster, Franzensbad, Homburger, etc. An artificial chalybeate water may be made with pyrophosphate of iron. Of pharmaceutical preparations, Senator prefers the ethereal tincture of chlorid of iron and ferrated ammonium chlorid. Arsenic and quinin are sometimes useful. Among newer procedures, the **sweat-cure** by means of different forms of baths has given very satisfactory results. Venesection is not indispensable and may do harm. In the diagnosis of pernicious anemia Senator lays stress upon the presence of **motile megalocytes**. His treatment of the disease presents nothing new. **Mountain sickness** (anemia montana) is an **anoxemia**, a condition due to diminution of the amount of oxygen in the blood. It manifests itself by palpitation, oppression, vomiting, fainting, bleeding from the nose and mouth, etc. The only sensible treatment is the return of the patient to a lower altitude. [D.R.]

2.—A case of **migraine** in a man of 49, that had begun at the age of 8 and had been associated with coincident attacks of **oculomotor paralysis**. Eventually the latter became permanent, and the man had ptosis, external squint, and dilated pupil. The cause of such a condition is probably a disturbance of the circulation in the region of the nuclei or roots of the oculomotor nerve. At first the disturbance is only transient, but afterwards it becomes permanent. [D.R.]

3.—An interesting article detailing the magnificent results accomplished in Germany since 1895 in the development of the **institutional treatment of tuberculosis**. The great advantage which Germany has in this respect is the national insurance law, which insures from 14 to 15 millions of the 53 million inhabitants of Germany against invalidism in consequence of internal disease. As these 14 to 15 millions insured represent, with their families, a population of 34 or 35 millions, this vast number of people come under the beneficial effects of the law. The law even enables the insurance associations to treat persons who are threatened with disability. The paragraph in question has been applied particularly to tuberculosis, so that the insurance companies have established sanatoriums where persons are treated even before they have become incapacitated. At present facilities exist for treating 20,000 poor persons for 3 months each in sanatoriums and other institutions. The results have been excellent, and the cures have varied from 71% to 82%. Another beneficent institution is the **dispensary for tuberculosis**. The first one was established at the Charité in Berlin, and is not merely a dispensary, but is also a place for careful study of the patients and for special treatment and advice. The insurance law provides that when the insured person is sent to an institution for treatment, his family shall receive one-half of the sum expended for the patient's support. As this stipend is small, about 10 marks (\$2 50) per week, a movement is on foot to have the law so changed by the Bundesrath that the insurance companies may be able to pay to the family more than half of the sum expended for the treatment of the wage-earner. Societies have also been formed, especially among the women of Germany, to secure change of occupation for persons who have been treated in sanatoriums. One society in this way succeeded in obtaining more hygienic employment for 41 out of 53 cases treated in the institution at Grabowsee. [D.R.]

4.—Pel believes in the **syphilitic origin** of the majority of the cases of **tabes**, but how the syphilis acts he is, like all others, unable to explain. It is remarkable that tabes seems to follow particularly the milder forms of syphilis. Syphilis is not the only cause of tabes, however; there are other factors, at least, in a small percentage of cases. The best prophylactic against tabes is not to become syphilitic, and when infection has taken place to receive proper treatment. When the

disease has once developed not much can be done. Only in rare cases is mercury indicated. When optic atrophy exists it should not be employed. Suggestion accomplishes considerable. Strychnin injected hypodermically may be of value in weakness of the bladder, etc. There is no specific, although silver nitrate and its succedanea may have some beneficial effect. For the pains of tabes, in addition to the coal-tar products and chloral, the local use of ichthyol may prove of value. Flannel binders, cold or warm compresses, may also be useful. The suspension treatment and the postural stretching of the spinal cord are viewed with disfavor by the author. The Brown-Séquard treatment is of no value. Arsenic seems to counteract the general debility. For the treatment of the ataxia the **mechanotherapy** of Frankel is recommended, although its application is not described. Everything should be done to keep up the patient's spirits. As the author says, "We should not forget the man in the treatment of the tabes." [D.R.]

Wiener klinische Wochenschrift.

July 5, 1900. [13. Jahrg., No. 27.]

1. The Thermal Springs of Gastein. LUDWIG and PANZER.
2. Basedow's Disease with Symptoms of Myxedema. JOSEF A. KIRSCHL.
3. Colic Pain. ROBERT LUCKE.

1.—A careful analysis of the famous thermal **springs of Gastein** in the Salzburg. [D.R.]

2.—A woman of 33 had typhoid fever in January, 1899, and never fully regained her strength. In August of the same year she fell down the stairway and was badly frightened. Symptoms of **exophthalmic goiter** immediately developed. Within 2 months, however, the palpitation lessened and **myxedematous swelling** of the face and of the lower extremities occurred. In addition, there was a noticeable forgetfulness. The goiter became fibrous, the uterus passed into a stage of atrophy, and the skin was dry. [D.R.]

3.—Lucke believes that colicky pains are produced under all circumstances by **distention of a hollow viscus**, and that the passage of calculi in itself is not the cause of colic. In the case of the intestines the internal pressure is increased, not alone by an augmentation of the quantity of fluid and gas, but also by contraction of the circular muscles above the obstruction. [D.R.]

Neurologisches Centralblatt.

August 1, 1900. [No. 15.]

1. The Electric Reactions of Degeneration of the Levator Palpebrae Superioris with Remarks upon an Isolated Traumatic Paralysis of the Oculomotor and of the Trochlearis Nerve. BREGMAN.
2. Speech Disturbance and Speech Development. LIEBMAN.
3. The Occurrence of Cerebral Palsies After Influenza. GUTTMANN.

1.—Bregman calls attention to the fact that with the exception of 2 cases reported by Wertheim-Salomonsen, no one has been able to produce **motor manifestations by the electrical stimulation** of the muscles of the eye. He then reports a case occurring in a man of 55 who, 4 weeks previously, had a severe fall producing an injury over the left eye. This was followed by severe headache, ptosis, moderate dilation of the pupil, and loss of reaction to light. There was also paralysis of the muscles supplied by the oculomotor and trochlear nerves. If a small electrode were placed directly beneath the orbital region and a galvanic current then passed through, a distinct slow elevation of the eyelid occurred. This was evidently due to the increased susceptibility of the muscle and to galvanic stimulation. Faradic stimulation failed to produce any contraction. In another case of congenital ptosis, the reaction did not occur, but was found in a third case in which the symptoms had followed a severe injury to the right temporal region. The fact that the reaction can be obtained in the levator palpebrae and not in other muscles of the orbit is explained by fact that the fibers of the former are placed further forward and can be reached more readily by the current. The lesion

in the case was probably situated either at the point where two nerves pierce the dura or where they pass through the superior orbital fissure. The Argyll Robertson pupil he regards as an evidence of gradual restoration in the function of the nerve. [J.S.]

2.—Liebmann accepts Kussmaul's division of the period of the **acquisition of speech** into 3 stages. The first commencing about the end of the third month consists of inarticulate sounds without significance. The second extends over a longer period and consists in the production of the actual sounds used in speech, not, of course, collected in the form of words. Usually it begins early in the second year and extends to the end of this period, when the child commences to say words that have to it and its auditors a definite significance. Among the conditions that can cause disturbance in the normal development is deafness occurring at birth or developing during the first year. Patients partially deaf may under certain favorable conditions learn to speak, but do not acquire modulation of the voice and have great difficulty in distinguishing between certain vowels and consonants. In case deafness develops just before complete speech is acquired, the child usually becomes dumb. Any disturbance of the organs of expression of speech, such as cleft palate, may, by rendering the production of certain essential sounds impossible, prevent the child from acquiring speech perfectly. Ognathism, either of the upper or lower jaw interferes with the pronunciation of the "s" sound and is spoken of as sigmatismus simplex. Lispering also interferes with speech-development. If these anatomic defects are not removed until later, normal speech may never develop. Lesions of the higher nerve-centers that interfere with speech, as those productive of stammering due apparently to awkwardness in the speech organs and those in which this awkwardness is so extreme that the child remains dumb. Finally there is a condition called agrammatismus in which the child never acquires the faculty of forming correct sentences. Of this there are 3 groups; in the first the child cannot form normal sentences, and even fails to use any inflections correctly by repetition. In the second it also fails to speak grammatically, but can repeat short sentences correctly. In the third class it uses sentences and occasionally inflections, but the formation of the sentence is defective. Repetition is usually perfect. These patients usually are deficient in intelligence, but some of them simply represent an imperfect development of the speech-functions. [J.S.]

3.—Guttman reports two cases characterized by the development of **motor disturbances after influenza**. The first, a boy 17½ years old, noticed 4 weeks after the attack that the right leg was weak and the right arm could not be used as readily as before. This condition continued to increase and began to be associated with occasional headache, dizziness, and an irregular, almost drunken gait. Examination of the eyes showed that there was convergent strabismus, and almost complete paralysis of the right eye. The right facial nerve was paralyzed in all 3 branches. There was a tremor of both hands, particularly on intended movement, no disturbance of sensation, but increase in the patellar reflex and ankle-clonus of the right side. Intelligence was normal. The lesion was probably in the cerebellum or in the medulla oblongata. The second patient, a woman of 54, had had a slight attack of influenza, after which she noticed increasing weakness in the right arm and leg, then had severe and repeated vomiting and headache. The paralysis was found to include the right side of the face and eye. The author believes these cases prove the very deleterious influence influenza may have upon the central nervous system. [J.S.]

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13. Treatment of Inoperable Cases of Cancer. CZERNY.
14. Results of Operations on Rectal Carcinoma. KRÖNLEIN.
15. Contraction of the Rectum and Colon Caused by Cancer, Syphilis, or Tuberculosis and its Importance as Regards the Resection of Intestinal Loops Lying within the Pelvis. KARL SCHUCHARDT.
16. Cephalocele Basilaris in a Woman 30 Years of Age. A. TAUBER.
17. Glanders in Man. GEORG STRUBE.

18. Experiences over the Operative Treatment of Malignant Tumors of the Large Intestine. W. KÖRTE.
19. Experimental Research over Hand Disinfection. O. SARWEY.
20. Recurrences Following Gallstone Operations. HANS KEHR.
21. The Surgical Side of Piano-Players' Disease. ZABLUDOWSKI.
22. Coxa Vara. FERDINAND BAHR.
23. A Communication on the Treatment of Hydronephrosis. REISINGER.
24. The Changes of the Growing Bone Due to the Influence of Phosphorus. LAV. STUBENRAUCH.
25. Alcohol and Soap in a Solid Mixture for the Disinfection of the Hands. VOLLBRECHT.

13.—Czerny in speaking of the **treatment of cases of inoperable cancer** says that the use of morphia should be put off until one sees that the end is approaching, less powerful remedies being used to control the pain of the earlier stages. When ulceration is present much relief can be obtained, at least for some months, by thorough curetting and cauterization, preferably with chlorid of zinc. Though the relief obtained by this procedure is generally rather transient, cases have been reported, some with undoubted correctness, in which a permanent cure has been effected. For the general treatment of inoperable cases of malignant disease a properly established hospital affords much better conditions than the ordinary home, and Czerny believes thoroughly in the construction and maintenance of such cancer sanatoriums. [G.B.W.]

14.—Krönlein has gone carefully over the literature treating of **operations for the relief of rectal carcinoma** and compiled a number of tables of the results of the leading surgeons of Germany. His views, as formed after a careful study of these statistics, he sums up in the following sentences: 1. Extirpation is the sovereign method of treating cancer of the rectum. 2. About four-fifths of the cases of extirpation of the rectum for carcinoma recover from the operation and the wounds heal. A permanent cure is obtained in at least one-seventh of the cases. 4. The functional results are the best when it has been possible to remove the diseased portion of the rectum and still leave intact the sphincter and anus. 5. The total removal of the whole of the rectum greatly interferes with the functional result but renders the proportion of cures greater. 6. The method of excision, whether perineal or dorsal, depends on the character of the case, and one may be used to complete the other. 7. The sacral method is especially appropriate for the cases in which the growth is situated or extends high up on the gut. 8. In operations for the removal of cancer of the rectum, it is to be remembered that the rules of plastic surgery apply here with the greatest of force, hence the proper placing of sutures and the adaptation of flaps of mucous membrane. [G.B.W.]

16.—Tauber reports a most interesting case of **cerebral hernia** in a woman of 30. She had a small tumor in the right orbit at the time of her birth, but could see with both eyes during the whole of her childhood. At the time of examination there was a large mass occupying the whole of the temporal region and spreading forwards so that the upper lid was several times its normal size. When the lid was lifted the eyeball was seen to be greatly shrunken, tests showed it to be perfectly blind, and the conjunctiva was red and fleshy in appearance. The bony structures were markedly diminished in size on the right side as determined by palpation through the orbit and mouth. The diagnosis was very uncertain, the possibilities including some form of angioma, atheroma, cysticercus, carcinoma of the lachrymal sac, or some kind of intracranial growth. At the operation, undertaken to remove the hypertrophied lid, it was discovered that the dura mater projected into the deep part of the orbit, and on incising it a quantity of yellowish fluid escaped and the brain-substance could be seen pulsating at the bottom of the wound. After a good deal of difficulty the cut in the dura was closed and the wound packed with iodoform gauze. The patient died on the sixth day after the operation. Necropsy showed that the case was one of congenital cephalocele basilaris complicated by external hydrops, which pushed the dura through a congenital defect in the base of the skull into the orbit, producing a meningeal hernia. The increase of the fluid within the skull caused

more and more a gradual separation and thinning of the bones concerned. [G.B.W.]

17.—Strube in speaking of **glanders** as a disease of man says that it is always the result of an inoculation of the specific bacillus either from an animal or from another man. The infection may take place either through an abrasion in the skin or may gain access to the blood through the mucous membranes, preferably near their junctions with the skin. The germs may also be inspired, setting up pulmonary glanders. Pathologically, the disease is to be divided into two groups; one in which the process remains localized at the point of infection either in the nose or on the skin, and another in which a pyemic condition is produced with the formation of secondary foci; in other words, there is a local and general manifestation of the disease. The local disease is characterized by the formation of nodes and infiltrations which tend to break down and suppurate. Clinically we see nodes, infiltrations, pustules, abscesses, ulcers, phlegmonous inflammations, etc. The disease may be acute or chronic, and may heal spontaneously or may proceed in its devastations until death occurs. Sometimes at the point of inoculation there will be very little reaction even in the severest cases and then it is often most difficult to differentiate this disease from typhoid. The germs spread through the blood. The diagnosis can always be made by inoculating a guineapig or other animal with the germs taken from the nose or cutaneous lesion. Mallein may be tried, but it is not absolutely reliable. The treatment of the disease must be carried out on the principles of antisepsis that would govern another severe infection; abscesses are to be opened, ulcers scraped, and nodes excised. [G.B.W.]

18.—Körte says that the most insidious tumors, the small ring-like, stenosing carcinomas, which so easily lead to constriction of the intestine, are most difficult to palpate through the abdominal wall, and the more stenosis there is the more difficult is their recognition. A very important help in the diagnosis of these tumors is the characteristic obstructive symptoms which they present. When a patient in middle age becomes gradually more and more constipated with attacks of colic and pain and with the borborygmi of intestinal obstruction which do not yield to proper medication, a diagnosis of stenosis would almost certainly be correct. But after a diagnosis of stenosis has been made out one must differentiate between the various forms of obstruction, though in the majority of cases a carcinoma will be found. The aim of the treatment must be a radical removal of the diseased area of intestine by resection, and when this is not advisable because of advanced state of the disease, enteroanastomosis and colostomy are suggested. In 19 cases of **malignant tumor of the large intestine** treated by resection 12 recovered and 7 died. Of the 12 cases, 5 remained free from return of the disease for a period of from 3 to 8½ years. Generally speaking, resection for intestinal stenosis should be undertaken only when the stenosing tumor can easily be drawn forward so that one, by proper use of gauze-packing, can operate extraperitoneally, and when the condition of the patient will permit a long operation. In conclusion Körte reports 62 cases of malignant tumors of the large intestine on which he has operated. [G.B.W.]

20.—See PHILADELPHIA MEDICAL JOURNAL, Vol. VI, p. 152.

21.—Zabludowski does not class the **disease of piano players** among the occupation neuroses, but says it is a neuritis of one of the nerves of the arm, having its origin in a muscle or joint which has been injured by too much playing. The majority of the persons who suffer from this disease are pupils in a conservatory, who have small and thin bones or weak joints, and hands altogether too small to properly span the ordinary key board. There should be a piano of smaller size for children, so that their smaller hands will not be unduly overtaxed. The treatment in these cases should consist in rest and not in hard massage and various exercises. [G.B.W.]

23.—Reisinger reports an interesting case of hydro-nephrosis in a man of 27. He gave a history of frequent attacks of pain, many of the attacks being followed by a copious flow of urine, but the urine was always free from pathologic constituents. An exploratory operation showed that the kidney was displaced downwards until its lower pole was only 3 cm. above the bladder. As it seemed impossible to remove the displaced organ because of its intimate adhe-

sions to the surrounding structures it was decided to perform a **nephrocystanastomosis**. A temporary urinary fistula was first established, opening between the symphysis and the umbilicus. Fourteen days later an anastomosis between the greatly dilated kidney and the bladder was made and a catheter placed through the bladder into the hydronephritic kidney and left in situ. The catheter was removed on the fourth day on account of irritation caused by its presence. At a later day the primary urinary fistula was closed and the final result was most satisfactory. [G.B.W.]

24.—Stubenrauch in a series of experiments on the lower animals has shown that **phosphorus** given either as a food or through the inhalation of the fumes produces in young, growing animals a thickening of the various bones especially around the diaphyses. From this it seems most probable that if this drug were given to a growing child it would increase bone-formation and therefore would be of great use in cases of rachitis. In phosphorus workers the x-rays showed some increase in the thickness of bones and a tendency towards an earlier disappearance of the epiphyseal lines. [G.B.W.]

Revue de Chirurgie.

August 10, 1900. [20me Année, No. 8.]

1. Exclusion of the Intestine. F. FERRIER and A. GROSSET.
2. A Case of Extensive Sebaceous Adenoma of the Face. G. CURTIS and LAMBRET.
3. Osteoplastic Amputation in the Continuity of the Long Bones of the Extremities. Z. SANTIRESCU.
4. Symmetrical Lipoma of the Plantar Arch. CH. FÉRÉ.
5. Gunshot Perforation of the Stomach, Colon and Diaphragm; Suture, Recovery. O. LAURENT.
6. Carcinoma of the Large Intestine. R. DE BOVIS.
7. The Anatomy of the Cecum and Appendix. G. PERONDI.

1.—A thorough discussion of the literature of exclusion with complete closure of the intestine is given. From a study of the work of others the writers conclude that the operation is one of considerable danger in spite of the successes which have been reported by 2 operators. [M.B.T.]

2.—**Sebaceous adenomas** are divided into 2 classes; the superficial form which is of interest only to the clinical dermatologist, is usually multiple and small; the large is usually a single neoplasm which may appear on any portion of the body. A case of tumor of the second variety is reported occurring in a man of 56. The tumor commenced above at a level with the upper border of the external ear and occupied the entire region of the masseter, extending to the lower border of the jaw. Its surface was entirely covered by healthy skin, which was adherent and covered with varicose veins. Complete excision was performed with an uneventful recovery, and the patient remains in good health about 6 months after the operation. On examination the tumor was found to be composed of a whitish soft tissue which was traversed by connective-tissue partitions, dividing it into a number of lobes and lobules giving it a glandular appearance. On histologic examination the whitish masses were found to be made up of epithelial cells arranged in lobular form. This form of tumor is perfectly benign, it is slow in its growth and usually single. Such tumors are of rather rare occurrence. [M.B.T.]

3.—An historical discussion of the methods of amputation is given, from the time of Celsus and Galen to the present. A method of **amputation** is described, the essential points of which are as follows: The skin and muscle incisions are made as in the ordinary classical flap-amputation. The bone is then sawed across transversely and the periosteum is separated over half its circumference. The bone is then split in frontal section in a longitudinal direction directly through the medullary canal. One-half of the cylinder of the long bone is then sawed across and removed, while the remaining half is also sawed across, but left attached by its periosteum to the soft tissues. This section of bone is then folded over, covering the exposed end of the long bone and is united by means of sutures. The amputation demands a greater sacrifice of tissue usually and takes a longer time for its performance. But amputations near joints are usually unsatisfactory, because the stump is not covered by a sufficient thickness of soft parts. By this procedure a perfectly serviceable stump is secured, which may be used immediately after healing and

never gives any inconvenience from pressure or artificial limbs. [M.B.T.]

4.—Two cases of symmetrical **lipoma** of the **plantar arch** are reported. One occurred in a young woman of 34, belonging to a family with a carcinomatous history, but without history of mental disease. Pressure in the mediotarsal region gave rise to intense pain on the entire inside of the foot. A second case is reported in an hysterical young woman of 38. Similar lipomas were also found in the plantar arches of her 2 sisters, but they gave rise to no disturbance. This form of tumor is thought to be very rare, and Féré believes there is indication that it is frequently hereditary. No surgical treatment was instituted in either case. [M.B.T.]

5.—A soldier of 22 was shot between the eighth and ninth ribs of the left side, about 10 cm. from the median line, with a revolver. There was severe pain in the lower portion of the chest and upper part of the abdomen, but no vomiting or expectoration of blood. From examination, it was believed that the bullet had penetrated the lung and some abdominal organ, which had given rise to peritonitis. Celiotomy was performed immediately. A perforation was found about the middle of the anterior surface of the stomach and in the transverse colon. These perforations were closed. A search was then made for the source of hemorrhage, which was evidently behind the stomach. The diaphragm was found perforated 4 or 5 fingers' breadths from the costal border, and it was closed by 3 sutures. A complete recovery followed. It is believed that death would have resulted in this case from peritonitis and hemorrhage, had not early operation been undertaken. [M.S.T.]

7.—Perondi reviews the literature of the **anatomy of the cecum and vermiform appendix**, and gives the results of a study of 50 cadavers, which he has carried out at the Anatomic Institute of Florence, Italy. He found that while the usual location of the cecum was the right iliac fossa, in 25% of the cases it was in the pelvic cavity; in 3 cases, it was in the umbilical region; in 1 case, in the lumbar fossa; in 2 cases it was absent. The axis usually inclines to the right, upward and backward, but in 3 cases it was vertical; in 2, absolutely transverse. The serosa was complete in 75% of the cases. The position of the appendix was usually vertical at the inner side of the cecum, but in 10 cases it was retrocecal. The average length was 7.6 cm.; the average diameter, 5 mm. Other details and an extensive bibliography are given. [M.B.T.]

Sundry French Journals.

1. Cardiac Pseudohypertrophy of Growth and Its Diagnosis by Large Palpation. RÉMY SYLVESTRE. (*Gaz. Heb. de Méd. et de Chirur.*, June 17, 1900. 47me Année, No. 48. Paris Thesis, 1899-1900, No. 48.)
2. The Action of Aspirin on the Fever of Tuberculosis. L. RENON. (*Sem. Méd.*, June 27, 1900. 20me Année, No. 27.)
3. The Role of the Nucleus of Cells in Absorption. H. STASSANO. (*Sem. Méd.*, July 4, 1900. 20me Année, No. 28.)
4. Tertiary Syphilitic Diarrhea. LEREBoullet. (*Sem. Méd.*, July 4, 1900. 20me Année, No. 28.)
5. A Study of Cod-liver Oil. MAIGNÉ. (*Gaz. Heb. de Méd. et de Chirur.*, July 22, 1900. 47me Année, No. 58. Paris Thesis, 1899-1900, No. 328.)

1.—According to Sylvestre the **cardiac troubles** that have been described under the term **hypertrophy of growth** are, in reality, phenomena of nervous hyperkinesis. Their frequency is in relation to the age, the sex, the profession, and the constitution of the subject. The nervous hyperkinesis presents its maximum frequency between the ages of 13 and 16 years, and diminishes with age. These cardiac troubles are influenced by intoxications, dyspeptic and gastrointestinal troubles, and relative respiratory insufficiency from defective development of the thorax or from obstruction of the respiratory ways; but they are primarily dependent upon an hereditary or acquired neurosis. The diagnosis is made by the method of large palpation of Bard; its essential element is the differentiation of the muscular shock and the valvular vibration. Pseudohypertrophy of the heart is characterized by the presence of an exaggerated valvular vibration with its habitual characteristics of abruptness, diffusion, and variability. [J.M.S.]

2.—L. Rénon has administered **aspirin**, which is acetylsalicylic acid, in doses varying between 1 and 3 grams. In three-fourths of the cases the antipyretic effect has been immediate with a fall of from 1 to 3 degrees of temperature in the afternoon; very rarely the fall of temperature does not occur until the next day. When the aspirin is withdrawn the temperature rises again, usually to as high a degree as was noted before the use of the drug. The great inconvenience of aspirin is seen in the abundant sweats that it causes, from which a temporary weakness results that should be taken into consideration, although collapse has never been observed. On the other hand, certain patients feel very much better after the period of sweating has passed. The appetite is maintained in all; in some it has improved; the gastric tolerance has been absolute. In the discussion that followed the reading of the paper, Taisans said that he had long since renounced the use of antipyretics in phthisis, because their action is always temporary and because the drugs, often harmful to the stomach, have a tendency, when the fall in temperature is too rapid, to produce collapse. The only way of diminishing fever in tuberculous patients in a permanent manner is to submit the patients to the curative action of air. Joffroy said that he was of opinion that the fall of temperature was not the only factor in the production of collapse. He has often obtained a fall of 4 or 5 degrees in the temperature of typhoid-fever patients by the use of large doses of sulfate of quinin without accident. On the other hand, antipyrin given in small doses, while it produced a less pronounced antithermic effect, determined syncope phenomena of great gravity. [J.M.S.]

3.—The author has shown that the red blood corpuscles of birds, which are nucleated, retain the mercury in the circulation. This is in direct opposition to the behavior of mammalian red-blood corpuscles, which are non-nucleated. Furthermore, by histochemic methods the author has been able to show the presence of injected metals (iron or mercury) in the nuclei of the endothelial cells in the periesophageal membrane of the frog. Finally, in submitting a tissue to pepsin digestion, which converts the protoplasm into peptones but leaves unchanged the nucleins and the substances combined with them, he has obtained a residue in which he has been able to recover toxic substances from the animal under experiment. The nuclei of vegetable cells possess the same affinities. It would seem then that **the nucleus of the cell is the only portion of the cell concerned in absorption**. [J.M.S.]

4.—Lereboullet, at a meeting of the Académie de Médecine, held July 3, 1900, reported the case of a man, aged 38, who was a neuropathic of long standing, and whose health was profoundly altered by a **chronic diarrhea** that had persisted for 18 months, and which was accompanied at different times by intestinal hemorrhages. The condition was very refractory to treatment. When examining the patient the author was struck by the presence of multiple adenopathies that presented syphilitic characteristics. The patient acknowledged the contraction of **syphilis** 8 years previously. After 15 days of antisyphilitic treatment, which consisted of an injection of gray oil and the internal administration of potassium iodid, the diarrhea and colic had disappeared, and after a further course of convalescent treatment the patient was entirely cured. In the discussion that followed Fournier said that in a similar case the diagnosis would depend upon: (1) The syphilitic history of the patient; (2) the absence of all ordinary cause of chronic diarrhea; (3) the resistance of the diarrhea to all ordinary therapeutic agents; (4) the coexistence of other specific lesions. [J.M.S.]

5.—Maigné concludes that the only kind of **cod-liver oil** that should be used in therapeutics is the pure oil, made from absolutely fresh livers that have been carefully washed and preserved in air-tight vessels, or after they have been exposed to a temperature of not over 75° C. (157° F). The oil thus prepared has an odor similar to that of fresh sardines. It has a pale-yellow color and does not leave a disagreeable after-taste that is capable of producing eructations. It is particularly indicated in tuberculosis, in convalescence from the infective diseases of infancy, in rachitis, osteomalacia, and enlargement of the lymph nodes. Its special composition, the conditions of combinations in which the component elements are found, and the ease and rapidity of its absorption make of cod-liver oil a therapeutic agent for which nothing can be substituted. [J.M.S.]

Practical Therapeutics.

Under the charge of

A. A. STEVENS, A.M., M.D.

The Treatment of Chlorosis.—Grawitz (*Therapie der Gegenwart*, June, 1900, and the *Medical Review*, July, 1900,) states that chlorosis is distinguished by the presence of a number of nervous disturbances, such as alterations in the mental disposition, and in the secretion of various organs, various vasomotor troubles, and neuralgia, which are not met with in simple anemia, even when severe. This shows that the disease does not consist in a mere alteration in the composition of the blood, and that it is probably a part of a general neurosis, rather than a primary blood disease. There is practically no deficiency in the number of the red blood-corpuscles, and the only characteristic change in the corpuscles is a diminution in the amount of hemoglobin; together with this there is an increased quantity of plasma (polyplasmia). The bone marrow is unaltered.

In the treatment the first factor is to remove the cause, if possible, by diet, change of air, or otherwise. Some cases are difficult to cure because deep-lying psychical influences, which are producing a bad effect on the developing nervous system, elude discovery and, therefore, cannot be removed. This explains the fact that a much quicker recovery is often obtained when the patient is isolated and treated in an institution than when she remains at home. At the beginning of the course absolute rest in bed is essential, even in the slighter cases, when there are no marked symptoms of cerebral anemia, such as vertigo and attacks of syncope. If the anasarca does not then disappear spontaneously, hot baths and wet packs, by producing sweating, not only diminish the edema but improve the general, and especially the cerebral symptoms. In many cases a regular course of saline purgatives is necessary. As regards diet, milk should be the chief constituent, unless the patient is obese. If there is any objection to drinking boiled cow's milk, goat's milk may be given raw. Meat and fish should be given in small but gradually increasing quantities, green vegetables, such as spinach, peas, and beans are preferable to white. Alcohol is, as a rule, to be avoided, though small quantities of beer or stout may be given if they improve the appetite. The difficulties in carrying out these simple directions in the patient's home are often very great, owing to the anomalies of appetite common in chlorosis. As regards drugs, iron is not a specific but only a useful aid in other measures. Since all preparations of iron are converted in the stomach into the chlorid before being absorbed, the new organic preparations and those made from blood and bone marrow have no advantages over the old *liquor ferri perchloridia*. Quinin and arsenic, the latter especially as arsenical waters (Roncigno, Levico, etc.), are often useful, but manganese is apparently useless. During the period of rest in bed, gentle massage of the limbs improves the circulation. In obstinate cases a course of iron mineral springs at Pyrmont, Schwalbach, Cudowa, Levico, etc., combined with an open-air life often succeeds. The climates of the Harz, the Black Forest, and of the watering places on the Baltic Sea, are beneficial, but a stay on the shore of the German Ocean often does harm. Mountain air does not agree as a rule, and to recommend it is supposed by some to increase the number of the red corpuscles; this is absurd, since it is the amount of hemoglobin, and not of red corpuscles, which is deficient. Though excellent results are usually obtained by suitable measures, in a minority of cases no treatment avails. The patients are then usually thin, delicate, and poorly developed generally; they suffer from the hypoplasia of the heart and large arteries described by Virchow; and generally eventually die of some intercurrent disease. This failure to develop is often due to the senseless custom of dressing children in corsets and "elegant" clothes, which impede free muscular movements. Sweets, unsuitable food, overwork at school, and late hours also contribute to the developmental failure.

The Palliative Treatment of Paralysis Agitans.—Williamson (*Practitioner*, April, 1900) states that, as all forms of nervous excitement increase the tremor, it is important that the patient should lead a quiet life, and be spared from

all forms of mental excitement and worry as much as possible. A warm bath will often cause a diminution of the tremor for several hours. Alcoholic drinks and strong tea and coffee cause the tremor to increase. It is important that the patient's room should be well ventilated, and not too warm, as a warm stuffy room makes the restlessness worse. In the open air, the patient usually feels better, and one of the best means of relieving uncomfortable sensations and restlessness is life in the open air. During a railway journey or drive in a carriage, the trembling is diminished, and the same occurs when the patient is wheeled about in a chair. The only drug that the author has found of real service is hyoscin hydrobromate. Small doses ($\frac{1}{100}$ to $\frac{1}{150}$ grain) are of no value; the practitioner should begin with $\frac{1}{150}$ or $\frac{1}{100}$ grain, by the mouth, and cautiously increase the amount. When the patient can take $\frac{1}{75}$ grain in 2 drams of chloroform-water, good results follow. Williamson has given to one of his patients $\frac{1}{75}$ grain three times daily, with short intermissions, for 3 years. If the patient suffers from insomnia, a little whisky and water may be given at bedtime, or sulfonal may be employed. Hyoscin, however, is also useful; a dose of $\frac{1}{75}$ grain in chloroform-water should be put at the bedside of the patient, to be taken soon after going to bed, if sleep does not occur, or if the patient wakes very early in the morning, and cannot get to sleep again.

The Treatment of Empyema.—Martin (*Therapeutic Gazette*, August 15, 1900) summarizes the treatment of empyema as follows: Empyema is best prevented by promptly evacuating all considerable inflammatory effusions. In the diagnosis of these effusions, by means of exploratory aspiration, the skin should be punctured by a tenotome at the point where the needle is to be driven in. Serous effusions are best evacuated by aspiration. If they reaccumulate after the third evacuation, they should be subjected to continuous siphon drainage, the puncture being made by a small trocar and canula, the latter being of such size that a small drainage tube may be slipped through it. Recent empyemata are best treated by continuous siphon drainage, the tube being introduced through a canula of at least the diameter of the little finger. When, because of a narrow intercostal space or because of constant blocking with fibrinous material, siphon drainage thus provided is inadequate, an inch of one of the ribs (usually seventh or eighth) should be resected, and a drainage tube the diameter of the thumb should be used. When the conditions are such that it is obviously impossible for the lung to expand under the influence of siphon drainage and respiratory exercises, Delorme's operation of stripping the pseudomembrane from the compressed lung should be attempted. When Delorme's operation is impracticable, a resection of the ribs (Eistlander) or of the chest-wall and thickened pleura (Schede), corresponding in extent to the size of the underlying cavity, is indicated.

Opothrapy.—Mosses (*American Journal of the Medical Sciences*, September, 1900) concludes with some practical deductions with regard to the value of opothrapy, which he distinguishes as direct and indirect. The writer believes that ovarian extract is most useful in relieving preclimacteric disturbances, although it is also indicated in the reflex troubles following the establishment of the menopause. Menstruation that has been prematurely arrested reappears after the use of the drug, but it has no influence in exciting the menstrual flow in young girls who have the *nusus* without any discharge of blood. In discussing so-called indirect opothrapy, he states that in cases of amenorrhea due to anemia iron is preferable to ovarian preparations, while he is confident that they have no value in the treatment of osteomalacia as compared with castration.

Orexin Tannate.—Zeltner (*Bulletin Générale de Thérapeutique*, November 8, 1900), states that he has employed orexin in more than 50 cases as a stimulant to the appetite. In 30 of these cases the remedy proved highly efficacious. In 13 cases of phthisis excellent results were obtained in 10. In 7 cases of uremia there was marked improvement of the appetite in 5. The dose of orexin tannate is 5 grains, twice daily, 2 hours before meals. The tannate has the advantage over preparations of orexin in not causing any burning sensation in the stomach. The drug appears as a yellow powder, insoluble, tasteless, and odorless.

Original Articles.

NEURASTHENIA.¹

By J. T. ESKRIDGE, M.D.,

of Denver, Col.

Neurologist to St. Luke's Hospital, Consultant Alienist and Neurologist to Arapahoe County Hospital.

NEURASTHENIA, the subject which has been chosen for me tonight, unfortunately, is too familiar to all of us. Under another name, the "irritability of weakness," it was known scores of years ago. Simple neurasthenia, especially in the beginning, is not a disease, but a condition. We speak of neurasthenic states, referring to a weakened, and hence, an irritable condition of the central nervous system. It differs in this respect from hysteria, which is a disease, a neuropathic state.

In health the higher nerve centers control and inhibit to a greater or less extent the lower centers of motor and sensory function, and of organic life. In prostration, exhaustion, and impoverished states of the nervous system, these controlling centers are to a greater or less extent deranged, and their controlling functions may be almost completely lost, hence the lower centers that formerly worked under the guidance and control of the higher are allowed to run at their own "sweet will." Stored energy in the higher or cortical centers, in exhausted states, is given off prematurely and irregularly on the reception of impressions that would, under healthful conditions, elicit but little response. It is seen then that exhaustion of the entire nervous system, known as neurasthenia, is a condition of weakness and irritability.

We have neurasthenia existing under various and variable conditions. Primary neurasthenia is a condition in which the exhaustion and irritability of the nervous system constitute the chief derangement of health. Secondary neurasthenic states follow diseases that have induced neurasthenia. These may be gross organic lesions, acute exhausting diseases, or even hysteria. In neuropathic subjects neurasthenia may cause hysteria, and such a condition may be regarded from a clinical standpoint as atypical of the latter disease. Hysteria may give rise to a neurasthenic state, but it never runs into a condition of typical simple neurasthenia.

If I have made myself clear thus far, I have meant to say that simple primary neurasthenia is not a diseased state, but an exhausted and irritable condition of the nervous centers, whereas, on the other hand, hysteria is a neuropathic condition and is almost invariably developed upon a neuropathic state of the central nervous system. The two diseases in their typical forms are cleanly cut in their symptoms and readily differentiated from each other.

Etiology.—Any influence, either hereditary or acquired, that tends to exhaust the nervous system may predispose to the development of neurasthenia, and anything that exhausts to the point of derangement of the nervous system may directly give rise to it; thus some causes may be both predisposing and exciting. The greatest predisposing cause, in all probability, is heredity, although this does not play as important a part in the causation of neurasthenia as it does in hysteria. Neuropathic states, such as insanity, epilepsy, or organic

nervous diseases in the ancestry are much more likely to predispose to hysteria than to neurasthenia, but those conditions in parents that tend to weaken the nervous system in the offspring without being carried to the point of disease, are the hereditary influences that predispose to neurasthenia. Nervous weaknesses, irritability, tuberculosis, syphilis, gout, alcoholism, and extreme age of the father may act as predisposing causes. Among the acquired predisposing causes are, unwise, loose, unsystematic and impracticable methods of education; forcing children in their educational work without paying sufficient attention to exercise and the observances of the laws of health; paying too much attention to music and drawing, to the exclusion of outdoor exercise. But it can be readily seen that the causes here classed as predisposing may, when carried to an extreme degree, give rise to neurasthenia, and thus act as an exciting cause. Occupations attended by worry, undue excitement, uncertainty, give rise to undue wear and tear, and may predispose to exhaustion and irritability. Neurasthenia is more common in the single than in the married state. The reason for this is not far to seek, when we remember that the male is not free from the irregularities of life, and the indulgences that tend to exhaustion. In the female the unequal battle for existence is a potent cause. The majority of neurasthenics are found between the ages of 20 and 50. The Hebrews and Slavs are the races most predisposed to the condition under consideration.

The exciting causes are both physical and psychological, but the latter far outweigh in importance the former. The greatest exciting cause of neurasthenia known is probably trauma, but trauma unattended by psychological shock is rarely followed by typical neurasthenia. Injury in a railroad accident, electrical shocks and explosions of various kinds, in which the mental excitement and shock are intense, are the ones which give rise to the most desperate cases of neurasthenia. It is possible that over-physical work, especially if it is uncongenial, exacting, and requires undue length of hours, will exhaust, not so much probably on account of the work itself, as on account of the worry incident to it. Excitement of a depressing character is much more potent in the causation of neurasthenia than that of a pleasurable nature. We often see the influence of mental depression, anxiety, and apprehension illustrated in the mother, who for days or weeks watches over her sick child. She comes out of the ordeal tired, nervous, and exhausted. The trained nurse, on the other hand, who gives longer hours, better service, and attends case after case, year after year, is rarely afflicted with neurasthenia. One does her work as a professional, the other exhausts herself from depressing mental emotions. Anything, I repeat, that exhausts the entire nervous system may give rise to neurasthenia. Excessive child-bearing, prolonged lactation, acute illness, such as typhoid fever, diphtheria, malaria, and influenza, are potent causes. Excessive alcoholic indulgences, sexual excesses, or abnormal methods of gratifying the sexual appetite may either predispose or give rise to neurasthenia. Tea, coffee, and tobacco have been blamed for the development of neurasthenia. I am inclined to think that the excessive use of these articles may predispose to neurasthenia, but in the absence of other depressed conditions, it is unlikely that they are capable of causing the development of so exhausted a state of the nervous system. I wish to call especial attention to the organic and functional diseases that may give rise to neurasthenia,

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because, when I come to speak of treatment, especially of the prevention, I shall have occasion to refer to these again. Among these are indigestion, intrapelvic troubles in the female, diseases of the genitourinary organs, tuberculosis, anemia, chlorosis, cardiac and renal diseases, or any organic disease or functional disturbance that may lead to the exhaustion of the nervous system. It is important to bear this in mind, because it is easier to cure curable organic or functional disease before it becomes complicated with neurasthenia.

The diseases of the ear and nose rarely act as an etiologic factor in neurasthenia more than as a contributory cause, except, possibly, in extreme cases in which severe and prolonged irritable affections of these organs may so wear upon the nervous system as to cause the development of a neurasthenic state in persons who are naturally very nervous. Prolonged disorders of the teeth and eyes on the other hand are undoubtedly capable of giving rise to neurasthenia. I have seen a number of cases of neurasthenia in which the exciting cause appeared to be prolonged irritation caused by defective and painful teeth. The immediate exciting cause in these cases has always been a prolonged siege with the dentist. There are several affections of the eyes that may give rise to neurasthenia, but the greatest one is uncorrected refraction errors. Persons who are suffering from uncorrected astigmatism, anisometropia, and exophoria, and are compelled to use their eyes for close work, soon become nervous, irritable, and suffer a great deal with headache. If the eye-strain is not relieved the nervous irritability finally leads to extreme nervousness and weakness, so that the sufferer may become a typical neurasthenic from prolonged eye-strain.

Pathology.—The observation of Dr. C. F. Hodge showed that prolonged exercise to the point of physical exhaustion is followed by change in the ganglion cells of the spinal cord of certain insects and animals, and that of Mosso that toxic agents were found in the blood of animals which were physically exhausted. The well-known experiment of physiologists,—exhaust a muscle by electrical stimulation until it refuses to respond, then wash it out by injecting into its artery normal salt solution, the exhaustion disappears and the muscle reacts to the electrical current,—shows that some agent is developed in the blood, as a result of muscular exhaustion capable of giving rise to depressing influences. It is probable, then, that the pathology of neurasthenia consists in cellular changes, so that function is perverted, and in the development in the blood of poisonous agents, which the various excretory organs, on account of the depressed state of the nervous system, are no longer able to throw off.

Symptomatology.—The symptoms of neurasthenia will be more readily appreciated if we remember that the condition is attended with an exhausted and irritable state of the entire nervous system. We have conditions in which the head symptoms seem to predominate, and others in which those relating to the spinal cord are most prominent, but this is probably not because one portion of the nerve centers suffers, while another escapes, but is due to the fact that the cause which has given rise to the exhausted condition has acted directly upon the center that seems to suffer most. We see this in traumatic neurasthenia, in which the head, spine, or some other portion of the body has sustained a blow.

Some years ago Dr. E. G. Whittle of London, published a small brochure, entitled "Congestive Neuras-

thenia," or "Insomnia and Nerve Depression." Dr. Whittle would have us believe that we have states of nervous exhaustion attended by congestion of the brain, in which blood-letting is the sole agent in the treatment. I have carefully read the booklet referred to, and studied the cases. I am quite thoroughly convinced that the title of the book is wrong; that it might better be termed "Secondary Neurasthenia following Organic Intracranial Disease." Some of the cases that he relates are typical of neurasthenia, but these are the ones that did not improve on local abstraction of blood from the head. In speaking of this class of cases, he says:

"My present object is to draw attention to the fact, which I have proved again and again in my own practice, that there are many cases of nerve-depression which can only be successfully treated by bleeding, saline aperients, low diet, and no stimulants, though they are usually treated by directly opposite remedies. The description already given will serve to identify the cases with precision, and distinguish them from allied types. The absence of anemia and neuralgia, the presence of melancholia without delusions in healthy people, insomnia, suffusion of face, neck, and conjunctivae, vertigo and other abnormal feelings about the head, visible arteries and full veins, with intolerance of stimulants and iron tonics, fairly characterize the type. Many are as intolerant of chloral and opium as of iron and stimulants. Instead of soothing and producing sleep they may excite and provoke the greatest distress, especially where the signs of brain-congestion are prominent, viz., heat of head with throbbing vessels, abnormal feelings *all over* the head, as aching, tightness, fullness, pressure, bursting, etc." If I had time to quote from some of the published cases, I think that you would agree with me that Dr. Whittle is dealing with intracranial disease instead of neurasthenia pure and simple.

As the disease under discussion is attended with an exhausted state of the whole nervous organism, and hence every organ of the body is functionally deranged, and of this derangement the patient is painfully conscious, it follows that the symptoms are numerous. They may be divided into four groups: Motor, sensory, mental, and visceral. After giving a short résumé of the symptoms, I will take up a few of the most prominent of each group, and discuss them a little more in detail.

This affection is attended by a sense of exhaustion and lack of nerve force, but not by abolition of power, sensory or motor, such as we find in hysteria. There is a lessened power of physical and mental endurance. The patient may temporarily show a considerable amount of muscular power, but this is soon exhausted and may be followed by hours or days of increased fatigue. Every outlay of energy is paid for on the part of the patient by hours of suffering and exhaustion. Lack of mental endurance is shown by the fatigue that follows reading or any other mental effort. There is a mental and physical irritability, annoying to the patient and often exasperating to the physician. There is frequently a sense of great physical and mental depression, often attended with doubt, hesitancy, and great apprehensiveness. Sometimes the depression is so great as to make the physician suspect a psychosis, such as melancholia; indeed, it is not infrequently difficult to draw the line between melancholia and neurasthenia with great mental depression. Emotional manifestations, such as shedding tears, and outbursts of laughter, are not infrequent.

Most authorities agree that insomnia is one of the most troublesome symptoms of neurasthenia. Pain and hyperesthesia are common symptoms. The pain is most prominent in and around the spinal column, in the neck and in the head, but it may be complained of in almost any portion of the body. Pressure over the painful regions of spine or over areas of hyperesthesia is usually attended by increase of the pulse-rate. In nontraumatic cases the pain is usually most severe in the upper portions of the spine and in the back of the head. In the traumatic ones, the lumbar region is usually the seat of the greatest pain and tenderness. Paresthesia, such as burning, "pins and needles" sensation, and crawling, is not infrequent in neurasthenia. While hyperesthesia is common, anesthesia does not occur. If the latter symptom is present the case is looked upon as one of hysteria. Central vision is usually normal, but the peripheral fields soon become exhausted, when the fields appear narrowed. Asthenopia is usually present. Auditory hyperesthesia is a common symptom. The motor symptoms consist of lessened power and lack of endurance for muscular effort continued any length of time beyond a few moments. There is neither paralysis nor contracture such as is found in hysteria. The deep reflexes are increased, the superficial normal, lessened, or increased. The trophic changes usually relate to those attendant on general malnutrition. There is nothing in the respiratory changes that is of much diagnostic value. The pulse-rate, on the other hand, is of great importance. This is, as a rule, considerably increased, and is often greatly accelerated on the slightest exertion or the least excitement. Knapp says: "One of the most striking features of traumatic neurasthenia is in the rapidity of the pulse. In 25 cases it ranged from 72 to 140, the average being 95, and in only 3 cases did it fall below 80."

Motor Symptoms.—There is no absolute paralysis, but muscular power is lessened. At the first effort the patient makes he may exert considerable force; rarely is this up to the normal, but his power soon becomes exhausted, so that at the latter part of a prolonged examination he may not be able to register on the dynamometer more than half what he could at the first of the examination. He complains of muscular fatigue, and frequently the muscles of the legs and arms are the seat of pain, especially after he has exerted his muscles to any extent. He may start off and walk with a fairly good gait for a while, but he soon becomes exhausted. The muscles themselves show no electrical change, but they may become flabby from the want of use. Wasting in them does not amount to much. Sometimes the muscles are the seat of a tremor, especially on exertion. This is much more common in the traumatic cases than in the nontraumatic ones. Muscular jerking, especially of groups of fibers in the muscles, is occasionally met with. The superficial reflexes are rarely much exaggerated. I cannot say that I have seen greater changes in the superficial reflexes of neurasthenic subjects than I have found in persons who were in an apparent state of health. On the other hand the deep reflexes are often considerably increased; especially do we find this in the knee-jerks, where tapping above the patella frequently gives rise to a smart contraction of the extensor muscles of the thigh. The front tap contraction is frequently present, and spurious ankle clonus is often met with, but I have never seen a case of true ankle clonus in simple neurasthenia. Dr. Dercum, so far as I know, is the only writer that speaks of the knee-jerks becoming exhausted in neurasthenia after repeated tapping of the

patella tendon. I have repeatedly tested this phenomenon, and have elicited the knee-jerk in typical neurasthenics from 15 to 20 times in rapid succession, the knee-jerk being as strong, if not stronger, at the last of the experiment, as it was the first time that I elicited the muscular contraction. The deep reflexes of the arms are usually increased, and frequently percussing the muscle, either at the nerve point or on the body of the muscle, will elicit smart contraction. There is no distinct ataxia in neurasthenia, although there is frequently a slight unsteadiness of gait, especially on the patient's first rising. This is probably due more to disturbances in the cerebral circulation than to incoordinate movement of the muscles. Dizziness or vertigo is common in many cases of pronounced neurasthenia. It is not so great as it is in cerebellar disease, but sufficiently developed to annoy the patient in descending stairs, in suddenly rising from the recumbent to the erect posture, in quickly turning around or in walking over uneven surfaces.

Sensory Symptoms.—When it is remembered that the functions of the whole nervous system and frequently of every organ of the body is perverted to a greater or less extent in neurasthenia, it can be readily understood that there is a multiplicity of subjective sensory symptoms. They are often so great that the patient in despair will say, "Oh! I don't know of what I suffer, I simply suffer from everything; I am out of sorts all over;" others say, "I am simply nervous; I do not suffer from anything but nervousness." On careful inquiry it is found that there are often vague pains in the head, and curious sensations in the scalp, as of worms crawling, or there is a band-like sensation around the head, but the most common cephalic sensation is suboccipital pain, pain in the upper portion of the cervical region and occasionally across the forehead, just above the eyes. The headache at times is little more than an uncomfortable sensation, at other times it is quite severe, so as to prevent sleep. Backache is common, the ordinary backache is most commonly complained of in the lumbar region. The pain is not infrequently found in the mid-scapular region and in the sacrum. When the back is the seat of severe pain, it is more commonly found in the upper dorsal and cervical regions in non-traumatic cases and in the lumbar region in the traumatic ones. Not infrequently there is a condition of hyperesthesia of the entire spine, a slight touch giving rise to severe pain. Sometimes pressure will relieve the superficial pain. When pain is deep-seated in the back, pressure will often give rise to considerable acceleration of the heart's action. Pain and fatigue are often complained of in one or more limbs, especially in the legs. Cutaneous hyperesthesia, but never anesthesia, is found over various portions of the body; such as on the sides of the trunk, in the epigastrium, over the scalp, nipples or testicles. While there is no anesthesia, numb sensations are frequently complained of.

The eye-symptoms found in neurasthenia are simply indicative of weakness and irritability. Central vision is usually good, but the peripheral fields are easily exhausted. If the field is taken by testing the periphery before the central, and then again taken by beginning at the central portion and going from within outward, it will be found that the field, by the second examination, is much smaller, owing to exhaustion of the peripheral portion of the retina, than that taken by testing the peripheral field first. It is often found that the muscles of the eyes are weak, reading tires the patient and often

gives rise to headache. This is frequently found when the refraction of the eyes is emmetropic. Vague subjective sensations of vision are not infrequently complained of. There may be sudden blurring of the sight; things may look as if seen through a smoked glass; a condition of hippus, that is, a dilation and contraction of the pupils, following each other in rapid succession, when the eyes are exposed to the light, or even in a darkened room, is not infrequently found, and is said to be usually associated with exaggeration of the knee-jerks. Temporary inequality of the pupils is not uncommon, but it is always temporary in character. The disorders of hearing, while not serious, are often very distinct. They consist of hyperesthesia and tinnitus. The patient's hearing is frequently so exaggerated that ordinary sounds become painful, and sounds barely appreciable by the normal ear are heard quite distinctly by the neurasthenic. The tinnitus sometimes becomes quite distressing. The sound may be buzzing, whistling, roaring, pulsating, or ticking in character. Disturbances of smell and taste, although the former is less frequent than the latter, are not great. There may be a condition of hyperesthesia or paresthesia of these senses. When the sense of taste is greatly perverted it may decidedly interfere with taking food.

Mental Phenomena.—There is always a lessened power for mental work. The ability to maintain mental concentration is lost, and the patient seems unable to remember scarcely anything that he reads, while in fact, owing to the inability for mental concentration, he has simply perceived, and has not appropriated what he has read. His memory is good for what his mental power has been able to grasp and appropriate. Neurasthenic patients frequently complain of loss of memory, and the supposed mental failure is a great source of worry to them, whereas, in fact, as evidenced by their ability to detail every minute subjective symptom proves that their memory is nearly perfect. Mental fatigue frequently follows the slightest exertion; so-called will-power, courage, and confidence are lessened. The patient becomes vacillating. On account of his inability to perform his usual amount of mental work, he becomes at first irritable, then sensitive, and finally greatly depressed, so that his condition seems very much like that of one in the earlier stage of melancholia; but even in this condition he is easily provoked to fits of laughter on witnessing some ridiculous thing, or is easily made to cry on reading accounts of some depressing subject. While he may maintain, on account of introspectiveness and depressed state, that he is suffering from this or that disease, on the assurance of his physician that he is free from this morbid state, he accepts the assurance, thus distinguishing his condition from the melancholic, whose delusions cannot so readily be gotten rid of. As neurasthenia continues, he loses, to a certain extent, the sense of propriety and is ready to discuss symptoms relating to the sexual organs in the presence of nonmedical persons. His affection for near relatives frequently lessens. His children, that before had been his delight, often annoy him, and he is given to seclusion. He may become the subject of the various phobias, or may be depressed with a sense of great fear of some approaching danger. A sudden and depressing mental impression made upon him may so affect him as to cause a relaxation of the sphincters of the bladder and bowels. Sleep is nearly always disturbed in well-marked cases of neurasthenia, and sometimes insomnia becomes the most prominent symptom. There may be

days and nights together when the patient gets but little sleep, unless assisted. Often the sleep obtained is only gotten by slight naps, which are frequently disturbed by unpleasant dreams.

Visceral Symptoms.—The most constant and important of these relate to the digestive organs. In rare instances we are consulted by neurasthenics, who claim that their digestive organs are in a perfect condition, but on questioning closely it is found that there are many evidences of disturbed digestion and assimilation. We must ever bear in mind that the neurasthenic state may be secondary to the disorders of digestion. Be this as it may, the condition of the digestive organs is of the first importance. There may be a condition of atonic dyspepsia, in which the appetite is capricious and digestion slow, imperfect, and attended by flatulency. In a few cases there is the condition of hyperesthesia of the stomach. The patient experiences a burning sensation in the stomach when it is empty, but is relieved as soon as he takes food. This is always attended with an uncomfortable sensation across the forehead and a sense of fatigue. In those cases in which there is no hyperesthesia of the stomach, gases on eructations, distention of the bowels and constipation, with an uncomfortable sensation in the stomach an hour or two after eating, are the most prominent symptoms. In another class of cases there seems to be a gastric catarrh, in which digestion is slow and imperfect and attended with acid eructations after eating. Sometimes the gas eructations are so violent that some of the contents of the stomach is thrown back into the esophagus, giving rise to what is commonly called heart-burn. Sometimes the esophagus from the throat to the stomach is the seat of a burning sensation. Constipation, sometimes alternated by diarrhea, is common. In a few cases mucus is passed by the bowels, and sometimes a fibrous substance may pass with the stools. In all severe cases of neurasthenia a stool is followed by a sense of prostration. There is not that feeling of buoyancy and of well-being which follows similar evacuations in a healthy subject. When the stomach is greatly distended with gases, pain is felt in the precordial region, in the stomach, frequently at the transverse flexion of the colon on the left side, and sometimes in the region of the iliocecal valve. The circulatory disturbances consist of cardiac palpitation, precordial pain, an occasional attack of false angina (rare). The pulse in the false angina is rapid, and sometimes almost imperceptible, especially during the second stage, when there is constriction of the arteries, differing from the pulse of a true angina, in which it is slow. The pulse in neurasthenia is almost invariably rapid; especially is this found on exertion, and in cases of tender spine or lumbago, typically met with in traumatic cases; pressure on the painful region causes considerable acceleration of the pulse-rate. Flushing of the limbs and face is common, and sometimes there is a throbbing of the larger vessels. The feeble circulation is shown by cold hands and feet, and occasionally by lividity of the extremities. In some cases there may be flushing with general perspiration, but in others the skin is dry and harsh. The urine is often scanty, because the patient imbibes too little fluid. It is sometimes cloudy when it is first passed, leading one to believe there is some vesical irritation. The phosphates are often increased, and oxaluria is sometimes met with. Transient glycosuria or albuminuria has been observed.

Perverted functions of the sexual organs are common. These consist, in the male, in nocturnal emissions, pre-

mature ejaculation, and greatly impaired, or loss of, sexual power. These symptoms relating to the sexual organs may constitute the main ones of which the patient complains. They are a great source of worry to him, and in some cases lead to great mental despondency. In the female, sexual organism may occur during sleep, attended with voluptuous dreams, and followed by a sense of great prostration. There is often hyperesthesia or paresthesia in the sexual organs of both sexes.

Diagnosis.—The principal diagnostic symptoms of neurasthenia are the following: Exhaustion, without complete loss of power; insufficient reserve force to enable the patient to recuperate rapidly after he has been compelled to exert himself, either mentally or physically; intense self-consciousness and a habit of introspection. The patient is cognizant of the perverted function of nearly every organ in the body. Numerous subjective sensory disturbances, mental depression, and apprehensiveness, undue emotional manifestations, irritability, and rebellious insomnia are often present. Pain and tenderness over the back; in the traumatic cases they are most intense over the lumbar region; in the nontraumatic, they are most pronounced in the upper region of the spine or at the junction of the spine and skull. There is hyperesthesia and paresthesia, without anesthesia; muscular weakness and fatigue, without paralysis or contracture; narrowing of the fields of vision after exhaustion of any kind, especially after the retina has become exhausted from repeated examinations of the visual fields. Auditory hyperesthesia exists and the deep reflexes are increased. The accelerated pulse-rate is greatly influenced by exercise, pressure over the tender spots, exhaustion, irritation, or excitement. Vasomotor disturbances, such as profuse perspiration over the entire body, or over a portion of it, are not uncommon. It is rare to find a case of neurasthenia unattended by more or less disorder of the digestive organs.

After having satisfied ourselves that we have a case of neurasthenia with which to deal, the next point to determine is whether it is associated with some organic disease, and secondary to it, such as intrapelvic, genitourinary disorders, etc. We must remember that neurasthenics may become hysterical, but that hysterics, while they may be neurasthenic, never become neurasthenics pure and simple. In neurasthenia there are no paralysis, contracture, anesthesia, and convulsions, while all of these symptoms are common in hysteria. Neurasthenia, as a rule, develops gradually; hysteria, on the other hand, may develop rapidly, especially after some emotion or shock. In hysteria we further have the globus hystericus, the peculiar pain in the top of the head, which has received the name of clavus and reversal of the color-fields. These are all absent in neurasthenia. In hysteria the symptoms not infrequently change from day to day. This is not the case in neurasthenia.

In well-developed cases of neurasthenia and melancholia, there is no difficulty in making a differential diagnosis between the two conditions. In the incipient stage, before any delusions are apparent, in melancholia, the diagnosis is sometimes attended with great difficulty. The difficulty is increased by the fact that most melancholics are neurasthenic to a greater or less degree. In a neurasthenic, the impression that this or that organ is diseased, that he is suffering from some incurable disease, the idea can be eradicated by repeated assurances to the contrary; but in a melancholia, the

presence of delusions that will not be persuaded away, and out of which the patient cannot be reasoned, is the only absolute and reliable symptom in the differential diagnosis. In melancholia there are delusions more than temporary in character; in neurasthenia there may be temporary ones. In melancholia sine delirio the diagnosis becomes exceedingly difficult, were it not for the fact that these cases do not present typical symptoms of neurasthenia.

In some cases there is a similarity between the early symptoms of parietic dementia and neurasthenia. Neurasthenics may show tremor; alteration of speech; change in the handwriting, and inequality of the pupils. The distinguishing points are these: that in a neurasthenic, speech is imperfect on account of lessened will-power and vigor, but on his making an effort, especially in the early morning, he can speak distinctly without any evidence of alteration of speech; his changed handwriting is most commonly found in letters to relatives and friends; but when he is compelled to write a business letter of importance, he does this almost as perfectly as he ever did; the inequality of the pupils is of only temporary duration; the defective memory is imaginary, rather than real, as he can relate his symptoms minutely, and shows no lack of memory for things which pertain to himself, and can detect his mistakes and correct them; he is seclusive, the parietic element is obtrusive.

Lastly, how are we to determine, especially in medico-legal cases, whether a supposed case of neurasthenia is genuine or real, or whether the neurasthenic state existed prior to the accident to which the claimant attributes all his ills?

Neurasthenia is gradual in its development. It takes time for the entire nervous system to become exhausted. It is possible for incipient neurasthenia to manifest itself soon after an accident; but unless the trouble is promptly relieved, the symptoms will increase for months, until the condition becomes pronounced. If, then, a condition of neurasthenia is fully developed a few days after an accident, it is quite evident that the accident could have had little more to do with the neurasthenia than to render it more pronounced. In other words, the neurasthenic state must have existed before the accident.

In answer to the other question, how are we to determine whether the neurasthenia is genuine or feigned? It is not always easy to satisfy ourselves on this point. But a slow or normal pulse-rate is against the existence of pronounced neurasthenia. A pulse-rate that is not considerably increased by exercise or by pressure over hyperesthetic areas, especially over a tender spine, is very decidedly against the presence of traumatic neurasthenia.

Prognosis.—The general prognosis of neurasthenia is, on the whole, comparatively good; but notwithstanding this general statement, many cases go through life complaining and never enjoy good health. These, however, are those who have never had a strong constitution, and have had to battle with life very much hampered from weak, nervous organizations. The principal unfavorable conditions in the prognosis are, heredity, especially relating to neurasthenia and general nervousness in the family; neuropathic inheritance; a tendency to neuropathic degeneration in the patient; the development of the condition in early life and beyond the age of 50 or 60; and long duration of the neurasthenic state. We have to remember, also, the great danger of the neurasthenic forming a drug habit. There is no doubt but some cases of neurasthenia pass into a psychosis.

Treatment.—One of the most important points in the treatment of neurasthenia is prevention. But little so far has been said concerning prevention of neurasthenia, but if we study our cases and find how many of these neurasthenics develop after intrapelvic troubles, gastric disorders, diseases of the genitourinary organs, or apparently result in persons in middle or advanced life from their taking up occupations which compel them to give up active life and lead a sedentary habit, and to fill positions for which they are unfitted from defective training and deficient education, we shall realize how important it is to remedy the conditions that ultimately lead to the prostration of the individual. Intrapelvic troubles should not be allowed to go on unrelieved until they have resulted in the patient's prostration. Neither should any disease be allowed to prey upon the patient until his vitality is greatly lessened. I have in mind, at present, a strong and vigorous man, who has led an active life, ridden his wheel or a horse 20 or 30 miles every day for a number of years. He has recently accepted a position of great responsibility which requires his closest attention and compels him to give up all active exercise. At present he is rapidly developing the symptoms of neurasthenia and is now planning to take a rest. These cases are not infrequent. It is not work that kills, but worry. Any occupation that is attended by worry, or excitement of a depressing character, is a dangerous one. What will worry and excite one person may be done by another, who is better fitted for it, with the greatest ease, and is unattended by exhaustion.

As indicated under the head of Etiology, affections of the eyes, ears, nose, and teeth, if unrelieved, act as causes in the development of neurasthenia, therefore, these organs should be carefully examined, errors of refraction corrected, the decayed teeth repaired or extracted, and other diseases treated, if possible.

The treatment of the neurasthenic condition, after it is developed, consists of rest, partial or almost absolute, diet, and in many cases isolation. For those who are in the early stages of neurasthenia, with a fair constitution, partial rest, with fewer hours of business, and relief from some of their responsibilities may be attended by a complete recovery. Others require not only partial rest, but absence from business for prolonged periods. In many cases, especially in the profound neurasthenics, but little can be accomplished without rest, as nearly absolute as can be maintained. The patient should not be allowed to feed himself, the discharges from the bladder and bowel should be passed into receptacles in bed, and a nurse should wait upon him as completely as though he were suffering from some acute disease. The digestive organs should receive attention and a suitable diet, skimmed milk being the best, beginning with a small quantity, 2 or 3 ounces every 3 or 4 hours for the first few days. It is rare that a patient after he becomes hungry cannot take and digest a small quantity of milk. As soon as the digestive organs will permit of it, the milk should be increased to the point of toleration, but it should never be carried so far that the patient becomes disgusted with it. As soon as it is possible to do so, a part of a meal can be given, finally a full meal a day, followed later by three full meals each day. By systematically and gradually increasing the feeding, several pounds of flesh can be put on the patient. At the same time that the rest cure is being undergone the nutrition of the muscles should be kept up by massage and electricity.

In most cases of neurasthenia, especially of the severer

forms, isolation is necessary. They should be allowed to see no one, except the physician and nurse, until such time as, indicated by their improved condition, they show that they are able to see their relatives and friends without becoming depressed or talking about themselves. Absolute rest should never be carried to such an extent that the patient becomes bedridden. When the patient begins to beg to be allowed to remain in bed, it is time to get him out.

I have already occupied more time than I had intended, and must leave the details of the treatment to be brought out by members of this society in the discussion.

MENTAL DISTURBANCES AFTER OPERATIONS UPON THE EYE.¹

By WILLIAM CAMPBELL POSEY, M.D.,
of Philadelphia.

DELIRIUM following the extraction of cataract is of not rare occurrence. Despite its comparative frequency, however, the subject has received but scant mention in all textbooks upon ophthalmology, and there is a wide difference of opinion among authors regarding its causation.

Having but recently encountered some cases of this nature I determined to report these, together with a series of similar cases from the Wills Eye Hospital records, with a view to ascertaining what the causation of the delirium might be, and what were the best measures to adopt for its prevention and relief.

Disturbances of the mind after operations upon the eye usually follow the removal of cataract; they have, however, been occasionally observed after various other surgical procedures in ophthalmology.

The mental derangement, as a rule, takes the form of a delirium which appears usually upon the evening of the third day after the operation and continues a few days to a week, according as the surgeon is prompt in combating it, and fortunate in his choice of remedies. Although frequently retarding the healing process by the irritation which is provoked in the eye at the height of the delirium by interference with the dressings, etc., the ultimate success of the operation is not as a rule marred by its occurrence. It is rarely seen in the young, but it is met with in those who are well advanced in years, and according to the majority of observers, especially in those who are predisposed by heredity, alcoholism, or some other cause to mental aberration. Schmidt-Rimpler also thinks that it rarely occurs in individuals in the best walks of life.

During the performance of the operation and for the first few days after it, the behavior of the patients is usually all that can be desired. At the end of the second or third day, however, towards evening, the patients become restless and wish to rise out of bed, and if unrestrained would tear the dressings from the eyes. Rapid and violent delirium may supervene. Such patients usually fancy the room on fire in which they are confined, and would make their escape at all hazards. Not rarely they imagine they are subjects of persecution; that they are being pursued or unjustly confined, and they demand a knife with which to wreak vengeance upon their oppressors. Although the symptoms usually are more apparent at night, the patient

¹ Read before the section in Ophthalmology of the College of Physicians of Philadelphia, January, 1900.

rarely recovers his full senses during the day. Hallucinations are not always present, but there is usually some fixed idea which predominates. Pain in the eye is but rarely complained of, and rise of temperature is accidental and not constant. After a few days the delirium subsides and the mental faculties are slowly regained without leaving any permanent mental aberrant processes.

The description of the delirium which has just been given corresponds to that which occurs in most cases, although it may assume a variety of forms, largely according to the individuality of the subject affected. Thus, Frankl-Hochwart has divided these psychoses into four groups: 1. Hallucinatory mental derangement in non-alcoholics. In this class the commencement of the affection is usually on the first day after the operation and occurs in individuals ranging from 30 to 90 years of age. 2. Simple confusion of ideas in senile individuals. Hallucinations are not present in this class, and dementia not rarely follows. 3. Delirium in alcoholism. In this class the delirium appears earlier and subsides more rapidly. 4. Confusion of ideas due to inanition, occurring in extremely marasmatic individuals and followed by death.

Delirium tremens develops not rarely after the removal of cataract, but, although it possesses many characteristics in common, it is so obviously different from that form of delirium which operates in the majority of cases which will be cited in this paper, that further mention of this class of patients will not be made, it being the purpose of the writer to consider only those cases which fall under the first category in Frankl-Hochwart's division.

Before giving the histories of the cases which the writer has to offer, he thinks it will be of interest to mention the different theories which have been held to account for the production of this delirium, so that in the report of each case the hearer may satisfy himself of the particular agency which seemed to be operating in each instance.

In looking over the literature of the subject, one is at once impressed with the diversity of opinions regarding the origin of the delirium, as it appears as though each author ascribed the agency which seemed to have the greatest influence in the production of the delirium in his own case as the causal factor in all cases of delirium.

As has been already stated, a number of authors, however, assume a special disposition towards mental derangement in all who become delirious following operations upon the eye. Among these may be mentioned Arlt, Schmidt-Rimpler,³² Knies,¹⁵ Warloment, Hirschberg,¹² and Valude. They believe that mental symptoms arise in only very weak and nervous people, but fail to mention further characteristics of this predisposition. Lopez thinks that the delirium occurs only in those who are already actually mentally alienated, although usually in a latent form, the mental weakness having passed unperceived by the physician.

Among occasional exciting causes may be mentioned Parinaud's²⁵ explanation of extreme preoccupation of the patient for several days preceding the operation itself, and secondly, the withdrawal of all external impressions during the first few days after the operation, resulting from the absolute rest in bed, and the darkness and seclusion enforced by the closed eyes. Schmidt-Rimpler³² is strongly of the impression that one of the chief factors in the production of the delir-

ium is the bandaging of both eyes, and in support of this theory cites two cases in which no operation was performed, but who developed delirium, as he thought, simply by reason of their being confined in a darkened room during the treatment for their ocular affection. One of these cases was that of a young man, 19 years old, who was suffering from iridochoroiditis; the other that of a man, 59 years old, who had plastic-iritis. This theory is supported by Sichel,³³ Swanzy,³⁵ Valude, Borelli,⁸ and Armaignac; the last three authors giving the notes of cases where the delirium disappeared with the removal of the bandage.

Another set of authors, including Galezowski,¹⁰ Salvator, and Angela Ledda, attributes the delirium to the action of atropin. Grandclement¹¹ subscribes to this theory also, as the mental condition of a case observed by him was made worse after each instillation of this drug.

While it is evident that in alcoholism the excitement consequent upon the operation, conjoined with the depressing circumstances which are attendant upon the after treatment, may easily provoke a delirium of persecution, it is not my purpose, as before mentioned, to consider this type of cases in this paper. I will, however, in this connection refer to a case reported by Lopez,¹⁹ when the delirium occurred in an alcoholic, in whom the eyes were not bandaged and where the wound healed perfectly. Lopez thinks that it is a circumstance worthy of consideration that he has always observed the delirium in the old and atheromatous, and says this has led him to think that this disease of the vascular system plays an important role in the production of cerebral troubles, and subsequently of maniacal paroxysms. He adds that it is not strange that the cause of the delirium in question should be charged by some to alcoholism, as this is a frequent factor in the production of atheromatous degeneration.

An additional theory is mentioned by Berger,² who says that he remembers that Meynert, of Vienna, ascribed the production of the delirium to the excision of part of the iris, which is one of the steps in the common operation for cataract. Berger, however, remarks that this theory is no longer tenable, since Parinaud has observed the delirium following the extraction of cataract without iridectomy.

The restriction in diet and lessening of the amount of food immediately before and after the operation has also been advanced as a cause. Dupuytren was the first advocate of this theory, for as early as 1832 this author found that after he gave his patients sufficient nourishment, mental derangements occurred much more rarely. Parinaud and Gillett de Grandement support this theory, for both think that the weakness induced by the restricted diet is an important factor in precipitating the delirium; the latter author citing a remarkable instance which was evidently induced by this cause.

Martin²⁴ also, who has contributed a recent and comprehensive article on the subject, holds that the delirium is due to inanition, but thinks that this is induced chiefly by the withdrawal of alcohol. He does not believe that the mental derangement in this class of cases is an alcoholic delirium in the sense that the subjects are ever intoxicated by alcohol, but that it is delirium occasioned by the privation of this agent in individuals who are accustomed to it in moderate amounts; for he thinks that the brain, especially in the old, which has been habituated to act normally under

the influence of alcoholic stimulation, becomes deranged if this agent is withdrawn.

Showing the tendency of modern medicine, Fromaget,⁶ writing quite recently, thinks the delirium is due to autoinfection as a result of uremia and toxins originating in the intestines, for he is of the opinion that these conditions are favored by the disturbances of the liver, kidneys and heart, which are common to the aged. In support of his views he gives the notes of a man aged 92 years, in whom an anuria prevailed two days after the removal of the lens, the flow of urine being increased after some difficulty by injections of caffeine.

I will now cite two cases of delirium which recently occurred in my own practice, and will then add the notes of a series of cases of a somewhat similar nature which were collected for me from the records of the past few years of the Wills Eye Hospital, by Dr. A. C. Snell, at that time a resident surgeon of that institution. The notes of two additional cases, kindly proffered by Dr. C. A. Oliver, are also appended.

CASE 1 was that of a man, aged 78 years, who had had failing sight in his right eye for 6 years, while deterioration in vision in his left eye had been noticed but two years previously. Notwithstanding his advanced age, his health was excellent, his disposition extremely cheerful, and his mind remarkably well balanced. He was a man of education and was most anxious to have his sight restored to him so that he might read again. His habits were temperate, as he drank but rarely. Examination showed that the reduction in vision in the right eye was due to a cataract which was almost mature, while the lens in the fellow eye, although cataractous, was still sufficiently transparent to permit of a distinct view of the fundus.

As the vision in his best eye was so poor that he could no longer get about without considerable difficulty, I determined to remove the lens from the right eye. This was successfully accomplished shortly afterwards by the combined method, with the assistance of Dr. Wm. Zentmayer, cocain being the anesthetic employed. Before applying the bandage to both eyes, as is the custom of the author, 2 drops of a 4-grains-to-the-ounce solution of atropin were instilled into the operated eye. The patient was seen later in the evening of the same day, and as he complained of pain over the scapulae caused by the constrained posture of lying flat on his back, several pillows were placed under his shoulders and he was raised into a recumbent position. Otherwise he seemed quite comfortable. His urine was voided without difficulty upon several occasions, and he received milk and beef-tea every few hours. At the visit the following morning the author learned that the patient had had a restless night on account of the pain in his shoulders, but his pulse was regular and his temperature was normal, and his mind seemed unaffected. The eye was redressed and found to be in a satisfactory condition, so that the bandages were reapplied after 2 drops of atropin had been instilled. A few hours after this I was suddenly seized with influenza and was compelled to relinquish the care of the case to Dr. Zentmayer. From him it was learned that upon the following day, the third day after the operation, the patient became violently delirious and was restrained from acts of violence with the greatest difficulty, the services of a powerful male attendant being constantly demanded to keep him in bed. His bowels were opened with croton oil, and chloral and bromids were administered in large doses, and the bandage was removed from the unoperated eye. After 3 days of this active medication the delirium subsided and the patient returned to his normal mental condition. The eye did extremely well, and when seen a week later, notwithstanding the irritation to which it must have been subjected while the patient was so violently delirious, it was almost entirely free from inflammation. The blood from the iridectomy was almost entirely absorbed, and the corneal incision was firmly and evenly healed. Six weeks later the proper correcting glasses were prescribed and full visual acuity attained.

With the exception of the 3 days of delirium, the

patient was perfectly rational, and though I have seen him many times during the past six years, I have never noticed the slightest tendency towards mental aberration. Indeed, his mind is wonderfully bright and he often says that he thinks himself quite capable of filling the difficult and responsible position of which he was the incumbent in his younger days.

CASE 2.—This patient, a large, hale man, 82 years of age, had noticed that the vision in the left eye had been failing for 5 or 6 years past, that of the right eye but 2 years. The examination revealing a cataract which was quite mature upon his left eye, and the vision in his right eye being reduced to $\frac{1}{50}$, his consent was gained to the removal of the lens in the left eye. He was accordingly admitted to the Howard Hospital and the combined extraction performed under cocain. The removal of the lens was accomplished with some difficulty, as it was found necessary to have recourse to the loop, as the lens glided under the upper flap when the attempt was made to express it by pressure and counter-pressure with the curets. After the toilet of the eye had been completed, 2 drops of a 4-grains-to-the-ounce solution of atropin were instilled and both eyes were bandaged. The behavior of the patient during the operation had been most exemplary, and he assisted me greatly by his perfect control of his eyes, not allowing them to wander while the instruments were in contact with the globe. When seen by me at the end of 24 hours, the patient was resting quietly and seemed fully contented with his surroundings. Another man had been operated upon for cataract on the same day, and the two old men in adjoining beds chatted quietly and pleasantly with one another to while away the time and to lighten the constraint of their positions. At the end of the second day, however, towards evening, the patient said that he would remain quiet in bed no longer and insisted upon rising. The delirium soon became very marked, he thought that he was being persecuted, that the nurses and resident physicians were trying to poison him, and he demanded a knife to defend himself from his tormentors. His temperature, which had been slightly subnormal, increased a degree and remained so for 24 hours. His pulse also was accelerated. His urine was voided in a normal manner and was not diminished in quantity, nor of a higher specific gravity than prior to the operation. Although watched with the greatest care and although his hands were placed in a muff to avoid such an accident, upon one occasion he managed to get his hands loose and tore the dressing off the eyes. He was very violent for three days, and would undoubtedly have taken his own life had an opportunity offered itself. Chloral and bromids were administered in high doses and his bowels opened with several compound cathartic pills. The delirium disappeared on the third day almost as suddenly as it appeared, and he has never shown any mental aberration since.

His family being questioned regarding his mental condition prior to the operation, it was ascertained that he had never manifested any disposition towards insanity previously, but that on the contrary they had considered him a most remarkable man for his years. I have talked with him a number of times since the operation, and have found him intelligent and cheerful and quite perplexed himself as to how to account for his mental aberration following the operation. Notwithstanding that the eye was much injected for a time after the dressings were torn off, he made an excellent though prolonged recovery. Glasses were prescribed about 3 months after the operation, which gave him a $\frac{5}{8}$ vision and the ability to read the finest type.

WILLS EYE HOSPITAL CASES.

CASE 1.—F. P. C., aged 65 years. Service of Dr. Jackson. Simple extraction. Delirium appeared on the third day after the operation and was controlled by hyoscin in a few days. Both eyes had been bandaged, but no mydriatic was employed. No known disposition towards insanity. Eye made a good recovery.

CASE 2.—J. S. K., aged 81 years. Service of the late Dr.

Keyser. Simple extraction. Hallucinations appeared on the second day after the operation. Both eyes bandaged and no mydriatic instilled. Delirium passed away in a few days, leaving patient in his normal mental condition, which was said to be excellent.

CASE 3.—F. K., aged 79 years. Service of the late Dr. Keyser. Simple extraction. Both eyes bandaged. On the day following the operation, atropin was instilled into the operated eye and the bandage replaced upon that eye, but removed from the fellow eye. Upon the evening of the following day the patient became very delirious and restless; this condition persisting for over a week. No mention is made of any mental peculiarity before the operation or after the delirium subsided.

CASE 4.—G. T. R., aged 76 years. Service of Dr. Jackson. Simple extraction. Delirium set in on the third day after the operation. Both eyes had been bandaged but no atropin employed. Bandage removed from the unoperated eye as soon as the delirium manifested itself, but this continued a week despite active treatment with chloral and bromids. Although the wound did not close until 4 days after the operation, the eye made a good recovery.

CASE 5.—R. R., aged 66 years. Service of the late Dr. Keyser. Simple extraction. Talkative delirium appeared 24 hours after the operation. Bandages removed from the unoperated eye and patient allowed out of bed; delirium still persisted, becoming more violent; patient manifesting a desire to jump out of the window. Mental aberration persisted 6 days. No atropin employed. Eye made good recovery. No disposition towards mental aberration.

CASE 6.—Mrs. H., aged 65 years. Service of Dr. Fisher. Simple extraction. Delirium on the second day after the extraction, being converted into actual acute mania by the end of the third day. Both eyes had been bandaged, but the dressing was removed from the unoperated eye and the patient allowed out of bed at the commencement of the delirium. The eye made a good recovery.

CASE 7.—Catharine V. M., aged 76 years. Service of Dr. Norris. Simple extraction. Large prolapse of vitreous followed the extraction of the lens. The day after the operation patient became restless and by evening was decidedly delirious, but was quieted by chloral and bromids. Administration of the hypnotics was continued for several days after the operation as the delirium showed a disposition to return towards evening. There was no family history of insanity or nervousness, but the patient was of a rather querulous disposition and seemed anxious on admission. The eye made a good recovery.

CASE 8.—Ellen McC., aged 65 years. Service of Dr. Norris. Simple extraction. Operation smooth, save for presentation of a small bead of vitreous after delivery of the lens. Atropin instilled. Forty-eight hours after the operation, patient became very restless and complained of being confined to the bed, and in a few hours a violent delirium manifested itself. The bandage was removed from the unoperated eye, and bromids and chloral were administered in high doses. The eye made a good recovery and the patient was discharged at the end of a week, although her mind had not yet fully recovered its normal balance. This patient was noted as being mentally deficient upon admission, as evidenced by hebetude and inattention to what was happening about her.

CASE 9.—J. E., aged 76 years. Service of Dr. Harlan. Simple extraction. Operation smooth. Iris prolapsed with the withdrawal of the knife, but was promptly replaced by gentle manipulation; some cortex remained; 24 hours after the operation the wound had not yet closed, though the eye was but little injected. The patient was exceedingly restless, talked somewhat incoherently, but seemed rational when addressed. He was placed on bromids and chloral, but despite these drugs became violently delirious on the following day, complaining that he was being poisoned and foully re-trained in a strange place. The delirium was not talkative, but the patient was very obstinate and morose. Atropin was used at the time of the operation only. On the fourth day the patient became quite rational, and the hypnotics were withdrawn. The eye made a good recovery. The patient had always been a strong man in excellent health and had never manifested any previous tendency towards mental alienation, nor was there any history of nervous trouble in his family.

CASE 10.—Mrs. X., aged 62 years. Kindness of Dr. Oliver.

Simple extraction. Hypermature lens. Removed without difficulty, the corneal wound healing on the third day. Upon the morning of the third day the patient became maniacal and tried to tear the dressings from her eye. She was somewhat quieted by the hypodermatic use of hyoscin. During the night of the same day, she endeavored to take her life by jumping out of the window, but was prevented by the prompt assistance of an attendant. Subsequently she tried to smother herself in a small closet. In spite of these circumstances, which later were unceasingly guarded against, the eye made an excellent recovery. It was afterwards learned from her family that years previously she had had recurrent attacks of mania.

CASE 11.—M. B., aged 70 years. Service of the late Dr. Keyser. Combined operation. The delirium appeared a few hours after the operation, and lasted for 48 hours. The operation was successful and the eye made an excellent recovery. Both eyes were bandaged throughout the delirium, and atropin was instilled daily into the operated eye.

CASE 12.—S. S., aged 70 years. Service of Dr. Berens. Combined extraction. Patient became restless on the second day after the operation, and 24 hours later violent delirium supervened. Both eyes were bandaged until the end of the second day, when the bandage was removed from the unoperated eye. Atropin was instilled at the time of operation, and twice daily until the patient was discharged 2 weeks later with an excellent result. The delirium in this case was controlled by trona.

CASE 13.—H. H., aged 51. Service of Dr. Croskey. Combined extraction. Delirium appeared upon the fourth day after the operation, associated with great depression of spirits and general weakness. The mental symptoms persisted 4 days, but were relieved by the enucleation of the globe, which was necessitated at that time on account of panophthalmitis. The cataract was of the complicated variety and a scoop was used in its delivery, necessitating the loss of considerable vitreous.

CASE 14.—A. P., aged 67. Service of Dr. Fisher. Combined extraction. Restlessness and delirium on the second day after the operation, quieted by $\frac{1}{4}$ grain of morphia sulfate. Both eyes bandaged at time of delirium, but atropin not used until later. Patient healthy but rather dull and childlike. Eye made a good recovery. Nine months later a combined extraction was performed upon the fellow eye. Delirium manifested itself 2 weeks after this operation, but was successfully combated by chloral and bromids. Both eyes had been bandaged, and atropin had been used at the operation.

CASE 15.—G. H., aged 60 years. Service of Dr. Berens. Combined extraction. Wound closed 24 hours after the operation, without undue reaction. Violent delirium on the third day after the operation; patient fancying the room on fire, and calling out murder. Delirium was controlled in 4 days with chloral and bromids. Both eyes were bandaged until the third day, when the dressing was removed from the unoperated eye. Atropin was not employed until after the delirium had manifested itself. Patient was a strong, healthy man, perfectly self-contained and docile, and of good habits.

CASE 16.—Samuel S., aged 80. Service of the late Dr. Keyser. Combined extraction. Small iridectomy; lens delivered with difficulty, considerable cortex remaining; no atropin. Evidences of delirium manifested themselves on the evening of the day of operation. Chloral and bromids administered. Upon the following morning patient was quite delirious, complaining that he was unjustly detained and cruelly treated. This mental unrest continued for five days, requiring the constant administration of hypnotics to restrain him. The eye was finally lost from panophthalmitis.

CASE 17.—Adam S., aged 73. Service of Dr. Berens. Combined extraction. Operation smooth; slight hemorrhage followed the iridectomy; no atropin instilled. Third day after the operation, eye was quiet, but the anterior chamber was not entirely reestablished. The patient complained of troubled dreams the night previous, and within a few hours, despite large doses of bromid and chloral, became wildly delirious, screaming that he was being robbed and made frantic efforts to get out of bed. This state of mental excitement subsided after 4 days, but recurred after the needling operation for the cure of secondary cataract, which was performed

2 weeks after the primary operation. The patient was in excellent health prior to admission, had never been a drinker and was not what could be called a nervous man.

CASE 18.—John B., aged 66. Service of Dr. Fisher. Iridectomy for glaucoma. Delirium manifested itself on the second day after the operation; mild for several days, becoming violent on the fifth day. Patient thought that he had been locked in a cell, and wondered how he had escaped. Tried to jump out of the window and was controlled with great difficulty. Discharged from the hospital at the end of 9 days, as his mental condition was excellent and the eye was in a satisfactory condition.

CASE 19.—Robert McC., aged 60 years. Service of Dr. Jackson. Iridectomy for glaucoma. Operation performed under cocaine-anesthesia. Complicated by a profuse intra-ocular hemorrhage. The patient was placed in an upright position for 2 hours after the operation. Upon the following day the wound had closed and the eye was doing well. On the third day patient became exceedingly restless, and accidentally struck the operated eye with his hand, opening the anterior chamber. On the fourth day, whilst still delirious, patient evaded the nurse and jumped out of the second story window of the hospital, fracturing the middle third of the thigh. As the eye made a fair recovery, he was removed to the Pennsylvania Hospital for proper treatment of his broken leg at the end of a week.

CASE 20.—Mrs. X., aged 56 years. Kindness of Dr. Oliver. Iridectomy for glaucoma. The patient, who possessed good personal and family antecedents, had a double subacute attack of glaucoma, necessitating the immediate performance of a double iridectomy, the operation being successfully accomplished at one sitting without the employment of any general anesthetic. The dressings were removed the next day and the patient was given her full liberty within 72 hours' time. A mild wandering delirium that lasted for more than a month's time appeared, 24 hours later, and as suddenly ceased without the use of any medication. The patient subsequently enjoyed the best of health and has remained entirely free from any apparent form of mental aberration up to the present time—some six years after the operation.

CASE 21.—Al. S. Service of Dr. Berens. Foreign body in eye. Three hours prior to admission into the hospital, the patient had been struck in the left eye with a piece of steel, inflicting a penetrating wound which embraced the center of cornea, and implicated the iris and lens, the lens being densely cataractous and the iris prolapsed into the corneal wound. The patient was etherized and the iris was freed from its attachment by a double iridectomy, and a quantity of lens-matter removed by the curet. A magnet was then introduced through the point of entrance of the foreign body, and carried back into the vitreous in the direction the fragment was supposed to have taken, and upon the withdrawal of the instrument the chipping was found to be adherent to it. On the fifth day after the accident, the pain, which had been very great, the result of an iridocyclitis which had been set up in the eye, became so severe that the patient became delirious and highly excited. The eyes had not been bandaged after the operation, although atropin had been used freely during the entire treatment. The delirium was very marked for 2 days, but subsided very rapidly after the removal of the globe on account of panophthalmitis. Although never insane, this patient might have been designated as nervous, for he worried constantly about his family and himself. He was non-alcoholic, of an excellent disposition and industrious. His mental symptoms were supposed by Dr. Berens to have been induced by the great pain provoked by the iridocyclitis, for, as before mentioned, as soon as the eye was removed and the pain relieved, the delirium subsided.

CASE 22.—Harry P., aged 15. Service of Dr. Berens. This lad inherited a tendency to be nervous from his father, who was of an excitable and irritable nature. His mother, on the other hand, was collected and calm. When but 3 years old he had St. Vitus' dance following an attack of grip, with a recurrence of the same affection some years later as a sequel of whooping-cough. His sleep was always more or less disturbed, as he would toss about and frequently call out. The day before the accident on account of which the patient was admitted to the hospital, he became much excited in assisting in the recovery of the body of a comrade

who was drowned whilst swimming. The injury to his eye was the result of an explosion of a can of powder, as a result of which the globe was perforated in the ciliary region to the nasal side, and the conjunctiva, sclera, and cornea badly burned by the powder. The iris was prolapsed into the wound, but the lens was apparently uninjured. The prolapse was snipped off, as much of the powder picked out of the eye as was possible, and ice compresses, atropin, and boric acid applied to the eye. The day following admission he became wildly delirious, muttered incoherently and kept striking at imaginary objects. Notwithstanding the frequent administration of morphia, chloral, and bromids, the delirium continued for five days. The eye recovered $\frac{4}{5}$ vision with the formation of a ciliary staphyloma.

Summary.—To briefly summarize the cases, it will appear from the foregoing that of these 24 cases, the delirium appeared 11 times after simple extraction; 8 times after the combined operation; 3 times after iridectomy for glaucoma, and twice in traumatic cases. Three of these cases were in subjects over 80 years of age; 7 over 70 years; 9 over 60 years, and 2 during the sixth decade. The traumatic subjects were much younger.

The delirium appeared during the first 24 hours after the operation in 2 instances; on the second day in 8; on the third day in 6; and on the fourth in 2 instances. No atropin was used in 6 instances; in 4 others it was not employed until the delirium had manifested itself, and in the remaining instances this drug was instilled at the time of the operation. Its employment did not seem to have any influence whatsoever upon the mental condition. Both eyes were bandaged after the operation in every instance, but the dressing was removed from the unoperated eye in 9 instances, as soon as the delirium manifested itself, without giving any appreciable relief to the mental condition.

It was specifically noted in 9 cases that there was absolutely no tendency towards mental derangement; there being evidence of such a condition previously in but 2 instances, other than in the traumatic cases, where there was strong evidence of previous mental disease. All of the eyes made a good recovery except in 2 cases, enucleation being demanded in one of these on account of panophthalmitis, and in the other on account of traumatic iridocyclitis.

The delirium was of the same character in all, beginning with a mild restlessness which rapidly developed into an active delirium with hallucinations and ideas of persecution, but passing rapidly under control by the proper administration of narcotics; permanent affection of the brain being remarked in not a single instance.

As regards the frequency with which the mental derangements occur, it may be noted that the 16 instances collected from the Wills Eye Hospital records extended over a period of four years, during which time 770 cataract extractions had been performed in that institution. This complication, however, undoubtedly is present in a much higher proportion of cases than this, these low figures being readily accounted for by the fact that it is the custom of the resident surgeon to administer hypnotics at the first manifestation of mental unrest, and only cases in which this is not sufficient to quiet the patients, and in whom actual delirium arises, are tabulated.

With the facts contained in this brief summary at hand, the refutation of many of the theories which have been mentioned above is a simple matter. Thus, the assertion that the mental aberration is due to a predisposition to mental unsoundness is shown to be without

any foundation whatsoever, for with but three exceptions all the cases which have been collected in this paper possessed a healthy mentality. The permanent recovery of mind in each instance after but a few days or a week of delirium is a further indication of the accidental and transient character of the delirium. Moreover, it has been the writer's experience that operations upon the eyes of those who are predisposed to insanity, instead of precipitating an attack of delirium, have in several instances markedly benefited the mental condition; indeed, in two cases of blindness due to cataracts in insane subjects he has had the happy experience of seeing restoration of the mental faculties attend the removal of the opaque lenses.

Martin²⁴ could satisfy himself of a state of mental weakness prior to the operation in but 2 cases mentioned in the literature, *i. e.*, that of Warloment, where the statement is made that his case seemed mentally "innocent," but that he had never given an other sign of delirium or insanity; and that of Hirschberg's, where the patient was said to have some mental unsoundness. He says that in none of the 20 or more other cases mentioned is there any reason to suspect a prior predisposition towards insanity. Lopez's claims of a mental predisposition should not be regarded, as two of his cases were probably quite insane before the operation, and should not really have been described as instances of postoperative psychoses; one of the cases occurring in a family of eccentric members and the patient remaining insane for two months after the operation, while the second case was melancholic.

Sweet's³⁶ case belongs to the same category. This author cites an instance of delirium of persecution following a cataract extraction which was evidently excited by the fear of going blind. The patient was very nervous, and although there was no former history of insanity, there was probably a strong disposition toward mental weakness. The patient died two months after the operation.

In opposition to the bandage theory is the fact that even after it is removed from the unoperated eye, there is usually no improvement in the mental condition. Thus, neither in Warloment's and Hirschberg's¹³ cases nor in any of those cited by the writer was there any improvement after the bandages were removed. Gorzecki, also, and Calderon⁹ saw delirium after cataract operation in nonalcoholics, when the eyes were not bandaged, and the same was true in case 14 of the present series.

This would seem to be in exact contradiction to a case reported by Valude, for, in this instance, as soon as the bandage was removed from a 75-year-old patient who had developed delirium as a result of double iridectomy for glaucoma, the delirium ceased; and likewise a case of Borelli, where amelioration was almost immediate when coquilles were substituted for the bandage. Martin, however, disposes of both of these objections, or rather exceptions, as follows: Valude's case was a simple coincidence, *i. e.*, the bandage being removed about the time that the other remedies which had been employed became efficacious, while Borelli's case was not one of true delirium, but simply one of a fixed idea which existed before the operation.

It can also be argued against the bandage and exclusion of light theory, that if the delirium be due to this cause, insanity should be much more common among the blind than is actually the case.

The statistics of the summary show conclusively that

atropin, also, could not be considered as a causal factor in the production of the delirium. Cocain can also be eliminated. Indeed it would seem to be proven beyond question that the condition of the eye itself has nothing to do with the development of the mental alienation.

But three theories remain—that of excessive preoccupation upon the part of the patient prior to the operation, that of the withdrawal of food, and that of autointoxication. Of these, the latter two may be readily disposed of, at least in so far as the cases which came under my observation are concerned, for I think that there can be no question of starvation in any of the cases which I have reported, as in my private practice it is my custom to make no change in the diet until 24 hours before operating. At this time the first preparations are made for the operation; the patient is bathed and the eye which is to be operated upon is protected by an antiseptic dressing after thorough flushing with the boracic-acid lotion. A light supper is then administered, which is followed by a laxative pill at bedtime. The following morning the patient partakes of a simple breakfast, and as the usual hour of operation is in the afternoon, a glass of milk and a cracker are given at luncheon. After the operation milk is again repeated at frequent intervals, if thirst be complained of. The diet of the second 24 hours also is largely a milk one, though broths or beef tea are given twice to prevent extreme constipation. On the third day the patient is usually gotten up out of bed and placed on a soft diet, and if the bowels have not been opened, a laxative pill administered. On the fourth day liberal and supportive meals are prescribed. I follow this general plan in my own practice and think that this is the course usually pursued by the majority of eye-surgeons. I believe, therefore, that the theory of insufficient nourishment is not tenable.

Similarly I do not think that the recent theory of autointoxication which has been advanced by Fromaget⁶ could have operated in any of the cases which I have cited, for care is always exercised in the institutions with which I am connected to avoid any such complications. Thus it is a rule of the Wills Eye Hospital that the urine of every cataract patient shall be examined the morning of the day of the operation, and the resident surgeons are particularly instructed to inquire concerning retention after operation. These precautions were adopted in all of the cases which I have reported, and retention of urine can be eliminated in all. The bowels also, if nature has not already accomplished this, are invariably opened on the third day by a cathartic, so that there could be no autoinfection from this source.

After a critical study of the entire subject I have finally reached the opinion that the cause of the delirium after operation upon the eyes is largely psychic, and I agree with Parinaud that it is due to the preoccupation upon the part of the patients prior to and after the operation. While they may appear calm and collected and submit to the operation most cheerfully, if one takes the trouble to scrutinize them closely, in most instances he will find that this state of quietude is assumed and that in reality there is a great though suppressed excitement.

The very thought of sight after the weeks and months, nay, unfortunately, in many instances, after the years of blindness, is enough to upset their mental equilibrium, and the desire to assist the operator dur-

ing the operation, and not to wince at any pain or to do anything that might mar its success, must also be a great tax on their courage, and calls forth all of their power of self-control; and then, following the removal of the lens, the glimpse, though momentary, which is obtained of the outside world, which has been so long hidden from their gaze, and the realization that the suspense is over, must undoubtedly occasion more or less psychical disturbance.

Undoubtedly also, the constraint of the supine position and the unusual stillness of the surroundings favor still further the temporary change in the psychic balance.

What the other factors are, which in addition to the preoccupation determine the delirium, are as yet unknown. The frequency with which the delirium is encountered should, however, be recognized, and proper treatment be administered at the first indication of its appearance. This undoubtedly consists in the free and repeated administration of chloral and bromids. As the statistics do not show any marked improvement in the symptoms to follow the removal of the bandage from the unoperated eye, this step is not to be advised, unless the wound caused by the operation be thoroughly healed. There is also no reason to discontinue the employment of atropin.

Constant oversight and judicious and tactful nursing is most essential, and amelioration in the mental condition frequently follows the installation of a proper person by the bedside.

It is proper to mention in this connection a communication which has been made by Dukes⁵ to the effect that the restlessness of old people is due to the gradual age-failing of the scavenger organs, and that it is owing to their incompetence that the blood is not sufficiently depurated and arterial tension increased. He believes that the remedies best adapted to calm these individuals are those which relieve the arterial tension, such as nitroglycerin, though he found erythrol tetranitrate in doses of $\frac{1}{2}$ to 1 grain to be even more valuable.

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RESOLUTION AS AN ETIOLOGICAL FACTOR IN POST-CRITICAL TEMPERATURE OF LOBAR PNEUMONIA IN CHILDREN.

By WILLIAM N. FISHER, M.D.,

of Washington, D. C.

Outdoor Physician to the Children's Hospital.

LOBAR or croupous pneumonia, a condition which in children has become so familiar to all, whose turning point for the better is one of the most beautiful phenomena of a self-limited disease, ending as it does by crisis, usually between the fifth and eighth day, frequently gives rise to grave apprehensions when there occurs a rise in temperature which is sudden in its onset, rarely reaching higher than 103° F. and taking place at from 36 to 48 hours after the crisis is complete.

A synopsis of the histories in 4 cases which have these characteristics is given, with particular reference to temperature, pulse, and respiration.

CASE 1.—Katie S., female, white, aged 2 years. Family history: Mother is living, and is in good health. Father is also living. He has anteriolateral sclerosis. She has one brother and one sister who are in good health. There is no history of syphilis or tuberculosis. Previous history: Labor was normal; she was well formed at birth, and was breast-fed; dentition was normal; she was never sick before present illness. Present history: Forty-eight hours after the illness began, consolidation of the lower lobe of the right lung was well-marked. Perfect physical signs of lobar pneumonia existed. The temperature ran a high continuous course, varying between 104° F. and 105.4° F., pulse 132 to 160, respirations from 60 to 78 a minute. The crisis took place on the seventh day of the illness and had become complete on the eighth day. The temperature now remained normal for 48 hours, when it began to rise, and in 12 hours had reached 102.8° F. For the next 24 hours it varied between 102.8° F. and 103° F., when it began to drop, and in 24 hours had reached normal. The only variation in the temperature from this time on was that usually noted in children.

During the subnormal period the respirations ranged between 32 and 52 per minute, pulse between 80 and 90 per minute. During the postcritical rise in the temperature the respirations remained about the same in frequency, but improved very much in quality. The pulse ranged between 90 and 120 a minute. At the end of the secondary rise the respirations had become less frequent, ranging between 26 and 40 a minute. At the end of crisis no change could be made out in the character of the consolidation. During the subnormal stage of the temperature, rales redux made their appearance. Beginning with the secondary rise in temperature, rales became numerous, and the breathing became bronchovesicular in character. There was a marked improvement in the character of the breathing, and progressive improvement in the number of rales during this period. When the temperature had again reached normal, bronchovesicular breathing was beginning to give way to the normal vesicular murmur. Rales persisted 10 days after the crisis, when a physical examination failed to reveal any abnormal condition.

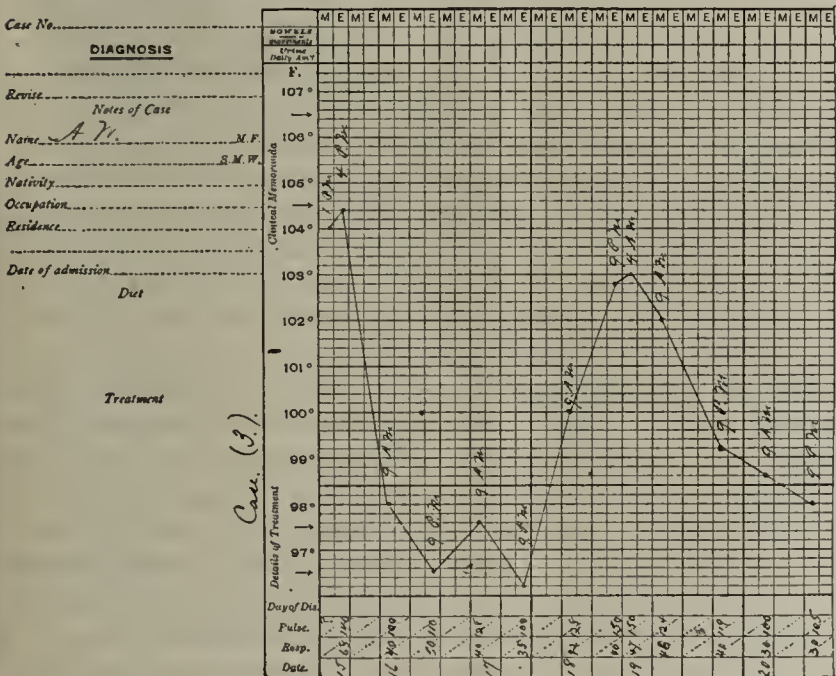
CASE 2.—James W., male, colored, aged 2½ years. Family history: Mother and father are living, in good health. He

has two sisters and one brother in good health. There is no history of syphilis or tuberculosis. Previous history: Labor was normal, he was well developed at birth and breast-fed; dentition was somewhat delayed. He had a mild attack of rachitis, the bony lesions of which are slightly visible. He has been subject to attacks of intestinal indigestion. Present history: The present illness is his first severe sickness. Consolidation was well marked 36 hours after the first symptoms made their appearance and affected the entire lower lobe of the left lung. Crisis took place on the fifth day. The temperature became normal in 8 hours.

During the febrile period prior to crisis, the temperature ranged between 104° F. and 105.5° F. For 36 hours subsequent to crisis the temperature was subnormal. It then began to rise, and in 12 hours registered 103° F. For 16 hours the temperature fluctuated between 101.8° and 103° F., then it began to fall. In 48 hours from this time the temperature was again normal. Normal fluctuations of the temperature were now noted throughout the convalescence. During the stage of consolidation the pulse ranged between 120 and 150 per minute. Respirations between 60 and 75 per minute. During the subnormal stage the pulse ranged between 45 and 60 per minute. During the postcritical rise the pulse ranged between 120 and 140 per minute, and the respirations between 32 and 45. Signs of resolution progressed nicely during this period, but not so rapidly as in the first case.

When the temperature had again reached normal there was still some bronchovesicular breathing heard. Rales had markedly decreased in number.

CASE 3.—Agnes W., female, white, aged 1 year. Family history: Mother is living, in good health. Father's history,



nil. No other children in family. Previous history: Labor was normal, she was well formed at birth, breast-fed, and has been a healthy baby. Present history: The child had been ill for five days when she came under observation with a history of having a high continuous temperature. The temperature when she was seen was 104° F. The physical examination revealed a consolidation of the lower lobe of the right lung, with a few moist rales. Pulse 104, respirations 68. In 12 hours crisis was complete. The temperature remained subnormal for 48 hours, when it began to rise, and in 24 hours the thermometer registered 102.8° F. In the next 4 hours it had gone up to 103° F. The temperature remained here only a short while when it began to fall and in 24 hours it had reached normal. No further rise was noted. During the subnormal stage the respirations ranged between 35 and 60, the pulse between 100 and 128 per minute. During the secondary rise of the temperature the respirations ranged between 40 and 60, the pulse between 120 and 150 per

minute. The pulse here became very weak, and stimulation was increased. The patient subsequently died from an attack of acute gastroenteritis.

CASE 4.—Maggie A. W., female, aged 3 years; no history obtainable. Physical examination revealed a consolidation of the lower lobe of the left lung, with a few moist rales. Temperature 104° F., pulse 116, respirations 48 per minute. Crisis was complete in 36 hours from the time when first seen. The temperature remained subnormal for 36 hours. It remained normal with very little change in the signs of consolidation for 56 hours, when there occurred a sudden rise in the temperature. The thermometer registered 100.5° F. In 24 hours the temperature was again normal. It was not until this postcritical rise in temperature took place that the breath-sounds changed from bronchial to bronchovesicular in character. There was a marked increase in the number of rales just prior to this rise in temperature.

The rales diminished considerably following the decline in temperature. The temperature in this case is not so well marked as in the preceding ones, but the result of the physical examination is practically the same. The respirations before crisis were 49 and the pulse 120 per minute.

After the crisis was complete the respirations ranged between 92 and 100 per minute. During the postcritical rise in temperature the respirations varied between 28 and 32 per minute, and the pulse between 98 and 100 per minute.

Three of the cases reported occurred during my term as resident physician at the Children's Hospital. I am indebted to the Hospital authorities for the use of the records.

The following table has been prepared to show the ratio existing between the pulse and the respiration. The subdivisions of the disease are arbitrarily arranged, and are based upon the character of the temperature as it is presented in these four cases:

Febrile stage.	Subnormal stage.	Postcritical stage.
Pulse, Resp.	Pulse, Resp.	Pulse, Resp.
2.11 to 1	2.12 to 1	2.41 to 1
2.00 to 1	2.11 to 1	3.29 to 1
2.05 to 1	2.42 to 1	2.70 to 1
1.10 to 1	2.45 to 1	3.30 to 1

The chart is that presented by Case 3. A summary of the above cases shows the following points:

1. That a postcritical rise in temperature took place in all the cases, and that the temperature was somewhat uniform as to time, height, and duration.
2. That while the ratio existing between the respirations and the pulse during consolidation was reduced to an enormous extent, the ratio existing during the postcritical rise in temperature was increased.
3. That these conditions being true, there must have been some cause common to all.
4. That the rise in temperature bore a direct relation to the physical signs marking beginning resolution.
5. That the rapidity with which this secondary rise reached its highest point bore a direct relation to the extent of liquefaction.
6. That the rise in temperature was followed by an improved state of the affected area.
7. That as the condition in the affected area improved the temperature reached normal.

Holt, in his treatise on lobar pneumonia, states that a postcritical rise in temperature is due to one of two causes. First, extension of the disease to a new area. Second, the development of a pleurisy which is apt to become purulent. In the above cases in which a postcritical rise in temperature took place, neither an extension of the disease nor the development of a pleurisy

took place. The similarity in the rise of temperature would seem to add still another cause for such a condition.

To me it is a most interesting phenomenon, and one which seems to be fully explained in the light of recent investigations. I believe it to be a frequent occurrence. In some cases it is better marked than in others, but always sufficiently well marked to be correctly diagnosed should it occur.

The general characteristics of this elevation in temperature seem to be as follows: That from 24 to 48 hours after the crisis, there occurs a secondary rise whose ascent is rather rapid, the maximum intensity not reaching higher than 103° F., nor lower than 100° F. This temperature is accompanied by an increase in the ratio existing between the pulse and respirations. The temperature again reaches normal in from 36 to 48 hours. The only symptoms noted were those referable to the fever. In Case 2 no symptoms were noted.

Such rises in temperature quite frequently give no symptoms in children, and if it were not for the use of the clinical thermometer this postcritical temperature would, I think, escape observation in many instances. It not often happens that slight rises in temperature give rise to marked symptoms, and especially is this true in cases which have had their vital powers depressed by severe illnesses.

To find a patient with a temperature of 103° F. on the second or third day after crisis has taken place, with a weak, rapid heart, gives rise to serious considerations on the part of the physician. Especially is this so, if after careful examination of the chest and of the various systems no new lesion can be found to account for the condition.

In order to bring out the points which characterize this condition, it will be well to consider briefly the differential features with regard to new foci of infections and empyema. The rise in temperature being rather abrupt would lead one to think that a new area had been infected.

This form of pneumonia is well recognized, and is spoken of as migratory pneumonia. This condition is usually readily made out. The beginning signs of pneumonia may or may not be present on examination in portions of the lung known to have been previously free from the disease.

In new areas of infection the rise in temperature, if crisis has taken place, is usually very rapid. It reaches its former height or even higher within a short period. The physical signs marking the beginning consolidation will not always be found at first for the reason that a portion of the lung may become involved at a remote distance from the chest-wall. We have all seen cases, not secondary infections, but primary conditions, which did not show the slightest evidence of consolidation for from 36 to 72 hours after the attack had been developed.

When this secondary rise in temperature is due to the involvement of another lobe, there is a marked increase in the number of respirations, which not only increase to their former rapidity, but exceed it in proportion to the amount of pulmonary parenchyma thrown out of action. This rapid increase in the number of respirations, the marked diminution in the ratio existing between the pulse and the respirations, and the sudden rise in temperature, unaccompanied by the beginning signs of consolidation, taken in conjunction with the history of the case, is to me sufficient ground on which to base a diagnosis of reinfection.

The respirations are here the criterion. Too much importance cannot be given to this feature of pneumonia, namely, the ratio existing between the respirations and the pulse. Pleuritis may accompany this condition, and by its physical signs, give further evidence of the involvement of a new lobe. Delayed resolution is an extremely rare condition in children. If the dulness persists for more than 10 days there exists usually one of two conditions—delayed resolution, or empyema.

In the effusion following the pleuritis of lobar pneumonia in children, this condition is almost invariably purulent.

The leukocytosis which persists during lobar pneumonia subsides with resolution. In empyema the polymorphic nuclear leukocytes increase to an enormous extent. This is common, however, in all suppurative processes.

The rise in temperature in this condition may make its appearance at any time following the disease.

The temperature is generally septic in type, and continues until relief is given. The temperature in unresolved pneumonia partakes of this type. Unresolved pneumonia can usually be diagnosed quite readily from empyema. If the dull percussion-note be due to an unresolved pneumonia, bronchial breathing will be well marked. If the dulness be due to empyema it is accompanied by weak breath-sounds in a large majority of cases. When the empyema is great enough to cause decided pressure of the lung, transmitted sounds will usually be heard. These can be diagnosed by being heard in an intensified state on the unaffected side. The ratio existing between the pulse and the respiration in unresolved lobar pneumonia is little affected. If the temperature following pneumonia in these complicated cases can not be accounted for by well-marked evidences of an unresolved lobe, the second cause for postcritical rises of temperature, spoken of by Holt, should be strongly suspected. After from four to six days, should the temperature become of an irregular type, it is a wise procedure to examine the blood for the presence of a leukocytosis. If this condition exists, and has coupled with it dulness, which may have increased in extent, with the presence of weak breath-sounds, the pleural cavity should be aspirated. I consider the presence of breath-sounds in empyema of the greatest importance, and should never be sufficient cause for withholding the only positive means of diagnosis—namely, aspiration. In two cases which I recall, both cases ending fatally, breath-sounds were heard up to cessation of respiration over the side affected.

The sounds were transmitted in these two cases.

The postcritical temperature reported in the above cases seems to be fully explained from a pathological standpoint. Schmitzer and Ewald, working in Albert's clinic in Vienna, have recently studied anew the fever-producing chemical bodies indisputably set free in subcutaneous hemorrhages. While asserting that the older notion of the chemistry of fibrin-ferment cannot be entirely regarded as the fever-producing elements in the blood, they endeavored to isolate from such blood those chemical bodies which produce the symptoms of aseptic-wound fever. They claimed to have found two series of compounds exactly meeting this requirement, the nucleins and albumoses; both of these substances when injected into the bodies of healthy animals brought about febrile reaction. These bodies must have existed in the degenerated blood experimented on, and

were the result of degenerative processes in the albuminous constituents, and not due to the formation of fibrin.

The cases reported showed no condition, either in the lung or in any other system, other than the signs of resolution, to account for such uniformity in the temperature.

Beginning with or shortly following crisis, liquefaction of the alveolar contents begins. It consists of a fatty and granular degeneration of the red blood-corpuscles, fibrin, and polymorphic nuclear leukocytes. This liquefaction progresses more rapidly in some than in other cases.

During liquefaction nucleins and albumoses, together with fat and pent-up toxins, are set free.

The lymphatics now begin to functionate, and depending on the extent of liquefaction these fever-producing bodies are rapidly thrown into the system. The reaction is marked in proportion to the rapidity and the amount of absorption, plus excretion. The kidneys are always the site of more or less cloudy swelling. It is the cells which take such an active part in the excretion of solids that have undergone this change. The swelling of the organ interferes with the proper circulation of its blood.

These two causes, namely, loss of function by the cell concerned in excretion, and interference with the proper circulation, can lead to but one conclusion—crippled excretion.

The temperature rapidly rises and the pulse becomes accelerated. The pulse becomes weak and rapid, depending on the power of the system to withstand this new invasion.

Few or no symptoms may accompany the condition.

In the above cases the system seemed to rapidly become used to these products. The variation in the time of this postcritical rise of temperature seemed to depend on established resolution, while the height to which the temperature rose, and the constitutional symptoms produced would appear to depend on three causes: First, the rapidity of absorption by the lymphatics; second, by the lessened excretory function of the kidney; and, third, by the resistance offered by the system. Here again the pulse and respiration play a most important role in the diagnosis.

The ratio in each case existing between the pulse and respiration was increased. In conclusion, I wish to say that I believe this secondary rise to be a frequent one, depending on the absorption of a degenerated albuminoid mass containing fever-producing bodies. It is a condition which can be diagnosed, the diagnosis of which gives a great deal of satisfaction, and allays much uneasiness, not only to the physician, but to anxious parents and friends.

INVERSION OF UTERUS; UTERINE INERTIA; SHORT CORD.

By EDWARD K. BACON, M.D.

Lecturer on Surgical Anatomy, Michigan College of Medicine and Surgery,
Detroit, Mich.

MEDICAL art began with specialties, which later combined in generalities. Ancient things were reproduced and improved. New things are nearly all old. From the beginning of the human family, babes have been born and died; were born and grew into adult life. The study of the pregnant woman and her accouch-

ment has for ages been interesting. From the day the ovum and spermatozoon become enveloped in the folds of the uterine mucous membrane and the barrier disappears that separates them, they combine to become a new life. The peculiar disturbance the new life gives to the physiology of woman is wonderful. Physicians entering the lying-in-room know not but that before they retire, one life and perhaps two or more may pass into eternity. Conditions often arise rendering the birth-chamber a dread. Head and breech presentations we have all observed; with arm, shoulder, and back presentations many are familiar; complete uterine inertia, inversion, and short cord have been seen by a few.

The literature on some of these conditions is ancient. From the day of Hippocrates to the present day, books written on diseases of women and obstetrics devote pages to presentations and troubles following confinements. The ancients often observed displacements of various kinds, but I can find no record of their describing inversions. Many authors of the present day never saw a complete inversion. No ancient medical literature describes inversion. Hippocrates, Paulus of Aegineta, Aretius, Galen, Celsus, Morgagni, the translators Rhazes, and Albuscas, Arteus, Scultitius, Pari, and others of their days, described and treated prolapses, but none of them, as far as I have been able to find, knew of inversion, although it may have been observed without distinguishing it. Probably inversion has occurred at times since prehistoric woman's day. I believe it is not a trouble peculiar to civilization. In the latter part of the eighteenth century, and during this century, cases of inversion are recorded. Nearly all medical journals, since the days of John Hunter, have at times recorded cases of inversion. I have never found a satisfactory pathologic explanation of this mishap.

The uterus at the full term of fetal life weighs nearly as many pounds as the unimpregnated uterus weighs ounces. Eight ligaments aid in holding it in its normal position, and 3 pelvic muscles and 2 fascias complete the foundation upon which it rests. Vigorously acting uterine muscles keep its form from collapsing.

The ligaments of the uterus do not increase in strength nor size, with the exception of the round ligaments, which develop their muscle-fibers during the ascent of the impregnated uterus as the uterus increases in size during fetal life. The broad and lateral ligaments are carried up with uterine ascent. The sacro-uterine ligaments are not disturbed; the round ligaments are stretched, and near the time of quickening contract their muscle-fibers, aiding in the descent of the uterus. The folds of the peritoneum have but little resisting powers in holding the uterus. Relaxed uterine muscle-fibers, depleted uterine bloodvessels, enervated pelvic muscles, sometimes allow a heavy uterus to invert.

In the *American Gynecological and Obstetrical Journal*, October, 1899, Dr. W. M. Donalds, of Detroit, gave an interesting experience in the treatment of partial inversion, the variety most commonly seen. Dr. Burton Parker, surgeon to Emergency Hospital at Detroit, reports a case this month, that of a miscarriage, with hemorrhage and partial inversion, which he reduced with a sterilized end of a leadpencil.

Inversion may begin at the os and evert the uterus, continuing the eversion to a complete inversion. It may begin at the fundus, which inverts partially

through the os, or the uterus may completely invert. Cases of inversion produced by traction on the cord begin as an eversion, that is, the uterus rolls its mucous surfaces out, beginning at the os, until the whole is inverted. Inversion following forceps-delivery begins as an eversion, starting at the os. Ambroise Paré gave the history of a case he called prolapsus uteri, in which he ligated the uterus into equal parts at its neck, taking it away in a few days, after sloughing at the point of constriction. Surgeons previous to his day did the same. It may be possible that in those cases, instead of operating on a case of prolapse, they removed an inverted uterus.

I believe hemorrhage is a great factor in producing inversion; this produces weakening of the muscular structures which support the womb. Loss of blood must weaken nerve-centers that control those muscles; hence not only weaken the muscular cells because of lack of proper blood-supply, but weaken the nerve-supplies, enervating their muscular structures, and lessening the power to hold up the heavy uterus. Traction applied to the child or placenta in such a uterus will cause it to invert. That hemorrhage may occur without inversion certainly weakens the theory, but I believe that excessive bleeding from the uterus is a prominent factor. The same condition allows the fundus to invert, because of its weight.

May 10, 1896, I was called to attend Mrs. D., aged 32, a primipara, living in the third story of a tenement block in Detroit, in the eighth month of a twin pregnancy. For a year her husband, her child, and herself, had lived in two rooms. The surroundings were unhygienic. When I arrived she was suffering with labor-pains, the os being dilated to the size of a quarter-dollar. She had some hemorrhage. Being placed into bed and sedatives given, I tried to stop the uterine contractions. The vagina was lightly packed with gauze, but in a few hours labor pains began at regular intervals. The first child was born feet first, and alive, but died in a few hours. The second child was born 20 minutes later, and lived 12 hours. The placentas were united, each side having a separate cord. The uterus contracted sluggishly. A hot saline douche was given and the toilet completed with sterile napkins. Ergot was administered, and in a few hours the uterus was contracted, but not firmly. She was resting easily when I retired at 4 P.M. At 10 P.M. the pulse, temperature, and respiration were normal. The bowels and bladder had been evacuated. She had no after-pain, but some hemorrhage had occurred. She was given another saline douche and dressed as before. Examination of the uterus showed it relaxed with a tendency to bleed. Ergot and quinin were given twice during the next 8 hours. The following morning she was feeling well, but there was some slight hemorrhage. The napkins were changed but no douche was given. She was placed on a light diet. The next day, with the exception of a relaxed condition of the uterus, she was doing nicely. The napkins were changed and a douche of hot saline water was given. The light diet was continued and ergot was given in ten-drop doses every three hours. The fourth day quite a hemorrhage had occurred, but not enough to be alarming. The uterus was not firmly contracted, but the patient felt strong. Her diet was increased. On May 15, or the fifth day, she had a severe hemorrhage. The uterus was relaxed. Vaginal examination showed some cervical laceration with ragged edges and an open os, large enough to admit the index finger. She was given a hot saline douche and 25 drops of aromatic sulfuric acid in a tumbler of water. The vagina was packed with gauze and sterilized napkins completed the toilet. I left her feeling comfortable, with the uterus contracted, but not firmly. On May 16 I removed the gauze and dressed with only sterilized napkins. In the afternoon she had a severe hemorrhage. Thinking that there might be a blood-clot or a part of a retained placenta in the uterus, I douched the uterine cavity with a hot saline solution through a spoon-curet, bringing nothing forth, not even clotted blood. I packed the uterus lightly with gauze to

cause, if possible, forcible contractions. During the evening the gauze was removed because it produced intense pain. I examined the uterus and found the cervix closed. On May 17, at 2 A.M. she had a hemorrhage that nearly exsanguinated her. When seen she was in a state of collapse, respiration and pulse rapid, and cold sweat standing out over her body. The foot of the bed was raised quickly, three feet from the floor. Placing my hand over the abdomen I grasped the uterus contracting it down. I administered aromatic sulfuric acid, 25 drops in a tumbler of water, and ordered tumbler draughts of normal saline solution to be given every half-hour. In two hours she had recovered somewhat from the shock and felt better. Her uterus had contracted, but not strongly. She was given a saline douche and dressed with napkins. I was called at 6 P.M. and found my patient pulseless, gasping, and blood everywhere—mattress soaked, quilts soaked, and a pool of blood on the floor. The foot of the bed had not been lowered. Again I placed my hand on the belly to grasp the uterus but it was gone. Quickly administering brandy and aromatic sulfuric acid in water, she was ordered strong coffee and was given large draughts. Somewhat recovered, her husband was told to give aromatic spirits of ammonia by the teaspoonful every few minutes. I then examined the genitals and in trying to enter the vagina I found it blocked with something hanging between the thighs. Running two fingers in between the mass and the walls of the vagina, about two inches downward and backward, I could map out a ring to whose edges was attached something. Requesting a neighbor to hold a lamp, I found a pear-shaped spongy organ, whose outer coat was gangrenous. It was movable, pendulous, spongy, and large. It flashed through my mind that I had an inverted uterus, and so it was. The mucous surface bled easily even on the merest touch. With the head lower than the heels, the foot of the bed being raised, I grasped the inverted uterus and pushed it downward and backward, but a gush of blood bathed my arm and hand. Loosing my grasp, I wrapped gauze and cotton around the uterus and tried to replace it, but it would not replace. My patient was gasping, and suffering terrible shock. Believing discretion the better part of valor, I applied more gauze and cotton, and covered with a sterilized napkin, and began to apply restoratives. In two hours she was considerably relieved. Again I tried to replace the uterus, but the large boggy mass would do nothing but bleed. Knowing that if I could reduce the size of the uterus, it would probably go back, I showered it with four gallons of hot saline solution. I then made a sling of three layers of iodoform gauze, tucked one end into the space between the posterior wall of the vagina and uterus, bringing it under the uterus and over its fundus along the upper surface of the uterus, and tucked the end into the space between the uterus and anterior surface of the vagina. The uterus was now covered with gauze. Rolling absorbent cotton into two rolls, I applied one under the uterus into the vagina and crowded it down against the tucked end of the gauze as hard as I could. The other end I applied on top of the uterus into the vagina against the other end of the tucked gauze, and pressed it downward as hard as I could, placing a tension against the inverted fundus and uterus; also compressing the superficial bloodvessels. I finished the toilet with sterilized napkins. Large draughts of normal saline solution were given every half hour. I left her at 9 A.M., feeling better, with a temperature of $99^{\circ}+$, pulse 105, and respiration 26. I saw her again at 3 P.M. She was stronger, no hemorrhage had taken place, and the temperature was $101^{\circ}+$, pulse 85, and respiration 20. She had had no chill. The inverted uterus was showered with four gallons of hot saline solution. Gauze was again applied as above described, and rolls of cotton and wool tucked into the vagina as before. I continued the saline draughts, and at 9 P.M. she was treated again in the same way, and left in the hands of her husband and a neighbor, with orders to give saline-solution until 3 A.M., and then let her sleep until 6 A.M., when they should again give the solution.

On May 18, at 6 A.M., her temperature was 100° , pulse 80, and respiration 18. She had rested well during the night. There was no hemorrhage, but a bloody watery discharge from the lining of mucous membrane, that smelled badly. She had passed a quiet night, and was without pain. Inspection showed gangrene of the membrane covering the mucous membrane of the uterus. I showered the uterus with

a hot mercuric chlorid solution, 1 to 2000, four gallons of solution being used. The sling of gauze was applied and its ends tucked into the vaginal space with rolls of cotton and wool, until tension was placed on the fundus, crowding it downward and backward. Sterilized napkins completed the toilet. Saline draughts discontinued, and she was placed on hot milk, a tumblerful every three hours. The bowels had moved, and urine had been passed in large quantities. At 6 P.M. the temperature was 99°, pulse 80, respiration 18, and the patient felt stronger. The discharge from the uterus was offensive. There has been no hemorrhage and no pain. The uterus was showered again with four gallons of hot mercuric chlorid solution, 1 to 2000, and dressed as above. At midnight her temperature was 99°, pulse 90, respiration 18. She had slept a little. There was an offensive odor from the uterus. It was again showered with four gallons of the hot mercuric solution and dressed. The uterus was less spongy.

On May 19, at 8 A.M., her temperature was 100°+, pulse 90, respiration 20. The watery discharge from the uterus was offensive in odor. The inverted womb was showered with four gallons of hot mercuric solution, 1 to 2000, and dressed. She complained of some pain across the belly. Diet: Gruel, broths, and milk. Before placing the sling of gauze over the uterus, the womb was dusted with iodoform 1 part, and boracic acid 3 parts. At 5 P.M. the womb was showered with the hot solution; the watery discharge was lessened, the membrane detached in spots, and the odor gone; the temperature was 101°+, pulse 30, respiration 18. She felt strong, but had some abdominal pain. Her bowels had moved and she had passed urine freely. The uterus was smaller and less spongy, and there was no hemorrhage. The vaginal space was greater, large rolls of cotton and wool were used, and more tension placed on the gauze sling. She was left for the night.

On May 20 the temperature was 100°+, pulse 87, respiration 18. She had rested well during the night. There was no hemorrhage, no odor, and the uterus was firmer. Some parts of the membrane were detached from the uterine mucous membrane, but some three spots of the membrane were yet gangrenous. I showered the uterus with four gallons of hot saline solution and dressed as before.

At 6 P.M. her temperature was 99°, pulse 86, respiration 18. She felt comfortable, had taken considerable nourishment during the day. The same treatment was carried out.

May 21 the temperature was 98.5°, pulse 78, respiration 18. There was no odor, but some watery discharge from the uterus. I detached more exfoliated membrane, but there was no hemorrhage. She slept well during the night. The uterus was treated as before. It was smaller and firmer, and the vaginal capacity was increased by the uterus receding in the afternoon. I gave the uterus another douching. The temperature was 100°, pulse 85, respiration 18. She had no pain, had passed a good day, and had taken considerable nourishment. I gave her $\frac{1}{20}$ grain of strychnia.

May 22. She had passed a good night, and the uterus looked clean, shrunken and wrinkled, receding into the abdomen. It was dressed as usual. I tried to replace the uterus, but failed because of much pain in manipulating it.

On May 23 the morning temperature was 99°, pulse 85, respiration 18. She had passed a good night, but had some abdominal pain. The bowels had not moved for 30 hours. The uterus was douched and an enema of soap and water was given and the bowels moved. Urine was freely passed. I gave her another dose of strychnia. In the afternoon the temperature was 100°, the pulse 90, respiration 18. She felt well, had no pain, and the bowels had moved freely. The uterus was dressed as usual. It had shrunk to half its former size, and was receding, the vaginal capacity being increased. Larger rolls of cotton and wool were packed into the vagina, producing tension on the womb.

Improvement was progressive until May 27 when the length of the vagina was 3½ inches anteriorly and 4 inches posteriorly; the uterine toilet was continued.

On May 28 the uterus was nearly normal in size. I placed the patient in a Trendelenburg position, and pushing the uterus downward and backward, it went into the abdomen with a rush and a snap. I tamponed the vagina lightly, and made her diet liberal. The next day she sat up for a while. I visited her May 30 and 31, June 1, 3 and 5, when she was discharged. I examined the uterus that day. It was mobile, and free from pain or displacements.

I had the patient under observation after her recovery for over a year. She was in good health, but during the year she did not become pregnant.

It may be interesting to observe the pathology of this case. I believe that hemorrhage weakened the muscular fibers of the uterus and the muscles of the pelvis. The uterus, weakened in its natural support, became inverted because of its weight.

In complete inversion, where are the ovaries and appendages? They must lie by the side of the sacro-uterine ligaments and between the muscular walls of the uterus. One could expect that the ovaries would be displaced. But in this case the ovaries were in their normal relation to the uterus after it was completely reduced.

In some cases of inversion, amputation of the uterus has been resorted to. I wish to introduce a new instrument for reducing inversion when all else has failed, to take the place of amputation. It is a pair of long, slightly curved forceps, barbed on the end like a fish-hook. An abdominal incision exposes the cavity of the inverted uterus whose walls are the uterine muscles. Introduce the forceps, passing them to the fundus, spread them apart, catching the barbs into the muscles of the uterus and producing traction, draw the uterus back into the abdominal cavity, at the same time putting tension on the fundus. I believe this operation safe and feasible, preferable to amputation. If by mishap, the uterine wall is torn, it is an easy matter to stitch it. I can conceive of no case of inversion, seen at the time of the accident, requiring amputation, except when the uterus is the seat of large fibroids or malignant growths.

Partial uterine inertia is frequently met. Complete inertia is rare. We frequently meet cases in which labor is prolonged because of lack of forcible labor action.

During the month of July, 1896, I was called to confine Mrs. G., aged 22. She had been in good health all her life. She had been married nearly a year, this being the first pregnancy. She was well developed. Labor-pains had begun upon my arrival.

It was twin pregnancy. After many hours of short nagging pains her first child was born. It lived but a few hours. Labor-pains stopped. I tried many ways during the preceding hours to induce labor, but failed. I once heard an old lecturer say that "God never forgot the pregnant woman, and sooner or later labor-pains would come." I spent 8 hours with her, waiting for labor-pains. At the end of the time, I tamponed the vagina and placed her on oxytocics, to be given every hour. I retired for the night. They were to call me when labor recommenced. The next morning brought no labor-pains, nor any during the day or night. There had been no hemorrhage and the patient rested quietly, feeling well. Upon the third day, in consultation with Dr. Cassidy, anesthetics were administered, and carrying my hand into the uterus to its fundus, I ruptured a sac and delivered a dead fetus and an adherent placenta. The mother made a good recovery without untoward symptoms. She has never been pregnant since, but is in excellent health. I have never been able to explain the cause of the inertia.

In the fall of 1898, I confined a woman of a healthy boy, whose umbilical cord was only 9 inches long. Under forcible pains the head advanced slowly and upon the birth of the head, the face was very cyanotic, a condition which frequently means cord compression. Upon examining the child as quickly as possible, I discovered an unnatural bulging at the umbilicus, the placenta lying upon the abdomen. Not knowing exactly the condition I had, I ruptured the cord, and quickly delivered. I caught the torn cord with an arterial forceps in mass and ligated. The placenta was expelled and upon measuring the cord it was found to be only 9 inches in length from the umbilicus to the placenta. Artificial respiration resuscitated the child. The mother and child are both living and in good health.

A FEW CASES OF DIPHTHERIA AND WHAT THEY
TAUGHT ME.¹By JOHN LEVERETT, A.B., M.D.,
of Binghamton, N. Y.

STATISTICS in regard to diphtheria and antitoxin have already been furnished by the larger hospitals, and to such statistics these few cases will be but a drop in the bucket. But I find that many general practitioners are still somewhat sceptical about its value and timid about using it. For them I hope the experience of a general practitioner, situated very much like themselves in an inland city, may prove of service. The bacteriologic examinations mentioned below were made by the regular bacteriologist employed for such purpose by the Board of Health of the city.

CASE 1.—April 13, 1899, I was called to see a young man about 21 years old, who was suffering from a sore throat, both tonsils being covered with an exudate having every appearance of diphtheria. A culture showed plenty of the Klebs-Löffler bacilli, and on the receipt of the report 1000 units antitoxin was injected. Much to my surprise the membrane disappeared as if by magic, rolling up from the edges, and in 48 hours the throat was clear. Well pleased with the result, I had a culture examined on the fourth day in order that he might be relieved from quarantine, and again to my surprise found that the bacilli were still present. By this time the young man felt and appeared perfectly well, but not until the thirteenth day had the germs disappeared.

CASE 2.—February 1, 1900, I was called to see a young married woman about 19 years old, who was complaining of pain in her head and back and whose temperature was between 104° and 105°. On my second visit she remarked that her throat felt queer. I found it covered with exudate, and a culture showed it to be diphtheric. On receiving the report (which means about 12 hours after the culture is obtained), she was given 1000 units of antitoxin with the result of causing the membrane to disappear in about 36 hours. But in her case the temperature still persisted for several days, coming down by lysis. Not until the thirteenth day did a culture show the absence of the germs.

In both of these cases the attendants received an immunizing dose—500 units—of antitoxin, and no other cases developed. Of course, after these two cases I felt very much pleased with the treatment and much confidence in its efficacy. But in neither of these did I know, nor could anyone tell, that they might not have run a more or less benign course without treatment. But in the group of cases that follow I think that I am justified in saying that the infection was of the most virulent form.

CASE 3.—February 15, 1900, I was called to see a little German girl, Rosie K—. She was in bed with her sister Katie, in fact I had been called to see both of them, but Katie seemed to have only a cold and I could see nothing suspicious in her throat. Rosie, on the other hand, was decidedly croupy and showed a suspicious throat. A culture was taken and diphtheria was the verdict. Meanwhile I had been giving what remedies I could to relieve the croupy condition but without avail, so, on the second day, being sure that I had a case of laryngeal diphtheria, she was given 1000 units antitoxin. But no marked improvement took place, and the next afternoon, the breathing getting worse instead of better, she received 2000 units more. That night she died. She did not strangle to death as I expected she would, but the attendants said that she breathed easier for a short time before death. Still I lost my patient in spite of the antitoxin.

CASE 4.—The other child, Katie, who had occupied the bed with Rosie on my first visit, had been removed to a room in another part of the house, and on my second visit I was informed that I need not see her as she was better, so

she was out of my mind. The day after Rosie died I was called to see Katie. Her throat was covered with a mass of blood-stained membrane. But I was a little discouraged in the use of antitoxin, and it seemed to me from appearances that the disease was then at its height and already self-limited, and she was treated without it. As I look back upon it now I don't believe that, given at that stage of the disease, it would have altered the result. She was treated with good-sized doses of tincture of chlorid of iron, heart tonics, stimulants, nourishment, and antiseptic throat irrigations. The membrane peeled off and was coughed up in due time, and I hoped she would get well and so told the parents and, in fact, diminished my visits from two to one a day. Two days after the membrane had disappeared the heart's action became bad and on the 26th she asked her father to hold her in his arms for a few minutes, and while in his arms, without any warning her head fell back and she was dead. No bacteriologic examination was made in this case; none was necessary.

CASE 5.—While this last patient was sick, about six days before her death, they asked me to look in the throat of her little brother Johnny, aged 4 years. I found both tonsils covered with a characteristic membrane. Without waiting longer than to send to the drug store for it, I gave him 1000 units antitoxin, and the next day he was feeling well and part of the membrane had come off. The day after the throat was clear. The culture taken the first day showed plenty of the Klebs-Löffler bacilli and they still persisted, for it was not until the sixteenth day that the throat was free from them. During none of this time was this child sick enough to be confined to the bed.

CASE 6.—March 3, five days after Katie's death, I was called to see the oldest daughter, Sophie, aged 18 years, and found her tonsils covered with a membrane which was afterwards proved to be diphtheric; 1000 units of antitoxin were immediately administered and she went to bed. The next day the throat began to clear up, and on the day following was entirely clear. The bacteria in her throat persisted for about 16 days.

When she was taken sick the other members of the family, father, mother, and big brother, received each 500 units for immunization, with the exception of the baby, then a year old. None of those so immunized contracted the disease.

CASE 7.—About the same time that Sophie, the older girl, was taken sick, my attention was called to the baby's eye, which was badly swollen and discharging profusely. I advised them to see an oculist, and Dr. McFarland was called, who pronounced it a diphtheric conjunctivitis and took charge of the case. On March 5, having discontinued my visits, Sophie being convalescent, I received word that the oculist said I should see the baby. I called on the doctor immediately and he said that the throat was then full of membrane, although the conjunctivitis was improving, and that in his opinion it would go hard with the baby that night. I went down and found it as he had said, a culture taken at the time showing the characteristic germs. I immediately gave the child, aged 1 year, 800 units of antitoxin with the happiest results. He had a comfortable night, the membrane had begun to come off in the morning, the day following there was no membrane left and in 14 days the throat was clear of germs. This was the last case in that family. My remarks on these cases I will reserve for the end of the paper.

CASE 8.—March 12, 1900, I was called to see a girl, 12 years old, in another part of the city. Both tonsils and the uvula were covered with what, to me, seemed an undoubted diphtheric membrane, but her aunt, with whom she was living, and who seemed to be very intelligent, said that she was accustomed to have that kind of sore throat several times every winter, in fact had suffered from it but a month or so before, when the membrane looked the same and was, in fact, more extensive. She had then been sick for two or three days, and although her throat felt bad she was very averse to staying in bed. I prescribed iron, using in this case the pyrophosphate, and the throat was also frequently swabbed with an antiseptic. A culture taken on my second visit showed Klebs-Löffler bacilli. No antitoxin was used in this case for the following reasons: The case was so ad-

¹ Read before the Broome County (N. Y.) Medical Society, April 3, 1900.

vanced when a positive diagnosis was made that there would have been little chance of its favorable action, and, since the family were still fully convinced in their own minds that she had nothing more than she had had many times before, if, in these circumstances she had been given antitoxin and died in spite of it, they would have felt sure that she died because of it. But the membrane cleared off leaving a gray scar behind. Then vomiting commenced and her pulse became weak in spite of stimulants which she was taking. I quieted the vomiting somewhat and stimulants improved her pulse, when, contrary to my orders they gave her a large drink of water, she immediately vomited it up, fell back, and died.

CASE 9.—March 27, 1900, I was called to see a baby, aged 3 years. Both tonsils were covered with a thick exudate and a culture showed Klebs Löffler bacilli. The next day, when I received the report, I injected 1000 units antitoxin. The day following there was not much change in the appearance of the throat, but the day after that there were only a few tags of membrane left and his mother said that he had been playing horse with two chairs most of the morning. The further convalescence was uneventful.

Other cases I might quote in which antitoxin in my hands has been uniformly successful, but these have been selected because they have been very instructive to me and I hope will be to others. From the reports which I had read in regard to antitoxin I was in more or less doubt as to its value. Until I have a further and a different experience I shall now try to use it in every case which comes into my hands early, and I shall feel much more confidence in the ultimate results.

The first case in the German family was fatal although antitoxin was used, but it was a laryngeal case, and a laryngeal case is so far advanced when it is diagnosed diphtheric that antitoxin is apt to be useless. In the 3 cases which recovered in this family, and that almost without symptoms excepting the membrane, no one, in view of the 2 who died, can say that it was a mistaken diagnosis or a light form of infection. Besides, there were several other deaths in the neighborhood in the same epidemic.

A physician recently said to me that if he had a case of diphtheria which he was afraid was going to die, he would use antitoxin as a last resort. I told him, as I say here, that he would generally have his trouble for his pains, for, if antitoxin is to be of any service, it should be used in the first few days of the disease, before the poison has been thoroughly absorbed into the system. Then the membrane may be expected to clear off inside of 48 or 60 hours and all the symptoms to subside. The patient is not and has not been poisoned, and you know, if you have ever had much real diphtheria, what I mean by that. In this connection I would call attention to the fact that the 2 cases that did not receive antitoxin died from systemic poisoning after the membrane had entirely disappeared.

These cases have also brought forcibly to my attention a fact which has not been sufficiently emphasized in view of its importance as regards the spread of the disease, namely, that the bacilli persist after the patient is clinically well if the case has been treated with antitoxin. I took a culture which still contained the bacilli from the throat of the older German girl, (Case 6), when not only had her throat been clear for several days, but she was downstairs attending to the housework. It is easy to see how such cases might be an unsuspected source of infection. It seemed to make very little difference what local applications were used, although, of course, no culture was taken immediately after an antiseptic application. Case 8 shows well the

value of a bacteriologic examination for diagnosis, especially in those patients who are subject to sore throat, and who are liable to let a case of diphtheria run because they think it is the same thing that they have had so many times before. It, and certain negative cases not here reported, taught me that when I find a suspicious-looking sore throat, I should have a culture examined immediately, no matter what the previous history, and should then be guided in my treatment by the finding of the bacteriologist.

In 2 of the cases I was able to trace the probable source of infection in a very interesting manner. In Case 1, the young man probably took it from his mate in the factory, who had stayed from work a couple of days with a sore throat but had had no physician. He said that they were accustomed to chew from the same quid of tobacco. In Case 9, the history on that point is interesting. This baby was visiting some friends in another street and while there was taken sick. They called their own doctor and, so they say, he pronounced it worms. I saw the other doctor the day after the diagnosis of diphtheria was confirmed and told him about it. To my surprise he laughed and said that he had expected it, as they were just recovering from an attack of diphtheria in the family when this child came there to visit. He had not reported his case as it was light and the child recovered. He seemed to think that it was a pretty good joke.

There are some members of the profession who have never used antitoxin, and for their benefit I will answer one or two questions which were asked me by a brother physician. Write a prescription for it and let the patient buy it at the drug store unless his credit with you is gilt-edged, when you can save a little time by buying it yourself and charging it up to him. It is not expensive. To a man who intends to pay his doctor's bill, \$1.50 for medicine which will save him a long and dangerous sickness and perhaps \$10 extra doctor's fees, it is an economy. To inject it an ordinary hypodermic syringe may be used, and it is best injected under the skin of the abdomen or loins. With a 30-minim syringe the needle will have to be inserted four times to inject 1000 units standard. Inject slowly and less pain will be caused as I know from personal experience. The quantity for a suspected case should be at least 1000 units. The syringe may afterwards be cleansed with warm water and sterilized by drawing it full of pure carbolic acid.

POSTDIPHTHERIC PARALYSIS OF BOTH EXTERNAL RECTI MUSCLES.—REPORT OF A CASE.

By HARRY FRIEDENWALD, M.D.,
of Baltimore, Md.

MYRTLE S., aged 6 years, was very ill with faucial diphtheria on January 19, 1900, when her physician, Dr. H. Lee Franks, was first called in to see her. On that day he injected 2,000 units of xx antitoxin and did the same on January 21, making 4,000 units concentrated. He discharged her as cured January 30.

On March 7 he sent the child to me for examination, because convergent strabismus had developed. I found almost complete paralysis of both external recti muscles, and also of the palatal muscles, which had developed in the last few days. The head drooped upon the chest from paresis of the cervical muscles. There was no paralysis of accommodation. Syrup of iodid of iron was ordered. I saw her again on March 15, when the condition was unchanged. On March

22, I found well-marked paresis of both upper and lower limbs. I did not see the child again until April 14, at which time I found that the child had recovered completely from all the paralyzes, and I was informed that the eyes had become straight a few days after I had last seen the patient. The paralysis of the external recti muscles had therefore lasted a little more than two weeks.

Remarks: This case presented a number of interesting features. First of all I should like to call attention to the extent of the paralysis, involving the palatal, both external recti muscles, the muscles of the neck, of the upper, and of the lower limbs. The first signs of paralysis made their appearance about 5 weeks after the local inflammation had entirely disappeared. The paralyzes did not set in at the same time, the palatal paralysis and that of the external recti muscles having been the first to appear, and they passed off in the same order in which they had come on, each lasting between 2 and 3 weeks.

Postdiphtheric paralysis of the external recti was formerly believed to be of very rare occurrence. That this is not the case appears from the statistics in Hirschberg's clinic. Moll¹ in 1896 collected 150 cases of postdiphtheric paralysis affecting the eye, that had appeared at the clinic during the previous 10 years. Of these 150 cases showed a paresis of both external recti, and there were 3 cases of paralysis of a single external rectus. The frequency of paralysis of the external ocular muscles is still better shown in the report of Goodall based upon 1,071 cases of primary diphtheria under treatment at the Eastern Hospital, Homerton, during 1892 and 1893.² Of these 362 cases proved fatal from the primary disease; of the 709 surviving patients 125 developed paralysis. "In 102 cases the palate was paralyzed; in 56 the ciliary muscles; in 52 the lower extremities; and in at least 11 the muscles of the larynx." "Of the 26 cases in which the external ocular muscles were affected, in 14 the notes only state the presence of squint, without specifying the exact muscle or muscles paralyzed. In 7 of the remaining 12 cases, one external rectus (usually the left) was paralyzed; in 3, both external recti; and in 2, most of the muscles of the eyeballs. In none of the cases were the internal recti affected apart from the external. In one case there was ptosis."

It is a matter of much interest to know what effect the serumtherapy has had upon the development of postdiphtheric paralysis. Soerensen³ has investigated this subject and found that "in 34 cases of diphtheria treated with serum, 20 cases were affected with paresis, while in 31 cases treated without serum he observed paresis only in 16, and the former were even more complicated than the latter."

Escherich⁴ and later Gutmann⁵ also concluded that the serumtherapy is more frequently followed by paresis, and that this is more apt to be severe in the serum cases.

Greef,⁶ whose views are in accord with the above, explains the relative increase and severity of the paralysis as the result of the much greater ratio of recovery in severe cases because of the serum-treatment. Many cases now survive and develop paralysis which formerly would have died. The case related perhaps belongs to this number.

In conclusion, it is interesting to note that serumtherapy has been applied for the postdiphtheric paralysis in a relatively small number of cases, but the results are very indefinite and scarcely encourage further experiments in this line.

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Rupture of the Popliteal Artery.—Bloodgood (*Maryland Medical Journal*, September, 1900) reports the case of a youth of 19 who suffered a posterior dislocation of the right knee-joint, with subcutaneous complete transverse rupture of the popliteal at its bifurcation. There was plugging of the artery by a thrombus, and no hematoma formed in the popliteal space. There was thrombosis of the popliteal vein, and gangrene of the leg set in soon after the injury. There was no great loss of blood, but shock was extreme 3 hours after the injury, when the patient was admitted to the hospital. The patient was kept under observation for three days; the temperature rose to 104°, and leukocytosis to 8000, due probably to fibrin in the blood, as the gangrenous tissues were sterile. Amputation through the condyles of the femur was performed on the third day. The patient made a good recovery. [A B C.]

Methods of Resuscitation in the Newborn.—Ayers (*Obstetrics*, August, 1900) remarks that proper application of means of resuscitation requires much judgment. Some children which suggest the need of resuscitation should be wrapped up warmly and left absolutely quiet. Such are generally those yet under the influence of drugs given the mother—ether, chloroform, morphin, etc. Regarding the many methods advocated for restoring circulation and inducing respiration in the newborn, the following is urged as altogether superior in all respects. It may be termed the "subaqueous method." When the child is born, and while the cord is yet intact, bring a large bowl or a bath-tub filled 6 inches deep with hand-enduring hot water, close to the mother and immerse the child in the water, holding the babe with its head, neck, and shoulders resting in the palm of one hand, and its knees in the palm of the other hand. Keep the face out of the water. Keep the cord free from interference with its circulation. Do not handle it. To expand the chest bend the entire body backwards, and to compress the chest reverse this motion. To stimulate voluntary respiration and crying, lift the child out of the hot water and dip it into a second bowl of cold water, and then immediately return it to its hot-water bath, and repeat the chest expansion and compression. Repeat the cold-water dip after several seconds. Remove the mucus from the mouth and throat with a piece of gauze on the end of the finger. An assistant can better do this. In some cases, having inhaled mucus, it may be well to lift the child by the feet for a few seconds to let the fluid run into the mouth. Spanking is of occasional value, and, rarely, the introduction of a catheter into the bronchial tube. When cold-water dipping fails to secure voluntary respiration, place a piece of gauze over the child's nose and mouth and expand the lungs by placing the mouth over the child's mouth. Regulate the force of this mouth-to-mouth lung inflation, aiming to do it quickly, but not to rupture the child's air vesicles. By Schultze's method the child's cord is cut promptly, the physician grasps the shoulders, holding the body forward, and swings it forward and upward until the limbs and pelvis fall by gravity upon the chest and compress it. Swinging the body back again the chest is expanded. While this method is undoubtedly effective in expanding the chest and in stimulating the respiratory center by exposure of the skin to the air, it is so unnecessarily severe and sacrifices so many important features the writer thinks it should be abandoned. Animal heat in the newborn will be lost very rapidly in one that is asphyxiated. The subaqueous method preserves animal heat so long as needed. This method secures as good chest expansion and compression as does Schultze's. It does not require severance of the cord and gets the benefit of continued placental circulation. The cold-water dip gives full skin stimulation without causing the loss of animal heat. The hot-water bath is especially useful in the semi-narcotized and in the pallid classes. When the child is first immersed in the hot-water bath its skin will turn blue, due to dilation and temporary blood-stasis in the capillaries. It is of no importance. Traction of the tongue will stimulate respirations, also slapping of buttocks. The pallid child may need a drop or two of whisky or brandy. [W.K.]

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A Grateful Constituency.—If the newspapers are to be credited, one of the Congressional districts in Maine has just been the scene of an election for Congress that is probably without precedent in this country. The chosen candidate is an invalid in a hospital for the insane, where he has been detained now for nine months. He is well known in public life as a faithful and able legislator, for he has already served for some years in Congress, and the feeling of regard and sympathy for him in his home-district is reported to be so great that even his political opponent did not attempt to make much of a canvass, for fear of the prejudice and criticism with which he would meet. From the medical standpoint the situation is abnormal and not to be highly commended, since it is against medical instinct to impose public trusts and obligations upon a man who is unfortunately deprived of the full use of his mental faculties; but the motive which has inspired this nomination, while it may be sentimental, is certainly a worthy one, and goes to prove that republics are not always ungrateful. What medicolegal relations the case may have we do not yet quite see; but if the congressman-elect should attempt to take his seat before he had made a complete recovery, there might, we should think, be some interesting questions raised. The friends and supporters of this unfortunate statesman are possibly assuming some large responsibilities for him and for themselves.

The Medical Martyrs.—Medicine has her martyrs, and they are no less worthy of commemoration than those of religion. There is, unfortunately, little reason longer to doubt that young Dr. Courtland Van Rensselaer Hodge, and possibly Dr. Yardley Taylor, have met with a martyr's fate in the insurrection in China. Intelligence is meager, but the American minister has cabled a few words which are all too fateful to the ears of waiting and mourning friends. For the immolation of these young physicians, and of the fair wife of one of them, there will be an universal feeling of mingled execration and sorrow. It is no place here to estimate the advantage gained, and to compare it with the price paid, in the missionary enterprises in China; but surely no one can read or think of this frightful sacrifice, made by a little group of Americans, who represented some of the best blood and culture of the land, without a sense

of its unutterable pathos; and no member of the medical profession but must feel that in this martyrdom he has himself a privilege and a share. For these young men and this young woman at least went out with none but the motives of a pure altruism, and sought to scatter in a land that sorely needs them the seeds, not of a militant and narrow theology, but of a broad and universal science. Their mission was a propaganda of benevolence; their death is a tragedy that disgraces one race, while at the same time it ennobles humanity. If it be indeed true that hope is ended, and that the final word has come that notes their cruel destiny, their memories are entitled to the homage of a profound reverence, and their friends to a sympathy that can only inadequately be expressed in words.

The Galveston Disaster.—When the first reports of the destruction to life and property by the fearful hurricane which struck Galveston on September 8 were sent out, it was confidently hoped that they were greatly exaggerated. Each day, however, brings additional confirmation that the original statements were in no wise overestimated, but rather the reverse. Never before in the history of our country has such a disaster happened to any community. The loss of property will reach far into the millions, but the loss of life is now known to be appalling, and even yet it is feared the whole truth is not known. As hundreds of bodies were washed out to sea, never to be recovered, the number that perished can never be more than approximated. It is now variously estimated at from 5,000 to 10,000.

At this date the recovery and disposition of the dead bodies goes on rapidly. This work is rendered especially difficult by the fact that over considerable areas most of the buildings were completely wrecked, burying the unfortunate occupants beneath them. It is now proposed by the authorities to burn certain districts of the city, and thus dispose of the decaying bodies and the wrecked buildings. The unsanitary conditions brought about by these circumstances and by a partial cutting off of the water-supply can hardly be overestimated, and the fear of a general pestilence has been great. The chairman of the Texas State Board of Health and the members of the City Board of Health of Galveston have given assurances, however, that they regard no such danger as imminent.

The generous manner in which the whole country has responded to the needs of the stricken sufferers is deserving of applause. The larger cities have vied with each other in answering the call for aid. From every quarter trainloads of supplies, medicines, and disinfectants have been rushing on to Galveston. Physicians and trained nurses by hundreds have volunteered their services, and many have been sent to care for the suffering.

All indications point to the rebuilding of Galveston. Its commercial importance is great, and it appears that the people have no idea of abandoning the city's site. Doubtless, a fairer, better, healthier, and more stable city will be erected on the ruins.

Sir William Turner.—It is a subject for congratulation that the British Association for the Advancement of Science has had for its president this year a distinguished member of the medical profession. This Association stands in the foremost rank of learned societies and represents practically all departments of science. It is, therefore, not specially representative of medical research, and in its wide inclusiveness of all branches of science, it might be feared that the medical sciences, although among the most important of the physical sciences, would stand some risk of occupying with it at least a not conspicuous position. This has not been the case, however, with the British Association, for its meetings have frequently been the occasions for important contributions to medical learning. In other words, medical science, in its wider sense, has held its own in generous rivalry, as it were, with the other sciences, some of which are but remotely, if at all, related with it. This fact is due to the eminence of the members of the British medical profession, who are affiliated in this Association with scientists of wide note in other fields. There are certainly many advantages to be gained by such affiliation, and the conspicuous rank accorded to medical investigation in the British Association for the Advancement of Science must be a source of satisfaction to all members of the profession. None more worthy than Sir William Turner could have been selected to preside over this distinguished assembly. He has held the position of president for the current year, and an abstract of this very able presidential address has just been published in the *British Medical Journal* (September 8, 1900, p. 690).

Sir William Turner's work as an anatomist has placed him in the very first rank in this field. He succeeded Professor Goodsir, in 1867, in the chair of anatomy in the University of Edinburgh, and his contributions to science and his accumulated honors are too many to be enumerated here. We merely wish to congratulate him as well as the medical profession on the honor which has been done both to him and to it—an honor which he has most capably upheld. It is to be noted that he succeeded in the presidential chair another

eminent medical scientist, Sir Michael Foster, the physiologist.

Surgical Opening of a New Side Track for the Blood of the Portal Vein.—In those cases of cirrhosis of the liver which cause obstruction of the portal circulation clinicians have occasionally observed cures resulting from the natural establishment of collateral circulation. Nature usually makes an effort at relief of the condition, giving rise to the caput medusæ, which is a commonly recognized symptom of this affection. Within the past four or five years various surgeons have tried to bring about this result artificially. Drummond and Morison (*British Medical Journal*, September 19, 1896) were probably the first to report an attempt of this kind, and of two patients who were operated upon one recovered. Morison has recently reported a second successful case (*Lancet*, May 27, 1899). Recently a number of other surgeons have performed similar operations, many of them without knowledge of the work of others. In the *Berliner klinische Wochenschrift* for July 30, 1900, Talma, of Utrecht, reports two cases in which such an attempt was made, and about a year previously he reported a similar successful case. A man, 59 years old, was taken with symptoms of cirrhosis of the liver following chronic diarrhea, the cirrhosis having resulted from infection from the intestine. The abdomen was repeatedly tapped and large quantities of ascitic fluid were withdrawn; the liver could be felt enlarged, hard and nodular, with an irregular edge; the patient became delirious from cholemia. Having observed a favorable result following operation in a similar case, operation was advised and was performed by Nareth. On opening the abdomen the parietal peritoneum was found to contain many enlarged veins, and numerous, tortuous, enlarged veins were seen in the omentum. The liver was very hard and nodular, with a blunt edge and thickened serosa. The serous surfaces were gently sponged and a number of sutures were taken uniting the omentum to the peritoneum of the abdominal wall. The patient continued in a delirious condition for some time, but the ascites did not recur and gradually complete recovery followed. At present the man is comparatively well and able to work at his usual occupation. In a second case of chylous ascites with cirrhosis of rapid development, operation was performed under local anesthesia with Schleich's solution. The ascites recurred, however, and death followed soon after the operation. At the necropsy numerous enlarged veins were found at the place where the omentum had been stitched to the parietal peritoneum.

In all, seven or eight cases have been recently reported in which operation has been performed for cirrhosis of the liver causing obstruction to the portal circulation. About 50% of the patients have died, but several very satisfactory recoveries have resulted, some

of them as striking as in the case just reported. While the results cannot be considered very encouraging considering the very slight chance of the establishment of collateral circulation by natural means and the almost certainly unfavorable termination of the disease without such collateral circulation is established, so simple a procedure can scarcely be considered unjustifiable.

Smallpox in the United States.—The fact has not infrequently been noted that smallpox has been prevailing for some time past in the United States in an unusually mild form. In fact, there have been reasons to suspect that in some quarters the genuine disease has presented itself in such a mild type that it has either not been recognized or else passed off as a less serious disorder. The official statistics of smallpox in this country for the past few months, as published in the United States Marine-Hospital Service, exhibit this subject in such a panoramic way that we present a brief synopsis of them for the benefit of general readers, and also possibly for the enlightenment of the few unfortunates who continue to oppose vaccination. In Alaska there was a small epidemic this summer, chiefly at Cape Nome, of 28 cases, without a death. In Colorado there has been an epidemic thinly spread over 15 counties, with 109 cases and no deaths. In Indiana also there has been a widespread prevalence of the disease with only 130 cases and 5 deaths during the months of June and July. In Louisiana a more severe type of smallpox has prevailed, for in June, July, and August, 148 cases with 40 deaths were reported. In Minnesota there was still more of the disease, but the mortality was astonishingly low—283 cases with only 3 deaths. North Carolina had 440 cases spread widely over the State, with not all cases reported, and yet the death-rate was very small. Ohio has had plenty of smallpox since the beginning of the year—1,376 cases—and yet has lost but 17 persons from the disease. Texas, with 556 cases since February, has lost only 4 patients. It will be seen from these statements that the disease has been quite widely spread over the United States, but has prevailed more in some localities than in others. Few States have been exempt from it, but in all of them, with the exception of Louisiana, the death-rate has been (if the term is allowable) abnormally low. In the Middle States—Pennsylvania, New York, and New Jersey—there has been but little smallpox in proportion to the large population, and only *two deaths* in these three States all summer. The grand total of cases for the United States for the period covered (which is mainly the summer months) is 3,818, with only 114 deaths. This seems almost incredible.

In view of these figures, and with our attention so much occupied with plague, yellow fever, and cholera, we are likely to lose sight of the fact that smallpox was formerly one of the great scourges of the human race.

Surely it is not too much to claim that most of the credit for this change is to be found in vaccination, by which simple preventive this one-time dread disease seems to have lost many of its terrors.

The Relationship of the Neuron to Disease of the Nervous System.—Dr. Lewellys F. Barker, who is well known by his recent treatise as an able and consistent expounder of the neuron-doctrine, read an interesting paper on this subject at the last meeting of the American Neurological Association (*Journal of Nervous and Mental Diseases*, September, 1900). The essential feature in this doctrine is the belief in the existence in the nervous system of definite nerve-units. This opinion is based especially on the work of Cajal, whose views have been accepted in large part by such eminent authorities as Kölliker, von Lenhossék and van Gehuchten, and confirmed by a host of competent observers. In Barker's judgment this doctrine is nothing more nor less than the application in full of the cell-doctrine to the nervous system. These nerve-units are complete nerve-cells, and the term "neuron" is intended to include not only the cell-body but also its processes. It abolishes, in brief, the old conception of a tissue or true network of nerve-fibers as distinct from the cell-body. There is no such network of fibers, but only an interlacing, as it were, of the processes (axis-cylinders, etc.) of the independent neurons. In other words, the "neuron" includes both the cell-body and all its processes. This conception is vital to an understanding of the doctrine.

This conception, however, in what may be called its primitive simplicity, has to be modified somewhat in view of later investigations. It is now considered probable, or even claimed by some to be demonstrable, that these cell-units or neurons do not remain absolutely distinct or dissociated, but that they are united to some extent by protoplasmic processes and delicate nerve-fibrils. The name of Apáthy is especially associated with this modification of the neuron doctrine. Barker evidently accepts the conclusions of Apáthy, for he says that they represent the most important discovery in neurological anatomy in recent years. He is quick, however, to claim that Apáthy's views do not in any way conflict with the neuron doctrine. This conclusion of Barker, however, does not quite accord with Apáthy's own words, which he quotes; for the latter distinctly repudiates the idea that the neurons are isolated units either in an anatomical or in a functional sense. He evidently bases this opinion on the anastomoses of his neuro-fibrils, which anastomoses, if words mean anything, constitute a reticulum or "continuum," which is practically identical in concept with the nerve network of the older anatomists. For Apáthy the body of a ganglion-cell is merely the center for "trophic and other regulatory influence of each definite domain." While this language does not convey a very precise

meaning it certainly seems to indicate for the nervous system a structure very similar to what was formerly believed to characterize it.

Dr. Barker's paper is especially valuable as embodying an attempt to harmonize these two apparently opposing conceptions of the nervous system, and as such it should receive from all neurologists a closer study than we can give it here. His views accord with those of Edinger, who believes that all the pathological relations of the ganglion-cell and its processes can only be explained by the neuron theory, and that this conception is not disturbed by the newly-won pictures of anastomosing fibrils. The truth seems to be that neuro-histologists are today arguing this question somewhat along the lines of their individual preferences, which are largely in favor of the neuron doctrine, and that Apáthy's views of anastomosing neurofibrils, while in a measure accepted reluctantly, are not yet fully harmonized with this doctrine.

Precautions of the United States Government Against the Plague.—Dr. H. D. Geddings, Acting Director of the Hygienic Laboratory of the United States Marine-Hospital Service, has recently published in the *Health Reports* an interesting paper in which he describes the methods adopted by the Government to provide against an outbreak of the plague. Dr. Geddings first reviews the subject of the antipest-serum and Haffkine's prophylactic, and goes over the ground recently covered in Dr. Rosenau's translation of Dr. Calmette's paper. As an editorial comment on that paper has just appeared in the *JOURNAL*, it is not necessary to review this portion of Dr. Geddings' article. We wish, however, to call attention to the fact, as described by Dr. Geddings, that the United States Government is taking every precaution to be well-armed. In the Hygienic Laboratory the preparation of a prophylactic fluid has been undertaken on a large scale. The modification of Haffkine's method, as recommended by the Pasteur Institute of Paris, was first tried. This consisted in a cultivation of the *Bacillus pestis* in agar-agar spread over large surfaces, and rendered as virulent as possible by special methods. The bacilli were then killed in the usual way by exposure to a temperature of 70° C. for several hours. It was found, however, that the chances for extrinsic contamination were too great by this method, and the technic has consequently been slightly modified. In order to avoid the growth of molds or ordinary air-organisms, especially the hay-bacillus, the plan has been adopted of growing the cultures in ordinary bouillon in flasks exposing a large surface to the air. By this method abundant crops of the organism are secured, and the risks of contamination are avoided. Each lot is tested to make sure that the plague-bacilli are killed by the heat, and some lots have also been tested on rabbits or other animals, both for innocuous-

ness and for efficiency. Large quantities of the fluid have been made and distributed to quarantine officers, national, state, and local, in the United States. Some of the fluid was used in the outbreak of plague in Honolulu, and more recently in the inoculation of about 600 persons in San Francisco. Altogether about 400,000 doses of 1 cc. each have been manufactured, and either distributed or kept on hand. This dose was determined upon as the standard, in preference to the larger doses of Haffkine, in view of the proved potency of the cultures. It is gratifying thus to note that the United States Government is thoroughly preparing itself for any emergency.

Nasopharyngeal Adenoids and Ear Disease.—Haight (*Transactions International Otolological Congress*, August, 1899) says that adenoid growths are found in varying degrees of frequency in at least 3 parts of the world, viz., Europe, America, and Asia. He says nasopharyngeal vegetations are a hypertrophy of the lymphoid tissue forming a mass situated in the vault of the pharynx bounded on either side by the orifice of the eustachian tube. The author believes that the main factor in producing both suppurative and non-suppurative inflammatory conditions of the tympanic mucous membrane is the presence of these adenoid growths, or the condition of the postnares subsequent to their removal or absorption. They produce inflammation of the middle ear (1) by irritation on account of obstruction to the circulation of the blood by pressure; (2) by blocking the orifices of the eustachian tube; (3) by injurious effect upon the general economy of the child and particularly upon the nerves of special sense; (4) by having as a sequel a postnasal catarrh. Mouth-breathing is a prominent symptom of adenoids. Alderton is quoted as saying that in his opinion 35 to 88% of cases of middle-ear disease is due to adenoids. The author is of opinion that this affection causes many cases of deaf-mutism, and that it is a strong etiologic factor in causing imperfect mental development among those classed as feeble-minded children, and who by a trifling operation could often be restored to the normal condition. As a means of treatment he prefers the curet to all others, and that children above the age of 12 should have applied a local anesthetic only. In case a general anesthetic is given he prefers ethyl bromid. [A.B.C.]

Indications for Opening the Mastoid Abscess in Purulent Otitis Media.—Macewen (*Transactions International Otolological Congress*, August, 1899) believes the mastoid should be opened: 1. In all cases of long-standing purulent otitis media, even though the patient is but little annoyed, because the danger of further complications is great. 2. In such cases as have lesions in the middle ear, which, though they could be removed by way of the external ear, can be removed with greater safety by way of the mastoid. Removal by way of the external ear is very apt to rekindle a smouldering point of infection. This applies particularly to so-called "aural polypi." 3. For the removal of necrotic bone, this being the only way the germs of infection can be eradicated. 4. Recurrent cases of purulent otitis media should be treated by this operation, and thus the danger of future complications be avoided. 5. Cholesteatoma and tuberculous processes with secondary pyogenic involvement should be treated by opening the mastoid, for only in this way can the diseased tissue be removed. 6. The author likens purulent otitis media to appendicitis, and says an early and complete operation is the best procedure in either case. It is the only procedure in which there is safety. 7. It may be necessary to open the mastoid to identify the suppurative organisms, in order to determine the character of the disease. 8. Opening of the mastoid should always be done as a preliminary step to any operation upon an intracranial lesion having its origin in purulent otitis media, abscess of the brain, of cerebellum, and sigmoid sinus thrombosis. 9. It is the safest and surest way of eradicating persistent purulent otitis media. [A.B.C.]

Correspondence.

CONGENITAL DEFORMITY IN TWIN BIRTH.

By ROBERT T. GLENDENNING,
of Manchester-by-the-Sea, Mass.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

I WAS called, August 2, 1900, to attend in confinement a woman, 37 years of age, who had had 5 children, all girls. She had had an abortion at about 3 months just before becoming pregnant this last time. I had attended her with her last 2 children, the labor in both cases being quick and easy. On my arrival the pains were frequent and severe. On going to make an examination I found a portion of the amniotic sac between her thighs, containing quite a quantity of fluid. I punctured the sac, and making a vaginal examination, found quite a long piece of the cord coiled up in the vagina. I also found the mouth of the uterus well dilated and the buttocks presenting. The presenting part was so low down that all attempts at replacing the cord were unsuccessful. There was no pressure on the cord at this time, as the pulsations were 120 to the minute, full and strong. The pains came so fast that I did not make an examination of the abdomen. In a few minutes the buttocks were presenting at the perineum. Just before the child was born there was evidently considerable pressure on the cord, as the pulsations were reduced to 10 a minute. On delivery the child was somewhat asphyxiated, but soon began to breathe regularly. The child was a female, perfectly formed, but small, only weighing $4\frac{1}{2}$ pounds.

After tying the cord the woman complained of having as severe pains as ever. I palpated the abdomen and found that there was a child in the uterus. On examination I found the feet presenting. After a vigorous pain the second child and placenta were delivered at the same time. The child was a female about the same size as the first child. It only lived about 15 minutes. The cause of death was a somewhat unusual congenital deformity. There was almost complete absence of the abdominal wall. The liver, stomach, and intestines were external to the body. The spleen was attached to the omentum at the base of the stomach. The amniotic sac was attached all around the abdominal opening. There was no true cord, but the bloodvessels from the placenta ran along in the amniotic sac to the upper border of the abdominal opening. The diaphragm was intact.

There was also a deformity of the left arm. The humerus was shorter than on the right. The forearm was at right angles to the arm and could not be extended on account of what appeared to be a contraction of the skin of the anterior surface of the elbow-joint.

RUBBER TAPE IN MINOR SURGICAL OPERATIONS.

By E. DREIFUS, M.D.,
of New Orleans, La.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

I HAVE been recently making use of a new appliance in minor surgical work, and as I have not read of its use anywhere, thought it worth while reporting. It is the black rubber tape used by electricians for insulating joints or breaks whenever necessary in the course of their work. As nearly all of the simpler methods are discovered by accident, so this one was by me.

The first time I had occasion to use the tape was in the case of a young man who badly mashed an index finger while cleaning his bicycle. The finger was caught in the cogs of his wheel and terribly lacerated, the upper part of the phalanx looking like a mass of jelly. He came to my house with his hand wrapped up in a filthy blood-soaked handkerchief and complained bitterly of pain. I was just then occupied making some repairs to my electrical fan. I took off his dressing and at first sight made up my mind that the joint would have to be amputated. However, upon second consideration, I argued that I might try to save the joint and if my efforts proved unsuccessful I would always have time to cut. So I placed the finger in hot water and, as best I could, cleansed it of the oil and other foreign substances, and bathed it freely with pure hydrogen dioxid. Then the thought occurred to me that if I could keep the crushed parts in apposition, nature might be generous enough to repair the injury; and the tape being on my desk, it struck me to use it. The tape, I think, has some material in its composition that seems to be aseptic. I applied the tape, making a complete hood over the finger; a snug-fitting bandage was then applied and the young man dismissed, and told to call in a week's time, unless he saw the bandage soiled, when he was to call. However, he did not call until the week expired. He said he had no pain at all after I dressed the finger, and, aside from the inconvenience of having his finger bandaged, he did not know he had a wound. I removed the dressing and to my astonishment the finger had completely healed. There had been no suppuration. This certainly was a gratifying result.

The next time I had occasion to use the tape was in the case of a little boy who fell against a curbstone while running, and cut a gash about $1\frac{1}{2}$ inches long just along the superciliary ridge. He became so alarmed when he saw me thread a needle, preparatory to sewing the wound, that his mother begged me to try some other method. As the child was so frightened, and his mother so nervous, I concluded to try the black tape once more. I did so, bringing it completely around the head, making 3 rounds, and applied a roller bandage, instructing the mother to return in 4 days, with the child, which she did, and again I had the happy satisfaction of seeing the wound healed by first intention.

Since then I have used the tape in several cases in place of suturing, and I think it is an excellent substitute, especially with children and other highly nervous people. I do not know that I have added much to surgery by this little discovery, yet I believe we should all add our mite, be it great or small, towards alleviating pain and suffering.

POST-GRADUATE MEDICAL WORK IN BERLIN.

By J. R. CARE, M.D.,
of Norristown, Pa.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

MY first advice to those not familiar with the language would be to gain a thorough knowledge of the German tongue before going abroad. First, because the best post-graduate work is to be found in the German cities. Second, the ability to comprehend and speak the language is absolutely essential to grasp the advantages offered. So many, in considering work abroad, fail to realize this necessity, and spend months at a disadvantage in acquiring the tongue before any real medical work can begin.

All lectures and demonstrations are given in German, all textbooks and papers are in the German, and all intercourse with the people must be in the same language.

Since there are no medical bureaus in the German cities similar to the one found in Paris, I would advise anyone going there to secure a medical directory, which can be found at any medical book store in any of the larger cities. In this will be given a map wherein the location of all hospitals is specifically marked; also a catalog of the various courses presented.

The Charité Hospital in Berlin, which is the largest and oldest in the city, contains 1,300 beds; also numerous amphitheaters, which could scarcely be called modern, in which many of the lectures of the University course are given.

The most satisfactory work developed in this hospital is that of internal medicine. Another hospital of distinction is the Moabit, which occupies an entire block of the city, and was originally built as an emergency hospital during an epidemic of smallpox in the army.

Each ward is a separate and distinct building, one story high. Adjoining this hospital is the City Morgue, presided over by Professor Langerhans, who gives a most excellent course on pathology, histology, and postmortem technic.

At Friedrichsheim, a suburban section of Berlin, is situated a magnificent modern hospital, built on the pavilion system, and surrounded by beautiful grounds, which, in their decorations, display the superior landscape-art of the Germans, so strikingly noticeable throughout the German cities.

A very well-conducted hospital, where good general surgery may be seen, is St. Hedwig's, which is centrally located. Here one of the best general surgeons of the city, Dr. Rodder, operates 3 days weekly.

The Frauen Klinik, presided over by Professor Olshausen, who is one of the most expert operators in gynecology, presents splendid opportunities for that line of work. His assistants, Gebhard and Rhugi, give one of the best courses in gynecologic pathology to be found on the Continent.

Among the private hospitals I think Martin's is the best for Americans interested in gynecology. This is conducted by Professor Ortman, who gives a very satisfactory course, demonstrated with abundance of material.

Professor Landau's Hospital, which is also a most excellent institution, is remarkable for vaginal work, as the Professor is the leading exponent of that method in Berlin. It was my fortune to have seen him perform numerous hysterectomies without the use of a single ligature. Dr. Thurman, an assistant to Dr. Landau, gives an excellent course on cystoscopy.

Berlin is a beautiful city, and quite the ideal place in which to spend a summer. One can live there comfortably on from 200 to 400 marks per month. Instruction costs from 40 to 75 marks per course. The great objection found is the wide distribution of the hospitals throughout the city. Hence one can accomplish less here in a limited time than in other cities on the continent. The Germans excel in diagnosis and pathology, but in surgical technic their work is inferior to that done in America. During operations their patients are less carefully guarded, and their open amphitheaters, with a few exceptions, are inferior to our operating-rooms.

FACIAL PARALYSIS FOLLOWING LA GRIPPE.

By JOHN C. BUCHER, M.D.,

of Lebanon, Pa.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

I HAVE had two cases of la grippe, with facial paralysis complicating, which struck me as being quite out of the ordinary. I consulted several authorities on the subject, and they make no mention of this complication.

Last February I was consulted by a man of 50 years, who came to my office with a well-developed attack of la grippe. He was suffering with a severe frontal headache, pains in his arms and legs, very chilly, with high fever, his temperature being over 103°; nasal passages slightly affected, but no

cough; his eyes reddened. I advised him to take his bed at once, that I would see him the next day, and gave him 4 grains acetanilid with $\frac{1}{30}$ grain strychnin every 2 hours. The next day, calling at his home, I found him greatly relieved, but he would not stay in bed; said he felt so much better, I need not come again. Two days afterwards, he left the house, and attended to his work—that of a teamster. For 2 or 3 days, he felt good, though weak, when he noticed that he could not expectorate as before, the saliva dropping on his chin and bosom; he also had a queer feeling in his forehead, but no pain. Coming to my office to report these facts, I at once noticed the peculiar condition of his face. The left side of his forehead was tightly drawn, the eyelids drooping, the eye itself being bloodshot; the corner of his mouth also drooping, and no wrinkles on that side. The right side of the face was perfectly normal. The wrinkles on the right side of his face were those of a man of his age, but they stopped in the center of his face, and the left side was perfectly smooth. The tongue was only slightly affected. The sensory nerves were not affected. The rest of the body was perfectly normal, appetite poor, bowels regular, bladder all right, no paralysis in his arms or legs. I gave him iron and strychnin with quinin, and he slowly improved, though he would not quit driving the team. The paralysis gradually disappeared, though it was the middle of April before it was no longer noticed.

The other case was not as pronounced, as it affected the right eye only. He was a stonemason, who had all the symptoms of la grippe; but his wife took charge of him, put him to bed, and gave him a good sweating, which relieved him of his chill and pains. Not content with leaving well enough alone, he started to work, and had the satisfaction of having the right eye turned inward to a remarkable degree. He then came to me for treatment. His general condition was good, said he felt strong. I could find no other cause for his condition except as a sequel of la grippe. With the tonic mixture of iron, quinin, and strychnin, his eye gradually assumed its normal condition.

Whether these conditions are common, I cannot say, as they are the only two cases which came under my observation. They both yielded readily to treatment; neither of them had any recurrence of the paralysis.

PSEUDO-MENSTRUATION.

By PAUL F. MUNDÉ, M.D.,
of New York.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

At the time the second case of so-called "precocious menstruation" was reported in your issue of July 7, I had it in mind to write you correcting the misnomer, since it was perfectly evident that a discharge of blood for a few days from the genitals of a newborn female child did not constitute *menstruation*, "precocious" or otherwise. I marvel that either of the two gentlemen who reported the two cases could have so considered or termed it.

Having done my share in my professional life of medical writing, I then refrained from sending you a note on the subject. But I am pleased to see that some one else has recognized the error, and has taken the trouble to correct it. Your correspondent of August 16, however, while objecting to the term of "precocious menstruation" given to this slight postnatal genital hemorrhage, errs, I think, in ascribing the cause of the bleeding in such cases, as in the two reported by himself, to some constitutional dyscrasia inherited from the mother, tuberculosis, or, preferably, purpura hæmorrhagica.

There is apparently no evidence whatever upon which to base such a supposition, for there is no mention made that the children were in any respect unhealthy; and to produce a genital or any hemorrhage which lasted a week, a tuberculous or purpuric dyscrasia would need to be so well marked

as to render the child anemic, emaciated, or, in the case of purpura, covered more or less with hemorrhagic petechiae. A cut surface, like the umbilical cord, might bleed under such a condition of the blood, but there is no cut or raw surface in the normal genitalia of a newborn female child.

Such temporary, slight, postnatal genital bleeding in girls is not rare. I saw it a number of times when interne at a maternity hospital in my youth. It was then attributed to compression of the pelvis during birth, as in breech presentations, or in large children where the breech (after coming) had to be extracted by traction. A rupture of a superficial bloodvessel in the vagina or cervical cavity might easily account for the trifling bloody oozing, especially if there is a catarrhal congestion of the cervical mucosa as is found in some newborn uteri. But the question is whether the supposed "bloody" discharge was really blood, and not urine discolored by a dark-red ("brick-dust") deposit, such as is quite common for a few days in newborn children of both sexes. This red urine would color the diapers precisely like blood, and could, on superficial examination, be readily mistaken for it. The "brick-dust" deposit takes place in the kidneys, from what cause and exactly how I do not now recall, being where I have no literature to consult on the subject—and is gradually washed down by the urine until in a few days it has all been eliminated. Only a microscopical examination could decide whether the red stain on the diaper was blood or urinary salts. If the latter, it had no special significance, and whether blood or salts the discharge is no more "precocious menstruation" than is the acute swelling of the breasts in newborn infants of either sex a puerperal mastitis.

HAY-FEVER AND CODLIVER OIL.

BY S. SOLIS COHEN, M.D.,
of Philadelphia.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

THE appended note from a careful observer who has had hay-fever 30 years or more may be of interest. In my own practice I continue to use the remedy I had the honor first to bring to professional attention in your columns two years ago—namely suprarenal extract, locally and internally. Conjoined in some cases with the use of oily sprays and the occasional administration of atropin or hyoscin hydrobromate in very minute doses, it gives almost complete relief temporarily.

My Dear Doctor:—I am able now to say that codliver oil used as a spray for the nostrils is a great palliative of hay-fever in my case. On days when there is a sea-breeze here the relief is almost total; on bad land-breeze days the relief is as great as heretofore obtained with other remedies on the best sea-breeze days, roughly speaking, about one half. I recommend the subject to the attention of the profession. The atomizer used is a hard-rubber oil atomizer. The oil is "deodorized." I use it once every 3 hours or oftener if required.

Internal Hemorrhoids.—Mathews (*Medical Age*, September 10, 1900) prefers the ligature to all other methods of operation for internal piles, because of its ease and simplicity, requiring fewer assistants than the clamp and cautery method. No matter how large the mass nor how large the separate hemorrhoidal tumors, he removes all at one sitting. He has seldom seen contraction follow. Should it do so, he advises simply opening the anus as if for examination, introducing a dilator, and dilating the stricture. Patients are generally completely recovered in from 10 days to 2 weeks. [G.C.C.H.]

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Dr. Hu King Eng, physician to the Empress of China, graduated from the Woman's Medical College of Philadelphia.

The Schuylkill County Medical Society met at Pottsville, September 11. Dr. W. C. J. Smith, of St. Clair, presided at the convention.

Adulterated Milk.—William J. Reilly was tried in a Philadelphia Court recently for selling adulterated milk. The chemist of the Board of Health found that one quart of water had been added to 6 quarts of milk.

Oleo Dealers Fined and Sentenced.—Last week 5 Philadelphia dealers were fined \$100 each for the illegal sale of oleomargarine, and 4 of these also received from 10 to 30 days in the county prison. Another dealer pleaded guilty to selling adulterated mincemeat and was fined \$50.

The Sanitarium Association of Philadelphia has just completed its twenty-fourth year. During the last year 6,189 more admissions were recorded than during any previous year. During 73 working days there were 180,670 admissions. The baths were enjoyed by 23,265 boys, 25,591 girls, and 4,516 infants and 82 mothers were admitted to the hospital with sick children.

Faith Curists Indicted.—An indictment has been preferred against Harry E. Sollenberger and Ezra Sheets, of Philadelphia, charging them with the murder of a 7-months-old infant, left in their charge at the "Beulah Orphanage" or "Fire Baptized Holiness Mission," conducted by them. The little one became ill and they failed to procure medical attention, with the result that the infant died.

Contagious Disease Ward Needed.—The medical profession of Philadelphia is much concerned at present in the maintenance of a contagious disease ward at some of the city hospitals, where people of the working class able to pay a little can send their children. The matter will in all probability be urged before the next meeting of the Board of Charities and an appropriation for such work asked.

Bequests to Charity.—By the will of the late Samuel W. Brown, of Manayunk, Pa., the Home for Aged Couples of the Presbyterian Church received \$5,000. Legacies of \$2,000 are left to each of the following institutions: Northern Home for Friendless Children, Southern Home for Destitute Children, Old Men's Home, Society to Protect Children from Cruelty, and Children's Aid Society. Part of the residuary estate is left to the Presbyterian Home for Widows and Single Women. Howard Roberts, of Bryn Mawr, left a legacy of \$10,000 to the Pennsylvania Hospital.

Board of Charities.—At a recent meeting of the Philadelphia Board of Charities and Correction a communication from the Mayor was received which contained several recommendations. Among these was a centralization of authority, or condensation of method and work, making the superintendent take the place of the Board. This feature was not favorably received. In the interest of economy the Mayor recommended the consolidation of the office at 42 North Seventh st. with the Philadelphia Hospital. Also that there be a reduction in the number of salaried men. In the matter of selecting the medical staff, resident and visiting, he expressed the wish that the 3 great medical colleges be equally represented by the best medical and surgical skill. He urged the construction of a new insane department in an outlying section of the city, and said he had in view the taking of a large tract of land, which could be used jointly with the development of the new water system. A motion was passed that the Board have a full consultation with the Mayor on the subjects covered by the communication. The following vacancies were reported: Treasurer of the Board, chief druggist, electrician, pathologist, laryngologist and register of the Philadelphia Hospital, physician of the insane department, secretary of the Bureau of Charities, and captain of the guard at House of Correction.

The Company Doctor.—One of the demands of the coal miners in the Pennsylvania anthracite regions, says a local paper, is that each man shall be permitted to engage for himself and his family a doctor of his choice. It is stated that at present the men are compelled to accept the services of the "company doctor." John B. Garrett, vice-president of the Lehigh Valley Coal Company, recently made this statement: "This company employs no doctors and makes no charges against its employes for medical service to them or their families. Inquiry has satisfied me that this is also the case with the companies generally, and that the company doctor is charged for only by individual operators, and by very few of these."

Hospital for Tuberculous Patients.—Some years ago the general hospitals of Philadelphia closed their doors to tuberculous patients who could not pay enough to warrant the maintenance of a separate ward. This made the lot of the poor victims of the disease who were in need of care very hard, and induced Dr. Lawrence F. Flick and others to organize the Free Hospital for Poor Consumptives in this city, in 1895. There is no hospital building in the control of the society, but the patients who apply to it are sent to the general or special hospitals under pay. In the first year 40 patients were provided for, at a cost of \$1,912; last year 124 were kept in the hospitals, at a cost of \$6,118. During the first 6 months of this year 116 patients have been cared for, at a cost of \$4,585. There is every reason to expect a steady increase in the number of patients as the resources of the society grow, and it is hoped in time to build a new institution especially for poor tuberculous individuals.

Vital Statistics of Philadelphia for the week ended September 15, 1900:

Total mortality		420	
Disease.	Cases.	Deaths.	
Inflammation of appendix 5, bladder 3, brain 12, bronchi 1, kidneys 19, larynx 1, liver 1, lungs 19, heart 2, peritoneum 9, stomach and bowels 25, spine 1		98	
Tuberculosis of the lungs		51	
Marasmus 24, inanition 20, debility 4		48	
Heart-disease of 28, fatty degeneration of 2		30	
Cholera infantum		24	
Convulsions 18, puerperal 1		19	
Uremia 11, Bright's disease 7, diabetes 1		19	
Apoplexy 8, paralysis 10		18	
Carcinoma of bladder 1, breast 2, face 1, liver 3, rectum 1, stomach 6, uterus 2, tumor 2		18	
Diphtheria	81	15	
Typhoid fever	63	10	
Casualties		10	
Burns and scalds		5	
Diarrhea		5	
Brain—disease of 1, softening of 3, congestion of 1		5	
Old age		4	
Suicide—hanging 1, gas 1, shooting 1		3	
Teething		3	
Septicemia		3	
Scarlet fever	30	1	
Psoas abscess 1, alcoholism 1, asthma 2, anemia 1, atheroma 1, childbirth 1, cirrhosis of liver 2, membranous croup 1, drowned 1, epilepsy 1, puerperal fever 1, gallstones 1, homicide 1, measles 2, locomotor ataxia 1, obstruction of the bowels 2, opium poisoning 1, arterial sclerosis 2, surgical shock 1, suffocation 1, sunstroke 1, syphilis 2, tetanus 1, ulceration of stomach 1, whooping-cough 1.			

NEW YORK.

Fire in Hospital Morgue.—Fire in the morgue of Roosevelt Hospital, recently, caused by the explosion of a plumber's benzine lamp, did \$500 damage before it was extinguished. There were no bodies in the building at the time.

Inspection of Schools.—The health and education authorities of Paterson, N. J., are considering a proposition to have a physician make a daily inspection of the children in the public schools, so that if any of them have ailments of any kind they can be promptly treated. This experiment has been tried in the Asbury Park schools and proved a great success.

Typhoid in Women's Hospital in Syracuse.—An epidemic of typhoid fever has broken out in the State Custodial Asylum for Feeble-minded Women at Syracuse and 12 persons are down with the fever, including the resident physician.

The public baths in New York have recently been inspected by the Board of Health. The Market Street bath has been removed and all the others have been declared pure, except the one at the foot of Duane Street which is pending a second investigation.

Baths Responsible for Conjunctivitis.—Dr. Carey, of the New York Eye and Ear Infirmary, has decided that the public baths along the rivers' front are responsible for an epidemic of conjunctivitis similar to the one in Brooklyn 2 weeks ago from the same cause. In one day 196 cases of the disorder were treated at the infirmary.

The Quarantine Inspection of Immigrants.—According to the annual reports of the quarantine and health officer of the port of New York for the year 1899, over 300,000 steerage passengers, arriving by the various steamship lines, were inspected during the year at the quarantine station. Some 4,658 passengers from "foreign" vessels were also inspected.—[*New York Medical Journal*.]

Four New Electric Ambulances.—According to the *Medical News*, automobile or electric ambulances are being built for private hospitals in New York. The Roosevelt, Presbyterian, and New York Hospitals are making the experiment. St. Vincent's Hospital has had an electric machine for several months. The vehicles for Roosevelt are 7 feet 6 inches long, which is about 18 inches longer than the ordinary horse-drawn ambulance, and weigh 4,800 pounds each.

Free Cremation.—New York physicians have recently been receiving from a certain cremation company a circular which reads as follows: This certifies that, in recognition of the support which our cause has received from physicians generally, — — —, M.D., or any member of his immediate family, is hereby entitled to incineration without charge at our — crematory, upon proper indorsement and surrender of this certificate, within 10 years from date. (Kindly return this certificate if you do not wish to use it.)

The water-famine in Brooklyn has become a serious question. There seems to be no immediate remedy except rainfall. A big fire or an accident to the water-plant would at present have the most serious results. Chief Engineer Birdsall says relief in the remote future lies in the conduit from Spring Creek to Milburn which will cost \$1,000,000, the Milburn reservoir to cost \$500,000, and a pumping engine at Milburn to cost \$75,000. All three projects are in the Municipal Assembly.

New Hospital for Tuberculosis.—At its annual meeting, held at Albany, N. Y., recently, the Board of State Pensions passed a resolution adopting the report of Commissioner Mantanye, which recommends Dannemora (the location of one of the State prisons) as the site for the erection of the State Hospital for Tuberculous Individuals, and urging the Hospital Commission to act in favor of the recommendation. Dannemora is situated in the northern part of Clinton County, in the Adirondack region.—[*Boston Medical and Surgical Journal*.]

Free-Milk Giving Discontinued.—The free distribution of pasteurized milk which has been carried on since July 17 by the Brooklyn Bureau of Charities has been discontinued. There has been an average daily distribution of between 1,600 and 1,700 six-ounce bottles of pasteurized milk for children. The milk has been distributed from 7 different stations in the city upon the receipt of an order from a physician or from the district nurses connected with the Bureau of Charities. The funds were obtained in response to an appeal issued by the Bureau of Charities early in the summer. The entire cost will be somewhat less than \$2,500. Notwithstanding the unusually hot weather, the statistics in the office of the Board of Health show that the rate of infant mortality has been lower than for the same period during the 5 years preceding, and some of the result is attributed to the distribution of milk.

Thousands for Charity.—By the will of the late George D. Sweetser, of New York, the following bequests of \$5,000 each have been made to the following institutions: New York Skin and Cancer Hospital; New York Society for the Suppression of Vice; Society for the Relief of Ruptured and Crippled; New York Infant Asylum; House of Rest for Consumptives; Woman's Hospital; New York Christian Home for Intemperate Men; Sheltering Arms; Colored Home; Home for Incurables; Children's Aid Society; Howard Mission for Little Wanderers; and the Five Points House of Industry.

Stable Refuse and Health.—Contractors for the removal of stable refuse from Manhattan and the Bronx, N. Y., have been enjoined by Justice Bischoff of the Supreme Court from dumping manure opposite a hotel in Glenwood, and thereby creating a nuisance detrimental to health. Dr. E. Harrison Griffin testified that he had carefully observed the effect of gases arising from fermenting stable refuse upon the respiratory organs, and deemed them conducive to health, and he had advised patients suffering from catarrh to spend as much of their time as possible about horses, where they could inhale such gases and odors. The Justice in his decision says: "With the optimism to concede the benign effects of the effluvia, which but for the injunction must envelop the plaintiff's hotel, a sojourn in the place could be the result of choice only by persons deliberately seeking a cure, but such heroism cannot be looked for in the public at large, among whom the plaintiffs may rightfully seek their patrons under normal conditions."

Plague Germs to be Cultured.—The Board of Health of New York has prepared plans for a bacteriologic laboratory in which bubonic plague germs are to be cultured. It will be constructed of steel, with solid asphalt walls. There will be neither chimney nor windows. The lighting will be by electricity. The cost of the structure will be \$25,000. Two cases of plague have been treated at quarantine during the last year, and the city is totally unprepared to meet the emergency that would be occasioned by its appearance. Every precaution will be taken to safeguard the workers in the laboratory. Several deaths have occurred from plague among the laboratory workers in Lisbon and Vienna during the last 2 years. Having these fatalities in mind the Board of Health did not regard any bacteriologic work in relation to the plague as safe in the general laboratories throughout the city. The diagnosis and the treatment, preventive and curative, of plague rest almost entirely upon the result of bacteriologic investigation. It therefore becomes necessary that the facilities for carrying on such work shall be unexceptionable; and at present the department does not command such facilities.

The Buffalo Academy of Medicine—Section of Medicine.—At the regular meeting held September 11, Dr. A. L. BENEDICT read a paper entitled **Quantitative analysis of gastric proteid digestion**, in which he remarked that notwithstanding the extensive studies for the past ten years, of gastric digestion, none of the methods of chemic examination in common use deals directly with the prime function of that organ, *i. e.*, converting albumins into peptones. He touched upon the physiology of gastric digestion and divided that of albumin clinically into the production of: (1) Soluble acid albumin or syntonin, (2) albumose or propeptone, (3) peptones. His method of analysis depends upon the separation of the proteids into the three classes mentioned, by the estimation of the bulk of moist precipitates by the centrifuge. He states that the bulk varies enormously according to reagents used. His reagents are: for albumin, heat; for albumose, ammonium sulfate to saturation; for peptones, phosphomolybic acid. His technic is to prepare the gastric contents for filtration by rapid cooling and centrifugation. He presented several tables the result of sixteen examinations of gastric contents after Ewald's test-breakfast, from healthy students, and concluded that (1) the proportions of the three stages of proteids do not vary materially during the third half hour of digestion, (2) syntonin is represented by a mere trace, (3) albumose by a mere trace, (4) peptone varying but in large quantity (he gives exact quantitative figures). He also presented tables from the examination of the gastric contents of a large number of pathological cases, but did not draw any conclusions from

them as groups of cases. He claims that in the use of this method of analysis the differences in the stages of digestion of the different animal and plant albumins assume relatively less importance as the various intermediate products are precipitated by ammonium sulfate, that the method does not require a long time, much apparatus nor many chemicals and that the results have a more even clinical value than the more refined but cumbrous methods. He states that as digestion once started in albumins is uninfluenced by the presence of undissolved masses of food and as ferments are almost inevitably present in abundance if free hydrochloric acid in reasonable amount be present after the preliminary one to one and a half hours, the liquid portions of the chyme are subjected to nearly the same conditions, whatever the bulk of the meal, its exact nature or the time after ingestion. It must be remembered, however, that the amount of an end-product of digestion depends upon two opposite factors, digestive activity and absorptive activity, hence it is difficult and often impossible to determine whether a large amount of end-product is due to good digestion or poor absorption, as no reliable test for absorption is known at present. He thinks that the titrating test of absorption is very unreliable because of the unknown values of (1) loss through the pylorus, (2) removal by absorption, and (3) the addition by secretion.

NEW ENGLAND.

A Charitable Bequest.—By the will of the late Charles H. Smith, of Providence, R. I., the Home for the Aged of Pawtucket received \$1,000.

Anthrax in New Haven.—Morris Sachs, of New Haven, Conn., died recently of anthrax. He had been buying hides in Long Island, where he contracted the disease.

Boston Public Baths.—All the public bathing places of Boston, Mass., except the Dover Street bath, are closed. Total number of bathers for June, July, and August, is 1,950,608. In 1899 the total was about 1,500,000.

Diphtheria in Brookline.—An epidemic of diphtheria prevails in Brookline, Mass., where 40 cases have been reported in the last 6 weeks. Some of the schools have been closed. Circulars recommending caution have been distributed by the Board of Health.

CHICAGO AND WESTERN STATES.

The National Wholesale Druggists' Association held its twenty-sixth annual meeting in Chicago last week.

The hospital-ship "Solace" has arrived at San Francisco from Yokohama, bringing 17 sick and wounded.

Ptomain Poisoning.—The family of William Swain, of Grand Crossing, Ill., is dangerously ill, due to ptomain poisoning caused by eating sardines.

"The Bacillus" is the name of a new monthly periodical published under the auspices of the Illinois Medical College. Dr. Fred. C. Zapffe is editor.

Physician Suffers from Hiccough.—Dr. H. A. Pickrell, of Beverly, Kan., has been suffering for some time with hiccough. He has tried more than 30 remedies without avail.

Bids for Construction of Hospital.—Bids were opened recently for the construction and equipment of a 24-bed hospital at Fort Stevens, Ore. The lowest bid of \$25,194 will be accepted.

Home for Poor Girls.—Former Governor John S. Pillsbury and wife will build a home for poor girls at Minneapolis, Minn., and present the edifice, when completed, to the Woman's Christian Association.

The Forum of Tuberculosis, Climatology, and Hydrology will meet in Chicago, November, 1900, for the study and consideration of all matters relative to tuberculosis, and of the therapeutic effects of the various springs and mineral waters of the continent.

To Care for Pupils' Health.—It is reported that medical inspection of the Chicago schools is to be more thorough this year than ever before. Recently 50 medical inspectors were given instruction for their guidance.

Typhoid Fever and Milk.—An epidemic of typhoid fever has existed in the northern part of Milwaukee. Practically all the cases, 40 in number, occurred in the route of one milk dealer. A case of typhoid was found in his family.

Physician Becomes Insane.—Dr. W. C. Putnam, of Oconto Falls, Wis., has been committed to the insane hospital at Oshkosh. His derangement is said to have been caused by powerful drugs taken in an overdose when he was suffering from sickness.

Wants a Commission.—Rev. William H. Barnes has filed a suit against the St. Louis Baptist Hospital Association asking for commissions on donations that he claims to have secured for the association, and for pay for other services which he says that he has rendered, amounting in the aggregate to \$3,659.53.

Woman Physician Without Certificate.—Physicians in Calumet, Mich., object to a woman practitioner of that town who came there four months ago from Helsingfors, Finland. She says her ignorance of English prevents her from taking an examination, but she says she is a graduate of Helsingfors University.

State Hospitals of California.—It is reported that a change is to be made in the management of the State hospitals at Sacramento, Cal., by which Dr. F. W. Hatch, now superintendent of State hospitals, will be put in charge of the Napa Hospital as medical superintendent, to succeed Dr. M. Gardner, who will establish a private sanatorium.

Anthrax and Tuberculosis Among Cattle.—Tuberculosis has made its appearance among the cattle at the Jackson county poor farm near Black River Falls, Wis., and the State veterinarian has been there to look into the situation. He went to Millston and Warrens, where it is said cattle are afflicted with anthrax, which it is claimed is caused by the cattle drinking stagnant or impure water.

Rabies Among Horses and Cattle.—Rabies still continues near Decatur, Ill., and a large percentage of the livestock on farms in Illini and Harristown townships seems to be affected. Dr. S. H. Swain insists that all the dogs in the two townships must be killed as the only means of safety for the people and livestock. So far hundreds of dollars' worth of cattle, horses and sheep have died. One case developed in the city recently, which would indicate that the disease is spreading.

SOUTHERN STATES.

Dr. H. A. West, of Galveston, whose death was recently announced by the Associated Press, is safe.

The Government Hospital Building at Savannah, Ga., which cost \$1,000,000, has just been sold for \$17,000.

Virginia Penitentiary.—It is understood that Dr. Charles V. Carrington, of Richmond, Va., will be appointed surgeon to the Virginia Penitentiary to succeed Dr. Benjamin Harrison, deceased.

Washington Asylum.—Dr. Percy Hickling has forwarded to the Commissioners of the District of Columbia the resignation of Dr. J. F. Wallace, the resident physician at the Washington Asylum, and recommends that Dr. O. Baker be appointed to fill the vacancy. It is understood that the recommendation will be approved.

Southern Medical College.—Dr. H. F. Harris, associate professor of pathology, Jefferson Medical College, Philadelphia, has been elected professor of pathology and bacteriology in the Southern Medical College, Atlanta, Ga. Dr. Harris assumes his new duties at the beginning of the present college year. His successor at the Jefferson Medical College has not been named.

Texas Quarantines San Francisco.—The State Health Officer of Texas still retains the quarantine against San Francisco, and intimates that it will now be more rigid than ever. El Paso merchants object to the measure.

Fined for not Reporting Smallpox.—Dr. A. L. Lopez, a negro physician of New Orleans, was recently, upon instigation of the New Orleans City Board of Health, fined \$25 for not reporting a case of smallpox under his care.

Quarantine Restrictions.—The *Adria*, a vessel loaded with fruit from Jamaica, arrived at New Orleans recently, but the Board of Health refused to allow the ship to come to the wharves, and it had to be unloaded on barges at the 9-mile point below the city.

Nurses for the Poor.—For the month of August the 3 nurses employed by the people of Washington, D. C., report 822 visits made on 165 patients, who would have been otherwise almost without care or attention. The work has been greatly helped by food and special diet provided by the Citizens' Relief Association and the Diet Kitchen.

Aid for Indigent Sick.—The Board of Charities of the District of Columbia recently made an allotment of \$7,920 for physicians to the poor, \$2,480 for medicine and nursing and \$500 for coffins to be used for the burial of the indigent dead. An allotment of \$400 was also made for the Woman's Dispensary. The present appropriation bill carries the sum of \$700,000 to be used in the board's schedule.

The Army Medical School, at Washington, D. C., is governed by special regulations, and will have the following organization: 1. The faculty, which will consist of four or more professors selected from the senior officers of the medical department stationed in or near the city of Washington and such associate professors as may be required. The senior officer will be president and the junior secretary of the faculty. 2. The student officers will be selected by the Surgeon-General from those medical officers who have been appointed since the last preceding term of the school and such others as may be authorized to attend.

To Care for Medical Students at Galveston.—The recent storm caused a loss of \$70,000 to the State University in Galveston. The medical branch of the institution was located there and the session was to have opened September 26. Steps will be taken to accommodate the students in some manner, and if it is found that they cannot be accommodated in Galveston, they will probably be given room in the main buildings of the university at Austin, temporarily. The Sealy Hospital survived the storm. The nurses' home was completely demolished, but there was no loss of life. There was no loss of life among the regular inmates of the hospital.

Dr. Hunter McQuire, who died at Richmond, Va., September 19, was one of the most eminent medical men of the South, and one of the best known in the United States. He had a stroke of paralysis six months ago. His career in the army of the Confederate States was distinguished for gallantry and humanity. He was chief-surgeon of the Stonewall Brigade, and a member of the staff of the Confederate general, by whom he was most highly regarded. He established the humane practice in both armies of releasing all medical officers who were captured. He was instructor of surgery at the Jefferson Medical College at the time of the John Brown raid, and, becoming offended at the comments regarding that affair, he organized a movement which resulted in all the Southern medical students in Philadelphia—at that time about 300—leaving the city and entering the Medical College of Virginia. The expenses of the transfer were met by the city of Richmond, though the money was advanced in the first place by Dr. McQuire himself. The students met at the college and marched in military formation to the depot, Dr. McQuire at their head. At the close of the war he was appointed to the chair of surgery in the Medical College of Virginia. He resigned in 1878, but in 1880 accepted the emeritus professorship of surgery. In 1877 he received the degree of LL.D. from the University of North Carolina, and in the following year a similar honor was conferred upon him by the Jefferson Medical College. In 1883 he established St. Luke's Hospital, and in 1894 he established the Virginia Hospital and the University College of Medicine.

MISCELLANY.

Our leper colony at Molokai contains 1,100 persons—625 males and 475 females. Of the entire number 984 are Hawaiians, 62 are half-breeds, 37 are Chinese, 5 American, 4 British, 4 German, and 6 Portuguese.—[*Medical Age.*]

Hospital Stewards.—The examination papers of candidates for promotion to the grade of hospital steward have been examined and the work will not be completed for 2 or 3 weeks. There are 15 places in this country and 20 in the Philippines.

To Prevent Plague in Hawaii.—Claims aggregating \$2,300,000 have arisen in connection with the efforts made, principally in Hawaii, to prevent bubonic plague from securing a foothold in this country and its outlying possessions, by burning down a large part of the Japanese and Chinese quarter at Honolulu, where it was thought the disease might find lodgment.

Yellow Fever in Havana.—In Havana 78 cases of yellow fever are now under observation. The mortality report for August, including deaths from all causes, shows a lower total than for any previous August in 10 years, the figures being 559 as against 620 in 1899 and 1,978 in 1898. The deaths for August were 276, yellow fever furnishing 49 victims and tuberculosis 65.

Instruction for the Deaf.—The number of pupils in schools for the deaf in the United States in 1899 was 10,291. Of these 61% are taught speech, oral instruction being used exclusively, or a "combined" method. The balance of 39% are not taught speech, but use the sign or manual methods exclusively. It is noticeable that the oral method predominates most strongly in the New England or Middle States. In the Central and Western States 58% are taught speech, while in the Southern States only 31% are under oral instruction.

Rates of Hospital Charges.—General Miles has issued an order prescribing the following rates of hospital charges: For subsistence of a retired enlisted man, 40 cents per day; for nursing, medicines, and subsistence of a civilian employe, 40 cents per day; for officers of the army, seamen, and river boatmen (admitted only on permit issued by a medical officer of the Marine-Hospital Service or a customs officer), and civilians admitted as provided in the preceding paragraph, \$1 per day. The money received will be accounted for with the hospital fund.

Distress in Alaska.—The Secretary of the Treasury has received a dispatch from Alaska, stating that a most deplorable condition exists among the native Indians along the coast from Cape Nome northward. The Treasury officials are powerless to render aid to the sufferers because the department has no available funds, but the War Department has a fund that can be drawn on in emergency cases like the present. The Treasury Department will furnish surgeons from the Marine-Hospital Service, and the Custom-officers will be instructed to render any assistance possible.

Obituary.—E. S. ARMSTRONG, of Perry, Ralls County, Mo., September 8.—B. F. BUFFEN, of Bay City, Ore., September 6, aged 74.—CORTLANDT VAN RENSSELAER HODGE, in China, formerly of Philadelphia, aged 28.—JOHN McMAHON BROWN, of New York, September 12, aged 55.—W. E. BRONTE, of Brinkley, Ark., September 11.—WILLIAM S. BROWN, of Baltimore, September 7.—BENJAMIN HARRISON, at Millwood, Va., September 10.—WILLIAM A. HILLEBRECHT, of Hackensack, N. Y., September 8, aged 26.—DENNIS DOWLING MULCAHEY, of Newark, N. J., September 11, aged 52.—FRANK W. MERRIAM, of Waterford, Conn., September 16, aged 46.—W. SCOTT WOLFORD, of Philadelphia, September 18, aged 53.

Smallpox.—The health authorities of Kansas City are concerned over the prospect of a serious outbreak of smallpox this winter, and are beginning to take elaborate precautionary measures. Last winter there was almost an epidemic, which cost the city \$65,000 to suppress. The disease was not entirely stamped out during the summer, and it now seems to be on the increase again. Several cases are also reported from Lake Linden and the copper district of Michigan and 3 from Winfield, W. Va. Two new cases have been discovered in New Bedford, Mass.. At the quarantine

station of that place all are reported doing nicely and on September 15, 16 cases were discharged as cured. The Board of Health has ordered another delay in the opening of the North end schools. Because of a case of smallpox on board, the steamer *Walla Walla* is quarantined at William's Head, and is liable to remain there for 2 or 3 weeks with her crew and passengers in confinement. The Pacific Mail Company's steamer *Newport* will also remain in quarantine at San Francisco for several days. A case of smallpox developed while she was on her way to that port.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended September 15, 1900:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
ALASKA:	Nome Aug. 18	3	
COLORADO:	Jefferson Co. Aug. 28-Sept. 1	11	
	Las Animas Co. Aug. 28-Sept. 1	1	
KANSAS:	Wichita Sept. 1-8	1	
LOUISIANA:	New Orleans Sept. 1-8	2	
MINNESOTA:	Minneapolis Sept. 1-8	1	
	Winona Aug. 28-Sept. 4	3	
OHIO:	Cleveland Sept. 1-8	2	
"	Dayton Sept. 1-8	1	
TEXAS:	Eagle Pass. In Sept. 7	1	
	Mexican portion of town.		
UTAH:	Ogden Aug. 1-31	2	
"	Salt Lake City Sept. 1-8	1	
WEST VIRGINIA:	Wheeling Sept. 1-8	1	

SMALLPOX—FOREIGN.

AUSTRIA:	Prague Aug. 18-25	2	
BELGIUM:	Antwerp Aug. 18-25	1	
BRAZIL:	Rio de Janeiro July 13-30	38	10
ENGLAND:	Liverpool Aug. 18-25	6	
"	London Aug. 18-25	1	
INDIA:	Bombay Aug. 1-14		6
"	Calcutta Aug. 4-11		7
"	Karachi Aug. 5-12	1	1
MEXICO:	City of Mexico Aug. 26-Sept. 2	4	5
RUSSIA:	Moscow Aug. 11-18	6	
"	Odessa Aug. 18-25	1	
"	St. Petersburg Aug. 11-25	96	11
"	Warsaw Aug. 11-18		10
SWITZERLAND:	Zürich Aug. 11-18		1

YELLOW FEVER.

BRAZIL:	Rio de Janeiro July 13-20		10
COLOMBIA:	Barranquilla Aug. 19-26		1
"	Panama Aug. 27-Sept. 1	3	1
CUBA:	Cienfuegos Sept. 8	1	
"	Havana Aug. 2-26	215	34
"	" Aug. 26-Sept. 1		23

CHOLERA.

INDIA:	Bombay Aug. 1-14	693	
"	Calcutta Aug. 4-11		35

PLAGUE.

INDIA:	Bombay Aug. 1-14	105	
"	Calcutta Aug. 4-11		52
PHILIPPINES:	Cebu July 14-21	1	
"	Manila July 14-21	4	
TURKEY:	Constantinople Aug. 27	1	On S. S. "Niger," from coast of Asia Minor.

The Pan-American Congress.—An announcement of the coming meeting of the Pan-American Congress in Havana, Cuba, has been received from the secretary, Dr. Tomas V. Coronado, of Havana. Dr. Coronado says: "Counting on your love for, and devotion to, professional matters I would be extremely pleased if you would favor us with your personal assistance and also by interesting your medical societies, universities, or medical schools, as well as your prominent colleagues who are teaching the medical sciences, so that they will take part in the Congress which convenes on December 26, 27, 28, and 29, 1900, and will send delegations, the members of which should forward their papers, or the titles.

"Our climate, our soil, and the grade of civilization itself to which we have arrived produce appreciable modifications in the diseased conditions that develop in an atmosphere so

distinct from that of Europe, and the diseases belonging to these latitudes the study of which is being perfected each day, are sufficient motives to authorize the scientific investigations of our Congress.

"In these controversies the combined efforts do not represent the sum of the units that compose them, but represent the multiplication of them. The simultaneous work of all the investigators of the Americas presented and discussed at a given time surely must produce surprising results in reference to the utility and the practical application of the scientific production of the men who cultivate successfully the medical sciences on the American continent. I sincerely hope that our sister nation whose medical attainments are so famous, will cooperate in promoting the success of the Third Pan-American Congress by sending the largest possible representation, both in delegates and scientific production." The members of the Congress consist of physicians of the Western Hemisphere, including the West Indies and Hawaii, that comply with the special regulations of registration, and the board of executive officers are selected, formed from the residents of the country in which the Congress is held. The official languages of the Congress will be English, French, Spanish, and Portuguese.

Changes in the Medical Corps of the U. S. Army for the week ended September 15, 1900:

GOULDING, TIMOTHY F., acting assistant surgeon, upon completion of the duties required in connection with the abandonment of the post of Cardenas Barracks, will proceed to Rowell Barracks, Paso Caballos, for duty.

SUMMERALL, WILLIAM B., acting assistant surgeon, is granted leave for 1 month, with permission to go beyond the limits of the division of Cuba.

HOFF, Major JOHN VAN R., surgeon, will proceed to Nagasaki, Japan, on the mail steamer "Hong Kong Maru," to sail August 29. Upon arrival at Nagasaki, Major Hoff will report to the depot quartermaster for transportation to Taku, China.

KNEEDLER, HARRY D., acting assistant surgeon, is relieved from duty with Siege Battery O, Seventh Artillery, now at the Presidio, and will report to the commanding officer, Light Battery C, Seventh Artillery, now at that post, for duty with that battery.

McLAUGHLIN, WHARTON B., acting assistant surgeon, is relieved from temporary duty at the Army General Hospital, Presidio, and will report to the commanding officer, First Battalion, Fifth Infantry, now in camp at that station, for duty with that battalion.

STARK, Captain ALEXANDER N., assistant surgeon, is granted leave for 1 month and 15 days, with permission to go beyond the division of Cuba.

ROBERTS, WILLIAM, acting assistant surgeon, is relieved from temporary duty at the Army General Hospital, Presidio, and will upon arrival in San Francisco, Cal., of the Second Battalion, First Infantry, report for duty with that battalion.

PRESNELL, JAMES F., acting assistant surgeon, will stand relieved from further duty with the Second Battalion, First Infantry, upon its arrival in San Francisco, Cal., and will proceed to Alcatraz Island for temporary duty at that post, to relieve Acting Assistant Surgeon Aubrey F. Higgins.

HIGGINS, AUBREY F., acting assistant surgeon, will proceed to his home, Germantown, Pa., where he will report by letter to the Surgeon-General of the Army, for annulment of contract.

LYSTER, WM. J., acting assistant surgeon, is granted leave for 1 month, from September 1.

ASHBURN, First Lieutenant PERCY M., assistant surgeon, is granted leave until September 30.

LITTLE, WILLIAM L., acting assistant surgeon, is assigned to temporary duty at Fort Sam Houston, pending the departure of Companies C and D, Twenty-fifth Infantry, for duty in the division of the Philippines.

COMEGYS, Major EDWARD T., surgeon, orders of August 15 directing him to proceed to Nagasaki, Japan, for duty as medical supply officer at that place, is amended so as to direct him to proceed to Taku, China, with all medical supplies invoiced to him, and establish medical supply depot at such points as may be designated by Major-General Adna R. Chaffee.

KIRKPATRICK, First Lieutenant THOMAS J., assistant surgeon, leave granted him for 7 days, September 1, is extended 7 days.

PHILLIPS, Captain JOHN L., assistant surgeon, is relieved from duty at Fort Columbus, to take effect upon the arrival at that station of Major WM. H. Corbusier, surgeon. He will then report to the commanding officer, detachment of recruits, Fort Slocum, to sail on the U. S. transport "Buford," on or about November 1. Upon his arrival at Manila, will report to the commanding general, division of the Philippines, for assignment to duty.

COSTINE, EDWARD F., hospital steward, Fort Columbus, is relieved from further duty in the division of Cuba, and will be sent to Jefferson Barracks for duty.

POINDEXTER, Captain JEFFERSON D., assistant surgeon, will report to the senior member of the board of officers appointed by par. 19, S. O. 295, December 20, 1899, from this office, upon the arrival of that board at Fort Reno, for the purpose of accompany-

ing the command that may be detailed to make a practical test of the emergency ration.

PROBERT, MERTON A., acting assistant surgeon, is relieved from temporary duty at Columbus Barracks, and will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for the Philippine Islands.

O'REILLY, PATRICK, hospital steward, now in Washington, D. C., will return to his proper station with permission to delay 30 days en route.

NEWLOVE, GEORGE, acting assistant surgeon, is relieved from duty at Fort Leavenworth, and will proceed to his home, Newcastle, Del., and report by letter to the Surgeon-General of the Army, for annulment of contract.

SALEEBY, N. M., acting assistant surgeon, Fort Snelling, will be directed by the post commander to report to the commanding officer, Second Battalion, Eighth Infantry, for duty with that battalion while en route to the Philippine Islands.

BROWN, CLARK L., hospital steward, Fort Snelling, will be directed by the post commander to report to the commanding officer, Second Battalion, Eighth Infantry, for duty with that battalion while en route to the Philippine Islands.

TREUHOLTZ, CLARENCE A., acting assistant surgeon, is relieved from temporary duty at the Presidio, and will proceed to camp near Three Rivers, Tulare County, Cal., where he will report to the commanding officer, Troop G, Sixth Cavalry, for duty, to relieve Acting Assistant Surgeon R. C. Stoney.

STONE, R. C., acting assistant surgeon, will proceed to San Francisco, Cal., for instructions.

KUHN, CHARLES F., acting assistant surgeon, is relieved from temporary duty at the Presidio, and assigned to duty on the transport "Lawton," during the voyage of that vessel to the department of Alaska, and return to San Francisco, Cal.

SHORES, ERWIN I., acting assistant surgeon, now on duty at Fort Caswell, is granted leave for 1 month, from about October 10.

Acting Assistant Surgeons WILLIAM J. CONDON, WILLIAM V. KELLOGG, JAMES C. RUTLEDGE, THOMAS F. MILLER, U. S. GRANT DEATON, LOUIS J. PERKINS, WILLIAM E. CASS and PAUL R. FLETCHER, are relieved from temporary duty at the Army General Hospital, Presidio, and assigned to temporary duty with troops on the transport "Rosecrans," to sail for the Philippine Islands about August 30. Upon arrival in Manila, the medical officers named will report to the commanding general, division of the Philippines, for assignment to duty.

Changes in the U. S. Marine-Hospital Service for the week ended September 13, 1900:

BAILLIACHE, PRESTON H., surgeon, granted leave of absence for 9 days from September 14.

IRWIN, FAIRFAX, surgeon, to proceed to Boston quarantine for special temporary duty. September 12.

McINTOSH, W. P., surgeon, to proceed to Biloxi and Ship Island for special temporary duty. September 10.

KINYOUN, J. J., surgeon, to proceed to Victoria, Port Townsend and Astoria quarantine for special temporary duty. September 7.

WERTENBAKER, C. P., passed assistant surgeon, to proceed to Galveston, Tex., for special temporary duty. September 10.

BROWN, B. W., passed assistant surgeon, granted leave of absence for 2 months from November 1.

ANDERSON, J. F., assistant surgeon, to proceed to Liverpool, Eng., for special temporary duty. September 7.

FRANCIS, EDWARD, assistant surgeon, relieved from duty at New York, N. Y. (Stapleton), and directed to proceed to the immigration station and report to Surgeon L. L. Williams for duty. September 10.

BAHRENBURG, L. P. H., assistant surgeon, relieved from duty at the immigration station and directed to proceed to Liverpool, Eng., reporting to Assistant Surgeon J. F. Anderson, at U. S. Consulate for duty. September 10.

BURFORD, R. E. L., acting assistant surgeon, granted leave of absence for 1 month from September 3.

GOMEZ, S., acting assistant surgeon, granted extension of leave of absence for 10 days from September 19.

MONCURE, J. A., acting assistant surgeon, directed to proceed to Brunswick Quarantine and assume temporary charge of station for 30 days from November 3.

HUME, LEA, sanitary inspector, to proceed to Galveston and report to Surgeon Peckham for special temporary duty. September 13.

RICHARDSON, S. W., hospital steward, granted leave of absence for 20 days from October 1.

ALLEN, C. C., hospital steward, relieved from duty at Delaware Breakwater, and directed to proceed to Mullet Key Detention Camp and report to medical officer in command for duty and assignment to quarters. September 10.

OLSEN, E. T., hospital steward, relieved from duty at Mullet Key Detention Camp and directed to proceed to Washington, D. D., and report at bureau for duty. September 10.

McKAY, MALCOLM, reinstated and appointed senior hospital steward. September 12.

Changes in the Medical Corps of the U. S. Navy, for the week ended September 15, 1900:

CRAWFORD, C. A., assistant surgeon, is detached from the "Eagle," and ordered to the "Dixie."

GATES, M. F., surgeon, is detached from the Naval Hospital, Norfolk, Va., September 12, and ordered to the "Atlanta," September 15.

McCORMICK, A. M. D., passed assistant surgeon, is ordered to the Naval Hospital, Norfolk, Va., for duty, when detached from the "Montgomery."

MORRIS, L., passed assistant surgeon, is detached from the "Baltimore," when put out of commission, and ordered home and to wait orders.

PEARSON, J., pharmacist, is detached from the "Wheeling," and ordered home and to wait orders.

HIGH, W. E. G., assistant surgeon, is detached from the Naval Hospital, Yokohama, and ordered to the "Oregon."

Foreign News and Notes.

GREAT BRITAIN.

An Hospital for Epileptics.—The trustees of the estate of the late Mr. Lewis, of Manchester, are about to spend £100,000 of the money at their disposal in the building and endowment of an hospital for epileptics.

Charitable Bequests.—The late Mr. Richard Eve, of Aldershot, has bequeathed £2,000 to the Cottage Hospital for the Poor, Aldershot, and £500 to the Kidderminster Infirmary, besides numerous donations to masonic and other charities.

Illegal Practices.—About a dozen bodies of newly-born children found in the East-end and in London proper recently are believed to have come from the West-end. It was declared at an inquest on one of these bodies, held in the City Coroner's Court, that the case was one of illegal operation. Among the suspects are 3 medical men who have long been removed from the Medical Register for illegal practices.

Children Poisoned.—About 600 children from the slums, taken by the Bradford Cinderella Club, recently, for a country holiday, wandered into a plantation and ate the seed pods from laburnum trees. Afterwards 20 suffered from narcotic poisoning, and were removed to Bradford Infirmary. Emetics were administered, and most of the children were put right. Two serious cases were detained.

The Professorship of Military Hygiene at Netley.—Major R. Hamill Firth has been appointed to the professorship of Military Hygiene in the Army Medical School, Netley, in place of Colonel J. Lane Notter, who has resigned the appointment in consequence of having to proceed to South Africa as a member of the Commission of Inquiry as to dysentery and enteric fever.

British Association for the Advancement of Science.—The seventieth meeting of the British Association, which is this year being held at Bradford under the presidency of Sir William Turner, President of the General Medical Council, opened September 5. The number of members' and associates' tickets issued was on that day about 1,600. The retiring president, Sir Michael Foster, is at present in this country.

Women in British Association.—Previous to the opening of the annual meeting of the British Association for the Advancement of Science at Bradford, the motion of Professor Hartop that women should be admitted to membership in the association was discussed. Sir John Evans, former president of the association, was not in favor of the motion, but it was finally decided to admit women, making membership of the general association a precedent to election to membership in the sections.

A Lady Poorhouse Medical Officer.—At a recent meeting of the Dundee Parish Council applications for the post of resident medical officer at Dundee East Poorhouse were submitted. Both came from lady graduates of Edinburgh. After some discussion whether any appointment should be made, Dr. Laura Stewart Sandeman was appointed at a salary of £100 a year. She studied at University College and the Royal Infirmary, Dundee, and on several occasions she acted in the infirmary as one of the assistant house-physicians. Miss Sandeman afterwards studied in the Extramural School of Medicine, Edinburgh, in the Royal Infirmary, Edinburgh, and the Rotunda Hospital, Dublin.

The Jubilee of Owens College.—The issue of a brochure by Professor Hartop, of Owens College, of Manchester, reminds us that the fiftieth anniversary of its foundation will occur next year, it having been established in 1851 by the munificence of Mr. Owens, a Manchester merchant, whose benevolence was largely supplemented by Mr. Falkener, also a Manchester merchant. For the first 8 years it was a dismal failure, the number of students having fallen off from 62 to 40. From 1860 the college has never looked back, and its student *clientèle* now numbers nearly 1,000. It began with an endowment of about £90,000, and has now to its credit not much less than a million sterling. It is the first and largest college of the Victoria University, others being at Leeds and Liverpool.—[*Medical Press.*]

Origin of Plague in Glasgow.—All cases seem to arise from the wake of a woman who died from supposed pneumonia. This woman lived in a crowded tenement-house and was the wife of a dock-laborer. On August 25, a child named Malloy died, also from pneumonia, and later the mother and two brothers were taken to the hospital, and one of the brothers died, and his death has been certified by the health authorities as having been due to bubonic plague. Mrs. Malloy had attended the wake above spoken of. The Malloy boy is the only death that has so far been certified as due to plague, although it is probable that the two cases of pneumonia were really pneumonic plague. From the organs of the Malloy boy the plague-bacillus has been cultivated. There is no history of any unusual death among rats, although inquiries are on foot and the authorities have rat-catchers out. The infected locality is some little distance removed from the shipping, and the connection between the first case and any infected ship cannot be traced, although, as stated above, the husband of the first suspected case of pneumonia was a dock-laborer. The cases now in hospital, we are informed, are all of the bubonic form, which may account for the small number of deaths. Five more cases have been reported, making a total of 21 cases. In addition, there is one suspect and 115 persons under observation.

CONTINENTAL EUROPE.

University of Utrecht.—Dr. Th. Ziehen, of Jena, has been appointed professor of psychiatry.

A Scandinavian Medical Conference was recently held in Copenhagen. It is said to have been largely attended by physicians from Sweden, Norway, Denmark, and Finland, and to have been a very successful gathering.

Sailors Accidentally Poisoned.—At Marseilles 4 deaths from accidental poisoning occurred recently. A sailor bought what he supposed to be gentian root and made a drink with it, which he served out to all the ship's company, and they were immediately taken ill. It turned out that some other root of a strongly irritant nature had been substituted by mistake, but the nature of the substitution has not yet been ascertained.

Bare Feet as Plague Carriers.—According to the *British Medical Journal*, the Sanitary Council of Constantinople has enjoined all persons to wear shoes or other covering for their feet. The reason assigned for this ordinance is that if persons who go barefoot happen to have scratches or excoriations on these extremities, they may thereby become infected with plague, and so transmit the disease. It takes a good deal to awaken the sanitary conscience of the Sublime Porte, but when it is aroused, its activity would appear to be remarkable.

The exhibit of the Trans-Siberian Railroad at Paris, says an exchange, is attracting much attention, as comfort and hygiene have both been studied in the trains. The walls are smooth wood or tiles; the seats are covered with real or artificial leather; there are shower baths; appliances for cooling the air; gymnastic apparatus; cigar lighters; boiled water in the coolers, and a sanitary official on each train who is a trained nurse and barber. The draperies are reduced to a minimum, and an automatic perfume is set in action as the door of the water-closet is closed.—[*Medical Age.*]

MISCELLANY.

Cholera in Afghanistan.—Cholera is reported by the Russian Consul at Meshed to be assuming alarming proportions in Afghanistan. He urges the establishment of a sanitary cordon on the frontier.

Women May Practise Medicine in Austria.—An imperial decree has been issued in Austria which admits women to practice as physicians and chemists on the same conditions as men.

Hospital Car.—The Prussian department of railways has added to its rolling stock a number of hospital cars, which can be hired in advance for any journey by rail. The cars are fitted with spring-bedstretchers, invalids' chairs, and all necessary sanitary equipment.

Foreign Universities.—Dr. Max Nitze, of Berlin, has been promoted to an extraordinary professorship of diseases of the urinary organs.—Dr. Wilhelm Autenrieth has been promoted to an extraordinary professorship of chemistry at Freiburg.—Dr. Bodin, of Rennes, has been appointed professor of pathologic anatomy and bacteriology.

Obituary.—JOHN TRESSILIAN TOLL, of Adelaide, Australia, aged 48.—JOHN ORTON, of Beeston, Notts, August 19, aged 55.—WILHELM WAGNER, of Königshütte.—DR. PORSON, of Nantes.—JAMES MUDGE, of Hayle, Cornwall, August 26.—WILLIAM MARSHALL, of Dumfries, August 30, aged 80.—THOMAS MARTYN SIBBALD, R. N., at Taku, China.—WILLIAM HENRY LOWE, of Woodcote, Wimbledon Park, August 26, aged 85.

Wanted: Head House-Servant and Doctor.—Under the above heading the *Indian Medical Record* quotes the advertisement of "Nawab Syed Delawar Reza," who wants a European, Eurasian, or Armenian "smart doctor" to act as private physician, secretary and steward at 100 rupees monthly, board and lodging. He specifies in conclusion that those not of noble birth need not apply. We fear he has not been overrun with applicants.

Plague in India.—The plague-deaths for the whole of India show a rise, the latest weekly report showing a total of 285. Private information is to the effect that plague is much more prevalent in some places than is reported. The continuance of plague in Calcutta, with from 50 to 100 deaths every week, is very serious. The general mortality of this city is 7 per 1,000 per annum above the normal, and the excess is not entirely accounted for by the plague. In the absence of any other explanation, it is probable that there are more plague-deaths than come to the notice of the authorities. Cholera exists not only in Bombay, but in Madras and in the city of Nagur. Owing to plague existing at Hong-Kong, all officers, men, and camp-followers proceeding to China have had the option of being inoculated with Haffkine's fluid before leaving their stations.

Fear of Bacilli and Its Results.—A few months ago, a doctor arrived in Melbourne, Australia, from India, bringing with him some bubonic germs cultivated in gelatin. The fact leaked out, the health-officers declared the germs constituted a grave public danger, but were at a loss how to deal with them; in framing the protectionist tariff, a short-sighted Parliament had omitted all mention of plague-bacilli. At length, the Customs Department came to the rescue. Gelatin was liable to duty, therefore this particular gelatin had been smuggled, and could legally be confiscated. It was burned, germs and all, and Melbourne breathed freely again. "You will want these cultures for serum some day," said the aggrieved doctor, and his words came true, for not long afterward, when the plague arrived, serum was wanted for purposes of inoculation. All Melbourne could do was to cable and wait for supplies, and regret those cremated germs.

The South African Hospitals Inquiry.—It is gratifying to notice that there is a decided preponderance of testimony in favor of the good work done by the Army Medical Corps in South Africa. Several of the colonial soldiers spoke very emphatically of their personal experience in this respect, and as their testimony was perfectly spon-

taneous and they knew what they were talking about it was reliable and valuable. They freely acknowledged that whatever shortcomings there might have been were of a temporary nature and simply unavoidable and attributable to the strain and stress of war. The testimony of soldiers who have passed through the hospitals in South Africa is the best test that can be applied and it is almost uniformly favorable; and where it is not their criticism is usually perfectly fair, temperate, and just. With regard to the overcrowding of army hospitals people seem to forget that this is occasionally unavoidable. A military hospital, unlike a civil one, is bound to take in and provide for sick and wounded soldiers after an action or outbreak of epidemic disease.

Anticholera Inoculation in India.—Cholera has always been exceedingly virulent and fatal among Coolies employed by tea-planters, especially those who labor on shipboard. At first, they would not submit to treatment, but the advantages of inoculation have become so apparent that they now seek it of their own accord, and the tea-planters are inserting special clauses in their contracts, calling for inoculated Coolies in preference to any others. In some of the tea-districts, in which the mortality used to be very high, cholera has practically been exterminated. Notes on a series of experiments, carried on in Calcutta, show that the results, considered as a whole, were as follows: 654 uninoculated, 71 deaths; 402 inoculated, 12 deaths. Proportion, 3.63 to 1; reduction of mortality by 72.47%.

Pasteur Institute for India.—The Pasteur Institute has been opened at Kasauli for the treatment of persons bitten by rabid animals. The director of the institute is Major D. Semple, who was assistant professor of hygiene at Netley for several years, and has been trained in bacteriology and studied the antirabic treatment in Paris. The treatment itself at Kasauli will be entirely gratuitous, but as it does not involve detention in hospital patients will have to make their own arrangements for board and lodging. Excellent accommodation for all classes can be found at this station. Soldiers bitten by rabid animals will no longer require to be sent from India to Paris for treatment. Major Semple has already had 8 men of the South Staffordshire regiment sent for treatment from Subathu, and applications for admission have been made in the case of sepoys and other natives from various parts of the Punjab and the northwest provinces.—[*Lancet*.]

Practice in China.—Dr. Johnson, a well-known medical missionary, tells some curious and interesting things about practice among the Chinese. He says they are very trying patients and make a strong demand on any doctor's Christian forbearance. To begin with, no Chinaman can be trusted to tell the truth about the history of his case; he simply will not follow directions and, if possible, he will upset the treatment by eating all sorts of things on the sly—such delicacies as green peanuts, pickled pig's stomach, decayed fish roes, raw turnips and Chinese pears, which are hard as a rock and about as nutritious as sawdust. Our mission hospitals made the mistake at the outset of treating everybody gratuitously, and the consequence was that they were overrun with people who were able to pay and who had no sympathy whatever with the cause. At present the mission hospitals have a fixed schedule of charges, ranging from 5 "cash," or about a quarter of a cent, for a quinin powder, to 2000 cash for a minor surgical case. The bona fide paupers, of course, are treated free. One of the large hospitals, at Chee Foo, tried the experiment of posting a notice that patients would be expected to deposit whatever they were able to give in a box fastened to the front gate, and a charitable German visitor started the thing off by putting in £5. During the first month over 900 cases were treated, indoors in clinic, and the box was then opened. It was as empty as a drum. Even the £5 had disappeared. After that the fee system was introduced. The missionary doctors are occasionally called in by the wealthy classes, and generally charge a good, round fee for such service. I was sent for last spring to prescribe for the mother of a rich magistrate, and was informed that I would have to feel her pulse by means of a silk cord extending out from the bedroom. I went through the solemn farce and charged £20 "for style." Subsequently I saw my patient face to face.

Society Report.

CANADIAN MEDICAL ASSOCIATION.

Thirty-third Annual Meeting, Held at Ottawa, September 12, 13, and 14.

[Specially reported for THE PHILADELPHIA MEDICAL JOURNAL.]

THE "century" meeting, which was the thirty-third annual meeting of the Canadian Medical Association, took place in the Academic Hall of the Ottawa University, Ottawa, on September 12, 13, and 14. Dr. R. W. Powell, the president in the chair, and Dr. F. N. G. Starr, of Toronto, secretary.

The Present Status of the Eliminative and Antiseptic Treatment of Typhoid Fever.—DR. W. B. THISTLE, of Toronto University, read this paper. Some seven years ago he introduced this plan of treatment of typhoid fever to the profession. He claimed that this form of treatment for typhoid fever had time and again been misrepresented by Professor Osler and others, as he had never held to the opinion that the eliminative and antiseptic plan could rid such organs as the liver and spleen of the bacilli lodged in them. When once the typhoid-bacilli gain access to the intestinal tract, the multiplication of them occurs with extreme rapidity and the intestinal contents teem with countless numbers of them. These are not confined to the intestine, but are to be found in the walls and, in fact, in almost every organ of the body. He was of the opinion that the draining of the intestinal walls following upon the action of a purgative, either as calomel or maganese sulphate, would tend to get rid of some of these bacilli in the intestinal walls, but he did not claim that it would effect their exit from the liver, etc. He thought the treatment had been imperfectly applied, in many instances without a clear conception of the underlying principles. Under this plan of treatment Dr. Thistle has never had a single case of hemorrhage, what hemorrhage occurred having been always very slight. He has also had very few perforations,—and 20% of the death-rate is from perforation and hemorrhage. In Toronto this plan of treatment is universally adopted. Statistics at the Toronto General Hospital show that from 1893 up to the present time there have been 833 cases in that institution, with 56 deaths, a mortality of 6½%.

In discussing this paper DR. MCPHEDRAN said that he had been watching Dr. Thistle's work in this direction from the time of the appearance of his first paper on the subject, but could not agree with all his conclusions. He did not think that this plan of treatment lessened diarrhea, tympanites, fever, nor delirium. He considered that Dr. Thistle was harboring the idea that purgatives in typhoid were a new discovery with him; this was not so. Twenty-five years ago he (Dr. McPhedran) gave these for the first ten days at least. In addition to this he used to give carbolic acid and iodine, and in a certain class of cases he thought he had the exact treatment. Another class would then come along in which that treatment had no effect whatever. He considered that the general toxemia that existed could not be eliminated through the bowel. It had to be done through the kidneys and skin. DR. THISTLE, in his reply, emphasized the fact that he was *not* trying to eliminate bacilli from the glands; in clearing out the bowels, he is trying to eliminate *toxins* from the body and not bacilli.

A Case of Sarcoma of the Right Nasal Fossa with Acute Sinusitis and Orbital Cellulitis.—DR. PERRY G. GOLDSMITH, Belleville, Ont., presented this paper and patient. The patient was a man of 38 years, a farmer, with an unimportant family and personal history. He consulted the doctor on the fourth of August last with severe frontal headache and double vision. Examination of the nasal fossae revealed growths which, along with some of the bone in the right fossa, were removed. After this, swelling and pain in the eye began, so that it was seen to project far forwards, downwards and outwards. The right nasal fossa was curetted, the tissues being sent to Professor Anderson, of the Trinity Pathological Laboratory at Toronto, who pronounced them of sarcomatous origin, small round-cell variety, with the walls of the bloodvessels thin and poorly developed. The

discharge from the nostril was of an odor similar to that emanating from cancer of the rectum. Up to 10 years ago Bosworth has collected 40 of these cases.

DR. R. A. REEVE stated that a number of years ago he had presented a paper before this Association on the same subject. He directed attention to the importance of examining the nasopharynx in diseases of the orbit. He instanced a similar case to Dr. Goldsmith's. In his case there was little pain, but an examination of the nose revealed the tumor.

President's Address.—On the afternoon of the second day, with a packed hall for an audience, DR. POWELL delivered the annual presidential address. He first recited a few reminiscences when on former occasions the Canadian Medical Association had convened in the Capital City—that was in 1871, 1881, 1889, and 1893. He made reference to the South African War in order to show the unsatisfactory condition of affairs which permitted other colonial surgeons from Australia and New Zealand practising their profession in that land without hindrance, whilst Canadians were debarred from the same privileges. An earnest and united effort on the part of the profession throughout the whole Dominion of Canada in an endeavor to bring about interprovincial registration, would facilitate matters in the direction of securing these privileges for the Canadian profession in other parts of the British Empire. The hackneyed subject of tuberculosis was lightly touched upon, whilst a very important matter relating to the profession, that of a Medical Defence Association, was dealt with at considerable length. Dr. Powell favored the formation of such an association, and later on in the proceedings nominated a committee to look into the question to report on the advisability and practicability of forming a Dominion Association of this character.

Some of My Experiences in the South African War.—DR. GEORGE S. RYERSON addressed the Association on this subject. He dealt first with the experience gained of modern bullets. The very latest returns show that 986 officers and 11,701 non-commissioned officers and men had been wounded, of whom only 733 have died of wounds received in battle, which is to be ascribed to the septic character of the bullet and the prompt attention and antiseptic treatment. Dr. Ryerson then dealt with the wounds caused by these bullets. Referring to poisoned bullets being used; this was not the truth, as the tarnish or verdigris probably accumulated in transit through the barrel. He also doubted the fact of explosive bullets being used. The Boers made use of thousands of Martini-Henry, a heavy bullet, which caused great destruction of soft parts, necessitating amputation. There were few amputations in this war. He quoted Kendal Franks, who had performed 20 amputations in 2,000 cases. While abdominal section in wounds of the abdomen was mainly inadvisable, he saw one case in which the results were excellent. He spoke highly of the magnificent work of the B. A. H. C. DR. T. G. RODDICK, H.P., told of the great sacrifices of Dr. Ryerson in proceeding to South Africa at his own expense to carry out the work of the Red Cross Association. While in England, recently, he stated he had made it his special business to inquire of returning Canadian soldiers as to the hospital management in South Africa, and although he had spoken to many of these, he had failed completely to find a single Canadian who had anything but praise for the hospital arrangements in that country.

Our Race and Consumption.—This was the title of a very able paper contributed by SIR JAMES GRANT, of Ottawa, who considered it an important fact and one worthy of consideration, that races had been born on this continent, had lived and entirely disappeared, leaving mounds in the West, and other traces in Florida and elsewhere, of their undoubted existence, and that thus far there was no information as to the exact cause of the disappearance of these races. He thought it remained for the Anglo-Saxons to see whether they will prove more successful than their predecessors in establishing themselves on this continent. He referred to the loss of 3,000 lives in the fair Province of Ontario in 1898 by consumption alone, and deplored the fact that the people were not as yet alive to their danger. Sir James endorsed the legislation passed at the last session of the provincial parliament designed for the purpose of assisting municipalities in the erection and maintenance of sanatoriums for consumptives.

Recognition and Management of Tabes Dorsalis.—DR. ALLAN McLANE HAMILTON prepared this paper,

but on account of illness was unable to be present to read it. The president undertook this task. It appeared that, as an etiological factor, syphilis was not referred to by the early writers on this disease. While some would attempt to divide the symptoms of the disease into the leg and eye types, the writer would consider that to be unwarranted. He considered there was a close resemblance, or rather relationship, between the different forms of cerebrospinal sclerosis. There was no disease of the nervous system which had drawn forth so many plans of treatment, and but little or no good had resulted from any one thing. Most tabetics are favorable subjects for expectant treatment, and many derive temporary benefit from some new drug. Looking back over a number of years, he finds that most good has been accomplished where little or no medicine had been given. He has found rest by suspension and persistent cauterization of the back, good treatment. In the opinion of the writer, syphilis cannot be traced in more than 50% of the cases. For the arthropathies of the joints, there is little to be done. Perforating ulcer is a rare feature of locomotor ataxia, and most obstinately resists treatment. He has seen 3 cases of this unusual condition in ataxias, and the ulcer rarely exceeds 2 or 3 cm. in diameter. One authority mentions 5 cases, cured by means of nerve-stretching. Throughout the course of the paper, numerous cases were cited, with their symptoms and treatment.

The Physician's "Vaster Empire."—In this paper, DR. JOHN HUNTER, of Toronto, its contributor, dealt with the questions of sanitary science, education, social purity, and medical missions. Referring to sanitary science, he entered a plea for the broader and freer application of the principles of this branch of medicine, in the building and construction of our homes, schools, churches, theaters, etc. No dwelling-house should be constructed except under the supervision of an architect, and a physician versed in sanitary science. In the matter of sanitary science, architects had improved wonderfully during the past 10 years. Another important question was that of our educational system—the mental and physical health and development of our school children. The best way to secure physical vigor and high mentality was surely within the province of the physician to grapple with and study. In all forms of social purity and impurity, physicians should speak *ex cathedra* against every form of vice and immorality. The boys and the girls of the family should be enlightened as to their sexual proclivities at proper periods by their fathers and mothers, respectively. In medical missions, he referred to the vast field for medical missionary work in foreign countries.

Address in Surgery—Tuberculous Lesions from a Clinical Point of View.—The president introduced MR. EDMUND OWEN in a few well-chosen words. This address was delivered at the evening session of the first day and the distinguished visitor was greeted by a crowded house. In commencing his masterly address, he stated that he would deal with tuberculous lesions as the surgeon meets them day by day in the hospital wards, in private practice, or in the operating theater. Referring to the pathologists, he considered his (the pathologist's) thought to be only of the dead tissue, while the surgeon sees the human tree during its life and rarely follows it after death. The student does clinical and pathological work at different times, and he is enabled to follow the case straight from the ward to the laboratory. He considered that study of the fresh specimen was the best, for the specimen taken from formalin was no more like the condition than canned salmon was like fresh-run fish. He would not hinder experimental research work; it was absolutely necessary. The life of a man was of more value than a sparrow or many guineapigs. It would be almost impossible to overestimate the direct value of the experimental laboratory work. Strumous and scrofulous are now terms devoid of meaning, and we now call tubercle by its proper name. There are three great factors in connection with tuberculosis which the public must be made acquainted with: 1. The disease is communicable; but the public must be allowed a little time before they accept this statement and fact. 2. The disease is preventable; this follows almost as a corollary to the first statement. 3. The disease is curable. Years ago the subject of tuberculosis was regarded as well nigh hopeless, but now we do not consider it of the untractable nature that it was formerly considered. Tuberculous lesions are exactly what they used to be; and Mr. Owen has worked at the

largest children's hospital in London for over a quarter of a century. We now take a much more hopeful view of these lesions. Many of you have studied tuberculous lesions under these skies and also in the mother country. Do you find that the tuberculous lesions are the same in both hemispheres? One rarely hears now of the *vis medicatrix naturæ*; surgery has rendered it superfluous. All have noticed cases of old-standing hip-joint disease where in time the boy actually grows out of his trouble. This may be a popular superstition, but, like most erratic beliefs, it is founded upon a stratum of truth. In children these chronic diseases are always tuberculous. Where chronic abscesses occur, it will not do to open and drain, but they must be scraped out—their unhealthy lining destroyed. In the treatment of these diseases, the learned surgeon stated that he had failed to find any virtue whatever in the employment of iodoform. It is an irritant and a poison, and it is apt to be septic, as germs can grow over it. Mr. Owen condemned the use of complicated apparatus, and also the forcible correction in cases of spinal deformities. He considers that this deformity does not lend itself to operative treatment. There may, perhaps, be a small class of cases where it may eventually be found applicable, as where bone or organized inflammatory deposits press upon the cord, so that the patient has lost movement in the lower extremities. The plaster of paris jacket must be held responsible for much of the deformity of Potts' disease. The proper treatment of these cases is rest in the horizontal position, with plenty of good fresh air and sunlight. At the conclusion of his extremely able and instructive address the thanks of the Association were moved in a complimentary speech by PROFESSOR SHEPHERD, of Montreal, and seconded by PROFESSOR CAMERON, of Toronto, put by the president, unanimously carried amid great enthusiasm, and appropriately presented to Mr. Owen by DR. POWELL. MR. OWEN made a happy reply.

Excision of the Knee-Joint in Tuberculous Disease.—PROFESSOR PRIMROSE, of Toronto University, minutely described Kocher's method of dealing with tuberculous disease of the knee-joint, recited the histories of a few cases in which he had obtained excellent results where this operation had been employed. The steps of the operation were made clear by a blackboard drawing; and at the conclusion of his demonstration, Dr. Primrose was highly complimented by MR. OWEN for his lucid exposition of his subject.

Some Experiences in the Treatment of Hernias.—At the morning session of the second day Dr. F. J. SHEPHERD, of Montreal, contributed the first paper. Some twenty years ago surgeons began to perform these operations by the open method. Older methods in vogue were touched upon and described; and he instanced one very large hernia which had come under his observation then where the man could not put his trousers on. The methods of operation are almost as numerous as surgeons, but there are certain general principles underlying all operations: (1) The necessity for excision or obliteration of the sac; (2) closure of the canal; (3) union by first intention. Some also hold that alteration in the direction of the canal is necessary. The operation performed by Dr. Shepherd is Bassini's, but with it he is not always successful. He has used all kinds of sutures. Absorbable sutures are the best and if antiseptic they are to be preferred. A suture that will last for three weeks is all that is wanted. He has used chromicized catgut now for some time. Professor Shepherd never washes out the wound and thinks it better to dissect out the sac with the knife than to tear it with the fingers. He never uses a drain. For two years past now, he has used rubber gloves in all his surgical work, abdominal in character, and he considers that he has got better results since beginning their use. In hernia operations the mortality is practically nil. Operations on children are now our most successful cases; formerly they were not advised except in strangulated cases.

DR. LAPHORN SMITH discussed this paper and the cases described, although his experience lay mostly in ventral and umbilical work. In some of these he had seen them so large as to require 20 stitches. During the past two years he has abandoned silk and resorted to catgut, chromicized, which he always prepares himself.

Replying to the criticisms, DR. SHEPHERD stated if there was any oozing in the wound, he would pass a probe in between the edges of the wound to let out the accumulated serum. This way he finds to be quite efficacious, as then

you minimize the chance of the introduction of any germs from without.

A Case of Syphilitic Gummata of the Spinal Cord Successfully Treated by Enormous Doses of Iodid of Potash.—DR. F. W. CAMPBELL, of Montreal, reported the history of this very interesting case. It occurred in a man of highly neurotic temperament who, a short time before the onset of symptoms of a definite character, had suffered from repeated attacks of insomnia of a very aggravated character. When his sickness began, there were noticed retention of urine and loss of power in the lower limbs. Patellar reflex was about normal. The loss of power in the lower limbs was absolute. The pulse varied from 80 to 96; the temperature was never above 99. The stomach remained in fairly good condition all the time. A consultant from New York was brought on and a diagnosis established of tumor of the spinal cord situated about the first lumbar vertebra, which might be sarcomatous or syphilitic. The advice of the consultant was to give 500 grains of iodid of potash per day, commencing with a dram 3 times a day. Dr. Campbell detailed minutely the daily history of the patient whilst getting him under the large dose, and then again whilst it was gradually being withdrawn. The patient is alive today and in good health, having recovered complete control of his lower extremities.

Address in Gynecology.—A very practical address was that delivered by DR. WILLIAM GARDNER, of Montreal, on the mistakes in diagnosing gynecological and obstetric cases. He states we often learn more from our mistakes than we do from our successes. Correct and accurate diagnosis depends mainly upon the sense of touch, which can only be attained by long and patient practice. He referred to the advantages of examining on a plain table instead of on a couch or bed. The patient's rectum should always have been emptied before presenting for examination. As for the bladder, it is best to empty that viscus yourself per catheter when the patient is on the table, as in this way you will be able to notice any discharges, etc. That the physician will have to do this often is quite clear from the fact that there are many women of nervous temperament who would not be able to empty the bladder voluntarily in the physician's office. Another advantage of doing this for yourself is, that you get an uncontaminated specimen for examination. In cases where tension is present in the muscles of the abdomen, if you make a series of circular movements over the lower abdomen, gradually narrowing your circle, you will be able to overcome whatever rigidity there may be present. Dr. Gardner urged caution in the use of the uterine sound. He rather considers it a dangerous instrument, that its use ought to be extremely limited; and holds the opinion that many women have lost their lives through this instrument. Then there is the danger and risk of infecting and injuring the uterine canal. This instrument, the uterine sound, is a great deal too much employed by the general practitioner. Mistakes in diagnosing displacements of the uterine body, he considers the most common. The uterus is a very movable organ and a distended rectum or bladder may cause it to be diagnosed as a retroversion. Then it is important to remember that it may be displaced through acts of coughing, vomiting, etc. In all examinations of the pelvic organs, Dr. Gardner has made it a point to examine the position of the kidneys as well. Referring to examination by the Sim's method, it is necessary to have the patient in the proper position; and if you have not a Sim's speculum, a bent table fork or the finger of the opposite hand, may be used to distend the perineum. Mistakes are often made in the diagnosis of pregnancy; but still the patients are few in whom the diagnosis cannot be made by careful examination of history, signs, etc. Many women are probably inaccurate as to date. Dr. Gardner illustrated his points as he proceeded by reciting cases. One in particular he instanced where he once found a woman in his office on her hands and knees in the throes of a twin pregnancy, which a fellow practitioner had failed to recognize and had tapped the gravid uterus and had drawn a quantity of the liquor amnii. Dr. Gardner referred to the mistakes made by himself as well as by his brother practitioners. The close of the paper referred to an interesting account of mistakes which had occurred in diagnosing extrauterine pregnancy. The Association voted him unanimously a hearty vote of thanks for his exceedingly practical paper.

An Unnoticed Factor in the Production of Abdominal and Pelvic Disturbances in Women.—DR. CLARENCE WEBSTER, of Chicago, contributed an interesting paper with the above title. Symptomatology in women, he said, was often overlooked by the general practitioner. The question of the normal relationship of the abdominal and pelvic contents was dwelt upon and then he proceeded to account for intraabdominal pressure, holding to the view that the pelvic organs as well as the abdominal were to a large extent held in their respective positions by reason of the pressure of the abdominal and pelvic walls. He stated the average specific gravity of the viscera to be a little more than that of water; the liver was 1.5 specific gravity. He maintained that there was no proof that the mesenteries acted as constant supports or were ever meant to be such; and the main factor in sustaining the viscera is the strength of the abdominal wall and pelvic floor. Local weakness of the abdominal wall has been fairly well described under hernia; while general weakness of the abdominal wall has been described as pendulous belly. General weakness in his experience is an exceedingly rare condition. As to the question of etiology, the condition is found in women who have borne children; and so, on examination of the great majority of women, there is found some degree of separation of the recti muscles in the region of the navel. All evidence later on may disappear, but permanent widening remains. The results of all this is unavoidable enteroptosis; and this is generally found in women who have been addicted to the pernicious habit of tight lacing. A very common displacement seen is that of the right kidney. Dr. Webster dwelt upon the diagnostic symptoms of these conditions and then proceeded to describe the operation he performs for their relief. This consists in bringing the edges of the two recti muscles into apposition. He first performed this operation in November, 1898. Since that time he has operated upon 41 cases and the results have been most satisfactory in all. MR. I. H. CAMERON took exception to Dr. Webster using the word "unnoticed" in the title of his paper, as he thought this was not an unknown factor in the production of the conditions mentioned in the paper. DR. W. S. MUIR, of Truro, N. S., asked what effect leaving off the use of the binder after confinements had to do with the production of these conditions. DR. WEBSTER held to the opinion that this had not been noticed except by himself and challenged Mr. Cameron to quote authority otherwise. The absence of the binder in his opinion had not made any special difference.

Address in Medicine.—PROFESSOR F. S. SHATTUCK, of Harvard University, said in opening his address that the advance in knowledge had brought about our relation to things in general. There is noticed a subdivision of labor in every branch of industry. As a consequence, specialization has taken place in the science and art of medicine. In specialization lies the cleavage between medicine and surgery; and nowhere has the line been more closely drawn than in England. Anesthesia greatly enlarged the bounds of surgery. Twenty-five years ago there was not a pure surgeon in America. Bellyache is now a surgical disease. The heart is practically the only viscus which remains the exclusive property of the physician; and he was not so sure that even this organ would soon be attacked and we might hear of suturing of the mitral valves. In this country the general practitioner is clinging to obstetrics for family practice. In some of the larger centers, there is now even a tendency to specialism in obstetrics, where the specialist will preside at the accouchement, and the family practitioner then step in to oversee the attendance throughout the puerperium. Pure gynecology scarcely exists today; and pelvic tinkering is suffering from a rapid decline. The great bulk of major gynecology is nothing more than abdominal surgery, which properly belongs to the general surgeon. Gynecologists should study general surgery and become general surgeons first. The field in medicine is so large that no one man can grasp it all in a lifetime. Other specialties were referred to. The desire on the part of some to escape the hurly-burly of general practice may be a cause in throwing them into special lines; and then there is the fact that special knowledge draws larger fees. Ophthalmologists get more for removing a speck of dust from the eye than the general practitioner. When we have specialists for diseases of the young, why not also have a specialty for the diseases of the old? In

the belief of the distinguished professor from Harvard, specialism had come to stay. The gathering was exceedingly delighted with the deliverance of Dr. Shattuck, and at the close voted him a cordial vote of thanks, to which he made an appropriate reply.

Gastric Hemorrhage.—This paper was read by Dr. GEORGE E. ARMSTRONG, of Montreal, who believed there was a fairly well-determined field in which surgical interference may be of use in hemorrhage of the stomach. Hemorrhage occurs in 50% of gastric ulcers and is fatal in 8%. Cases are arranged in two groups, the acute and the chronic. Rodman has reported 31 operations for frequently occurring or chronic hemorrhages, with 6 deaths. Dr. Armstrong has operated 5 times for gastric hemorrhage, one being a chronic case. In one of these the patient was getting along nicely after the operation when she expired suddenly; and on a postmortem examination being made, thrombi were found in the branches of the pulmonary artery.

Some Cases in Stomach Surgery—Gastrotomies, Two Cases; Gastrostomies, Two Cases; Pylorotomy.—Dr. A. E. GARROW, of Montreal, reported these cases. In one patient operated on, the patient was fed before he left the operating table. Another, a woman of 50 years, who had a persistent hacking cough had gastrostomy performed and was discharged able to feed herself through a tube. In another case, in a man aged 33 years, who had vomiting and blood in the stools, the patient suddenly had acute pain with a pale face. Duodenal perforation was present; and when the abdomen was opened gas escaped from the incision. When discharged on July 24 last, he was feeling well. Six cases were reported.

The Modern Treatment of Retroversion and Prolapse of the Uterus.—Dr. A. LAPHORN SMITH presented an able paper with the above title. It referred to the proper and most successful management of procidentia uteri in elderly women between 70 and 75 years of age—a most pitiable condition. Except for this trouble she may be otherwise in excellent health; the perineum, however, is so relaxed that no pessary will remain in place. Then the majority of these cases have an ulcerated cervix. After confinement the uterus remained large and the pernicious habit of keeping women too long on their backs has a tendency to produce the backward displacement. Dr. Smith feels certain that women who have been relieved of this distressing condition will have little difficulty in persuading others to avail themselves of the treatment. He removed a woman's uterus a few months ago which had been out of her body for 20 years, and the patient now assures him that she feels like a young woman. In correcting this deformity Dr. Smith makes a small incision in the abdomen and performs ventrofixation. After that the vaginal canal is narrowed by a large anterior and posterior colporrhaphy. In selected cases he also amputates the lower half of the organ and then stitches the vagina to the upper half. He considers ventrofixation if properly performed a most reliable means of fastening up the uterus. The operation has given him the most complete satisfaction of any operation he has ever performed, especially when combined with amputation of the cervix and posterior colporrhaphy.

Gasoline as a Surgical Detergent.—A paper that was highly original was contributed by Dr. BRUCE L. ROIRDAN, of Toronto, on the use of gasoline as a detergent. With this, dirty, greasy hands of machinists, who are the subjects of injuries in these parts, can be effectively and rapidly cleaned, without the ordinary brush, and soap and water. It is far better for this purpose than any method heretofore devised for cleansing. He now constantly carried a small bottle of this in his surgical bag. A report from Dr. WILLIAM GOLDIA, of Toronto, showed its effects upon germs and germ life, a report which would conduce to its employment as indicated. One word of caution was thrown out by Dr. Roirdan in its use; as it is a highly inflammable substance it should not be used in any quantity near an exposed light, and it is painful in the eyes or ears. It is also used in cleansing sutures of accumulated serum, blood, and dressing powder, thus freeing these particles and enabling one to locate the stitches easier and quicker. Dr. J. C. MITCHELL, of Inniskillen, Ont., stated that he had tried gasoline recently as a detergent in two very severe threshing-machine accidents, where the parts were all smeared over with oil and grease and dirt, and it was very satisfactory, as he was

able to get perfect cleanliness in a short time, both wounds healing by first intention.

Dilation and Prolapse of the Stomach.—PROFESSOR ALEXANDER MCPHEDRAN, of Toronto University, presented this paper, which dealt principally with prolapse. This condition rarely occurs alone, but is associated with prolapse of other abdominal organs. There is generally present as well some degree of dilation, and the abdomen may be prominent or flat, or even retracted. The case of a man aged 51 years was referred to, a manufacturer, who had been ailing for 2 or 3 years. The stomach was below the umbilicus. He was directed to massage the abdomen very thoroughly and to practise abdominal gymnastics. Through this treatment, combined with dietetics and some strychnin, he has been restored to health, and able to resume business. Another case, that of a woman, aged 35 years, was reported. This woman had been the subject of recurrent attacks of vomiting for 2 years. The symptoms were detailed; massage and abdominal gymnastics ordered with satisfactory results. The different ways of examining the stomach were described, and, in concluding, Dr. McPhedran spoke of the benefits of a change of scene in treating these cases.

Physical Training; Its Range and Usefulness in Therapeutics.—Dr. B. E. MACKENZIE, of Toronto, gave a very interesting account of the methods employed by him in correcting deformities in his orthopedic hospital in that city. The paper was illustrated by lithographs showing improvements in spinal deformities after physical training in the direction indicated. The paper embraced the results of his observations for 13 years past, and was ample justification of the benefits derived from gymnastics in the correction of lateral curvature, clubfoot, etc. He had also found physical training valuable in hysteria and chorea, especially the former.

Interprovincial Registration.—Dr. T. G. RODDICK, M.P., read the report of the committee having this matter in hand. A new feature to be incorporated in the measure was that of allowing the homeopaths representation on the proposed Dominion Council, as according to the law of Ontario, these had their vested rights in that province, and so must be accorded similar interests in any proposed Dominion Council. These will be allowed 3 representatives, which will be equivalent to the representation from any one province of the Dominion. Their term of office will be 4 years. Homeopathy, however, as such, will not be inserted in the measure, but they will be classified under "any other school of medicine having legal recognition in any of the provinces in Canada," as the British Medical Council would not recognize any such body. Dr. Roddick stated that the Bill would be introduced at the next session, and advised the members of the committee from each province to bestir themselves before their respective provincial parliaments, as these bodies must sanction the measure before it can be finally acted upon by the Dominion Parliament.

Cerebral Abscess.—Dr. JAMES STEWART, of Montreal, reported 2 interesting cases of abscess of the brain, situated in the temporo-sphenoidal lobe, and referred to the unusual existing aphasia which was present in both cases, viz., simple inability to name objects. The first case occurred in a young man of 22 years, who had otitis media following an attack of influenza. Some 6 weeks afterwards an abscess formed. The abscess was diagnosed as being confined to this area simply on account of the peculiar aphasia,—the simple inability to give the name of a pen when that object was presented to him. The patient was operated on by Professor Ball, who secured 2 ozs. of pus. Meningitis, however, set in and the patient died. The second case was a girl of 21 or 22 years of age. She had had ear trouble for a great many years, with very severe pain at times. She, too, had difficulty in naming objects, and she could not name any object whatever, finally. She died suddenly a few hours before the operation was to be performed for her relief. On opening the skull at the subsequent postmortem examination 2 abscesses were found, 1 skirting the upper margin of the lobe, and the other situated about the center thereof. In reply to a question of the President whether we were to take this kind of aphasia as a distinct diagnostic symptom of abscess in that region, Professor Stewart stated there is what is called a "naming center," and when this is destroyed that particular form of speech defect is present. The cases were aptly illustrated by a diagram.

Gangrene of the Leg Following Typhoid Fever.

—DR. H. H. CHOWN, Winnipeg, reported two cases of gangrene of the leg following typhoid fever, which had recently come under his observation. In the first case the patient had the classical symptoms of typhoid fever, the spots appearing at the end of the first week and being very numerous. Great pain set in in the calf of the leg, with collapse symptoms, while the limb was cold and bloodless. Cutaneous sensibility was lost over the leg. The third day after the complication set in the part involved included the lower third of the leg on the inner side and the lower half of the outer. Operation was done at junction of upper and middle third of femur. Patient stood the operation well. The temperature before the operation was 102.6; pulse 120. On the following day the temperature was normal and the pulse 110. On the tenth day the flaps were united. There was a rise of temperature a few days later—a relapse, with hypostatic congestion of the lungs. On the fifth day after there was hemorrhage of the bowels. The patient is now a picture of health, weighing 200 pounds. The second was a somewhat similar case in which the blood reacted early and promptly to the Widal test. The gangrene began in the first case on the eleventh day of the disease; in the second on the ninth. Keen reports gangrene on the fourteenth day. The gangrene in the second case extended to the upper and middle third of the leg. The leg was amputated and prompt union took place throughout.

DR. R. B. NEVITT, of Toronto, discussed these cases and mentioned a similar case coming under his observation during the past summer. Gangrene occurred in his case about the third week of the fever, and the patient was seen about a week or ten days thereafter. Amputation was performed through the middle third of the femur. He also referred to a case of gangrene of the arm following an attack of pneumonia, recently observed by him.

Notes on Atropin.—An interesting paper was that contributed by DR. R. D. RUDOLF, of Toronto University, which was illustrated by means of a chart showing the action of the drug on animals and the inferences drawn therefrom of its therapeutic uses. He finds that the drug directly stimulates the heart, and thus the blood-pressure is markedly raised. He considered that the maximum single dose as laid down by Witherstine of $\frac{1}{30}$ of a grain, as too large unless used as an antidote; and thinks that we ought never to give more than $\frac{1}{100}$ of a grain of atropin sulfate at one time except in emergencies. He also referred to its action in catarrhal pneumonias of children and its employment before anesthesia, to ward off danger.

The paper was discussed by DR. A. D. BLACKADER, who congratulated Dr. Rudolf upon it and said that he hoped he would pursue his studies farther upon the same subject to find out the effect it would produce in controlling vomiting after anesthesia. He considered, however, that strychnin and not atropin was the most powerful heart tonic in our possession. He thought that late experiments would throw doubt upon atropin being a direct stimulant to the heart-muscle; and he thought it would be questionable practice to administer a drug when he wanted to stimulate the heart's action that would paralyze nerve endings.

Lantern Slide Demonstration of Skin Diseases.

The demonstration of these cases was conducted by DR. GEORGE H. FOX, of New York City, and it proved to be one which the members of the Association thoroughly appreciated. The great majority of the skin-lesions shown were of syphilitic origin; and as they appeared on the canvas, Dr. Fox described the histories of the cases. One in particular is remembered from the disfigurement of the woman's face. It was a large mass of excrescences on the nose, which Dr. Fox was to get rid of in the course of two or three months, leaving only a slight superficial scar. He laid down a timely word of caution in treating syphilitic conditions, that when the patient was run down and emaciated, through large doses of mercury or iodid of potash, not to keep on pushing these drugs, but to desist for a time, and in the interval endeavor to build up the patient's strength and general condition. That accomplished, return to the specific treatment, and the results would be found to be more beneficial. At the conclusion of the doctor's demonstration, which will rank as one of the features of the meeting, Dr. Fox was voted a cordial vote of thanks for his instructing work.

DR. F. J. SHEPHERD showed a very interesting case, a boy

of 16 years who, at the age of 6 sustained a severe cutting injury of the nerves and vessels of the axilla, all the nerves of the brachial plexus below the cords of the brachial plexus being severed completely. At that time, 10 years ago, Dr. Shepherd dissected out each nerve separately and united their respective ends by suture. All did well with the exception of the musculo-spiral with which, as a consequence, the lad exercises very little control over the extensors of the forearm.

The Successful Treatment of Two Important Cases of Disease of the Eyes by the Combined Methods of Mercury and Iodid of Potash Internally and Pilocarpin Hypodermically.—DR. G. H. BURNHAM, of Toronto, reported two cases successfully treated by his combined method. Under this method no such result follows in other plans of treatment, and with this plan a permanent result is got. This treatment has a wide application, whether iodid of potash or mercury or the iodid alone be given internally in suitable cases without satisfactory results; if the pilocarpin be added, good results will always follow.

Mental Sanitation.—The assistant superintendent of the Brookville Asylum for the Insane, DR. R. W. BRUCE SMITH, contributed a scientific paper with the above title. It was a plea for prophylaxis in insanity, and he thought that much would be accomplished in this direction during the twentieth century. Insanity was on the increase in Canada, and it can be ascribed to the fact that while these unfortunates are well attended when they become insane, the fact that there have been no preventive measures employed speaks for itself. In order to accomplish good in this direction, we must seek either to lessen the demands on, or to strengthen the resisting power of, the brain. He condemned intermarriages in families and also amongst those of a deranged mentality. Fifty per cent. of the cases of insanity were hereditary, and the descendants of these should be careful in contracting marriage ties. He referred to a portion of one county in Ontario alone, where indiscriminate marriage and intermarriage has become most fruitful; and he has seen several members of one family from that locality inmates of the same institution at the same time. He considers that the day may yet dawn when we will give the same attention to the rearing of children as we now give to the breeding of horses. Speaking of farm life and the tendency it has to melancholy, he thought this class of the community should receive education in participating more in the enjoyments of life and not to continue to rot in domesticity. An upheaval in the sentiment and surroundings of the rural homes would work wonders in prophylactic principles.

The Canadian Medical Association endorsed the scheme for the formation of a Dominion Anti-Consumptive League. The following were recommended as provisional officers: President (Honorary), the Governor-General. President, Sir James Grant, Ottawa; vice-presidents were appointed for all the provinces; the secretaries are to be the secretaries of the different provincial boards of health; secretary-organizer, Rev. Dr. Eby, Toronto; treasurer, J. M. Courtney, Esq.; deputy finance minister, Ottawa.

The Medical Defence Association.—The Association recommended that Dr. V. H. Moore, of Brookville, be the permanent chairman. One member for each province was appointed. This committee will gather information on the subject and bring in a recommendation at the next annual meeting. The treasurer's report showed that 153 members were in attendance and that there was a balance in the treasury of \$240.65.

Election of Officers.—President, H. H. Chown, Winnipeg; vice-presidents, P. E. I., H. B. Johnson, Charlottetown; N. S., A. J. Haiter, Halifax; N. B., T. D. Walker, St. John; Quebec, A. Laphorn Smith, Montreal; Ontario, A. A. Macdonald, Toronto; Manitoba, J. A. Macdonald, Brandon; N. W. T., J. D. Lafferty, Calgary; British Columbia, S. J. Trinstile, Vancouver. Treasurer, H. B. Small, Ottawa; general secretary, F. G. Starr, Toronto.

Next place of meeting, Winnipeg.

Sir William Hingston and Dr. F. W. Campbell, of Montreal, were appointed on the board of governors of the Victorian Order of Nurses, as representatives of the Canadian Medical Association.

The Latest Literature.

British Medical Journal.

September 1, 1900. [No. 2070.]

1. Discussion on the Treatment of Malaria by Quinin. ANDREW DUNCAN, W. J. BUCHANAN, ROBERT FIELDING-OULD, PATRICK MANSON, JAMES CORT MARSDEN, DAVID C. REES, C. F. HARFORD-BATTERSBY, E. M. WILSON, B. S. RINGER, C. B. MAITLAND, JAMES CANTLIE, EDWARD HENDERSON, RONALD ROSS, GUTHRIE RANKIN, OSWALD BAKER, and KENNETH MACLEOD.
2. The Metamorphosis of the *Filaria Sanguinis Hominis* in Mosquitos, especially with Reference to its Metamorphosis in the *Anopheles Rossii* and other Mosquitos of the *Anopheles* Genus. S. P. JAMES.
3. The Etiology of Filariasis. J. MAITLAND.
4. The Hot Weather Diarrhea of India. W. J. BUCHANAN.
5. The Diseases of Goorkhas. ANDREW DUNCAN.
6. A Discussion on Ankylostomiasis. G. M. GILES, C. F. FEARNSIDE, LEONARD ROGERS, OSWALD BAKER, PATRICK MANSON, RONALD ROSS, and JAMES CANTLIE.
7. Tropical Liver Abscess. KENNETH MACLEOD.
8. Subhepatic Abscess. JAMES CANTLIE.
9. The Diagnosis and Surgical Treatment of Tropical Liver Abscess. W. JOHNSON SMITH.
10. Abscess of the Left Lobe of the Liver, with Particular Reference to its Amebic Causation. P. W. BASSETT-SMITH.
11. Some Suggestions for the Improvement of the Sanitary and Medical Practice in the Tropics. RONALD ROSS.
12. Notes on a Case of Blackwater Fever, with a Description of the Microscopical Appearances. GEORGE THIN.
13. The Cyprus Sphalangi and its Connection with Anthrax (called locally "Sphalangi Bite"). GEORGE A. WILLIAMSON.
14. A Discussion on Yaws. JONATHAN HUTCHINSON, E. DAVIES, PATRICK MANSON, D. C. REES, and KENNETH MACLEOD.
15. A Discussion on the Nature and Varieties of Pneumonia in Children. NESTOR TIRARD, F. J. LORIMER HART, H. OLIPHANT NICHOLSON, ALFRED MILNE GOSSAGE, W. SOLTAU FENWICK, FREDERICK TAYLOR, and THOMAS DAVID LISTER.
16. Hypertrophy and Dilation of the Colon in Infancy. W. SOLTAU FENWICK.
17. A Discussion on Enlargements of the Spleen in Children. SAMUEL WEST, R. MURRAY LESLIE, ALFRED MILNE GOSSAGE, THEODORE FISHER, and JOHN THOMSON.
18. Congenital Hypertrophic Stenosis of Pylorus; with an Account of a Case Successfully Treated by Operation. JAMES H. NICOLL.
19. An Explanation of the Cause of Infantile Scurvy, with Suggestions as to its Prevention. CYRIL E. CORLETTE.
20. A Discussion on Lateral Curvature of the Spine, Flat-foot, and Knock-knee. J. JACKSON CLARKE, CHISHOLM WILLIAMS, NOBLE SMITH, E. MUIRHEAD LITTLE, JAMES GREEN, and FREDERICK TAYLOR.
21. Ambidexterity; A Plea for its General Adoption. E. NOBLE SMITH.
22. An Analysis of a Series of Cases of Infantile Paralysis, with some Notes on Treatment. MUIRHEAD LITTLE.
23. Apathy following Use of Thyroidin. F. G. HAWORTH.
24. Antistreptococcus Serum in a Case of Puerperal Septicemia. T. MORTON.
25. *Anopheles* in St. Lucia. ST. GEORGE GRAY.
26. Notes on Two Cases of Exophthalmic Goiter Appearing Suddenly in Men who have been in Action. W. H. HARLAND.
27. A Case of Renal Calculus: Nephrolithotomy. ERNEST F. NEVE.

1.—Duncan opened the discussion on the treatment of malaria by quinin at the Section of Tropical Diseases of the British Medical Association. He has no doubt but that quinin has a prophylactic action in relation to malaria. The evidence in regard to the value of arsenic as a prophylactic agent against malaria is conflicting, but in the experience of the author it has been of no benefit. Narcotin is not so efficient as quinin as a prophylactic. For the last 3 years, the

author has compared the curative action of quinin with that of other drugs in the treatment of the disease, and quinin makes the best showing of any of the drugs used. It requires a fewer number of administrations of quinin to cure the disease and the number of failures from its use was the smallest. The drug should be given by the mouth at first and, if this method is not productive of good results in a few days, it should also be given by the rectum in 20-grain doses. In 1894 Buchanan tried the experiment of giving daily or several times a week a dose of quinin or of cinchonidin to every prisoner in the Punjab. The sickness and mortality rates in this district for that year were so low that the system was tried in other provinces, so for the past 5 years the prophylactic use of quinin against malaria has been tried on an extensive scale. As a result it is safe to state that quinin will prevent the incidence of malaria to a considerable degree. Furthermore, the prolonged use of quinin by healthy individuals is possible without the slightest mischief resulting. The author has never seen a single case of hemoglobinuria resulting from the use of the drug. Fielding-Ould entirely disagrees with the idea that quinin should be used as a prophylactic against malaria. It is obviously wrong to speak of the prophylactic effect of quinin; the alkaloids of cinchona do not prevent malaria, they only attack the parasites when they are in a certain stage of their development. A patient has not always young amebas in his blood, yet he continues to take large doses of quinin, thereby often doing great damage to his digestion, that function which it is most important to keep in good order in the tropics. In addition to disturbing the peptic digestion, quinin is very apt to lead to congestion and torpidity of the liver, and it is the patients who exhibit hepatic symptoms who go down, when invaded by malaria parasites, with pernicious forms of the disease. Except in cases of actual fever and on exceptional occasions, such as after great fatigue or during a march, quinin should be avoided. A full dose of 15 grains of quinin should be given when the organisms are about to sporulate or when they are in their youngest phase as sporocytes. So long as digestive disturbance is absent the drug should be given by the mouth, but when the stomach is intolerant the hypodermic should be employed; 3 grains of the hydrochlorate is a full dose by this latter route. If given with proper aseptic precautions suppuration seldom occurs. Rectal administration is often advantageous and as much as 30 or 40 grains may be given at one dose. The administration of quinin should be continued for some weeks after the cessation of all febrile symptoms or until the microscope shows that the blood is free from the parasites. Manson said that the reputed prophylactic action of quinin is but a phase of its therapeutic action; it is the application of the drug to the parasite and not an immunizing of the body against the entrance of the parasite that we have to deal with; therefore, we may confidently expect that if it will cure a malarial infection it will prevent its development,—the development of, though not the introduction of, the germ. We may expect it to be a timely prophylactic against the benign tertian form of the organism but less active against the malignant tertian form. The value of the drug is likely to be underestimated in consequence of its being given in a routine fashion, and often under conditions in which it cannot be absorbed. Marsden has given quinin both as a prophylactic and as a therapeutic agent for 20 years with uniformly good results. Rees is of opinion that 5-grain doses of quinin administered daily lessen the severity of the cases of fever and diminish the mortality, although it does not reduce the number of cases that develop. He inclines to the use of 2-grain doses of quinin 3 times a day as a prophylactic. Harford-Battersby believes strongly in the prophylactic action of quinin. For the curative effect, he believes that the best results are obtained by giving 10 grains of the drug at the beginning of the sweating stage, after the bowels have been freely opened. He does not believe that quinin is the cause of hemoglobinuric fever. Wilson does not think that quinin has much prophylactic effect. Maitland had used methyl-blue with good results in cases of malaria, in doses of 3 grains 3 times a day. He had found that quinin could be given with safety in any stage of pregnancy. Henderson gives a dose of 15 grains of quinin in the sweating stage of the disease, after the temperature has fallen; he follows this with a few 5-grain doses and this usually puts an end to the attack. He considers quinin a dangerous drug to give to pregnant

women, and is of opinion that the effect of quinin on the pregnant woman can be lessened by guarding it with some preparation of opium or with chlorodyne. Ross pointed out that old cases of malaria might be secondary to enlargement of the liver and the spleen, not due to the parasites and not amenable to quinin. He prefers to give quinin in solution. Baker believes that the prophylactic dose of quinin is the same as the curative dose. [J.M.S.]

2.—James has succeeded in keeping members of the *Anopheles* genus of mosquito alive for 14 or 15 days by putting them in a bottle in which a ripe banana was hung during the day and liberating them beneath his own mosquito-bar during the night. By this method the author has traced the **metamorphosis of the *Filaria sanguinis hominis*** to its final stage in the *Anopheles Rossii*. The young filariae are found in the tissues of the thorax, in those of the head and neck, and, in smaller numbers, in those of the abdomen. By carefully dissecting the tissues of the head with needles and separating the parts of the proboscis, 2 or 3 filariae may almost invariably be found. On 2 occasions a filaria was found stretched out lengthwise, partly within the labrum of the proboscis, the remainder of the body being curled up in the tissues of the head. Since large, moving filariae have been found in this situation it can hardly be doubted that young filariae may gain entrance to the human host when the mosquito bearing them are in the act of biting. In the tissues of the mosquito the filariae can move about by boring their way from one place to another. In water, however, their powers of locomotion are very limited and they die in from 2 to 3 hours. The author succeeded in transferring a filaria that he was examining in water to another part of a microscopic slide; then, by introducing some human blood beneath the cover-glass, the movements of the worm were seen to become much more active. The filariae that were in water alone died in about 2½ hours, but the one that was kept in blood was active for over 6 hours. If this experiment can be confirmed it will afford a strong proof that the filaria pass directly from the mosquito to man without having first to exist for some time in water. In the discussion that followed the reading of the paper, Manson said the fact that the filaria has been found in the proboscis of the mosquito suggests, without absolutely proving, that the parasite is directly inoculated into man by the bite of the mosquito. It is a well-known fact that the young filaria can live several hours in water, and possibly it would live longer in dirty than in clean water, because more food would be found in the former. It must be remembered that before the embryos can be found in the blood a large number of parent worms must be present in the lymphatics. It is easy to understand how the European escapes infection by filaria, sleeping as he does under a mosquito bar and in good hygienic surroundings, he is at most bitten once or twice by filariated mosquitos. The native, on the other hand, sleeps without a net and is month after month bitten by his own filaria-charged mosquitos, and thus becomes the subject of a high-grade filarial infection. [J.M.S.]

3.—Maitland dissents from the theory of direct inoculation of the **filaria** from the mosquito to the human host. He calls attention to the fact that cases are on record in which servants suffering from **filariasis** live in the same house with masters who are not subjects of that disease. He does not think that the mosquito-bar explains the apparent immunity because the Europeans are liable to be bitten by mosquitos during the day. He believes that water is the medium by which the filaria is introduced into the human system, and he cites several instances of infection that would tend to confirm that opinion. He believes the immunity enjoyed by the European is due to the fact that only boiled or filtered water is drunk by this portion of the population. [J.M.S.]

4.—Buchanan describes the **hot weather diarrhea of India**. The onset of the disease is always sudden and is characterized by violent purging and vomiting. The stools are at first loose and feculent and the vomitus is composed of the last meal. The former soon become abundant, more or less colorless, and pour out from the rectum as from a tap. The patient becomes collapsed and cyanotic and resembles, though in a much less degree, the appearance of a cholera patient. The urine may be suppressed, and in old people the attack may result fatally in a short time.

Usually, the violence of the attack becomes less in the course of a day, the temperature rises to 102°, the stools become normal, and recovery is rapid. In some cases the inflammation of the intestine goes on to an ileocolitis and dysenteric symptoms persist for a few days. Transient albuminuria is often seen, constipation after recovery is the rule, and microscopic examination of the stools shows epithelium, starch grains, particles of grain and husk, and numerous bacteria. The treatment consists of liquid diet, brandy, or rum, and, after the stools become distinctly watery, chlorodyne or camphoridyne. A dose of castor oil is indicated when the diarrhea is about checked. The predisposing causes are: (1) Badly cooked food, (2) hastily eaten food or overeating, (3) unripe or overripe food, (4) raw grain, (5) drinking too much water, (6) too rich food, (7) badly prepared grain, (8) overindulgence in alcohol, and (9) excessive use of inferior fibrous vegetables. The disease is to be differentiated from cholera (1) by the absence of cholera in the neighborhood, (2) by the low death-rate, (3) by the absence of cramps, the less marked collapse, and the absence of rice-water stools. [J.M.S.]

5.—Duncan has found that **malarial fevers among the Goorkhas** are of a particularly intractable character. If the rectal injection of 15 or 20 grains of quinin was not beneficial the only resort left was to send the patient to another district. The rectal way was found more efficient for the administration of quinin than administration by the mouth. Cases of **tuberculosis of the lungs** pursued a very rapid course. **Mumps** and **measles** were very common. **Ophthalmia** was common and more so among the married Goorkhas than among the bachelors, probably on account of the more unsanitary condition of the quarters of the former class. **Typhoid fever** was not common. [J.M.S.]

6.—Giles gives a description of the method that he employed in order to develop adult members of **Ankylostoma duodenale** in the laboratory. He believes that the presence of the parasite in the human intestine is responsible for a formidable mortality, and even a greater amount of chronic sickness. The worm has been found in persons who are apparently healthy as well as in those manifestly sick. The **anemia** produced by the worm cannot be due to the loss of blood alone, but is very probably due to the damage to the mucous membrane of the intestines by the worms. It is also probable that the worm in its growth produces a poisonous excretion that is concerned in the production of the anemia. Fearnside has made a systematic search for the ova of *Ankylostoma duodenale* in the stools of all the new arrivals at the Central Prison, Rajahmundry. Out of 678 new arrivals, 68.1% harbored the parasite. Out of 72 persons that harbored the parasite 70% were in good health, 16.6% were in indifferent health, and 13.9% were in bad health. Nearly 35% of subjects harbor both *Ankylostoma duodenale* and *Ascaris lumbricoides* simultaneously. Out of 200 convicts that had been in the jail for over 6 months, and who were, consequently, subjected to better hygiene and cleaner food, only 58% harbored *Ankylostoma*, while only 18.5% showed *Ascaris lumbricoides*. Out of 105 postmortem examinations 74.3% showed the presence of this worm; 57.9% showed congested areas in the bowel; and 11.4% showed small erosions and ulcers. The experience of the author goes to show that the effects of the *Ankylostoma* are for the most part secondary. The worms seldom occur in such numbers as to cause true **ankylostomiasis**. The symptoms of ankylostomiasis are the result of concurrent disorders such as malaria and dysentery. In these conditions the presence of the parasite sets up local congestions and erosions of the bowel which cause a catarrh, which, in turn, retards the proper assimilation of the food and the recovery of the patient. Furthermore, the parasite bleeds a patient who cannot afford to lose more blood. For the **diagnosis of ankylostomiasis** it is necessary to exclude all other blood-destroying diseases rather than to depend upon the mere presence of the parasite in the bowel. Rogers defines the term **ankylostomiasis** as a disease characterized by anemia produced by long continued small losses of blood through the gastrointestinal mucous membrane, caused by the presence of several hundreds of ankylostomata acting for many months; or by a still larger number acting for a shorter time. Ova can easily be found in a single cover-glass preparation of the feces when but 5 to 15 worms are present; but, on the other hand, if they are met

with in nearly every field of the microscope, then it is certain that the parasites are present in large numbers and thymol is indicated if the patient is in a condition to stand it. The mere discovery of one or two ova is not an indication for thymol unless it is quite certain that the drug will do no harm; because much greater injury may be inflicted by the drug than will be compensated for by the removal of the very few worms that may be present. The author has made careful studies of the blood condition in ankylostomiasis and several other conditions that may be mistaken for it. He finds that in healthy Assamese the hemoglobin is 62%; the red corpuscles are 4,734,000; and the leukocytes are 7,325. In the epidemic malaria of Assam the hemoglobin is 33%; the red corpuscles number 2,462,000; the leukocytes were 2,600. In ordinary chronic malaria the hemoglobin was 32%; the red corpuscles were 2,000,000; the white corpuscles were 1,600. In ankylostomiasis the hemoglobin was 11.5%; the red corpuscles were 1,145,000; the leukocytes numbered 5,338. In cases of malaria complicated by ankylostomiasis the hemoglobin was 27%; the red cells were 3,120,000; the white corpuscles 3,200. The most important distinction is that in ankylostomiasis the hemoglobin is reduced twice as much as the number of red corpuscles so that the color index sinks to 0.31, or about $\frac{1}{3}$ the normal of healthy people of Assam. Again, the white corpuscles, although absolutely reduced in number, are relatively less reduced than are the reds, so that the proportion rises to 1 to 524 against 1 to 684 in the healthy controls. The color-index in uncomplicated cases of malarial anemia was always over 0.5; while the highest color-index encountered in ankylostomiasis was always under 0.4. The correct **treatment** of these 2 diametrically opposite forms of anemia should obviously be different. In that due to ankylostomiasis, iron is urgently indicated in order to assist in the production of hemoglobin; in the anemia of malaria, on the other hand, arsenic and bone-marrow are strongly indicated in order to increase the output of the red corpuscles which are being, or have been destroyed by the fever. Baker studied the prisoners in the Moulmein jail in order to determine the frequency of the occurrence of the ankylostoma in the natives of Burma. Taking the natives of Burma alone, of whom there were 69 studied, it was found that 55% were infected with ankylostomata. Ankylostomiasis is both directly and indirectly responsible for much mortality. The infection is conveyed through the medium of contaminated food, and water has but little to do with the matter. It would seem, therefore, that no marked diminution in the prevalence of and mortality from ankylostomiasis in Burma can be looked for until some system of sanitation has been generally adopted that will obviate the broadcast distribution of infective night-soil. Manson is of the opinion that thymol rarely fails in the treatment of ankylostomiasis, provided it is given in adequate and rapidly repeated doses, say 30 grains every hour for 4 doses. The differentiation of malaria from ankylostomiasis by hemocytometric methods, though interesting and valuable from a pathologic point of view, is impracticable under ordinary circumstances. [J.M.S.]

7.—After speaking of the conditions under which and the manner in which a **tropical abscess of the liver** may rupture into the thoracic cavity, Macleod points out that, in old-standing cases of lung-lesion consequent on hepatic abscess, the pathologic burden has been transferred from the abdomen to the chest, and that relief measures must be applied with that understanding, the lung-lesion being treated according to the special indications of the case, and the liver left to take care of itself. [J.M.S.]

8.—Cantlie says that by the term **subhepatic abscess** is meant a collection of pus on the under surface of the liver, between that organ and its capsule, commencing most probably in the lymphatics of this region. This form of hepatic abscess does not seem to depend upon dysentery or other forms of intestinal ulcer for its development, though it may be malarial. The only single definite feature which can serve as a guide to a diagnosis of these abscesses is the presence of a tumor in the epigastrium which is found to contain pus and is bounded by the liver above. The prognosis in these cases is generally good and the treatment consists in tapping with a large trocar and draining through a large tube. [G.B.W.]

9.—Smith says that **liver abscess** should always be put under the care of a surgeon, as this condition has little chance of recovering spontaneously, and the need of surgical

interference is often called for purely to help in the diagnosis either by puncture or exploratory laparotomy. In very few cases is it possible to make a positive diagnosis of pus in the liver by clinical methods alone. For diagnostic purposes the simplicity of puncture with a proper and sterilized needle is superior to the discomforts of an exploratory opening of the abdominal cavity. As to operation for the evacuation of the abscess a great deal of care is necessary in order to avoid infecting either the pleural or peritoneal cavities. In the transpleural route it is generally advisable, especially where a mixed infection of the abscess itself is suspected, to leave packing in the wound for a few days before opening the abscess, so that adhesions may form and shut off the dangerous cavities. [G.B.W.]

10.—Bassett-Smith reports a case of **abscess of the left lobe of the liver** occurring in a man who had just recovered from a subacute attack of dysentery. Two years previously he had returned from the Mediterranean, where he had been for a long while, but had always been perfectly well during his residence there. The abscess pointed in the epigastrium and was opened, but the patient died 3 days later. The postmortem showed the left lobe of the liver to be entirely occupied by a large accumulation of pus surrounded by necrotic walls. There were no secondary abscesses in the liver, though the organ was markedly increased in size. Cultures from the pus showed the presence of large numbers of *Amoebae coli*. [G.B.W.]

11.—Ross suggests some **improvements in medical organization in the tropics**, improvements that have long been required, and that can be very easily made. Instruction in animal parasitology and in tropic medicine should be given. Every examination-paper on pathology and medicine should contain at least one question on animal parasitology, and one on tropic medicine. Small but up-to-date libraries should exist in all the leading towns in the tropical possessions, especially in connection with the principal government-hospitals. Microscopes, with oil-immersion lenses, antitoxins, antivenene, and apparatus for bacteriologic diagnosis, such as material for the Widal test, should be found in the principal towns. Medical regulations and municipal sanitary regulations should be compiled and issued with the greatest care. Research should be organized (1) by the foundation of research laboratories; (2) by the appointment of specialists to prosecute certain definite lines of investigation, and (3) by the encouragement of private research. There should be a central scientific authority. [J.M.S.]

12.—Thin reports the case of J. R., aged 27, a marine engineer, who had been in British Central Africa for 18 months, and who died of **blackwater fever**. White corpuscles containing malarial pigment in minute granules and very small spheres were found in the tissues of the spleen. They were comparatively most numerous in the malpighian bodies and were present in the large white corpuscles of the splenic pulp. They were also found in the white corpuscles lying external to the walls of the small veins and in the lumen of the veins. In the liver, white corpuscles containing pigment were found in the capillaries and in small numbers in the veins. Most of the pigment was found in the endothelium of the capillaries, the course of many of these vessels being marked out by the pigment accumulated in the swollen and degenerated endothelial cells. Occasionally, small particles of pigment were found between the capillary vessels and the contiguous liver cells. In many of the liver cells the pigment was found in minute granules in the substance of the cells. In the kidney, the epithelial cells first become swollen and granular, then are detached from the basement membrane and block the tubule; the epithelial blocks gradually disintegrate until the final stage is reached, when the lumen of the tubule is found with a mass of minute rounded granules, not unlike groups of large cocci. The changes in the epithelial cells of the kidney illustrate the very powerful effect, in these cases of blackwater fever, of a toxin generated by the parasite. In the discussion that followed the reading of the paper, Manson said he would protest against jumping at the conclusion that **hemoglobinuric fever** is a form of malaria merely on the strength of the discovery of the malarial parasite in the hemoglobinuric patient's blood, or of melanin in his viscera. [J.M.S.]

13.—The **sphalangi** of Cyprus is an insect that resembles the ant in general appearance and in size. Williamson

has seen several cases in which the bite of this insect has been followed by symptoms that resemble **anthrax**. He thinks that the anthrax infection is conveyed to the patient by the short hairs with which the insect is covered; the insect, in turn, getting the anthrax-bacilli from feeding on the carcasses of animals that have died of anthrax, or, as it is called in Cyprus, **phlangari**. [J.M.S.]

14.—In the section of Tropical Diseases of the British Medical Association, Hutchinson opened a discussion on **yaws**. He presented to the section a young man who was said to be the subject of yaws. The author expressed his firm conviction that yaws was syphilis modified by race and climate. He considered that syphilis found its way to England, not from America, but from the African coast. Davies said that he had seen yaws in Fiji and in Samoa, but that it had always occurred in children. Manson said that inoculation by yaws would not protect against syphilis nor *vice versa*, and that it would be strange, if the two diseases were identical, that this should be so. Yaws, like many other parasitic diseases peculiar to the tropics, could not be imported to colder climates owing to the death of the parasite on account of the absence of continued high temperature. MacLeod said the patient exhibited by Hutchinson was undoubtedly infected with syphilis and not with yaws. [J.M.S.]

15.—According to Tirard, **bronchopneumonia** is frequent among children under 2 or 3 years of age. After this age, however, the tendency to assume the adult type of **pneumonia** is greater and a large proportion of patients admitted to the wards present the physical signs of true **croupous pneumonia**. Pneumonia is no doubt the result of a general infection. The author is extremely doubtful whether the disease is ever contagious in the ordinary sense of the term. Pneumonia may present abnormal features, (1) in regard to the temperature, (2) in regard to the initial symptoms, and (3) in regard to the physical signs. Nicholson has studied the cases of pneumonia by means of the sphygmograph and the sphygmometer. In acute croupous pneumonia at the onset and for the first 48 hours or so the pulse is very generally of higher tension than normal. After 2 or 3 days, when the disease is working toward the crisis, the pulse-curve becomes of the low-tension type. The tracing becomes markedly irregular and unequal in the force of the individual beats. In the bronchopneumonia of children the same characteristics of pulse and blood-pressure were found; but the pressure was never so high as at the commencement of the attack. The chief indication for treatment suggested by the condition of the pulse seems to be that the arterial pressure should be looked after. Its tendency to fall should be anticipated and all therapeutic measures should aim at maintaining a pressure sufficient to give the cardiac muscle an adequate blood-supply through the coronary arteries to enable it to hold out. The newer methods of treatment by abdominal ice bag and by saline infusions fulfil this indication. Of drugs used to maintain a good blood-pressure, digitalis, though theoretically ideal, is peculiarly disappointing in children, and strophanthus, strychnin, and ammonium carbonate are much more useful. Gossage said that in bronchopneumonia the infection comes through the bronchial tubes, while in lobar pneumonia it comes by the blood-paths. [J.M.S.]

16.—Fenwick reports the case of a male child, 1 year and 5 months old, who suffered from swelling of the abdomen and constipation. The latter symptom gradually increased until the age of 9 months, when the abdomen began to swell. The abdomen was enormously distended and almost globular in shape. From time to time, strong peristaltic contractions were observed and it then became obvious that a prominence seen above the umbilicus was due to a single piece of bowel, which came into relief like a man's arm slightly bent at the elbow, and slowly contracting from right to left. The lower left half of the belly appeared, at the same time, to contain 2 perpendicular cylinders that moved in opposite directions. At the autopsy, when the belly was opened, its contents appeared to consist of 3 distended pieces of intestine. Its right half was occupied by the transverse colon, which passed from the right iliac fossa, obliquely upward and to the left, toward the hypochondrium, filling up the epigastrium and giving rise to the protuberance observed there during life. The left half of the abdominal cavity contained 2 sacs that lay side by side in its long axis and reached from above the

level of the umbilicus to the brim of the pelvis. Subsequent examination showed that this latter appearance was due to an enormous dilation of the sigmoid flexure while the pelvis was completely filled by the distended rectum. These cases of **dilation of the colon** have as their most important and significant feature a **hypertrophied** state of the **muscular wall of the bowel**. [J.M.S.]

17.—West opened the discussion on **enlargement of the spleen in children** at the meeting of the Section of Diseases of Children of the British Medical Association. He laid particular emphasis on **splenic anemia** or **primitive splenomegaly**. The features of the disease in the adult are extreme and progressive anemia, usually without emaciation; early and progressive enlargement of the spleen, without enlargement of the lymphatic glands; attacks of severe pain in the splenic region; and a fatal ending sooner or later with the usual symptoms, namely, profound anemia, repeated hemorrhage, and extreme asthenia. The affection in the infant runs a chronic course, lasting some months, but in the end many cases get quite well. Syphilis is occasionally, and rickets frequently, associated with splenic anemia; but the association is not constant in either case. Neither syphilis nor rickets can be the sole cause, and are probably not the cause at all, except, perhaps, indirectly by means of the ill-health to which either leads. [J.M.S.]

18.—Nicoll reports a case of **congenital stenosis of the pylorus** successfully treated by operation. The patient when first seen was 5 weeks old, and vomited all food as soon as swallowed, the vomited milk being partially clotted, but showing no further alteration. The child became greatly emaciated, so that at the age of 6 weeks a laparotomy was performed. "The pylorus was found represented by a bulky ring of muscular (or fibromyomatous) tissue." The operation carried out was practically a Loreta's, consisting in opening the stomach and forcibly dilating the stenosed pylorus. The child recovered perfectly from the operation, and 12½ months afterwards, except for a slight degree of rickets, was in perfect health. [G.B.W.]

19.—It seems to be generally admitted that **infantile scurvy** is caused by some deficiency in the diet of the patient. The defaulting factor, according to Colette, is none other than citric acid. Citric acid is a normal constituent of fresh milk. Henkel, working in Soxhlet's laboratory, found that milk contained 0.9 to 1.0 gram of citric acid per liter (¾ gr. per ounce); and Göldner found that the citric acid was present as a calcium salt. Calcium citrate is at best only sparingly soluble in water, but it is markedly more soluble in cold than in boiling water. Now, since the sterilization of milk involves boiling, it is easily seen how the restriction of the diet of a child to sterilized milk may cause a deficiency in the supply of citric acid. Infantile scurvy, though apt to arise in children fed largely on sterilized milk, does not occur in those who have been fed on pasteurized milk. In the process of pasteurizing, the temperature reached is comparatively low, and the solvent power of the milk proportionately less interfered with. In order to prevent the occurrence of scurvy in milk-fed infants there is, first of all, the expedient of giving a sufficient allowance of fresh milk. If there is any reason for not giving fresh milk, pasteurized milk, prepared in the way described, may be used. If it is impossible to give a child anything but boiled milk we could get over the difficulty by the contemporaneous administration of lime juice (50 to 60 grs.) or of a citrate salt. The following precautions seem the most rational means of diminishing, as far as possible, the loss of citric acid in boiled milk: Any water used as a diluent to the milk should be added before the boiling, thereby making the fresh mixture a less concentrated solution of citrate than the undiluted milk, and, therefore, probably, less likely to suffer loss of the salt by its comparative insolubility on boiling and thereafter. Further, the milk should not be boiled a moment longer than the occasion requires, so as to minimize the formation of the more insoluble crystallizable citrate. Also, the milk should not be poured off when hot, but should be allowed to cool in the vessel in which it was boiled, and be well stirred when cool enough, in order to redissolve the citrate as far as possible. [J.M.S.]

20.—In this discussion on **scoliosis, flatfoot, and knockknee**, these deformities were treated from every standpoint. Clarke says that he believes that pathologic lesions are responsible to a very great extent for the devel-

opment of these deformities and quotes a number of cases from his own experience to substantiate this idea. Smith believes that scoliosis is due to pathologic changes in the vertebrae, consisting of a softening of the bones of the spine and a laxity of the ligaments. Williams reported the results of an analysis of 500 cases of spinal curvature. [G.B.W.]

22.—Little has analyzed all cases of **infantile paralysis** that have been under his observation during the last 3 years. Out of 147 deformities, in 115 patients, only 4 affected the upper extremity. The incidence in the sexes is nearly equal, girls being slightly more liable. Scoliosis was recorded in 4 cases and lordosis in 2. The 2 tibial muscles, and especially the tibialis anticus, are especially vulnerable. Next to them in order of frequency come the extensors of the toes (dorsiflexors of the ankle) and then the calf-muscles and flexors of the toes (plantar flexors of the ankle). In the upper part of the lower limb the quadriceps extensor is specially vulnerable. Tendon-transplantation or tenoplasty was performed 8 times and arthrodesis 5 times. [J.M.S.]

23.—Haworth reports the case of a girl, aged 16, who presented a slight **goiter**. The patient was put on 5-grain tablets of thyroidin, 3 times daily, making a dose of 15 grains in the 24 hours. After taking the remedy for 3 weeks, the patient became sleepy, the least exertion induced copious perspiration, and the memory became fickle. The bowels were normal, and the appetite good, but she ate only because she was told to do so. She would do any kind of housework when requested. Though usually fond of reading, she complained that it made her head ache; sight and hearing were normal; she complained of frontal headache, and was glad to go to bed whenever her parents would let her. [J.M.S.]

24.—Morton reports a case of **puerperal septicemia** successfully treated with antistreptococcus serum, which he began to administer on the twelfth day. He is convinced the serum saved the life of the patient, a healthy, young primipara, and his only regret is that he did not resort to it sooner. [W.K.]

25.—Gray has found specimens of the **anopheles** mosquito on the island of **St. Lucia**. [J.M.S.]

26.—Harland reports 2 cases in which private soldiers developed **exophthalmic goiter suddenly after being in action**. One patient was 29, and the other 30. In the case of the second patient it was learned that his mother had been operated on for goiter. [J.M.S.]

27.—In this case of **renal calculus** the stone was found and removed, though the operation was difficult and tedious. Later the same patient had a small stone removed from his bladder by crushing, and at another time a third stone was removed from the prostatic urethra by an external incision. The patient finally made a good recovery. [G.B.W.]

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[This number is entirely composed of editorial and other articles relating to medical education in Great Britain.]

New York Medical Journal.

September 15, 1900. [Vol. lxxii, No. 11.]

1. The Treatment of Tuberculous and Purulent Joints with Large Glass Speculum Drainage and Pure Carbolic Acid, with a Report of Seventy Cases. A. M. PHELPS.
2. Generalized Tuberculous Lymphadenitis, with the Clinical and Anatomical Picture of Pseudoleukemia; The Study of a Case. THOMAS R. CROWDER.
3. A Consideration of the Statistics of Operations for the Relief of Malignant Disease of the Larynx. D. BRYSON DELAVAN.
4. Were These Unusual Cases of Partial Paralysis of the Vocal Bands Caused by Overuse of the Telephone? CLARENCE C. RICE.
5. The Lingual Tonsil. ROBERT LEVY.

1.—The method of applying **pure carbolic acid to joint-abscesses** is as follows: The abscess cavity is laid open. The opening into the capsule is found and enlarged and the joint explored. If there is extensive bone-disease

the opening is enlarged and after thorough curetment the joint is irrigated with a 1:1000 bichlorid solution. The joint is now filled with pure carbolic acid. It is allowed to remain 1 minute by the watch, after which the joint is thoroughly washed out with pure alcohol, and finally the alcohol is washed away with a 2% solution of carbolic acid. A large glass drainage-tube is then placed in the wound, reaching just flush with the surface. The tube for adults should be about 2 inches in diameter and 5 inches long; for children, 1 or 1½ inches in diameter and 3 inches long. To facilitate drainage packing may be loosely applied through the tube. Phelps says that the results obtained by this method of treating joint-abscesses are most satisfactory. [C.B.W.]

2.—Crowder reports the case of a lumberman of 34, who complained of gradual painful enlargement of the cervical and axillary lymph nodes, accompanied by loss of weight and by fever; the clinical picture of **pseudoleukemia**. The disease terminated in about 1 year and 8 months, with profuse diarrhea, high temperature, and delirium. About one week before death examination of the blood showed a specific gravity of 1.052; hemoglobin, 72%; red corpuscles, 4,320,000; leukocytes, 19,000. A differential count of the leukocytes showed small mononuclears, 30%; large mononuclears, 2.5%; polymorphonuclear neutrophils, 67%; eosinophiles, 0.5%. There were no myelocytes, no nucleated red cells, no polychromatism, and but slight poikilocytoses. Fowler's solution and Coley's toxins constituted the treatment. At autopsy, the cervical, submaxillary, axillary, mediastinal, parabronchial, and retroperitoneal lymph-nodes were found enlarged. There were also lymphoid nodules in the liver, spleen, and lung. There were secondary anatomic changes of less interest. Histologic examination of the lymphoid tissues showed the same conditions in all regions. The capsule was moderately thickened. The vessels were packed with red corpuscles. There was no line of demarkation between the cortex and the medulla of the lymph-nodes and the fibrous stroma was greatly increased. The structures were composed of lymphocytes, polymorphonuclear leukocytes, plasma cells, giant cells. Staphylococcus pyogenes albus and aureus were found in the peritoneal fluid and the former organism alone was found in the lung. Tubercle-bacilli were found in the cervical, retroperitoneal, and axillary lymph-nodes; in the lymphoid nodules in the liver, in the spleen, in the lymphoid nodules of the lung, and in subserous tubercles in the small intestine. Fragments of the lymph-nodes inserted into the peritoneal cavities of guinea-pigs killed the animals without producing general tuberculosis. [J.M.S.]

3.—Delavan says that as yet there are no satisfactory statistics of **operations on the larynx for malignant disease**. This is chiefly because the operator generally tries to keep his failures quiet and only publishes those cases which have been attended with more or less success; also the patients operated upon by careful observers have not been numerous enough to point to any conclusions. The statistics, however, which do exist show that those cases which die directly as the result of the operation grow distinctly less as the skill of the operator grows greater, and also that up to the present time there has been no case reported (as far as the author knows), either in this country or abroad, where the patient has recovered. Delavan believes that according to our present knowledge, major operations on the larynx for the removal of malignant disease have not furnished very marked evidence of success, though better statistics may in the future throw more light on this subject. [G.B.W.]

4.—Rice reports the cases of 2 men—one of 45 and the other of 55—who complained of **difficult phonation**. The former patient was under weight and very nervous; the latter was over-stout and in fair general condition. In the younger man the vocal cords had lost their ability to straighten out and come in contact for ¾ of their entire length and, though they could be approximated, they could not be maintained in that position. In the older patient the right vocal cord showed only fair adduction and a lack of tension. Consequently, the voice was husky. The author believes that in both cases the trouble was due to excessive and faulty use of the telephone. [J.M.S.]

5.—The symptoms which result from **enlargement of the lingual tonsil** are always more pronounced in neurotic and hysterical patients, but they, nevertheless, require

local treatment, as shown by the immediate relief following, in some very distressing cases, the application of the galvanocautery. The symptoms are somewhat varied, and may be divided into the following classes: 1. Those of simple discomfort, feeling of a foreign body in the throat, etc. 2. Those of severe cough. 3. Those of vocal distress. 4. Those of respiratory distress. 5. Those of distress in swallowing. 6. Hemorrhagic cases. The treatment of these cases should consist in general medication as well as local applications. The local treatment par excellence is the application of the galvanocautery. [G.B.W.]

Medical Record.

September 15, 1900. [Vol. 58, No. 11.]

1. Poisonous Snakes and Snake Poison. GUSTAV LANGMANN.
2. A Few Cases of Erosions of the Stomach. EDWARD QUINTARD.
3. The Radical Treatment of Tuberculosis of the Testis. ALEXIS V. MOSCHCOWITZ.
4. A Clinical Study of the Liver as a Factor in Elimination, and in the Production of Nephritis. GEORGE E. DAVIS.

1.—Langmann states that the venom glands which secrete the poison of snakes correspond to the parotids; the secretion is viscid, acid, straw, greenish-yellow, or orange in color, specific gravity 1.030 to 1.077, has a characteristic odor, and contains 12 to 67% of solids; the microscope shows a few epithelial cells, amorphous albuminoid masses, and no bacteria. The poisonous principle consists of two albuminoids which he calls venom-peptone and venom-globulin, the proportions of these differing in the different snakes. Peptones exert their actions mainly on the nervous system, the effects resembling in type those of acute bulbar paralysis or acute ascending spinal paralysis. Respiratory paralysis is a very common symptom. Globulins cause local reaction with hemorrhages there and elsewhere in the body, and destruction of blood-coagulability. Similarly with other toxins the poison causes fatty degeneration, nephritis, pneumonia, etc. The first effect on the blood is coagulability due to the liberation of a nucleoalbumin by the action on the erythrocytes and vessel-wall lining, and may result in sudden death from thrombosis. Noncoagulability follows secondarily. In the treatment, he advises amputation, a tight ligature, or deep scarification to prevent absorption. Substances to neutralize the poison are not reliable, except, perhaps, hypochlorite of lime. Alcohol is of no use except as a stimulant. Lavage of the stomach will aid elimination. Danger symptoms are met as follows: Normal salt-solution injections to take the place of salts lost from the plasma may prevent coagulation. Artificial respiration long continued may tide over the danger period to the nervous system. Strychnia and atropin are valuable respiratory stimulants. Calmette's antivenene has a decided chemical action on the toxins and has proved itself of value in prolonging life until the danger is over. Mental encouragement should be persisted in. [J.S.]

2.—Quintard speaks of erosion of the stomach as a loss of the mucosa, but the process extends no deeper and there is no elevation or induration of the edges. He thinks the term is necessary for clinical purposes to describe a class of cases in which the pain after eating is moderate, there is decided loss of flesh and strength, fragments of mucosa are found in the washings, and there is hypochlorhydria or anachlorhydria, and possibly lactic acid is present. It is a complication of numerous pathologic conditions. The treatment is a spray of 1 : 500 solution of silver nitrate by an Einhorn atomizer every other day. After 3 applications there is usually marked local and general improvement. [J.S.]

3.—Moschcowitz believes that in genital tuberculosis in the male the primary focus is frequently a nodule in the epididymis. In the course of a few weeks, the tubercle-bacilli will be carried by the seminal secretion into the corresponding vas deferens and gradually travel upward until the entire vas deferens to the seminal vesicles is involved; very soon this also becomes tuberculous. The next step is the infection of the corresponding lobe of the prostate. For the radical cure of this condition castration alone will evidently be futile; every portion of diseased tissue must be removed including the entire vas deferens, together with the corresponding seminal vesicle. The following procedure is recommended: Castration is performed by the usual scroto-

inguinal incision, with the exception that the vas deferens is not divided at the level of the vessels, but is isolated from the other structures of the spermatic cord and left in connection with the testicle; then as much of the vas deferens is pulled out of the inguinal canal as can be done without danger of tearing it off. After placing a ligature around it, it is divided, and the proximal end is seared with a Paquelin cautery, so that in manipulation no opportunity shall be given to infect the channel of the vas deferens, between the peritoneum and the bladder. After removal of the testicle the external incision is closed. The patient is then placed in the lithotomy position, a sound is introduced into the bladder as a guide, and a curved incision is made in front of the anus, extending from one tuberosity of the ischium to the other—after division of the superficial and deep perineal fascia, and of the tendinous union between the bulbo-cavernosus and external sphincter, the urethra being held front by a blunt retractor, the space between the rectum and urethra is deepened by blunt dissection, until the anterior portion of the levator ani, the so-called levator prostatae, is reached. This is divided by scissors, the muscle retracts, and the prostate and diseased seminal vesicle are reached by the finger. The finger of the left hand is now introduced into the rectum, and hooked over the upper border of the prostate; traction is exerted, and much of the prostate and seminal vesicle can be brought into view. Should this be impossible on account of adhesions, the seminal vesicle may be grasped by a clamp and gentle traction and manipulation made to liberate it. Proceeding in this manner, the entire unruptured seminal vesicle and the remaining portion of the intraabdominal part of the vas deferens are brought into view. The seminal vesicle and vas deferens are then attached only by the ejaculatory duct, which can be readily cut off. Tamponade of the wound, and the insertion of one or two sutures partly closing the perineal incision, terminate the operation. Moschcowitz reports operating on a man of 35 by this method. Uneventful recovery followed the operation and the patient was cured of genital tuberculosis, but he died eventually of pulmonary tuberculosis. [M.B.T.]

4.—Davis says the liver is the connecting link between digestion and elimination. It completes digestion and finishes disintegration, rendering it possible for the substances to be excreted by the kidneys. The most frequent cause of nephritis and diabetes is inadequate constructive and destructive metabolism in the liver. Drugs correcting the liver functions often prove to be the best diuretics. [M.B.T.]

Medical News.

September 15, 1900. [Vol. lxxvii, No. 11.]

1. A Simple and Efficient Treatment of Talipes Calcaneus Paralyticus in Young Children. V. P. GIBNEY.
2. In What Relation does Occupation Stand to Tuberculosis? W. FREUDENTHAL.
3. Multiple Traumatic Hemorrhages of the Liver Associated With Multiple Pulmonary Emboli of Liver-Cells and Giant Cells Resembling Bone-Marrow Cells. ALFRED SCOTT WARTHIN.
4. Post-Apoplectic Temperature and Disturbances of the Alimentary Tract; Their Management. HENRY LYLE WINTER.

1.—Gibney says that a simple and efficient method of treating talipes calcaneus paralyticus is to put the foot in extreme extension and to keep it there by some form of apparatus. In children he employs plaster-of-paris, and in a number of cases has obtained very satisfactory results, some of the patients obtaining practically normal limbs. In adults plaster-of-paris possesses many disadvantages, so that it is better to immobilize the foot with some form of leather splint properly supported by steel, but the same principle, immobilization in extension, holds good. [G.W.B.]

2.—Freudenthal says that statistics show that tuberculosis causes a higher death-rate among the population that receives the smallest incomes. Among 1,152 tuberculous male patients at the Montefiore Home in New York, 389 were tailors or engaged in allied occupations. The reasons he gives for this fact are that most of these men are Poles or Russian Jews, and they not only work in sweat shops, but their homes are in the crowded tenement houses where they have the same bad hygienic surroundings. These

people suffer from chronic atrophic nasopharyngeal catarrh, and the dried secretions offer a good medium for the growth of the bacillus and an open door to invasion. [J.S.]

3.—Warthin reports a most interesting case of **traumatism of the liver**, caused by the handle of a hay-fork passing through the perineum into the abdomen. The sufferer died, on the third day after the injury, from septic peritonitis developing as the result of numerous intestinal perforations. At the postmortem, numerous areas of contusion and hemorrhage were found throughout the liver, in which both the portal and hepatic vessels were found ruptured. In the lung there were many fresh hemorrhagic infarcts caused by the lodgment of giant cells in the capillaries. These giant cells resembled apparently exactly those seen in the lung capillaries in cases of eclampsia, and supposed to be placental cells. After a careful study of this case and the literature on the subject Warthin offers the following conclusions: 1. Mononuclear and multinuclear giant cells appear in the pulmonary vessels in a large variety of widely varying pathologic conditions. In some cases they also appear in the capillaries of the liver, spleen, and kidneys. 2. The source of these cells may be either the placenta, bone-marrow, spleen, or lymphatic glands, but we have no means of absolutely determining such origin except in the cases where portions of the villi or of marrow tissue are also found. 3. It is not possible with the present staining methods to differentiate between simple giant cells arising from the syncytium, periplacental tissue, bone-marrow, spleen or lymphatic glands. 4. It is probable that in the majority of cases the giant cells found in the lung-capillaries arise from the bone-marrow, and that in some cases (pregnancy) the metastasis is physiologic, while in others it may be the nature of an agonal or pre-agonal leukocytosis. In other conditions it may be the result of diseased conditions in the bone-marrow itself. The exact significance of the process remains yet to be discovered, but it is probably of far greater importance than that of an accidental occurrence, as it has generally been considered. In the case above mentioned liver-cells were found in the lung-capillaries along with the giant cells. [G.B.W.]

4.—Winter thinks the **post-apoplectic temperature** found at the time of returning consciousness in the majority of cases not due to local infection, is caused by the absorption of infective material from a torpid alimentary tract. In place of the usual routine of calomel, he advises dram doses of hydrogen peroxid, repeated as necessary. This drug checks fermentation, and is slightly stimulating to digestive functions. In a number of cases in which it was tried, he found the axillary temperature reduced a few hours after its administration, and more rapidly on the paralyzed side. This was not due to vasomotor phenomena, but to a more rapid elimination of heat on the affected side as the alimentary condition was improved. The drug does not influence the pulse. It is administered with an equal quantity of glycerin. [J.S.]

Boston Medical and Surgical Journal.

September 13, 1900. [Vol. cxliii, No. 11.]

1. The Radical Cure of Hernia. J. COLLINS WARREN.
2. Actinomycosis. CHARLES ALLEN PORTER.
3. Four Cases of Actinomycosis. JOHN C. MUNRO.
4. Tendon Suture. EDWARD S. HATCH.
5. Method of Teaching Practical Medicine. THOMAS F. HARRINGTON.

1.—Warren gives the results of his experience in the **radical cure of hernia** in a series of 98 cases operated on in the Massachusetts General Hospital and in private practice between the years 1888 and 1900. It includes 74 cases of inguinal hernia, 7 of femoral hernia, 12 of umbilical hernia and 5 of ventral hernia. Great pains were taken to obtain the subsequent history of all cases operated upon over 1 year previously and answers were received from 62. In 4 of these death occurred from other causes, results unknown. This leaves 58 cases from which to obtain information as to recurrence. Separation of the cases into 2 groups—those operated upon between 1888-1894 and those between 1895-1900—shows the marked improvement aseptic technic has brought about. Prior to 1895 there were 33 cases operated upon, of which 16, or 48%, were infected; after 1895, of 65 cases, 9, or

16%, only were infected. All cases that did not heal by first intention throughout the wound, even the smallest stitch abscess, are classed as infectious. A careful analysis of the cases was also made to determine the best form of suture material. Silk, catgut, kangaroo-tendon, etc., were used. The results are decidedly in favor of silk as a suture material, though, since more thorough preparation of catgut in later years, the results following its use are much improved. As to the question of recurrence: Out of 58 cases in which an answer was obtained 1 year or over after operation, 45 were cases of inguinal hernia; and in 7 of these relapse was reported—that is, there were 84% of cures. In 3 cases of femoral hernia there was no recurrence; 2 cases of ventral hernia, no recurrence; and 8 cases of umbilical hernia, 3 recurrences. Comparing the inguinal hernias operated upon prior to 1895 and since, in the former there was 69% of cures, in the latter 92% of cures, showing that improved technic had an important influence upon the result. Warren does not agree with Coley and Bull that the age-limit should be placed at 50 years. It is in hospital practice that we see a larger number of hernias, usually of large size, in individuals above this age. They are, as a rule, patients who are unable to afford a truss, or do not understand how to apply it intelligently. It is precisely in this class that an operation seems to hold out hope of great relief. Among Warren's cases, 17 were operated upon who had passed that limit, with no recurrences. Great care in the preparation of the skin and careful isolation of the sac, closure by suture and excision, are considered specially important. [M.B.T.]

2.—Porter believes that **actinomycosis** is a much more common affection than is generally believed. In its clinical aspects there is little that is characteristic, and examination by microscope and culture is essential for a positive diagnosis. During 18 months' work in the Out-Patient Department at the Massachusetts General Hospital, Porter has found 8 cases of actinomycosis in about 60 so-called alveolar abscesses examined, and 4 cases were found by other surgeons. Six cases occurred within 3 months, and 4 within a week; so we may conclude that the disease cannot be one of great rarity. Reports of Porter's 8 cases are given. The infection enters most frequently near a carious tooth, or is carried in by a foreign body through the mucous membrane of the mouth or pharynx. The process is essentially subacute or chronic, the infection is usually mixed with ordinary pyogenic organisms, it is rarely painful, and under the microscope the disease is characterized by the formation of an unusual amount of dense connective tissue. The mere presence of "sulphur granules" is not by any means conclusive. Small, round masses of fibrin or tuberculous debris, or round masses of mouth bacteria, or *Leptothrix buccalis*, occasionally appear very like a true colony. With reference to treatment, two facts speak strongly for the self-limitation of the disease in the majority of cases. Though it cannot be rare, few cases enter the hospital with advanced actinomycosis of the jaw, and it seems, therefore, certain that many recover after simple incision of the abscess, or even natural rupture. It is surprising to find, on microscopic examination of sections, how infrequently the colonies are found in the walls of the abscesses, though the pus contained many granules. The surrounding connective tissue probably proves an effective barrier to the spread of the disease. Simple opening, curetting, and drainage have proved sufficient in many cases; though recurrences may be frequent, healing eventually takes place. When possible, excision of the inner half of the abscess wall or sinus is the best treatment. External drainage is advised, and potassium iodid internally is thought to be of benefit in some cases. [M.B.T.]

3.—Munro reports 4 cases of **actinomycosis**: A man of 45 was operated upon for encysted empyema in the region of the left ninth rib posteriorly. A portion of the rib was removed and the cavity was curetted and packed. The patient's general condition did not improve and death resulted a few weeks later. In the 3 remaining cases the jaw was affected, the disease following a blow on the cheek in 1 case, fracture of the jaw in another, and extraction of a tooth in the third case. In all these cases apparent cure resulted from thorough curetment and antiseptic treatment of the abscess cavity. [M.B.T.]

4.—Hatch reports **tendon suture** following an incised wound of the wrist dividing the following structures: Tendons of the palmaris longus, flexor carpi ulnaris, and flexor sub-

limis digitorum. The ulnar artery and the median nerve were also found cut. The ulnar nerve was cut about half way through. The tendons and nerves were united with fine silk sutures; the ulnar artery was tied. The patient now has normal flexion and extension, with normal sensation over the distribution of the ulna and nearly normal sensation over the distribution of the median nerve. [M.B.T.]

5.—Harrington says much of the criticism of the present system is due to a misunderstanding either on the part of the student or the teacher in his respective work. The science of medicine can be learned only through lectures and study. He advises limiting the first 2 years of the college course to **teaching medical science** and the last 2 to practical work at the bedside. Individual students should make reports on the cases, and then the instructor and class should enter into the discussion. In this way even pathology, therapeutics, and the special branches could be taught. [J.S.]

Journal of the American Medical Association.

September 15, 1900. [Vol. xxxv, No. 11.]

1. Infantile Cerebral Palsy; Classification of Twenty-five Cases, with Illustrations. A. C. COTTON.
2. The Milk-Control in the Kaiser und Kaiserin Friederich Hospital in Berlin. SOMMERFELD.
3. The Milk-Supply in the Kaiser und Kaiserin Friederich Hospital in Berlin. A. BAGINSKY.
4. The Relative Value of Homatropin as a Cycloplegic; a Clinical Study. E. C. ELLETT.
5. Some Facts About Appendicitis, Medical and Surgical. J. H. CARSTENS.
6. Improved Lantern for Testing Color-Perception. CHARLES H. WILLIAMS.
7. Improved Method of Testing Color-Perception. WILLIAM THOMSON.
8. Cutaneous Manifestations in Diabetes Mellitus. S. SHERWELL.
9. Diabetes Mellitus in Children. HENRY DWIGHT CHAPIN.
10. Influence of Sea-Air and Sea-Water Baths on Disease. W. BLAIR STEWART.
11. The Identification of Dextrose in Human Urine. HEINRICH STERN.
12. Measurements of Chicago School Children. W. S. CHRISTOPHER.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1282.

2.—“ “ “ “ “ “ “ “

3.—“ “ “ “ “ “ “ “

4.—“ “ “ “ “ “ “ “ 1441.

5.—Carstens draws the following conclusions with regard to **appendicitis**: It should be a general rule that every case of appendicitis should be operated on as soon as the diagnosis is made, but when it is the first attack and very mild, or no proper facilities are at hand either to perform the operation or to take care of the patient afterward, it is often good policy to wait and watch the case. In cases of second or subsequent attacks, however, the patient should be sent to a hospital, even though it is at quite a distance—unless good facilities can be had at home—and an operation promptly performed. Statistics of cases operated on as they come along, good, bad, and indifferent, by experienced surgeons, give a mortality of only 8%. Statistics collected by general practitioners who are able and up to date, and who advocate surgical interference, show that medically treated cases have a death-rate of at least 15 to 20%; that at least 60% have recurrences; while the cases operated on are absolutely cured. [M.B.T.]

6.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1441.

9.—Chapin believes that the following facts with regards to **diabetes mellitus** are about the sum of our knowledge with regards to this disease in children: First it is very rare. The urine of all the children in the babies' wards of the New York Post-Graduate Hospital, the William Parker Hospital, and of the Riverside Hospital is regularly examined, yet it is exceedingly rare to find any sugar in the urine. Next, the disease is exceedingly fatal in young children. In looking up the literature he found one case which was reported to have recovered, but he doubts if in this case the diagnosis was correct. Third, the disease in children is accompanied by exceedingly rapid emaciation. An illustrative case is

cited. Whenever a child is brought to the physician with a rapid atrophy he should examine the urine for sugar. Chapin emphasizes the statement that this is one of the diseases of childhood which produce rapid atrophy. [M.B.T.]

10.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1263.

12.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 999.

American Journal of the Medical Sciences.

June, 1900. [Vol. cxix, No. 6.]

1. The Surgical Anatomy of Congenital Dislocation of the Hip joint. EDWARD H. NICHOLS and EDWARD H. BRADFORD.
2. A Fifth Case of Family Periodic Paralysis. LEO M. CRAFTS.
3. Permanent Nonprogressive Ataxia, with a Clinical Report of Three Cases. SANGER BROWN.
4. On the Spinal-Cord Changes in Paralysis Agitans. MAX NONNE.
5. The Pathological Anatomy of the Cord in Paralysis Agitans and Senility. CHARLES A. DANA.
6. A Contribution to the Pathology of Chronic Hyperplastic Tuberculosis of the Cecum, based upon the Study of Two Cases, in One of Which Carcinoma of the Cecum Coexisted. T. R. CROWDER.
7. Embryonal Renal Adenosarcoma. MAXIMILIAN HERZOG and DENSLOW LEWIS.
8. A Critical Summary of Recent Literature on Plasma-Cells and Mast-Cells. HERBERT U. WILLIAMS.

1.—The object of this paper is to determine the anatomic cause of relapse in cases of **congenital dislocation of the hip** in which the bloodless method of reduction had been tried. The results arrived at are drawn from the examination of 8 hip-joints, which show that the obstacles to reduction of the deformity are: 1. The peculiar attachment of the capsular ligament, which causes a shortening of the ligamentous bands at various points, chiefly laterally and below. 2. Constriction of the middle of the capsule, so that it may be impossible to draw the head of the bone through the constriction. 3. Thickening of the capsule just above the apex of the acetabulum. 4. Adhesions between capsule and head of the femur. 5. Contraction of the adductor muscles. 6. An increase of femoral torsion so that when the head of the femur is placed in the normal acetabulum the knee looks inward. Also it was shown that the obstacles to retention to the head of the femur after complete reduction are: 1. A flattened or inefficient acetabulum, placed too obliquely. 2. An insufficient head. 3. An extremely short neck of the femur. 4. Obliteration of the cavity of the acetabulum by a mass of dense fibrous tissue. In cases where the capsule is thickened so that it cannot be dilated, either the knife must be used or the head be kept in contact with the acetabulum sufficiently long to cause absorption of the intervening portion by pressure. Also when the acetabulum is set too obliquely or is too shallow to hold the reduced head firmly, it should be deepened either by the knife or by long and continued pressure. When there is an abnormality in the axis of the neck causing marked inversion or eversion of the foot, osteotomy of the femur below the lesser trochanter should be done to secure the proper relations of the parts. It is also essential that the head be kept in place long enough for the pelvotrochanteric muscles to undergo adaptive shortening. [G.B.W.]

2.—Crafts reports a case of **family periodic paralysis**. The name is of no scientific value, and applies only from the fact that the majority of cases have been reported in groups in families. European writers have reported cases of this disease, but only 3 cases in this country strictly conform to the conditions. The patient has been under observation for about 7 years. A man of 35 years, short, heavy build of body, hands and feet very large. His gait is waddling in character. Mentally he is keen and energetic. The legs, hips, and thighs are abnormally large and the arms, too, are heavy; but his muscular strength does not correspond at all to the development. His family history is distinctly neuropathic. He was 12 years old when the present condition made its advent. For 2 days he was unable to move any of his ex-

trémities, but on the third day he was up and about. Six months later the second attack occurred, and they have returned at irregular intervals since. The most serious attack occurred 3 years ago, following extreme exertion for a day. There was almost constant vomiting, with large quantities of bile, marked exhaustion, bad color, pulse weak, small, and rapid. Constipation or diarrhea frequently precedes the attack. The onset is always gradual, usually beginning in the hands and feet, and the duration of an attack varies from a few hours to about 3 days. In the extreme condition all muscles of the extremities, body, and neck are entirely relaxed. The chest-wall hardly moves at all on respiration, which seems entirely confined to movements of the diaphragm. There are no manifest vasomotor disturbances, no pains, and no sensory changes. The normal reactions of both muscle and nerve to either galvanism or faradism diminishes in proportion to the motor loss in the muscle under test, and tetanizing currents will elicit absolutely no response when the paralysis is complete. The tendon reflexes are abolished, the plantar is gone, but the cremasteric is at times present in slight degree. During the attack the pulse is always accelerated. Examinations of the blood, urine, and feces have been carefully made. From the feces a poison was eliminated which produced in rabbits and guineapigs a paralysis which gradually disappeared in 48 hours. Goldflam, Taylor, and Mitchell became convinced of the presence of some form of autointoxication (an opinion shared by the author), but were not able to isolate the poison. It would appear, further, that this poison is developed only at intervals, considering the widely varying intervals between the attacks. The way is therefore pointed out for the development of a rational method of treatment of an antitoxic nature, but this probably cannot be accomplished until the poison has been fully identified and the seat of its evolution determined. [C.A.O.]

3.—Brown gives a clinical report of 3 cases of **permanent nonprogressive ataxia**. The first case was a man of 30, family history fairly good. At 18 he was subject to very hard labor, and drank some, but not to excess. He denies venereal disease of any kind. At this age he began to suffer from severe frontal headache, became gradually blind, lost the use of his arms and legs, and in 2 or 3 months was entirely helpless. For several months he continued in this condition, and then improved very slowly for a year, since which time he has been practically in his present condition, which is that of intense muscular incoordination and great exaggeration of the superficial and deep reflexes. The voice sounds and grimaces when speaking are much like those observed in some cases of idiocy, so that one might be easily led to form an erroneous impression as to the patient's mental state. The second case was a woman of 28, vigorous and healthy as a child and young woman. She was married at 19, and a year later a child was born; nothing abnormal. When 23 she again became pregnant, and from the first suffered intensely with nausea and vomiting. All known remedies were tried in vain and an abortion was carefully performed. Symptoms of severe sepsis followed this. After recovery the ataxia was so great that she could not stand alone, feed or dress herself, although the gross strength was little, if at all, reduced. The reflexes were exaggerated, there was great difficulty in speaking, although no mental impairment. There was no change in her condition until she died at the age of 28 with symptoms of cerebral meningitis. The third patient was a woman of 28, general health good up to present illness. About the eighth month of pregnancy she suffered from grip, followed by severe headache. Finally somnolence, loss of reflexes, ptosis, with no attention to the bowels or bladder. A healthy child was born 11 days after the headache began without the mother showing the slightest appreciation. After several days mental activity gradually returned. The strength partly returned, but there was extreme ataxia which has continued until the present time—a period of over 6 months. These cases, from a clinical side, have much in common; a more or less severe, acute, and probably infectious illness, resulting in profound general muscular ataxia, particularly in the muscles of articulate speech. No lasting impairment of special sense or general sensation, general health good after primary illness and mental condition normal. The essential question is, what part of the normal adult brain has to be injured in order that general ataxia shall result. Assuming that the cerebellum

exercises a predominating influence upon the coordination of voluntary muscular movements, then it would not be unreasonable to assume in the cases cited that one effect of the primary disease had been to injure permanently those parts of the organ subserving this function, or a considerable number of the neuron processes connecting it with other parts of the nervous system. If it is conceded that the influence of the cerebellum is paramount in controlling muscular coordination when the position and extent of the various tracts are remembered which connect it with other parts of the nervous system, it is not difficult to understand how far apart pathologic processes may be situated, and yet, by destruction of one of these connecting paths, throw the cerebellum out of circuit, so to speak, and give rise to ataxia. In many cases of the progressive types of ataxia the pathologic process apparently begins and is for a long time confined to the spinal cord, while in the cases described it was apparently in the brain. [C.A.O.]

4.—Nonne publishes a reply to a paper on **paralysis agitans** by Dana in the November issue, 1899, of the *American Journal* in which he states that Dana takes occasion to differ radically from an opinion which he had expressed on **the spinal-cord changes in paralysis agitans**. He says the changes found by Nissl's method are identical with those found by Dana, that there was no difference between the changes found in senile cords and those in cases of paralysis agitans, and that the changes described by Dana are those usually found in a condition of cachexia. German authors do not consider such changes pathognomonic. He says this alteration of the ganglion-cells had been observed by him in his own cases of anemia and in those that came under Goebel's notice. The fact that these changes in the ganglion cells in cases of paralysis agitans often occur, and are not looked upon as pathognomonic of paralysis agitans has already been stated by Sander. [C.A.O.]

5.—Dana in reply to Nonne's article says that he and Nonne do not differ much and that his views have been misinterpreted. These were as follows: 1. That paralysis agitans was a very strikingly distinct clinical entity and quite different from premature senility; hence it was probable we should some time find its anatomic basis. 2. In his experience he did not find the pathologic picture of the cords in paralysis agitans and senility identical. 3. That there is a rather unusual degree of degeneration and vascular and sclerotic change in the anterior horns in paralysis agitans, and more here than in any other part of the central nervous system so far as yet known. 4. He says his view that in the disease there is an interruption in the flow of nerve impulses from the corticospinal dendrites to the anterior horn cells is only a working hypothesis, but that it is in harmony with pathologic findings, as Nonne admits. [C.A.O.]

6.—Crowder briefly reviews the literature bearing on **tuberculosis of the cecum**, and reports 2 cases. The first was a colored girl of 14, whose immediate family history was fairly good. Her trouble began about 8 months before she applied for treatment. There were cramp-like pains in the abdomen, which at first were irregular and diffuse, but later became more frequent and were attended by much vomiting. Only liquid food could be retained and she had lost much flesh. On physical examination a mass the size of a large lemon was found lying deep in the abdomen, half way between the umbilicus and the anterior superior spine. The mass was tender, smooth, very slightly movable and apparently free from the anterior abdominal wall. On operation the tumor was found to involve the entire circumference of the bowel at the ileocecal junction. The lymphatic glands lying in the mesentery next to the cecum were firm, white and swollen. No vermiform appendix was found. The mass, including about 2 inches of the bowel on each side, was excised and an end-to-end anastomosis between the colon and the ileum was performed. The patient made a good recovery. A microscopic examination of the mass showed it to be tuberculous. Since the patient has developed no evidences of other tuberculous manifestations, it appears that this was a primary, localized tuberculosis of the bowel. The second case was a woman of 54. About 3 years before entrance to the hospital tumors were removed from the left breast and left axilla, but there is no definite knowledge of their nature. The patient gave a history of a blow in the right inguinal region. Succeeding this there was pain on walking, which radiated down the leg. Later there appeared a swelling in

the right groin, which was incised, revealing an abscess. There remained to the time of her death a fistula in the right groin, which permitted the escape of fecal matter. A postmortem examination showed tuberculosis of the lungs and peribronchial glands; amyloid spleen, chronic interstitial nephritis; and **carcinoma of the cecum associated with tuberculosis**. It appeared that the malignant growth had taken its origin from the margin of an old tuberculous ulcer. This hyperplastic form of tuberculosis as found in the intestine is usually located in the cecum, and most often takes its origin at the ileocecal junction. [C.A.O.]

7.—Herzog and Lewis discuss that type of mixed tumors of the kidney which has been attracting attention for a number of years, the true character of which has been fully recognized only quite recently. These tumors attract attention not from urinary symptoms, but by increasing the size of the abdomen. They grow rapidly, speedily lead to malignant cachexia and destroy life with or without the formation of metastases. They are the **embryonal renal adenomas of childhood**. With reference to their origin, which has excited much investigation and controversy, Birch-Hirschfeld believes that they arise from the remnants of the Wolffian body. Wilms believes, however, that they arise from inclusion of the very earliest embryonic development, namely, from the undifferentiated mesoblastic tissue, which later on in normal embryonic development gives rise to the Wolffian body and to the myotome. The myotome, he claims, is responsible for the presence of the striated-muscle fibers in the tumors. The authors refuse to accept the explanation of Wilms, but lean strongly to that of Birch-Hirschfeld. They believe that these tumors owe their origin to inclusion which is formed in the following manner: The nephrotome is not cut off at the normal site, but in such a manner that a part of the myotome is severed from the main mass and remains in connection with the nephrotome. The separation may take place so that only a part of the myotome proper is cut off, or a part of the sclerotome may likewise be taken along. If the former is the case we have the matrix for striated muscle-fibers only; if the latter occurs, we have also the matrix for cartilage. If now we assume that a part of the nephrotome (Wolffian body) to which tissues of the myotome proper, or the latter and sclerotome have become adherent by an abnormal process of embryonic separation, becomes included in the permanent kidney, we have a matrix containing all those embryonic elements which occur in the mixed renal tumors, namely, striated muscle-fibers, cartilage, other connective-tissue elements, and epithelial glandular structures. The latter are derived from the excretory tubules of the nephrotome. [C.A.O.]

Münchener medicinische Wochenschrift.

July 10, 1900. [47. Jahrg., No. 28.]

1. A Contribution to our Knowledge of the Effects of Turpentine. H. SCHULZ.
2. A Contribution to Immunity Instruction. FREIHERRN V. DUNGERN.
3. Etiology of Fibrinous Bronchitis. OTT.
4. A Case of Weil's Disease. ALFRED SCHITTENHELM.
5. A Case of Hysterical Muteness, Doubtless Caused by Intoxication. ERNST BLOCH.
6. Experimental Attempts at Hand Disinfection. PAUL and SARWEY.
7. Migration of Foreign Bodies in the Small Intestines After Laparotomy. WUNDERLICH.

1.—Schulz's studies on the influence of **minute doses of turpentine** have led to results that are exceedingly strange and almost incredible. Several medical students took turpentine in 1% solution. The first took during 5 days a total of one drop; the second took in 10 days 2 drops; the third during 8 days, a little less than 2 drops; and the fourth during 9 days, about 2 drops. The first man had some gastric pains, headache, nausea, belching, and a marked sense of fatigue. More or less similar symptoms were present in the other cases. In a second series of experiments the dose was still smaller. The first subject took during 8 days altogether one-fifth of a drop of turpentine. In a third series the subject took during the course of 23 days altogether

one-half drop. There was a reduction in the pulse-rate. Constipation was the rule in nearly all of the subjects, which shows that turpentine in small doses may, even in the absence of lead, produce constipation. There was no harmful effect on the urine. In 2 cases acne was produced. While it would not be scientific to deny that turpentine in such infinitesimal doses could produce all the symptoms which Schultz found, it seems to us that the psychic element must have influenced both the experimenter and his subjects. [D.R.]

2.—Von Dungern brings forward further proof of the **lateral chain theory of immunity**, as enunciated by Ehrlich, which had been attacked by Metchnikoff. He also succeeded in producing immune serum by means of the injection into guineapigs and rabbits of cows' milk. Such an immune serum is capable of killing ciliated epithelial cells introduced into the abdominal cavity of guineapigs. The serum has also to a certain extent the property of dissolving the blood corpuscles of cattle. This shows that the immune serum possesses at least two *immunkörper*, one acting on the ciliated epithelial cells of the trachea of cattle and the other on the red blood-corpuscles. Its action on the former is much more powerful than on the latter. This proves that in milk are contained the same specific substances as in the epithelial cells which produce the milk, by means of which it is possible to excite the formation of a powerful serum that is destructive of epithelial cells. The author has been engaged in an attempt to produce an epithelial immune serum with human milk, thinking that it would perhaps be destructive to the epithelial cells of cancer. So far the injection of human milk into dogs and rabbits has not produced an immune serum having such properties. [D.R.]

3.—A case of **fibrinous bronchitis** in a boy of 15. The fibrinous coagula on culture and microscopic examination showed the presence of the pneumococcus and Staphylococcus pyogenes aureus. It is probable, the author thinks, that the patient had a primary simple catarrhal bronchitis, which was kept up by his occupation. He was a polisher of shears, knives, and other metal tools. The irritation produced by the fine metallic particles prepared the way for the localization of the bacteria. The chronic course of the case was probably due to the addition of mixed infection to the infection of the pneumococcus. [D.R.]

4.—A coppersmith of 31 was suddenly taken ill with headache, delirium, fever, gastric and general symptoms, and a mild angina. Jaundice, swelling of the liver and spleen, a mild nephritis, muscular pains, and skin-lesions soon developed. The disease ended by lysis. Convalescence was slow, and during it the pulse was rapid. Bacteriologic examination of the blood was negative. There was nothing in the history throwing any light on the origin of the Weil's disease. [D.R.]

5.—A case of **hysteric mutism** preceded by hysterio-epilepsy and apparently excited by intoxication with carbon monoxid. It seems probable that as the patient had shown some signs of nervous disturbance previously, the CO poison was merely the exciting cause of a dormant neurosis. [D.R.]

7.—Wunderlich reports 2 cases in which **tampons** were evidently **left behind** after abdominal operations. In the first case the gauze tampon was passed from the bowel through the anus and the patient made a good recovery. In the other the patient died within 36 hours subsequent to the operation and the tampon was found free in the abdominal cavity and unaccompanied by any inflammatory reaction. [G.B.W.]

July 17, 1900. [47. Jahrg., No. 29.]

1. The Early Diagnosis of Tabes. W. ERB.
2. A Method by Röntgen Procedure to Ascertain by the Shadow of an Object its True Size, and the Correct Determination of the Size of the Heart by this Method. MORITZ.
3. The Clinical Diagnosis of Diaphragmatic Hernia. CARL HIRSCH.
4. Concerning Alcohol Dressings. C. GRASSER.
5. An Until Now Disregarded Property of Alcohol in its Application to Hand Disinfection. EGBERT BRAATZ.
6. The Antiseptic Value of Oxycyanid of Mercury. OTTO V. SICHERER.
7. Similar Experiments Concerning the Value of Mechanical Alcohol Disinfection of the Hands as Opposed to Dis-

infection with Mercurial Salts. B. KRONIG and M. BLUMBERG.

8. Experimental Researches in Hand Disinfection. TH. PAUL and O. SARWEY.

9. Concerning Diabetes Insipidus. STRUBELL.

1.—Erb calls attention to the existence of **larval forms of tabes**, the early recognition of which is difficult. A number of illustrative cases are cited. The disease generally manifests itself by lancinating pains, slight paresthesia, and diminished sexual power. In one case there was a unilateral Argyll Robertson pupil. In another there were merely bladder and sexual weakness, slight fatigue, and paresthesia, and some swaying with the eyes closed. The reflexes in 5 cases were present and active, even after the symptoms had persisted from 4 to 7 years. In all of the 5 cases cited an undoubted secondary syphilis had preceded. Another group of cases in which the diagnosis is difficult is composed of those with **visceral crises**. In all of these a careful examination may reveal perhaps a sluggish or absent reaction in both pupils or in one pupil only, absence of the Achilles reflex, slight indication of Romberg's symptom or of disturbance in sensation. Erb considers that the presence of lancinating pains, bladder and sexual weakness, lassitude, trifling paresthesia, Argyll Robertson pupil, and slightly developed Romberg's symptom, are sufficient to justify the diagnosis of tabes, even if the reflexes are present and the other characteristic symptoms are absent. The demonstration of a previous syphilitic infection practically clinches the diagnosis. Such cases may remain always rudimentary, or they may develop into the typical grave locomotor ataxia. Erb uses mercurial inunctions freely in these forms. [D.R.]

3.—Hirsch reports a most interesting case of **hernia of the diaphragm** in a man of 34. The objective symptoms resembled very closely a left-sided pneumothorax. The patient, however, was in good health and did not give a history of lung-disease. Ever since early childhood the patient had suffered more or less from gastric distress, especially following eating, and had been treated at different hospitals without obtaining relief. Physical examination gave unmistakable signs of a cavity in the lower part of the left side of the chest, and it was ascertained that since childhood the heart had been situated on the right side. Also it was noticed that physical signs varied greatly. After eating, the supposed cavity increased in size, and finally the true state of affairs was suspected. The diagnosis was confirmed by inflating the stomach and by radiographs made after the patient had swallowed a quantity of bismuth, and, secondly, after a stomach-tube filled with mercury had been introduced into the stomach. These tests show that the whole of the stomach was displaced and occupied a position above the diaphragm, in the left pleural cavity. [G.B.W.]

5.—Braatz advances a rather new theory as to the way in which **alcohol** does good as a **disinfectant** for the hands. He says that the skin naturally contains a certain amount of air chiefly in the ducts of the glands, and that it is the presence of this air which prevents, to a very large degree, the watery disinfectants from gaining access to the bacteria residing in these recesses. Alcohol, he claims, will replace this air and thus readily penetrate into the ducts and act directly on the germs contained therein. [G.B.W.]

6.—Sicherer says that the oxycyanid of mercury is not as powerful an antiseptic as the bichlorid, though Pastilli's oxycyanid is stronger than that of Grouvelle. [G.B.W.]

9.—Strubell defends himself against the attacks made upon him by lay and medical writers, on account of his practical **incarceration of a man** with diabetes insipidus in whom he wanted to study metabolism. While he seems to show that he did not transgress the limits of the allowable, we yet feel that he laid himself open to criticism. His own devotion to his work, which made him visit the patient from 8 to 10 times during the day and from 5 to 6 times during the night, is very commendable; but it would not be considered by the majority of persons whose opinion, even if not well founded, must be respected, as excusing the procedures dictated by the author's scientific zeal. Much has been made by the lay press of the man's escape through the roof of his room, but Strubell clearly shows that the man himself was willing to submit to the investigation and returned after his escape for a continuation of the experiment. [D.R.]

Wiener klinische Wochenschrift.

July 12, 1900. [13. Jahrg., No. 28.]

1. The Etiology of Basedow's Disease and Thyroidism. ROBERT BREUER.
2. Our Knowledge of Recurrent Tetania Gravidarum. C. HÖDLMOSE.
3. A Mud Obtained from Salzberg by Ischler. E. WIENER.
4. Comment upon the Essay, in No. 25 of this *Wochenschrift*, of G. Holzknecht, "The Radiographic Appearance of Pathologic Processes of the Thoracic Aorta." M. WEINBERGER.

1.—A man of 43, of healthy antecedents, following an acute suppurative thyroiditis due to staphylococci, developed **exophthalmic goiter**, of a grave type, with well-marked ocular symptoms. The disease ended fatally in about six months under the picture of an acute psychosis. The autopsy showed the remains of the abscess and a diffuse hyperplasia of the thyroid gland. The parenchymatous viscera were the seat of degenerative changes such as are found in intoxications or acute infectious diseases. The author believes that his case clearly proves the thyroid origin of the exophthalmus of Graves' disease. It had been held by some that the existence of exophthalmus could not be explained on a thyrogenic origin and that this constituted a strong argument against Möbius' theory of the thyroid origin of the disease. [D.R.]

2.—Hödlmoser reports a case of **recurrent tetany** in a woman of 33. The attacks set in at about the middle of each of 7 pregnancies and continued until the end. From the history it was apparent that the patient had had the attacks of tetany before her marriage. The pregnancies seemed afterwards to be the exciting cause. Tetany is much more frequent during lactation than during the period of pregnancy. [D.R.]

Sundry French Journals.

1. Kernig's Sign in Meningitis. P. ROGLET. (*Gaz. Heb. de Méd. et de Chirur.*, July 15, 1900. 47me Année, No. 56. Paris Thesis, 1899-1900. No. 344)

1.—**Kernig's sign** is characterized by the absolute impossibility of obtaining complete extension of the leg on the thigh, when the patient is sitting and the thigh is flexed at a right angle to the trunk. The cause of this functional trouble lies in the contracture of the flexor muscles of the leg. The contracture disappears, however, and complete extension of the knee joint is easy when the patient assumes the dorsal decubitus. While it is usually bilateral the phenomenon is sometimes found on one side only. The intensity of the contracture may vary from day to day and in order to be sure that the sign is not present it is necessary to look for it several times. Often the phenomenon does not appear until the third or fourth day of an attack of **meningitis** and, indeed, in some cases of tuberculous meningitis it has not been discovered until the seventeenth day. The time of its disappearance is also variable. It may persist until death supervenes; it may disappear during the preagonal period; and it has been known to remain during convalescence. The value of the sign is real but not absolute. When it exists, it is useful in differentiating cerebrospinal meningitis from certain forms of influenza, typhoid fever, infantile paralysis, tetanus, and meningismus. Its absence in any case would not justify one in excluding the diagnosis of meningitis or of irritation of the meninges. Kernig's sign is produced by irritation of the meninges of the lower portion of the spinal cord and of the nerve roots that constitute the corda equina, although it is no indication of a distinct lesion of these structures. The experiments of Roglet on rabbits indicate that increase of pressure of the cerebrospinal fluid is not the cause of the phenomenon. In the healthy subject, placed in the sitting posture, with the thighs flexed at right angles to the trunk and the legs completely extended, the fibers of the flexor muscles of the knee-joint are extended to their extreme limit and their elasticity is almost completely exhausted. If now, under an irritation of the spinal cord or of the roots of the spinal nerves, the muscular tonicity is increased and the elasticity and the length of the fibers are diminished, they become too short to allow of complete extension of the leg upon the flexed thighs and Kernig's sign appears. [J.S.M.]

Practical Therapeutics.

Under the charge of

A. A. STEVENS, A.M., M.D.

Tropon as a Food in Pulmonary Tuberculosis.—Knopf (*Prophylaxis and Treatment of Pulmonary Tuberculosis*) writes as follows: "Of the many food-substances which have been recommended recently as especially valuable in the dietetic treatment of tuberculosis, I have used most extensively and with most satisfactory results the new product, tropon. Tropon is a tasteless and odorless, albuminous preparation in the form of a yellowish-brown powder, obtained through a complicated chemical process from animal and vegetable substances. That such a substance should be of value in the treatment of consumption seemed evident. I selected patients with whom I had had unusual difficulty in increasing their weight, with some among them on account of their aversion to fats. To summarize the results obtained, I may say that with from one to two ounces per day the average gain in 20 days was about one pound and a half, including one case with negative results. I must, however, add that these patients were mostly ambulant. In Weicker's sanatorium in Goerbersdorf, where patients in all stages of the disease are admitted, from out of 18 cases 15 responded to the treatment, gaining in the average 2½ pounds in 4 weeks. The relatively better results obtained in the sanatorium must be ascribed to a better supervision and a more regular administration of the tropon than is possible with ambulant patients. Tropon has since been extensively used with satisfactory results in the clinics of von Leyden and Senator in Berlin; Schmelinsky and Klein in Hamburg. It can be administered with mush, thick soup, cocoa, chocolate, milk, mashed potatoes, rice, sago, tapioca, etc. It must be borne in mind that tropon is not soluble in water, and consequently falls to the bottom in clear liquids, coffee, and thin soups, and when taken with such it must be constantly stirred. It can be advantageously taken with the yolk of an egg and some sugar. For those of my ambulant patients who have not the conveniences of home life, I prescribe the tropon to be taken by the aid of a wafer (a teaspoonful at a time). Considering that tropon is really an able substitute for the albumen in other foods; that it rarely causes digestive disturbances; that it can be taken for a long period of time without aversion, and that it is excessively cheap, we may look upon the new product as a most valuable adjuvant in the dietetic treatment of phthisical patients."

Diarrhea of Phthisis.—Burney Yeo states that in advanced cases he has found the extract of coto bark very efficacious. He prescribes it in the following form:

R.—Fluid extract of coto 60 minims.
Compound tincture of cardamom..... 60 minims.

Mix and triturate slowly with:

Mucilage of acacia..... 3 drams.
Simple sirup..... 2 drams.
And add sufficient water to make..... 6 ounces.

Dose: One tablespoonful.

Ichthalbin in Intestinal Diseases.—Rolly (*Merck's Archives*, August, 1900) draws the following conclusions from the use of ichthalbin in 28 cases of subacute and chronic enteritis: Ichthalbin was given in doses up to 2 drams daily for a long time without harmful results, and was always eagerly taken. It caused no constipation, even in the larger doses, nor any symptoms of irritation of the intestines or kidneys. In our metabolism tests it facilitated the albumin intake, while at the same time it diminished the nitrogen elimination via the urine, and heightened the utilization of the ingested nutriment. Doses of 5 to 8 grains of ichthalbin sufficed to raise the appetite and increase the body-weight; hence the remedy appears to be serviceable as a tonic. In our four series of tests daily doses of 23 to 45 grains greatly reduced the quantity of ethyl-sulfates, and lessened intestinal fermentation, even though the dejections only gradually lost their fetid character. Under otherwise constant conditions (diet, etc.) daily doses of 23 to 45 grains of ichthalbin had a satisfactory, at times very excellent, in-

fluence on simple chronic enteritis, as well as in cases complicated with peritonitis or tuberculosis. Subacute gastric intestinal catarrhs were to some extent satisfactorily influenced, but in acute cases an uninfluenced action could not be observed.

The Abortive Treatment of Bubo.—Christian (*Therapeutic Gazette*, August 15, 1900) states that he has obtained most satisfactory results from the use of an ointment of drugs alterative in character combined with speedy pressure obtained from the use of a spica bandage. The ointment to be used for this purpose is made up as follows:

R.—Ointment of mercury.....
Ointment of belladonna.....
Ichthyol
Lanolin..... } of each 2 drams.

If the bubo be seen early, no heat or redness being present, a piece of surgical lint spread with the ointment is applied directly to the swollen gland; over this is placed a piece of oiled silk of the same size. A large pad of cotton is next applied, and firm continuous pressure is obtained by the application of a wide spica-of-the-groin bandage, two bandages being employed. This treatment is applied every other day until, in cases in which it acts successfully, entire resolution of the bubo is accomplished—usually a period of 10 days to 2 weeks. Twenty buboes have been treated in this manner during the past year in the Philadelphia Polyclinic. Of these 12 were aborted, 8 of the cases following gonorrhea, and 4 accompanying chancroid. Of the 8 cases in which abortive treatment failed, 6 were cases of tubercular adenitis. In these instances, however, it was early apparent that resolution would not occur. From a careful study of these cases the author has become firmly impressed with the belief that fully 50% of buboes, other than tubercular, can be successfully aborted by the plan of treatment outlined.

Eructation, Regurgitation and Rumination.—Lincoln (*New York Medical Journal*, March 24, 1900) states that rumination is usually caused by heredity, custom or imitation. The best treatment is removal of the cause, having meals served in company, and the administration of some very bitter preparation. The following is suggested:

R.—Fluid extract of condurango. }
Fluid extract of quassia..... } of each 20 minims.
Compound tinct. of gentian. }
Tincture of nux vomica..... } of each 10 minims.
Tincture of capsicum }

Neurasthenia.—Dornblüth (*Therapeutische Monatshefte*, July, 1900) lays great stress upon the hygienic and regimenal treatment. Drugs, however, are often of great service. He believes that codein is particularly useful, and that it exerts, apart from its narcotic properties, some special influence on the nervous system. The organic salts of iron, bromide, and arsenic are often used with advantage. Insomnia may be a troublesome symptom; when such is the case the patient after partaking of light supper should give himself up for the rest of the evening to absolute relaxation of mind and body. A little food before retiring is sometimes beneficial. For inducing sleep the author recommends a hot foot-bath, a general bath (70°—76° F) with gentle friction, or Preisnitz pack. Valerian, kryofin, lactophenin often prove efficient, but in obstinate cases their use may be preceded for a few nights by trional, sulfonal, or dormiol.

Levulose in Diabetes.—The *Therapist* for July 16, 1900, quotes an article on this subject by Andrea Ferrannini, which appeared in *Il Policlinico* for November, 1899. The author draws the following conclusions from his experiments:

When glucose continues present in the urine of a diabetic subject, in spite of the diet being exclusively albumino-adipose, the administration of levulose augments the quantity of sugar contained in the urine.

When the sugar disappears from the urine, the diet being much scantier, although exclusively albumino-adipose, we may administer 13 drams of levulose in 24 hours without causing it to reappear in this urine; but the quantity of levulose may not be repeated on the following day, as sugar would then show itself. It is only with a dose of 6½ drams of evulose administered on alternate days that the sugar does

not show itself in the urine, even when this alternate treatment is continued for a protracted period of several days.

This small dose of 6½ drams of levulose administered on alternate days, when not eliminated as sugar in the urine, saves the consumption of the nitrogenous substances in a much greater proportion than agrees with the law of the thermo-dynamic equality of the articles of food, so that this effect is also due to other bio-chemical properties, which have not yet been ascertained.

Dysentery.—According to the *Medical Fortnightly* the following combination is useful:

R.—Magnesium sulfate..... 1 ounce.
Tincture of aconite..... 4 minims.
Morphin hydrochlorate..... ½ grain.
Spirit of camphor..... 10 minims.
Water..... 3 ounces.

A teaspoonful every 2 hours until character of stool changes, then at longer intervals.

Rheumatoid Arthritis.—Nestor Tirard (*Medical Treatment of Diseases and Symptoms*, 1900) writes that it is essential to make careful inquiry as to the possible connection of the disease with any menstrual irregularity, which may perhaps be corrected, and also to treat the general health by the free use of alterative tonics. Iron arsenate ($\frac{1}{16}$ to $\frac{1}{8}$ grain) or sodium arsenate ($\frac{1}{16}$ to $\frac{1}{8}$ grain) may be conveniently administered as a pill in conjunction with ferrous sulphate, if there is marked tendency to anemia. If the patient experiences any difficulty in taking this pill, sodium arsenate may be given in solution with iron citrate, or with the sirup of ferrous iodid, or, if the digestion appears to suffer from the use of arsenic, the sirup of ferrous iodid, $\frac{1}{2}$ to 1 dram, may be given in water three times a day. Although this drug is frequently of very great service, complaint is sometimes made of its persistent taste, which is due doubtless to the absorption of iodine and its gradual elimination by the salivary glands. When there is evening rise of temperature, together with slight night-sweats, quinin is often of service. A grain or a grain and a half may be added to the iron arsenate, or it may be given in solution with dilute sulfuric acid, or in pill with extract of nux vomica and extract of belladonna. Ordinarily under this treatment the appetite improves and the temperature falls. When there is marked indication of debility, codliver oil may be of service. Many observers contend that they obtain better results from the steady employment of this drug than from any other form of medication. Constipation must be counteracted. Sulphur in comparatively large doses is the best laxative. The confection of sulphur may be administered night after night, but in general it is found that preference is expressed for the repeated use of the sulphur lozenge:

R.—Precipitated sulphur..... 5 grains.
Potassium bitartrate..... 1 grain.
Sugar..... 8 grains.
Powdered acacia..... 1 grain.
Tincture of orange peel..... 1 minim.
Tincture of acacia..... 1 minim.

Two or three to be taken at bedtime.

Concerning the hot-air treatment the writer believes that in the early stages of osteoarthritis the applications lead to increased mobility, but in advanced cases comparatively little benefit ensues. Massage, if performed with care and moderation, may cause some improvement. The combination of massage with the use of hot baths, as carried out for instance at Aix-les-Bains, is sometimes productive of considerable benefit. In the early stages the writer has seen much benefit follow the application of iodine, with repeated gentle, passive movement. The ointment of cadmium iodid (62 grains of cadmium iodid with 1 ounce of simple ointment) has occasionally appeared to give much relief, though sometimes it has caused blistering.

Fetid Bronchitis.—Parcellé (*Progres Médical*, June 16, 1900) recommends the following pill:

R.—Acetate of lead..... 2½ grains.
Terpine hydrate..... 2½ grains.
Dover's powder..... 1½ grains.

Three to four pills daily.

Application for Herpes Zoster.—Bleuler (*Nouveaux Remèdes*, No. 1, 1900) reports 23 cases of herpes zoster in which he employed successfully the following ointment spread upon linen:

R.—Cocain hydrochlorate..... 1 part.
Lanolin..... 50 parts.
Cosmolin..... 50 parts.

According to the writer the subjective pains are relieved at once and the disease brought to a speedy termination.

Gelatin in Hematuria.—Schwabe (*Therapeutische Monatshefte*, June, 1900), reports a case of hematuria in a patient with recurrent nephritis in which he employed without success the usual hemostatic remedies. Prompt and permanent relief, however, was obtained by the injection into each infraclavicular region of 7 drams of physiologic salt-solution containing 2% of pure gelatin, followed by the daily internal administration for a week of a pint of 10% gelatin solution. According to the author the pain was not intense, and no unfavorable after-effects were observed.

A Lotion for the Night-Sweats of Phthisis.—Kohnstamm (*Wiener medizinische Blätter*, June 21, 1900) states that the following lotion is very efficient in the night-sweats of phthisis:

R.—Balsam of Peru..... 1 part.
Formic acid..... 5 parts.
Chloral hydrate..... 5 parts.
Trichloroacetic acid..... 1 part.
Absolute alcohol..... 100 parts.

Quinin in Syphilis.—Murray (*Rough Notes on Remedies*) in discussing the treatment of those cases of syphilis which do not respond to mercury or iodids writes: "Happily there is another drug which seems to deal with this mercurio-syphilitic diathesis and to help the patient over the stile, and that is quinin. At this juncture a bold administration of quinin will often act like a charm, and it may be safely combined with potassium iodid if that be deemed wise or necessary. This combination seems to be a deadly foe to the mercurio-syphilitic diathesis. Five or six grains of quinin 3 times a day is enough, and it will work well with 15-gr. doses of iodid. Indeed, it is quite wonderful to see how much better the iodid works with quinin than mercury, and how this combination tends to undo the bad effects of mercury where specific disease has occurred in a poor habit of body with unfavorable surroundings."

Prostatic Hypertrophy.—The *Revue Médicale*, July 18, 1900, recommends the following suppositories:

R.—Ammonium sulphoichthyolate..... 5 to 12 grains.
Cacao butter..... 54 grains.

For one suppository.

Opium in the Summer Diarrheas of Children.—Crandall (*International Medical Magazine*, July, 1900) believes that opium, if skilfully used, is capable of doing good in summer diarrhea. He believes that it is contraindicated in the first stages of acute diarrhea before the intestinal canal has been free from decomposing matter; when the passages are infrequent or of bad odor; when there is high temperature or cerebral symptoms are present; when its use is followed by elevation of temperature or the passages become more offensive. It is indicated when the passages are very frequent, with pain; when the passages are excessively frequent, large, and watery; in dysenteric diarrhea, preceded by castor oil or a saline; in late stages, with small, frequent, nagging passages; when the passages consist largely of undigested food, and the bowels act as soon as food is taken into the stomach. Opium should be given alone, so that its dose can be regulated with more certainty. The intervals between its administration should rarely be less than 3 hours, while 4 hours is more commonly advantageous. The dose should be as small as possible. Narcotism should be strictly avoided. The most available preparations for young children are paregoric and the deodorized tincture. The dose of paregoric may be as follows: at 3 months, 2 minims; 1 year, 8 minims; 5 years, 30 minims. The dose of the deodorized tincture may be at 3 months, $\frac{1}{2}$ minim; 1 year, $\frac{1}{3}$ minim; 5 years, 2 minims.

Original Articles.

MULTIPLE METASTATIC SARCOMATA OF THE LUNGS.

Secondary to Sarcoma of the Right Forearm. Adhesive and Hemorrhagic Pleurisy; Thrombosis of the Pulmonary Artery, with a Necropsy.

By STEPHEN SMITH BURT, A.M., M.D.

Professor of Physical Diagnosis and Clinical Medicine, New York Post-Graduate Medical School and Hospital.

AMONG the patients that have come under my observation during a recent service at the New York Post-Graduate Hospital, there has been an instance of multiple metastatic sarcomata of the lungs which seems to be of enough general interest and importance for publication. "Virchow¹ described sarcomata as new formations of the connective tissue type, distinguishable from the corresponding fully developed tissue by their immaturity, of which the predominance of their cellular elements is a sign." It is stated that² "accurate knowledge regarding mediastinal and other intrathoracic tumors dates from a very recent period."

Although pulmonary sarcoma is now a well-recognized disease, it certainly is not of common occurrence; and a metastasis of this neoplasm from the extremities to the lungs is comparatively infrequently encountered.³ "The number of cases coming under the observation of any one observer has always been limited, and opportunity for accurate clinical study of the various forms and of the successive stages is therefore limited." Hence, every additional example of primary sarcoma and its metastases, in view of the necessary paucity of individual experience, should find its way into the public records, for the benefit of those who are especially interested in this subject. Of the 60 examples collated by S. W. Gross to illustrate the pathology of malignant growths, inspection after death disclosed metastatic tumors in 57.14% of the sarcomata. It is not improbable that many of these tumors are discovered for the first time at the autopsy.

In an exhaustive article by W. Roger Williams,⁴ out of 15,481 primary tumors collated, 54.4% were cancers; 9.4% sarcomas; 24.7% nonmalignant tumors; and 11.4% were cysts. Of 1,350 primary sarcomatas tabulated by Williams, 385 were of the bones, and 340 originated in the connective tissue. Of these latter, 11 were found in the mediastinum, 7 in the arm, 5 in the forearm, 18 in the thigh, and 13 in the leg. Out of 385 cases of primary sarcoma of the bones, the humerus was affected 22 times, the radius 3, the ulna 3, the femur 61, the tibia 19, the fibula 11, the clavicle twice, and the ribs 6 times. Among other sources of original growth, the kidney was affected 8, and the lung 3 times. The primary seat of the neoplasm under discussion was in the connective tissue of the right forearm. Williams likewise says that "any given tumor always contains more than a single variety of cell; but in most sarcomata some special variety predominates, and after it the tumor is named. Round-celled and spindle-celled are the commonest, but a mixture in which both these varieties are dominant is of frequent occurrence."

Delafield and Prudden⁵ state that "sarcomata may occur in the liver and lungs, and heart by metastasis, and intimately related as they are to the bloodvessels, metastasis is more apt to occur through the blood than through the lymph-channels, and consequently adja-

cent lymph-glands are much less apt to be invaded than in some other forms of tumor, notably the carcinomata." It will be seen in the following history that there was no involvement of the lymph-glands. "Metastatic deposits are of comparatively rare occurrence in sarcoma," says McGuire.⁶ On the other hand, Dr. N. Senn⁷ asserts that "general dissemination in sarcoma takes place much more frequently, and at an earlier stage than in carcinoma. In this regard sarcoma is much more malignant than carcinoma. The intimate relations which exist between the bloodvessels and the tumor-tissue in sarcoma serve to explain the frequency of metastasis." Inasmuch as the migration of these neoplasms seems to take place by way of the veins, the malignant growth is more prone to reappear in the lungs than elsewhere. Hare⁸ repeats that "it is a point worthy of remark that the lungs very rarely form the starting-point of the growths, and are, indeed, very rarely affected by primary or secondary formations. Ziegler⁹ states "of secondary growths examples of each species of neoplasm that form metastasis at

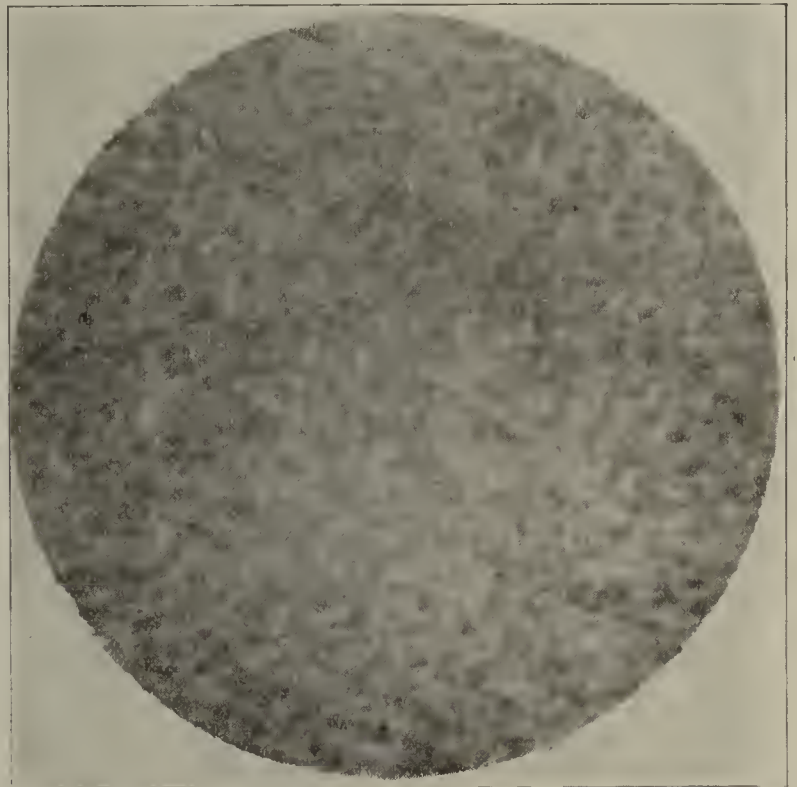


FIG. 1.—Photomicrograph of spindle-celled sarcoma.

all have been found in the lungs, and, as the tumor grows, reactive inflammation is apt to be set up, especially in the pleura, where it not infrequently assumes a hemorrhagic character, and in the lung the inflammation is usually catarrhal." There was a pronounced catarrhal bronchitis in our patient, together with an inflammation of the pleura that was both adhesive and hemorrhagic. Ziemssen¹⁰ says that "sarcoma is pretty frequently found in the lungs, occurring only secondarily, and generally when the primary seat of the growth is in the bones." In the following case, as previously stated, the original growth involved the connective tissue of the forearm. "Where the disease is primarily in the arm," remarks Hare,¹¹ "the secondary growth is not infrequently in the mediastinum." One singular fact about the case before us was the entire absence of the sarcomatous tumors in the mediastinum. "When the malignant disease extends to the lungs," says Winslow Anderson,¹² "by metastasis from some other organ, the disease is for the most part multiple," and further, "malignant growths of the lungs, like those of all other

organs, tend rapidly to undergo degenerative changes, hence they soon break down and form irregular cavities with considerable hemorrhage." The report of the necropsy will show a breaking down of many of the tumors in this pathological specimen, and the history records a moderate amount of hemoptysis. "Of the varieties of sarcoma the spindle-celled is by far the most common, as it constituted 11 of the 16 cases that have come under my personal observation," declares S. W. Gross,¹³ "and it was met with in 45 of the 60 examples that I have collated." The primary tumor was of the large spindle-celled variety in the present instance, and the metastatic tumors were likewise composed of the large spindle cells. In the "Reference Hand-Book of the Medical Sciences"¹⁴ it is stated that "sarcoma is a growth preferably of the first half of life, differing markedly from carcinoma, which is an affection of middle life and of later years." The present patient was 33 years of age. Sarcomatous growths in the lungs exist usually without pain, except in the associated pleurisy, and there was little complaint of pain recorded here, except about the heart, and in the previous history of the attack of pleurisy.

In the *Johns Hopkins Hospital Reports*, Volumes I to VII, there are no cases of multiple metastatic sarcomas of the lungs mentioned. From Volume I, published in 1876, of the "Transactions of the New York Pathological Society" to the last bound volume, dated 1897-98, but six pulmonary sarcomatous tumors are recorded. The first specimen was presented to the Society by Heitzman in 1876. It was a multiple metastatic round-celled sarcoma of the lung, from the body of a man aged 69, who had had since childhood a primary tumor in the right groin, and who died two years and eight months after the first operation for its removal. The second was an osteosarcoma of the lungs, presented by Van Gieson in 1879, and published in Volume XXX of the *New York Medical Journal*. It was from a man aged 30, and the tumor involved nearly the whole of the left lung, and was strongly adherent

to the chest and pericardium, and involved the apex of the right lung. The third was also presented by Van Gieson in 1887. It was an angiosarcoma of the lung with calcific deposits, removed from the body of a middle-aged woman, who had an amputation of the knee five years previously for a tumor which was not diagnosticated. The fourth was presented by Roosevelt, in 1888, and taken from the body of a boy aged 11, who was brought into the hospital moribund, and who died the day following. It was an extension of a sarcoma from the mediastinum into the left lung. The

fifth was presented by Hoenpyl in 1895, from a man 43 years of age. It was a multiple new growth in the lung, mediastinal and mesenteric glands, liver and stomach, following an injury to the left shoulder resulting in hemorrhagic pleurisy, and thought by Prudden from the description to be both sarcoma and carcinoma. There was about one quart of bloody fluid in the pericardial sac. The sixth was presented by Tuttle, in 1896. It was a specimen of angiosarcoma from a man, 42 years of age, who had primary sarcoma of the kidney with numerous metastatic deposits in the lung and liver, varying from one-fourth of an inch to two inches in diameter.

From 1857 to 1899, comprising Volumes I to XX of the Proceedings of the Pathological Society of Philadelphia; there are 9 pulmonary sarcomas recorded. The first specimen, from a man aged 24, was presented by Louis

Starr, and published in Volume IX. There was an intrathoracic tumor of the right side, weighing 10½ pounds, with several calcareous nodules found in the right lung, and two of a similar nature, as large as a filbert, in the left lung. It was secondary to an osteosarcoma of the right femur, for which amputation at the hipjoint was performed, and it was a spindle-celled sarcoma with calcareous and osseous transformations. The patient died 23 months after the operation. The second was presented by H. F. Formad for R. E. Girvin, from a man aged 36, and published in Volume X. It was a secondary multiple sarcoma of the lungs, from



FIG. 2.—Multiple metastatic sarcomata. Left lung.

a small round-celled malignant sarcoma of the left foot, for which there was an amputation at the lower third of the leg, with a reappearance in the lungs three months afterwards. The third was presented by H. M. Fisher, published in Volume XV, from a woman aged 48, and was a small round-celled sarcoma of the mediastinum involving the left lung. The fourth was presented also by H. M. Fisher, from a man aged 25, and published in Volume XVI. It was a multiple sarcoma of the lungs, pleura, heart, etc., secondary to a large round-celled sarcomatous tumor of the rib. There was a hemorrhagic pleurisy. The fifth was

a specimen presented by Alfred Stengel for Thomas Tyson, from a boy aged 13, and published in Volume XVII. It was a multiple round-celled sarcoma of the lung, secondary to sarcoma of the periosteum of the rib. The sixth, also presented by Alfred Stengel, from a boy 7 years old, and published in the same volume, was a primary mixed, small, round-celled and spindle-celled sarcoma of the pleura, or the periosteum of the rib, probably the latter, with secondary involvement of the lungs. The seventh, likewise by Alfred Stengel, from a man aged 38, in the same volume, was an endothelioma primarily in the pleura, with metastasis to the lungs and hemorrhagic pleurisy. The eighth was presented by F. A. Packard, in the same volume, from a woman aged 50, and was a primary endothelioma of the left pleura with secondary involvement of the lung, pericardium and diaphragm. The ninth

was a multile sarcoma, presented by A. O. J. Kelly, and printed in Volume XIX, O. S. It was a metastatic formation from an amputation at the hip for sarcoma of the left femur. The patient was a girl 9 years of age, who died 8 months after the amputation. There were growths in the three mediastinal spaces, the lungs, the pleura, and the brain.

In the bound volumes of the *Boston Medical and Surgical Journal*, from 1886 to 1899, comprising Volumes 115 to 141, there are four cases of intrathoracic sarcoma published. The first, in Volume 120, was an intrathoracic sarcoma, endothelioma, by F. C. Shattuck, from the periosteum of the ribs in a boy of 12. It was

remarkable, as Dr. Shattuck states, for an entire absence of any metastasis. The second, in Volume 131, also by F. C. Shattuck, was a rapid sarcomatosis, in a man aged 36, involving the surface and viscera, including the lungs, but not multiple metastatic sarcomata. The third, in Volume 140, published by George W. Sears, was a primary sarcoma of the posterior mediastinum, involving the lungs, the pleura and the liver, in a man 25 years of age. It was a spindle-celled sarcoma; there was hemorrhagic pleurisy. The fourth, also in Volume 140, by W. F. Whitney, was a large round-celled sarcoma, in a man 39 years of age, of the mediastinum.

There was no metastasis. The growth was by direct extension, and it was restricted to the right side of the pericardium, the right side of the heart, and to the left lung, and the diaphragm on that side.

The examples which have been gathered from the Transactions of the Pathological Societies of New York and Philadelphia, and from the *Boston Medical and Surgical Journal*, number, including my own, 20. Of these, one started primarily in the groin; one in the leg; one in the kidney; one in the lung; four in the mediastinum; two in the pleura; one in the right femur; one in the left femur; one in the left foot; four in the ribs; one in the right forearm; one in the left shoulder; and one apparently was general, rather than local, from the beginning. Sixteen were male and four were females. The ages were: One "middle-aged;" two, 36; two, 25; and one, 7, 9, 11, 12, 13, 24, 30, 33, 38,

39, 42, 43, 48, 50, and 69, respectively. There were six round-celled; two spindle-celled; two angiosarcoma; three endothelioma; one osteosarcoma; one sarcoma and carcinoma; one mixed—small round and spindle-celled; one spindle-celled, with calcareous and osseous transformation; and the nature of three was not given. Finally, there were one hemorrhagic pericarditis, and five hemorrhagic pleurisies among the 20 cases enumerated.

History.—William E. F., admitted to surgical division, July 23, 1899, readmitted to medical division, December 26, 1899, aged 33, married. Occupation, locomotive fireman. Family history negative. Previous history—had the diseases com-



FIG. 3.—Multiple metastatic sarcomata. Right lung.

mon to childhood—measles, whooping-cough, etc.,—also typhoid fever and pneumonia. Four years previous to admission he first noticed a small tumor situated in his right forearm, which then was painless. This tumor gradually increased in size, and finally became sharply painful upon exertion. One year ago, from July 23, he had the tumor removed, but before the wound had healed the growth reappeared, and has been gradually growing larger, and during the past two months more painful. When he entered the surgical division there was a physical examination of the heart and lungs with negative results. The urine was 1.025 in specific gravity; acid in reaction; contained neither albumin nor sugar, and but a few hyaline casts. A second examination of the urine on July 25, revealed neither casts, sugar, nor albumin. There was a tumor on the inner side of the right forearm, five by four inches in diameter, somewhat movable, nodular, with fluctuation in one of the nodules, and encapsulated. A specimen of the neoplasm sent to the laboratory was found by Dr. H. T. Brooks to be a large spindle-celled sarcoma upon microscopical examination. On July 24, 1899, the arm was taken off at the upper third by Dr. W. O. Plympton; the patient made a good recovery, and on August 5, 1899, was discharged from the hospital.

Pathological examination by Dr. R. L. Loughran of the house staff: There is a tumor $2\frac{1}{2} \times 2$ inches in diameter beneath the common tendon of the flexor muscles of the forearm, just below the elbow, and in front of the internal intermuscular septum. This growth extends downwards to within a few inches of the wrist, between the flexor sublimis and extensor carpi ulnaris, becoming thinner as it descends. There is no evidence of the involvement of bone, nor, above the elbow, of the muscles.

The man, after the amputation, continued in apparent good health until the middle of November, when, after retiring one night feeling as well as usual, he awakened next morning to find that he could not get up. He complained of severe, sharp pain in the right side on respiration. A week later he was taken with shortness of breath, which has gradually increased. On December 1st there was pain on the left side in front. An aspirating needle was inserted in the right side of his chest before he returned to the hospital, but only a small amount of blood was withdrawn. On readmission to the hospital his chief complaint was weakness and dyspnea. Temperature 98° F.; pulse 112; respiration 38. Examination of urine December 27, specific gravity, 1.025; reaction, acid; color, amber; transparency, clear. Chemical analysis—albumin, very slight trace; sugar, negative. Microscopical examination—no casts. Second examination, January 10, with similar results, and a few coarse, granular and hyaline casts in addition. Examination of sputa for tubercle bacilli, with negative results.

Exploration of the chest.—Heart, inspection, no visible cardiac impulse; palpation, impulse of heart against chest-wall absent; percussion, flatness from below upwards to the third intercostal space, in the left parasternal line, and dulness thence to the second intercostal space. Flatness extending across and about three-quarters of an inch to the right of the sternum. Flatness extending four inches beyond the left edge of the sternum, and dulness one inch further. Auscultation, heart-sounds almost inaudible.

Lungs, right side, inspection, lack of mobility; palpation, absence of fremitus over the greater part in front and behind; mensuration, no increase in the semi-circumference. Percussion, marked dulness over the upper part, and flatness below, especially behind; auscultation, vesicular respiration heard from above downward with diminished intensity, but rather harsh in quality, to the lower part in front and behind. Left side, inspection, lack of free mobility; palpation, negative; mensuration, negative; percussion,

dulness below in front, vesiculo-tympanic resonance behind; auscultation, fine crackling, and subcrepitant rales lower portion behind. Also a small area of bronchial breathing just below the inferior angle of the scapula; sibilant and sonorous breathing in front and behind, especially behind. The bronchial breathing and subcrepitant rales remained constant throughout subsequent repeated examinations, and were, of course, more distinct during the absence of the sonorous breathing, which was not constant. The bronchial breathing, subcrepitant and fine crackling rales were similar to the combination termed *rale redux* heard in resolving pneumonia. On January 10, the flatness over the cardiac area had disappeared, and the heart-sounds, though not strong, were stronger and decidedly more

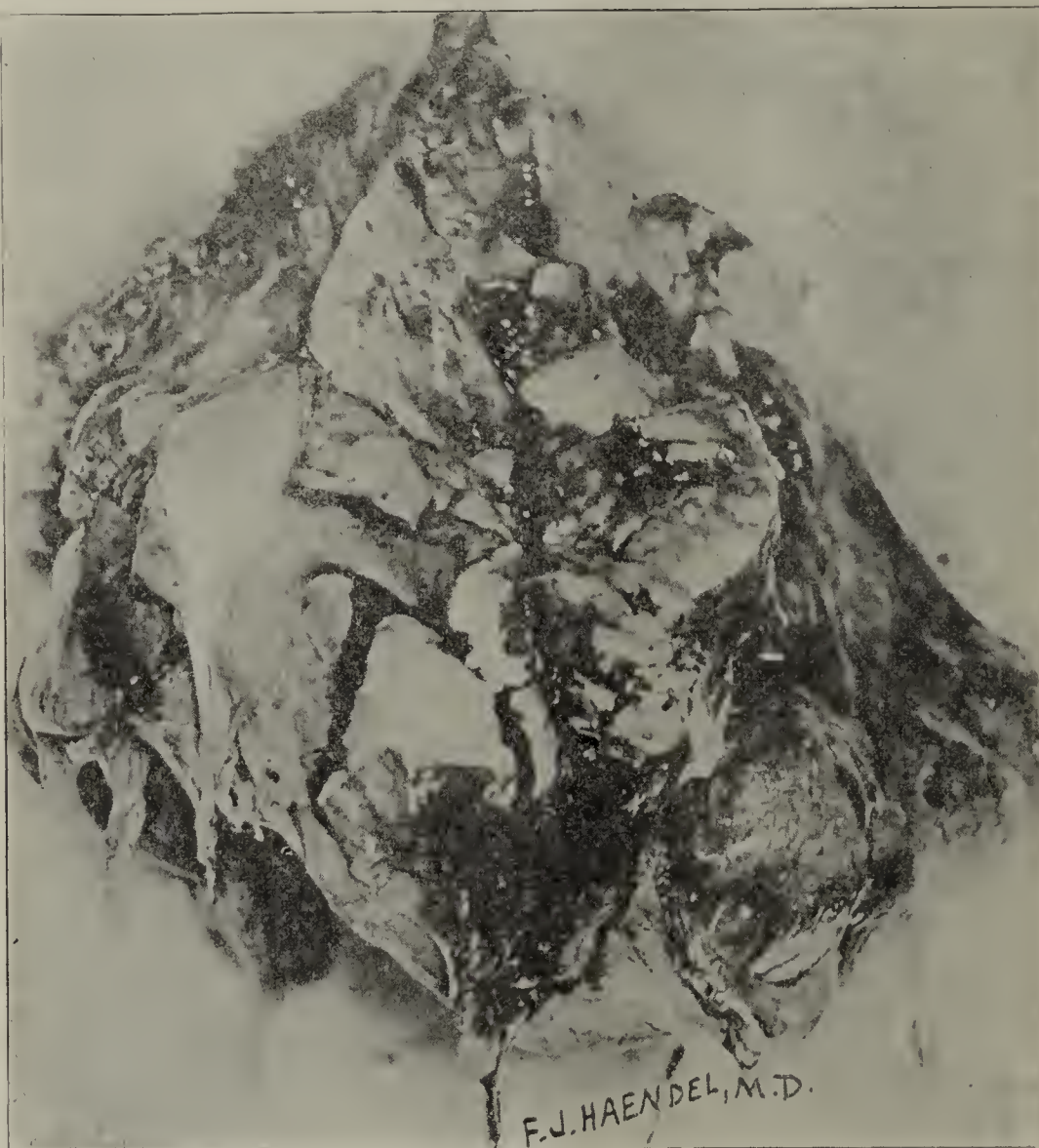


FIG. 4.—Multiple metastatic sarcomata. Left lung.

audible than on previous examinations. In other words, the effusion in the pericardium virtually had been reabsorbed.

Clinical notes.—There was practically no fever; the temperature, once reaching 101° F., and once descending to 96.6° F., ranged the remainder of the time between normal and subnormal. Respirations varied from 24 to 40, reaching 50 once, but not often exceeding 36 per minute. The pulse was always rapid and generally weak. There is a record of attacks of coughing, and at first of vomiting; pain in the right shoulder and about the heart; bloody expectoration; restlessness, insomnia, and above all dyspnea; in the beginning appetite fairly good; repeated spitting of blood; profuse night-sweats; almost constant oppression of breathing, temporarily relieved by treatment. It was neither the rapid breathing of acute pneumonia, nor yet of capillary bronchitis, but rather of a gasping type that was comparatively slow and variable, but nevertheless unendurable. There was little, if any, cyanosis; there was pallor, but with flushed

checks; his dyspnea very soon resulted in orthopnea; he sat up, or reclined, in a chair most of the time, day and night. He frequently exclaimed, that if he could only get his breath, and a good night's rest, he would be all right. Indeed, his fortitude and cheerfulness throughout were remarkable. There was no enlargement of the superficial glands; there was no malignant cachexia; and he remained fairly well nourished. On January 9, the feet and ankles were much swollen, and were very tender and painful. There were still severe pains about the heart, and distressing attacks of dyspnea. On January 18, still the same complaint. His legs and feet still swollen (edematous) but no longer painful. On January 31, breathing very difficult; appetite gone completely. February 3, awoke in a sort of stupor, and talked aloud to himself almost continually. Short spells of apparent unconsciousness. Died February 4, 1900.

The diagnosis was adherent pleurisy, pericardial effusion, bronchitis, emphysema, asthma, and, eventually, metastatic sarcomata of the lungs, and, finally, pulmonary thrombosis.

At first the more manifest signs of pleurisy, pericardial effusion, and bronchitis with asthma and emphysema appeared quite sufficient to account for all the symptoms. But later, upon the disappearance of the effusion from the pericardial sac, and during the absence of the asthmatic seizures, though the action of the heart had grown somewhat stronger, there were, nevertheless, persistent weakness and orthopnea to be explained. There was no evidence of pressure upon the trachea, esophagus, recurrent laryngeal nerve, nor sympathetic. There was no involvement of the carotid or subclavian arteries. But there were, and had been for some time, symptoms of pressure upon the large veins. Despite the vesiculo-tympanic resonance on the left side behind, which indicated emphysema and masked the dulness; and, allowing for the manifest impossibility of differentiating an adherent pleura, with clotted blood on the right side from a pulmonary sarcomatous infiltration, I finally came, perhaps with more deliberation than was consistent with the circumstances, to the conclusion that the evidence was sufficient for what I had latterly been seeking to demonstrate, namely, a metastatic deposit in the lungs, because of the dulness in front on the left side, and the continuous bronchial breathing behind, together with the sub-normal temperature and persistent orthopnea among other symptoms, and the history of the primary sarcoma whereof I had not been unmindful.

It is regrettable that no examination of the sputa was made, except for tubercle-bacilli. From the physical signs I concluded that the pleurisy was plastic chiefly, which it proved to be, and therefore no attempt was made to draw fluid from the pleural cavity, consequently there was no microscopical examination of the clot which occupied the space in the pleural sac that remained. In regard to the diagnosis of pulmonary thrombosis, it simply may be said that the picture of such an occurrence was still vividly in my mind when its re-presentation appeared in this case towards its termination. The apparently increased distress of the breathing; the swelling of the superficial veins; the livid countenance; the increase of the anasarca; the repeated reference to the heart; the irregularity of its action; the tumultuous, and, withal, weakness of its impulse; the failing distinctness of the heart-sounds, with, at the same time, a certain discrepancy between respirations that were fairly deep for him, and reiterated complaints of air-hunger such as occur in cardiac dyspnea; all this, as said in the beginning, was a reproduction of a former scene wherein pulmonary thrombosis was taking place; hence, my diagnosis.

Respecting the treatment, the patient was given, among other drugs, digitalis, strychnia, nitroglycerin, and compound spirits of ether. Hoffman's anodyne proved of no relief to the dyspnea, but extensive and daily dry cupping chiefly, with now and then hot flaxseed and mustard poultices, and, finally, oxygen inhalations, were a great and continued source of relief and comfort, supplemented by small doses of atropia and morphia hypodermically.

Report of Necropsy.—February 6, 1900. Necropsy on the body of William E. F., performed by Dr. H. A. Gribbon, of the house staff, under the direction of Dr. Henry Turner Brooks, pathologist.

General Conditions.—Body well nourished; right arm shows old amputation about six inches below the shoulder; stump normal; rigor mortis pronounced; postmortem congestion of the most dependent parts; moderate amount of anasarca; abdominal fat about one quarter of an inch thick; costal cartilages not calcified; on removal of sternum, lungs bulge forward, color black mottled.

Lungs.—Right lung, surface irregularly nodular; nodules vary in size from one quarter to two inches in diameter; consistence of lung boggy, adherent to chest-wall all over the anterior and lateral surface; small area behind not adherent; separation is made with difficulty; large clot of blood in the pleural cavity; blood partially organized and intimately connected with lung-parenchyma and ribs; further separation tears lung-tissue, leaving fragments adhering to the costal cartilages and the ribs; whole substance of lung soaked with bloody liquid; section through nodules shows some of them to consist of a soft mass closely resembling blood-clot; some show blood-clot center with small periphery of soft, white tissue; some show solid white mass with occasional blood foci, others show pure white, or yellow white, bacon-like appearance; section through lungs shows these nodules distributed throughout. The left lung separates readily from pleural adhesions, and shows one very large irregularly lobulated nodule occupying the lower part of the upper lobe, and almost the entire lower lobe near the front; section through this growth shows soft, white encephaloid tissue. The lung also contains several small nodules, mostly with softened blood-mass centers. Behind there was hypostatic congestion; lower lobe behind also shows pronounced emphysema; section shows large dilated alveoli—spongy appearance. Trachea and bronchi down to the smallest branches intensely congested, mucosa brilliant red and covered with bloody mucus.

Pericardium.—Thin, smooth and glistening; sac contains about two ounces of clear sanguinolent fluid.

Heart.—Displaced to the right; normal in size; muscles show slight fatty and interstitial change; right auricle filled with dark clot. Pulmonary artery filled with dark clot partly decolorized, and of sufficient consistency to be drawn out in its entirety.

Liver.—Slightly enlarged; extends one and a half inches below the free border of the ribs; surface smooth; color dark red with slight mottling—nutmeg liver; on section, shows fatty change associated with passive congestion.

Kidneys.—Large, dark red; capsule strips off with difficulty, leaving granular surface; on section, cortex swollen, alternate yellow and red cortical markings; pyramids passively congested; whole kidney shows slight fatty and interstitial change. Diagnosis, chronic diffuse nephritis.

Spleen.—Slightly enlarged, soft; on section, dark and granular; parenchyma—soft and easily scraped off.

Brain, stomach, intestines, and pancreas not examined. No evidence of any lymphatic enlargement; no metastatic deposits elsewhere than in the lungs. Microscopic examination of the neoplasm shows it to be a large spindle-celled sarcoma.

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GYNECOLOGY, ITS PRESENT, PAST, AND FUTURE.¹

By HOWARD A. KELLY, M.D.,

of Baltimore, Md.

IN extending me the distinguished honor of your invitation this evening I clearly recognize the fact that you have wished to acknowledge the present prominence of the special branch of surgery to which it is my good fortune to have devoted the working years of my life, rather than to exalt an individual who is merely one of the army of toilers who are busy in all the various branches of an art erecting the coralline structure in which we dwell so happily together.

Most appropriate, therefore, has it seemed to me to consider with you for a few brief moments the relationship of that not very euphonistically named branch, gynecology, to the greater fields of general medicine and surgery. Could I by the issuance of a mandate compel each one here present to declare instantly what he understands by the term "gynecology," I think you would one and all affirm that gynecology constitutes a well-defined branch of medical science, a crystallized entity, handed down from our forefathers, for which perhaps the present generation has furnished some accretions, a branch including within its scope all those diseases which are peculiar to women.

You would also quite surely tell me that while this has been, and is its field, you fully expected it to continue to operate within the same lines in the future.

If, however, I allow you a little time for reflection you will be inclined, I am sure, to modify your definition somewhat, perhaps recalling first the fact that "gynecology" is a term of widely varying significance in various localities. In Germany the leaders in gynecology, the professors in the various universities, are of necessity great obstetrical teachers as well, and find in the efficient conducting of the two chairs, in practice and in didactics, about as much work as one man can well compass.

In our own land the divorcement between gynecology and obstetrics has been long since effected through the absorbing activity of the more active surgical specialty, and with one important arm thus set free the gynecologist has reached out in other directions, and has sought to make good his loss by adding to his territory various kindred abdominal operations. There is, therefore, today a broad undefined zone in which both the gynecologist and the general surgeon are alike active.

You will, too, perhaps recall the fact that by way of compensation, or I might say in anticipation of these inroads, the general surgeon has recouped himself *pre-numerando*, by laying hold of the whole range of breast affections which are peculiarly gynecologic (*sensu strictissimo*). I may, however, well pause to add in parentheses that I consider that this great act of trespass has been fortunate indeed for humanity, and I bear no grudge when I witness for example, as is often my pleasure, the wonderfully improved results of Halsted's breast operations.

While the gynecologist has thus been advancing his

domain in an upward direction, owing to the improvements in general technic and the greater precision of our various gynecologic operations easily described and for the most part easily imitated, our confrères have been no less busy in extending their own field downward, and herein lies a little source of occasional complaint and of some slight irritation, manifested only when we forget for a time the breadth and the magnanimity which should characterize lives weighted with so great and such sacred responsibilities.

To this matter and to its solution I shall recur again.

If the gynecology of today is such a variable conception, a thing of such mobile equilibrium, what of that of the past? Are the trespassers of this generation indeed guilty of that offence most heinous in the eyes of mankind, the shattering of a time-honored hoary idol? The rootlets of gynecology reach back, it is true, into a hoar antiquity (speaking as mortals speak), and the zealous historian finds precise and precious data in all the early writings, and especially in those of Soranus and of Celsus of the first century.

Then, again, after the curtain of the black night which fell over first the Greek and then the Arabian copyists, Aëtius, Rufus, Oribasius, Avicenna, Rhazes, and Abulcasis, was lifted the first glimpse of the dawn of the mighty day was shed in the middle of the fifteen hundreds by the anatomy of Vesalius (1543) and the surgery of Ambroise Paré, to be followed at once by the large collective gynecologic work of Casper Baulein, of Basel, reëdited toward the end of the century in a great volume by Israel Spach. But these "Gyneciorum libri," or gynecologies, were but the collated observations of the ancients and constituted the evidence of no specialty, for there were no men giving exclusive attention to the branch and there was no science.

But from now on, beginning with Felix Plater, Rousset's hysterotomotoky, Roonhuysen, Fatio, Levret, Naegele, and a host of others for the next two hundred years, observations began to accumulate and the first foundation-stones were laid, although even yet no specialty existed, nor was it born until the second quarter of this century in which we live.

Then the great superstructure in which we dwell was erected by the giant labors of a few men working in different but kindred fields, and it is by the gathering together into one these converging lines the science of gynecology as we understand it today has been formed.

If I may erect a circle of honor with gynecology on a pedestal in the center, I will place in the periphery of the circle all pointing to the common center, the figures of MacDowell, who gave us ovariectomy; of Jobert de Lamballe; of Sims and of Simon, whose joint labors rescued vesicovaginal fistula from the list of impracticable procedures; of Atlee and Keith, who labored so bravely in operating upon fibroid tumors. I would give a position of preeminent excellence to Virchow, whose cellular pathology is the very groundwork of all that is scientific in our work. I would place T. A. Emmet there for his undying services in the domain of plastic surgery.

I would give Lord Lister a place beside Virchow as the greatest conserver of life the surgical world has ever known.

And so on, time would fail me should I attempt to mention the mighty Blundell, Simpson, Pean, Koeberlé, Hegar, Martin, and the whole galaxy of other great German and brilliant French investigators whose labors are our common property today.

And so it is, you see, if I may change my figure, by

the blending or the flowing together of these streams that the mighty current is made on which we are so satisfactorily borne today. Not without many eddies and counter-currents did these streams come together; and so we see that like general medicine, our branch has passed through her fads, and although but a creature of the latest century, she is, after all, a little microcism exhibiting the spirit which has energized the whole.

We have lived through our cervical catarrh and ulceration era, when these notions dominated all our pathology, and therefore our therapeutics, like the humoralist doctrines of old. We have seen the day when vesicovaginal fistulae fixed the attention of the world as a crowning surgical achievement. We have witnessed ante- and retroflexions, the great dominating factors in our pathology and the innocent inspirers of the vast horde of pessaries. We have watched the rise and fall of pelvic cellulitis.

We have then seen pelvic peritonitis and pelvic abscess assume the prominent role.

Again, extrauterine pregnancy in the hands of Tait came like a great refreshing discovery to taking the place of pelvic hematoceles, inspiring a mass of literature which no man can digest.

Hysterectomy for cancer and hysterectomy for fibroid tumors then came to the front as a godsend to thousands of hopeless sufferers.

And still the march goes on; diseases of the appendix and other great problems in abdominal surgery have been added to the list. Diseases of the urinary tract are destined in the immediate future to attract our most interested attention, and if I am not wrong in my forecast, a better understanding of diseases of the rectum will follow, and I would add to the list, the as yet vaguely understood affections of the gallbladder. Let them go on until the tale is complete and until we have reached the acme of our art under its present limitations; until some mighty mind reveals some new principle which will revolutionize and reorganize all our work on new lines.

But what of the immediate future of gynecology? Unless I wrongly read the signs of the times, and unless I would shun what seems to me to be an irresistible conclusion, the future of gynecology is destined to develop a closer association with the parent trunk from which she was originally broken off; the aims of gynecology and of general surgery are one. Gynecology is, after all, but a branch of general surgery, to be cultivated by reason of predilection and of special aptitude, but, after all, one of the branches.

I take it that from now on the interests of humanity will be best served by discouraging the training of men as gynecologists exclusively, and by insisting upon the broad training of general surgery as the best equipment to do this work in the best possible way.

THE CHEMICAL EXAMINATION OF FECES FOR CLINICAL PURPOSES.

By A. E. AUSTIN, A.M., M.D.

of Boston, Mass.

From the Chemical Laboratory of Tufts College Medical School.

THE examination of feces has received, as is well known, too little attention from physicians, probably for various reasons. First, on account of the disagreeable nature of the manipulations required; second,

from a disinclination of the patient to provide such means of diagnosis; and third, because up to the present time we have been unable to derive from such examinations the positive results which we desire and also expect. Notwithstanding these obstacles, however, it seems that we ought to continue such investigations, simply because we wish to perfect the results obtained from such means. From such examinations several points can be learned. First, in regard to the pancreas with its threefold function of fat-splitting, albumen-converting, and saccharification; second, by this means we learn the rapidity and completeness of absorption of the digestive products in the digestive tract; third, the motility of the intestines; and fourth, the nature of the fermentative processes which take place there.

The objections to collection and manipulation may be largely avoided by the use of weighed Mason jars which are given to the patient and in which are to be collected the 24 hours' feces. These, when again weighed, less the original weight of the jar, will give the weight of the feces in their moist state. When such feces are more carefully examined, they are found to consist of three elements: first, the undigested elements of food; second, side-products produced during the course of digestion; and third, constituents arising from the secretions and excretions of the intestinal mucous membrane. It is a well-known fact that during fasting, feces are still formed from the cast-off epithelium of the intestines, a fact which has been substantiated by Hermann.¹ The composition of the feces varies also according to the nature of the food, there being more after vegetable food, and less after animal food. Voit² found in 24 hours after mixed food, 120 to 150 grams of feces, with 30 to 37 grams solid residue; after vegetable food, 333 grams, with 75 grams solid residue.

The commonest constituents are muscle-fibers, connective tissue, particles of casein, starch, fat, cellulose, and nuclein. All of these come from the food. From the excretions, on the other hand, and the mucous membrane producing them, there are found mucin, cholic acid and cholesterin; while from the products of decomposition we find skatol, indol and fatty acids, especially acetic acid, calcium and magnesium soaps. We find no chlorids; because of their ready solubility they are absorbed and eliminated in the urine. The insoluble ammonium magnesium phosphate is quite common, however, and can be readily detected by the microscope by its peculiar coffin-lid shape. The neutral calcium phosphate and magnesium phosphate are found, coming chiefly from the food. Bacteria in great numbers, together with stercobilin, are found, but no bilirubin or biliverdin unless there is present undue motility.

Microscopic Analysis.—With the microscopic analysis, in my estimation, but little is to be learned. It is true that muscle-fibers may be found, but these are always found when a largely meat diet is taken, and the only inference which can be derived is very clearly stated in the following statement taken from Nothnagel:³ "When there is no fever, but symptoms point to existing catarrh of the intestinal tract (mucous), and large numbers of muscle-fibers are found, then only can we reach a reasonable conclusion that catarrh of the small intestine exists." Boas⁴ declares strongly against the view that such an abundance of muscle-fibers means an affection of the pancreas, as Friedreich states. The presence of starch granules under the microscope, which can also be confirmed by the addition of iodine in iodid

of potash solution, does not of necessity mean an impaired pancreatic digestion, but may mean an increased motility, by which the intestinal contents are hurried out before absorption can take place. These, however, are extremely rare—rarer even than muscle-fibers or fat-globules. Of the latter we may say that they may be present in quite considerable numbers, either as aggregations of needle-like crystals, more or less curved, due to the presence of fatty acids, or as longer and straighter needles, frequently arranged in groups, due to the presence of soaps of magnesium or calcium. It is possible also to find both neutral fats and soaps in the form of globules. A distinction can be readily made by warming the slide; the neutral fats and fatty acids are converted into globules, the soaps remain permanent. Then, of course, with the microscope, we can also find clumps of casein in the feces of small children, where the diet consists principally of milk. The great disadvantage of these microscopic methods is that we cannot get any quantitative idea of these ingredients present, and these quantitative amounts only can give us an idea of the degree of digestion, absorption, etc.

Chemical Analysis.—The importance of examining quantitatively the stomach-contents, or rather the gastric juice, for the purpose of diagnosis, has so impressed itself upon the minds of physicians, that at present few attempt to treat such disorders without a quantitative examination. The question presents itself to us at the present time—Why cannot we make an analogous examination of the feces? because unquestionably we have intestinal indigestion as well as gastric indigestion, and the results seem to be far more serious. The repeated removal of the stomach and continued health of the patient have shown that we can live very comfortably without the stomach, and without marked emaciation from the failure of this part of digestion. All experiments, however, which have had for their object the removal of the pancreas, have convinced us of the untoward symptoms which arise from such a removal. Persistent diabetes, very limited utilization of food, and marked emaciation have invariably followed. We can also, from a clinical point of view, appreciate the rapid emaciation which follows disease of the pancreas. It was only within the last year that we have had evidence that such removal of the pancreas for suppurative disease (Richardson) can be followed by fair health and good digestion. The only practical means of demonstrating the changed character of digestion when the pancreas is impaired or removed, is the examination of the products left unabsorbed after such digestion. This, of course, can only be obtained from the feces-examination. The method of obtaining pancreatic juice by the introduction of a tube through the duodenum into the pyloric orifice, has proved impracticable, though attempted by Ewald, Boas, and others. The examination of feces after extirpation of the pancreas in animals, and disease of the same in man, has shown some curious results. Ablemann and Minkowski⁵ found only 44% of the albumen taken, absorbed; of the carbohydrates only 57 to 61%, and of the fat none. Later, however, Mueller found that in a case of complete closure of the pancreatic duct, verified by autopsy, there was a perfect digestion of starch, and that fat digestion suffered to no great extent. This is probably due to the fact that the neutral fats are split up into fatty acid and glycerin by means of the bacteria in the intestine. In order to demonstrate the digestive power of the pan-

creatic juice, it is necessary to determine separately the fat, starch, and nitrogen in the feces on account of the former's threefold function, since it would seem improbable that all three functions would suffer to an equal extent. It is also possible that mental disturbances may have the same influence upon the pancreatic digestion that it has upon stomach-digestion. This influence, as we know, is generally directed toward the secretions of hydrochloric acid, and does not act upon the secretion of pepsin. The examination of feces, however, without a knowledge of the nature of the diet, would be practically worthless, yet it would seem that there is no objection to giving a test-meal or series of test-meals, in which the respective amounts of fat, starch, and albumen are known, and from which direct comparison can be made between these elements taken, and eliminated undigested in the feces. Such a day's ration is suggested in the following composition:

430 grams (15 oz.) pea meal.

200 grams (7 oz.) rice flour.

113.4 grams (4 oz.) butter.

This can be made into a loaf or into crackers and corresponds in terms of these three elements to 116 grams of albumen, 113.2 grams fat, and 384 grams carbohydrates, the proportions which will give about the average daily food as required by the need of an ordinary man, which, according to Voit, consists of 100 grams albumen, 100 grams fat, and 400 grams carbohydrates. Or there is a form of food known as the diabetic cracker, sold by the Health Food Company, which contains, according to the analysis made by me, 9.4% albumen, 58.4% carbohydrates with no free sugar, and 8.5% fat. One thousand grams of this taken every 24 hours, as can be readily seen, would give 94 grams albumen, 584 grams carbohydrates, and 85 grams fat. This daily ration could either be preceded the night before with a laxative, or there could be taken with the first portion .3 gram carmine, which would stain the feces and indicate when the first residue from this ration appeared in the feces.

To return to the feces, absolute accuracy is of course desirable, but yet we can weigh the 24 hours' feces, and then determine in aliquot parts the amount of N substances, fat and carbohydrate and calculate for the 24 hours' feces as is done in urine. This theoretically should give some information as to which of the pancreatic functions, if either, is wanting; or if we found these undigested substances alike increased, we could either say that all the functions were lacking, or that there was an increased motility which prevented complete absorption. In the latter case, we could easily demonstrate this by determining whether albumose, peptone, or sugar was present,—substances equally indicative of wanting absorptive power. It is always advisable to weigh out two portions of 5 grams each, which shall serve respectively for the determination of carbohydrates and fat, and one portion of 1 gram which shall serve for nitrogenous estimation by Kjeldahl's method. The portion reserved for the determination of fat must of necessity be dried, and we can also combine a determination of the amount of water by drying it in a weighed dish accompanied by a weighed rod. The process of drying is always a long and tedious one, but can be hastened by mixing this portion of the feces with absolute alcohol (50 cc.), and after this has been driven off, another portion of 25 cc. is added and evaporated, whereupon the feces generally form a dried, easily powdered mass, especially adapted to

extraction with the Soxhlet apparatus which is generally employed. This process will not remove the fat present as soap, but this can be easily obviated by adding a few drops of any acid to the alcohol, which splits up the soap and allows the fatty acids to be extracted by the subsequent treatment by ether. If it is desirable to determine the fatty acids separately, the extracted combined fat may be dissolved in a mixture of ether and alcohol, and titrated with $\frac{1}{10}$ normal NaOH solution in alcohol with phenolphthalein as an indicator. That portion which is intended for the determination of the carbohydrates is to be cooked for an hour or two with 100 cc. of 25% H_2SO_4 , filtered and then alkalinized. The volume of 100 is reestablished by the addition of water, and the sugar (resulting from the converted starch and cellulose) determined; the original carbohydrates will be equal to .9 of the sugar found. We now have a determination of the water, residual albumin (calculated from N by factor 6.25), fat and the carbohydrates (calculated from sugar).

It is also important, from the quantitative point of view, to mix a large portion of the feces, 50 grams at least, with water, and distill over the skatol and indol, the respective amounts of which would demonstrate even better than the ethereal sulphates in urine, the bacterial fermentation taking place in the intestines and the amount of autointoxication going on. Before important inferences can be drawn from such analyses, it is first necessary to establish a normal degree of utilization of food. This is excessively difficult, because the form in which the element occurs has great influence upon the amount of it absorbed; for instance, a much larger portion of nitrogen is absorbed in a meat diet than in a diet consisting of cereals, and also the form in which the same food is taken determines to a large extent the absorption. It has been shown that a much larger portion of the carbohydrates of potato is utilized when the potato is mashed than when cut up coarsely as is customary in potato salad. If, however, we establish a distinct form in which the three elements are to be taken as food, it seems possible to compare the results with a moderate degree of accuracy. To cite a few illustrations from Von Noorden's *Pathologie des Stoffwechsels*, we learn that from bread from coarse flour only 2.6% are lost, and that the feces in a condition of normal digestion contain only .5 to 1 gram of N in 24 hours.

This means, upon the above mentioned diet, a loss of 3 to 5%, and the loss of fat amounts to 4 to 6%. The following few cases were given approximately this amount and nature of food, and the feces collected for 24 hours were examined quantitatively.

CASE 1.—This case was from the practice of Dr. F. B. Brown, and was that of a young man complaining of enormous distention of the abdomen with gas. The rumbling from the collection of gases was very annoying, and could be heard by persons in the same room. There was some discomfort from pressure, but otherwise the man was in a normal condition. The feces were found of natural color, and possessed no bile pigments. The amount obtained weighed 132 grams in a moist state. The water was not determined, but the feces were well mixed and percentages were based upon the feces in a moist condition. No particles of mucin were found under the microscope, but there were some muscle-fibers, a few starch granules, and enormous numbers of bacteria. By means of distillation, large quantities of indol and skatol were found, and indican was plentiful in the urine. A quantitative analysis for the 3 chief elements of undigested food showed 5.8% starch, 2.1% nitrogen, and .34% of fats. These percentages, based upon 132 grams of feces,

show that 7.65 grams starch were present, which, based upon consumption of 400 grams, means a loss of 1.9%. Of nitrogen, there was present 2.77 grams, or a loss of 17.3% based on a consumption of 100 grams of albumen, which equals 16 grams nitrogen. There were present 448 milligrams of fat, or .44 of 1% on a basis of 100 gr.

CASE 2.—Also from the practice of Dr. Brown; a woman who had diarrhea and constipation alternately, who was undergoing the climacteric, and in whom no menses had been present for 5 months. She had .1 of 1% of albumin in her urine, with a sediment consisting of pus, oxalate of calcium and pelvic cells. The feces were of a yellowish color, and the 24 hours' amount weighed 127 grams. Albumose and dextrose were both absent. A quantitative analysis, as described above, showed 2.48 grams nitrogen, 689 milligrams of fat, 4.81 grams of carbohydrate, which, based upon the above diet, shows a loss of 15.51% of nitrogen, .69 of 1% of fat, and 1.2% carbohydrate.

CASE 3.—A man who complained of vague distress in the abdomen, but whose movements were regular and normal; 24 hours' feces weighed 119 grams. Quantitative analysis showed 1.66 grams nitrogen, 3.7 grams fat chiefly in the form of fatty acids, while the carbohydrates were present in too small amounts to be estimated. This would give a loss on the above diet of 10.3% of nitrogen, and 3.7% of fat.

For comparison, 2 tables are here appended. One from Von Noorden's *Stoffwechsel* gives results on perfectly normal individuals, prepared by various investigators, and one containing the results of these experiments.

TABLE I.

FOOD.			FECES.		
Nitrogen.	Fat.	Carbo-hydrate.	Nitrogen.	Fat.	Carbo-hydrate.
15.4	95.1	...	6.5 %	3.3 %	
15.3	94.2	...	4.8 %	6.9 %	
17.2	80.	154.	8.98 %	5.2 %	
15.782	40.49	289.64	4.6 %	3.4 %	
14.57	156.3	193.	18.9 %	3.27 %	2.79
15.36	227.5	423.7	16.7 %	2.81 %	1.35

TABLE II.

FOOD, APPROXIMATE.			LOSS IN FECES.		
Nitrogen.	Fat.	Carbo-hydrate.	Nitrogen.	Fat.	Carbo-hydrate.
16	100	400	17.3 %	.441 %	1.9 %
16	100	400	15.51 %	.691 %	1.2 %
16	100	400	10.3 %	3.7 %	None.

A short reference to Table I shows a wide variation in the loss under perfectly normal conditions. The amount of fat and carbohydrate unabsorbed remains quite constant, while the amount of nitrogen shows the widest differences, varying from 4.6 to 16.7% of loss. This must be due to a failure of digestion and not to absorption, because these experimentors state that no albumose-peptone was found in the feces. In the examination made by me, likewise, no albumose-peptone was found. There is present a strong possibility that the excessively acid condition of the stomach-contents when poured into the duodenum may inhibit to a certain extent the action of trypsin upon the contents, which is also true of amylaceous digestion. The absorption of carbohydrate when digested is most excellent, dextrose being one of the rarest of substances found in the feces. It is possible that a large amount of the carbohydrate found arises from the cellulose in the food which is practically incapable of digestion, except by means of the bacteria which infest the in-

testinal tract in such large numbers. In cases where fat is found, it is very desirable to determine the nature of the fat, whether it exists as fatty acid, soaps, or neutral fats, because upon this is based the differentiation of faulty digestion or faulty absorption. The former means the absence of pancreatic juice under the conditions mentioned above, while the latter means the absence of bile. From this, we can conclude with fair certainty whether the pancreas or the liver is diseased.

Bile.—The normal feces always contain stercobilin, an analogous substance to urobilin, but never biliverdin or bilirubin, unless there is a catarrhal condition of the duodenum, with associated increased motility. Schmidt has devised a very simple and satisfactory means of distinguishing the biliary coloring-matters from the stercobilin. If we add to the feces a solution of mercuric chlorid a red color shows the presence of stercobilin, a green color the presence of the biliary coloring substances. There are also some interesting cases of what are known as cholic stools with absence of icterus. Unfortunately, as yet, we cannot derive any important diagnostic value from this peculiarity, because it has been found under such varying conditions as leukemia and carcinoma of the intestines, while Nothnagel claims to have found it in certain stages of phthisis. It seems that this condition is not necessarily due to the absence of stercobilin, but to the fact that fat is present in such enormous quantities that the normal color of the feces is obscured.

We have also, as another product of biliary coloring-matters, exceedingly small bodies which correspond to the gravel of urine. One opportunity has been presented to me of examining such feces from a case which had experienced a great deal of pain, but never had had jaundice. These small bodies were of about the size of a head of a pin, and were obtained from the feces by mixing with water, and straining through cheesecloth, and when isolated in this way were found, when examined under a microscope, to be faceted like the ordinary gallstone of greater size. This case, which was in the care of Dr. H. D. Arnold, was afterwards operated on, and on opening the gallbladder, various larger stones were found, which could not pass through the common duct. Chemical examination of these small bodies showed that they consisted of a compound of bilirubin and lime.

Diagnostic.—It is with some disappointment that we review the results which have been obtained from the examination of the feces, and upon referring to those who have had the largest amount of experience in such examinations, we find that they are not at all agreed as to the diagnostic value of certain of these chemical points. For instance, von Jaksch⁶ says that the native albumin can always be found in typhoid-fever feces and in those of diarrhea. He also claims to find albumose under the following varied conditions: Typhoid fever, tuberculous ulcers of the intestines, and peritonitis with purulent discharge into the intestines. He has also found it in scarlet fever, chronic nephritis, and chlorosis. The poor absorption of well-split and well-saponified fat, according to Biedert and Demme, can be found in duodenitis of children, and in tuberculosis of the mesentery glands. Nothnagel finds this condition in intestinal atrophy, amyloid and tuberculous condition of the intestines. The absence of pancreatic juice does not show as great difference as might be expected. There is, however, 40% split and saponified fat instead of 84%, as usually found. The presence

of enzymes, trypsin and amylopsin, which can be easily demonstrated by allowing a small fragment of blood-fibrin to remain suspended in the liquid feces a few hours, whereupon the enzymes become fairly attached to the blood-fibrin, and their nature determined by their action upon starch or the fibrin itself,—has so far proved of little diagnostic value. About the only inference which can be drawn from their presence is the fact of excessive motility, and this is usually accompanied by catarrhal inflammation of the duodenum.

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CHRONIC EAR-VERTIGO (MÉNIÈRE'S DISEASE); ITS MECHANISM AND SURGICAL TREATMENT.¹

By CHARLES H. BURNETT, M.D.,
of Philadelphia.

Aural Surgeon, Presbyterian Hospital, etc.

CHRONIC ear-vertigo, sometimes called Ménière's disease, consists in paroxysmal attacks of vertigo, due primarily to chronic disease in the tympanic cavity. The effects of the chronic disease in the middle ear are conveyed to the semicircular canals in the internal ear and thence reflected to the cerebellum. Chronic ear-vertigo is most frequently caused by chronic catarrh of the middle ear. This latter malady tends to sclerosis of the mucous membrane of the cavity, rigidity of the membrane of the round window, retraction and stiffening of the ossicles of hearing, and a consequent impaction of the stapes in the oval window of the vestibule. This latter event, by pressure upon the labyrinth fluid and consequent compression of the endolymph about the nerve terminals in the ampullae of the semicircular canals, leads to the reflex phenomena termed ear-vertigo.

In order to understand the mechanism of ear-vertigo, one must recall the anatomy of the middle and internal ears.

1. *The Labyrinth Fluid.*—The labyrinth fluid is composed of two systems, viz., the endolymph, that which fills the interior of the membranous labyrinth, and the perilymph filling the cavity of the bony labyrinth, in which the membranous labyrinth is suspended. The endolymph, according to Hasse of Würzburg, comes from an epicerebral lymph-cavity, being conveyed by the so-called aqueductus vestibuli to the cavity of the membranous labyrinth. Every increased or diminished pressure in the cerebrospinal fluid in the subarachnoid cavity will make itself felt through the aqueductus vestibuli in the interior of the membranous labyrinth. The same authority shows that the perilymph is poured into the labyrinth from the subarachnoid space, through the foramina acustica, and leaves the labyrinth by means of the aqueductus cochleae. In fact the perilymphatic cavity is inserted into the lymphatic tract of all vertebrates, and, being in connection with the subarachnoid space, it is seen how changes of any kind in the cerebrospinal fluid can be communicated to the perilymph and thence to the various parts of the mem-

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branous labyrinth. Especially can we understand how easily intralabyrinth fluid-pressure may be increased either from the cranial side through the aqueducts, or the tympanic side through impaction of the stapes in the oval window, the semicircular canals thus irritated, and vertigo ensue.

If in a properly prepared, normal auditory apparatus, in a cadaver, sound is conveyed from an organ pipe into the external ear, the vibrations of the membrana, ossicles, and of the round window membrane can be seen and measured, as I have shown in my physiologic acoustic experiments, in Helmholtz's laboratory in 1871-72. If the auditory apparatus has been so prepared as for the experimenter to be able to convey water to the labyrinth from the side of the cranial cavity and thus increase the intralabyrinth pressure, while the sound vibrations of the ossicles and round-window membrane are going on, he will soon perceive that the intralabyrinth distention or engorgement thus brought about by the introduction of water into the internal ear will force the stapes and round-window membrane tightly outward and cause their vibrations to cease, while the vibrations of the membrana, mal-

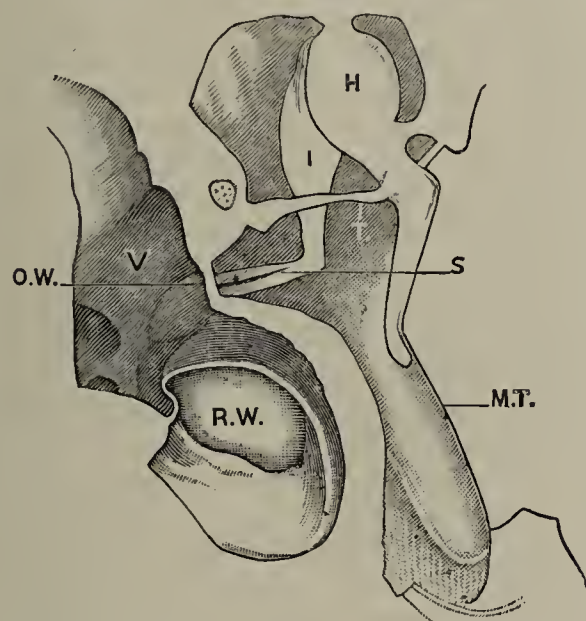


FIG. A.

Partly diagrammatic vertical section of the left auditory apparatus, in front of malleus and oval window, running through the vestibule, and viewed from in front. Modified from Siebenmann.

H., hammer. I., incus. S., stapes. M.T., membrana tympani. V., vestibule. O.W., oval window. R.W., round window. T., tendon of the tensor tympani.

leus, and incus continue. Thus an idea may be gained of what takes place in an engorgement of the internal ear from influx of lymph from the cranial cavity, or from congestion of the former. This outward fixation of the stapes in such instances might be less if the bonelet were not pushed outward against the incus and its fixation thus further augmented. Outward distention of the round-window membrane could be overcome by puncturing it. But this I have never done.

2. *Scheme of the Middle and Internal Ears in the Mechanism of Ear-Vertigo.*—My meaning as to the mechanism of chronic ear-vertigo may be made clearer by a consideration of Fig. A. Thus, if the stapes, S., is impacted into the oval window, O.W., its footplate will press upon the fluid in the vestibule, V., and if a recoil from this pressure cannot be obtained by the bulging of the membrane of the round window, R.W., towards the tympanic cavity, the lymph in V. as well as in the entire labyrinth is unduly compressed, the semicircular canals irritated, and ear-vertigo results. Or, if in any

sudden and copious influx of lymph from the cranial cavity into the labyrinth, or in an increased vascularity of the labyrinth, a compensating recoil from such intralabyrinth pressure cannot be obtained at R.W., and also at S., as in a normal ear, the semicircular canals are unduly compressed and ear-vertigo is evoked. As is well known, both of these recoil-points in the fenestrae become more or less unyielding in the later stages of chronic catarrh of the middle ear, when paroxysms of ear-vertigo are likely to be added to the already profound deafness and tinnitus.

Symptoms.—As the great majority of cases of chronic ear-vertigo occur in chronic sclerotic otitis media, let us first consider the symptoms of ear-vertigo as they occur in this form of tympanic disease. Usually only one ear, the worse, is the cause of ear-vertigo, though both ears may be affected with so-called chronic catarrhal otitis media. The more affected ear—the one causing the ear-vertigo—is *always profoundly deaf* and may be the seat of distressing tinnitus. In any case, chronic ear-vertigo is (chronologically) the last among the lesions of chronic catarrh of the middle ear. It is manifest that the internal ear can lose its hearing function before its equilibrating function. In an ordinary case of ear-vertigo from chronic tympanic catarrh, the patient in the first attack is seized with a sudden and, to him, unaccountable vertigo, usually attended with an increase of tinnitus in the implicated ear. The attack may last from a few minutes to half an hour. The patient may be obliged to take hold of something for support, or to sit or lie down. Nausea may be present in the early attacks if the vertigo continues as long as fifteen minutes, but as a rule nausea and vomiting do not occur in the first paroxysms of this disease. When the seizures become more frequent, more severe, and longer in duration, nausea and vomiting may be very intense and result in a form of collapse, with pallid face and clammy surface, but without *loss of consciousness*. The fact that the patient does not lose consciousness from ear-vertigo serves as the great differential guide in diagnosis between ear-vertigo and apoplexy and epilepsy, with both of which it is often confounded at first. The apparent motion in ear-vertigo is generally towards the affected ear, in which direction the patient tends to fall. When both ears are the cause of ear-vertigo, the patient is entirely unable to walk, and sits down whenever he is attacked, even in the street. In such cases the patient's actions are often mistakenly attributed to alcoholic intoxication. These phenomena have been termed Ménière's Symptoms, or Disease.

The first attack of ear-vertigo is usually comparatively light and generally attributed to stomachic derangement and treated as such. This first attack may not be followed by another for weeks or even months. Then a more severe attack comes on, which is followed in a week or two by another. At last the attacks may occur every week or every day. The patient now fears to leave the house unless accompanied by an attendant, and is forced by this quasi agoraphobia to give up any regular duties outside of his house. Even in such cases the true cause of the ear-vertigo is usually overlooked and the symptoms attributed to other influences. As the diagnosis is defective the treatment not only does no good, but rather harm, if depletive, as it often is when "biliousness" or "apoplexy" are deemed causative of the vertigo. Finally, something draws attention to the ear as a possible factor in the production of the vertigo. Examination now

reveals the fact that the patient is a victim of chronic ear-vertigo, most commonly of that form found in the late stages of chronic sclerotic otitis media. Deafness and tinnitus are found to have been present for a long time, to which within a few months or even a year there has been added the most distressing symptom of all, viz., a tendency to frequent attacks of ear-vertigo. These may be so severe and so frequent as to keep the patient, especially if a woman, in bed for weeks at a time. If the patient be a man he is rendered unfit for leaving the house alone and attending to his daily avocation. He becomes low-spirited, his general health fails, and his will-power becomes impaired. If the patient persists in leaving the house and trying to work he is liable to be attacked at any time by severe vertigo, nausea, and vomiting, his face becoming very pale and bathed with clammy sweat. At this point he will reel and fall if not supported, but there will be no loss of consciousness. He becomes helpless and must be carried home. I recall a case of this nature in which the patient, a man of 40, was attacked while "on 'change" and was brought in semicollapse in a carriage to my office for relief.

Membrana Tympani.—If the membrana tympani of a patient affected with chronic catarrhal ear-vertigo be examined it will be found to present the usual appearance of the drum head in chronic catarrhal deafness, viz., opacity, thickening, and retraction. The retraction of the membrana may be so great as to draw the malleus upward and backward, towards the aditus. In most of such cases the incudo-stapedial joint can be seen through the upper, posterior quadrant of the drum membrane. The examiner then sees in the retraction of the membrane and ossicles the mechanical cause of the ear-vertigo. The retracted chain of bonelets, by pressing the stapes inward into the oval window and holding it there in a condition of undue retraction upon the vestibule and its fluid, compromises the latter space and compresses the labyrinth fluid upon the ampullar nerves in the semicircular canals and ear-vertigo is evoked.

Ear-vertigo is not constant, however, because varying conditions of relieved tension in the middle ear and the chain of ossicles, from the outer side of the stapes, and also similar variations in the labyrinth-lymph on the inner surface of the stapes footplate in the oval window, suspend temporarily the compression of the ampullar nerves and the patient is temporarily free from vertigo.

The stapes, however, being permanently in a state of undue impaction in the oval window, it requires but little additional inward pressure of the stapes from the tympanic side, or increased flow of lymph into the labyrinth to exert undue compression of the endolymph in the already compromised labyrinth space and irritative pressure upon the ampullar nerves, followed by an attack of ear-vertigo. Varying conditions in the health and circulation of the lymph or blood of the patient are sufficient to evoke these attacks in one in whom the drum cavity is already diseased and the labyrinth space compromised, i. e., contracted by the chronic impaction of the foot plate of the stapes in the oval window. In a normal state, undue inward pressure of the stapes into the oval window is compensated by a yielding of the round window membrane towards the drum cavity. In a normal auditory apparatus any undue increase in the flow of lymph towards the labyrinth, including of course the vestibule, is compensated by the recession of the stapes outward towards

the tympanic cavity and also by a similar recession on the part of the membrane of the round window. But if the stapes in the oval window and the membrane of the round window are rendered abnormally rigid, as they often are by chronic catarrhal otitis media, compensatory recession at these two points to intralabyrinth pressure is impeded, the intralabyrinth space is thus easily engorged by an inflow of lymph or blood, its fluid is compressed upon the ampullae, and ear-vertigo is the result. It can be thus seen that ear-vertigo is produced in a purely mechanical way, depending largely upon retraction of the tensor tympani and the ossicles in chronic catarrhal otitis media.

Ear-Vertigo in Chronic Purulent Otitis Media.—Ear-vertigo sometimes occurs in the subjects of chronic purulent otitis media. In these cases, too, the retraction and impaction of the stapes, by the superposed and enlarged malleus and incus, usually play the chief part in producing vertigo, for the malleus and incus in such instances are often covered with swollen and granulating mucous membrane, and bound firmly by synechiae to each other and the inner tympanic wall, and thus are made to press very forcibly upon the stapes. In these suppurative cases the bloodvessels of the mucous membrane of the drum-cavity are always deeply engorged, and as these vessels are intimately connected with the bloodvessels of the labyrinth, it is easy to see how the latter may become unduly engorged and excessive intralabyrinth pressure thus induced, resulting in ear-vertigo. Irritation and engorgement of the labyrinth, with resultant vertigo and nystagmus in purulent otitis may also be due to direct transmission of inflammation through carious openings from the drum-cavity into the horizontal semicircular canal, or at some other point in the outer wall of the labyrinth. Though the mode of production of the ear-vertigo in such cases is somewhat different from that in chronic catarrhal otitis, the mechanism is the same, viz., a mechanical pressure compromising the labyrinth space and compressing the ampullar nerves in the semicircular canals.

Treatment.—The cause of chronic ear-vertigo being a mechanical one, consisting chiefly in impaction of the stapes in the oval window, removal of this retractive force and liberation of the stapes will cure the disease. Consequently many years ago I devised an operation consisting in surgical removal of the incus, in cases of ear-vertigo originating from chronic catarrhal otitis. The removal of the incus breaks the retractive force of the tensor tympani and malleus exerted through the incus upon the stapes, and the latter bonelet is liberated.

In chronic purulent cases it is necessary to excise the remnants of the diseased membrana, and the malleus and the incus, with their synechial bands, in order to liberate the stapes.

This operation in such cases, supplemented by local treatment of the purulent drum-cavity, is followed by cessation of the vertiginous attacks, and cure of the chronic purulency. Thus excision of the diseased ossicles leads to curing the chronic purulency and acts as a prophylaxis of antrum and mastoid disease.

Operation.—The patient is etherized (local anesthesia by cocain being both inefficient and toxic according to my experience) and the external auditory canal and the membrana sterilized by a solution of mercuric bichlorid (1 to 5000) or one of formalin (1 to 1000). Then the auditory canal and membrana tympani are illuminated by means of an electric light held on the

forehead and run by a small portable storage battery, made for the purpose of clinical illumination.

Where the membrana is intact, as it is in a case of chronic ear-vertigo due to chronic catarrhal otitis media, the initial incision is made with a delicate knife, beginning close behind the short process of the malleus and following closely the periphery backwards and downwards until reaching a point below the line drawn horizontally through the umbo of the membrana. This cut is followed by little or no bleeding as a rule. The flap thus made should be pushed inward towards the promontory by means of a probe armed with a small dossil of sterilized cotton. If there is no bleeding the incus-stapes joint is seen as soon as the flap of the membrana is pushed aside. If there is bleeding it must be mopped away with sterilized mops on a cotton holder.

The incus being now in plain sight, it should be gently disarticulated from the stapes by drawing the former outwards and downwards by means of an incus-hook knife passed behind its long limb. When this is done the long limb of the incus should be grasped by special forceps and drawn very cautiously downward and outward into the auditory canal and then removed entirely from the ear. When this is accomplished the operation is finished. The slight bleeding that sometimes occurs in the chronic catarrhal cases requires no attention. The meatus should be stopped with sterilized cotton and the ear let alone for 24 or even 48 hours, unless the cotton in the meatus gets moist with blood or serum. If this occur the cotton should be removed and dry cotton inserted. There is to be no after-treatment in such cases, as all is accomplished when the incus is removed. As a rule there is no reaction in these cases, and the wound in the membrana heals by first intention. Sometimes a slight reaction has occurred, shown by a little pain and some mucopurulent discharge. But this is healed in a few days by simply mopping the ear with sterilized cotton and a solution of formalin (1 to 1000) and such reaction has never had any bad effect upon the result of the removal of the incus in checking the vertiginous attacks in any of my cases. A serious reaction I have never encountered after the operation, neither in the chronic catarrhal nor in the chronic purulent class.

The mode of operation in the purulent cases is different from that in the chronic catarrhal cases with intact drum-membrane. In the former the membrana is already perforated and the ossicles, if still present, plainly visible in most instances. The incus should be detached and removed first, and then the remnant of the diseased membrana and malleus should be completely excised. Hemorrhage in such cases is always relatively great and delays the operation, as the field of operation requires constant and complete mopping before the surgeon can proceed. After the operation the ear requires syringing with a bichlorid solution (1 to 5000) and the ear should not be stopped with cotton, but allowed to discharge. The subsequent treatment must be that indicated in a case of chronic purulent otitis media. I have performed this operation in its two forms named above in 27 cases of chronic ear-vertigo, mostly in *chronic catarrhal otitides*, and in no instance has it failed to give relief, and I know of no other kind of equally successful treatment of chronic aural vertigo (Ménière's disease). In two instances entire and prompt relief from ear-vertigo of over a year's duration, following mumps, has been afforded by the surgical removal of the incus as described above.

A NEW HEMOGLOBINOMETER FOR THE EXAMINATION OF UNDILUTED BLOOD.

By ARTHUR DARE, M.D.,

of Philadelphia.

Clinical Assistant, Medical Department, Jefferson College Hospital.

THE instrument described in this paper is the outcome of a considerable amount of observation directed to the estimation of hemoglobin by the colorimetric method with undiluted blood. The application of the instrument depends upon the principle that the color of a thin film of undiluted blood, illuminated by candlelight, can be compared with a graduated color-comparison. The results obtained from it are uniform and accurate and, chiefly, more definite than those obtained from the dilution methods. Furthermore the operation of the instrument is sufficiently simple to place hemoglobin estimation within the possibilities of clinical routine.

The material used for observation was selected from the Out-patient Medical Department of Jefferson College Hospital, and from private cases. A large number of the anemias were examined, including chlorosis, pernicious anemia, splenomedullary and lymphatic leukemia, Hodgkin's disease, fatal hemorrhage, and numerous cases in which the hemoglobin was deficient as a secondary symptom. The patients were seen at regular intervals, the blood examined, and the rise or fall in the hemoglobin percentage carefully noted. In all cases comparisons were made with the von Fleischl hemometer and with the Oliver hemoglobinometer. In using the von Fleischl hemometer it was placed in a special camera box, by which all extraneous light was excluded and the conditions surrounding the comparison of color made uniform. With the Oliver instrument the candlelight scale was used exclusively, so that the quantity of light thrown upon the blood-cell and the standard gradations was kept equal, and a greater accuracy of observation insured than was possible with the scale standardized by daylight.

For the purpose of colorimetric observation in the instrument here described, the blood is drawn by capillary attraction into a chamber of measured thickness, presenting sufficient surface for a color field, and illuminated by candlelight. Between the blood-film and the source of illumination a white glass slide is interposed to diffuse the direct rays of light. Against this white background the shades of color are observed to the greatest advantage, and are compared with a graduated color prism of tinted glass which represents the percentage of hemoglobin in the blood examined.

The determination of the standard for hemoglobin percentage in normal blood is a matter of observation. Von Fleischl examined a number of healthy male adults and represented the normal hemoglobin percentage in Austria by the 100 mark on his instrument. In the Oliver hemoglobinometer the 100 mark, or normal point, is somewhat lower, and probably represents more nearly the normal in this country. The graduations on the instrument at present under discussion were standardized by comparison of blood-strata of thicknesses varying with mathematical uniformity. To fix the 100 mark—the color-shade of normal blood—hemoglobin prepared especially for the purpose by Messrs. Armour & Co., of Chicago, was reduced and the impurity determined. The standard for normal blood was fixed at 13.77 grams of hemoglobin (adjustment being made for impurity) mixed with 100 cc. of saline solution. From this point

the percentage above and below was determined by means of pipets containing blood-strata of thicknesses representing hemoglobin percentages from 10 to 120. Freshly drawn blood reading 100% by the comparison scale was used for subsequent observations in preference to diluted hemoglobin. Comparisons were then made with impoverished blood and found to agree accurately with the standard set by the various strata

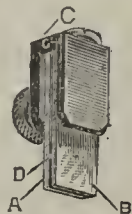


FIG. 1.—Blood pipet. A. White glass of pipet. B. Transparent glass of pipet. C. Pipet clamp, showing milled screw which makes pressure over center of white glass, preventing tilting from uneven pressure. C'. Groove into which corresponding guides on stage of instrument slide, holding pipet firmly in position. D. Capillary chamber of measured thickness into which the blood is drawn automatically by capillary attraction.

of normal blood. To standardize with diluted blood was impossible, because of the discrepancy due to the color-curve, though gravimetric and volumetric dilution methods were tried (the former most accurate). The readings in all cases were verified by comparative tests with Oliver's instrument and found to be in accord throughout the scale. The Oliver instrument, according to the claims put forth, makes perfect adjustment for the color-curve. With this new hemoglobinometer dilution is not practised and the dilution color-curve is accordingly excluded. The color-curve peculiar to every specimen of freshly drawn blood, which is an intravascular dilution presenting various degrees of hemoglobin concentration, is to all purposes eliminated from the experiment, by keeping the concentration of coloring matter in the comparison prism equal to it, *e.g.*, in comparing a film of blood rich in hemoglobin a thicker stratum of tinted glass is required to give an equal color-shade, and vice versa. The specific color, or absorption-curve, is by this means entirely adjusted.

It may be noted that observations less accurate can be made with the pipet of this instrument alone. The blood-drop may be placed between the two parallel discs of glass, adjusted to desired thickness by a graduated micrometer screw, and the hemoglobin percentage estimated by comparing with a color-comparison of known percentage.¹

The pipet for collecting the blood consists of an oblong piece of glass placed between the blood-film and the candlelight. It is composed of white or opaque glass of standard color, which diffuses the direct rays and serves as a neutral background against which shades of color are best appreciated. At one end is ground a square depressed surface exactly parallel to the plane

surface of the glass, and measured with a micrometer to give an exact depth. This depression forms a capillary chamber when the transparent glass completing the pipet is adjusted over the white. The two glasses are of equal size, the surfaces ground perfectly plane, and the colorless glass is polished to preserve its transparency. When clamped tightly together with a pipet clamp the chamber contains a blood-film of definite thickness and fills automatically by capillary attraction when any of its three edges is gently touched to a blood-drop.

The pipet clamp is formed of metal with two projecting parallel bars, between which the glasses of the pipet are placed and firmly held by a milled screw, threaded into the upper arm and pointed with bone to lessen the liability of breaking the glass. Since the pressure is directly in the center of the articulating surface of the white and the transparent slides, it is impossible to tilt the edges by uneven pressure. Grooves on the lower arm into which corresponding guides on the stage of the instrument slide, retain the blood pipet in proper position for examination.

When the film of blood is thus collected by the automatic pipet and spread out sufficient for colorimetric observation, a comparison is made with the tinted glass semicircle of the comparison prism. This semicircle is the color of undiluted blood, and so ground that from apex to base it shows an increasing shade. It is mounted upon a disc of white glass to diffuse the direct rays of light and furnish a neutral background against which the shades of color are best appreciated. The other semicircle mounted on the disc is a thick plate of white glass, upon the edge of which the hemoglobin percentage is etched and filled with black enamel, giving a legible index reading. The thick edge serves also as a friction-surface for the rubber-covered roller that revolves the comparison-prism. The shade of color shown in the comparison-field is regulated by a milled wheel carrying a small rubber-covered cylinder which rests firmly upon the circular edge of the prism. Free rotary motion of the color-prism is allowed by the pivots upon which it revolves. The shaft serves as pivot for the prism

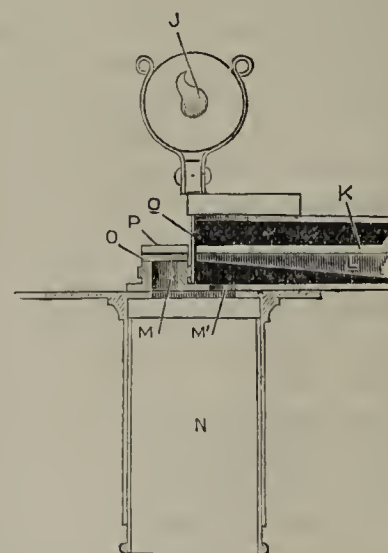


FIG. 2.—Horizontal section of instrument on a level with center of comparison apertures. J. Candle, curves in wick should be pointed towards instrument and junction of the springs of candleholder to insure equal illumination of blood-film and color prism. K. White glass disc of color prism. L. Color prism. M. Aperture through which color of blood-film is viewed. M'. Aperture through which the illuminated color prism is viewed. N. Detachable, telescoping camera tube through which the colors, placed horizontally side by side, are viewed. O. Transparent glass of pipet. P. White glass of pipet showing section of blood film between O and P. Q. Metal septum between blood-film and color prism.

¹It is interesting to note that this principle of strata-thickness we have applied to the estimation of hemoglobin percentage without drawing the blood from the body. The ear-lobe is washed, dried, and the circulation actively stimulated by massaging. Active congestion is allowed to subside by waiting five minutes (this stimulation of the circulation previous to the application of the instrument to the ear-lobe prevents the congestion due to its pressure and insures the filling of the capillaries). A color prism similar to that used in this instrument, but reversed—white glass towards the observer—is compared with the color shade observed in the circulating blood of the auricular tissue viewed through a circular aperture which is closed by a transparent glass window and illuminated by a five volt electric lamp. The lamp is enclosed in a reflecting tube made to press a glass disc mounted on its end against the opposite surface of the ear-lobe by an adjusting screw. The tissue is held between the two parallel glass discs exsanguinated without additional pressure, a mechanism is then released that gives a definite strata-thickness into which the blood pours. Comparison is made and the hemoglobin percentage read off. When this method was used on the negro, compensation was made for darker shade of color by having the opposite side of the comparison disc covered with a close woven light paper giving the exact shade produced by pigment spots visible in the illuminated skin. By considerable practice the hemoglobin percentage could be calculated within 10 or 15%, but as there is no definite point of departure the method is very uncertain and merely mentioned in passing as a curiosity.

passing through the center and is covered with soft rubber. Discs of rubber are interposed between the

glass and the metal washers binding the prism to the hub. This cushion produces a resiliency that admits of considerable violence without injury to the comparison-disc.

The index of hemoglobin percentage is read off at a point opposite the color-apertures. The rectangular opening in the edge of the comparison-case is of sufficient size to allow the numerals above and below the percentage indicated to be seen at a glance—the sharply

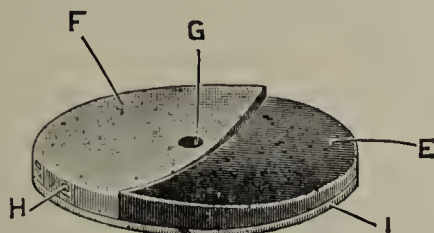


FIG. 3.—Color prism. *E.* Prism of colored glass. *F.* Semicircle of white glass, the edge carrying the index of hemoglobin percentage etched and filled in with black; this edge also serves as a friction surface for the rubber-covered roller by which the prism is rotated. *G.* Hole in which hub is fixed with rubber washers which lessen liability of breaking. Pivots in center of metallic case hold the prism firmly in place, allowing free rotary but no lateral motion. *H.* Index of hemoglobin percentage etched in black, showing very distinctly. *I.* Disc of white glass which serves the same purpose as in the blood pipet, breaks the glare of direct light and furnishes a white background to view the shades of color.

beveled edge of the opening resting directly over the reading indicated. The divisions and subdivisions in the comparison-disc allow the most accurate reading of the percentage below and above the normal.

The framework of the instrument, assembling the essential parts, is simply a thin, circular, black enameled aluminum box containing the comparison disc, which it protects from dust and injury. From this a small stage projects, upon which the blood pipet slides, and is retained by guides. Pivoted to the posterior surface is a circular metal disc, the diameter of which is exactly that of the case upon which it lies when not in use. When pushed outward it forms a screen that shades the eyes of the observer from direct candlelight. Besides, by raising and lowering slightly, it may be used also to close the illuminated color apertures and rest the eye of the observer by allowing the pupil to dilate in the darkness.

The illuminated blood-film and the color-comparison disc are viewed through two circular apertures placed on a horizontal plane; one communicating with the stage, the other with the comparison case, the two compartments separated by a septum of metal. The orifices, which are 5 mm. in diameter, cover a surface of the comparison prism equal to 3%, but are magnified by achromatic lenses fitted in the camera-tube to give a larger color-field for comparison, and to facilitate rapid and accurate observations. The apertures are placed 13 mm. apart, a distance best suited to colorimetric comparison. A telescoping camera-tube, attached to the instrument by means of a threaded socket, excludes all extraneous light. In focusing, should the blood-film present a mottled or stippled appearance, as is occasionally observed when the pipet is imperfectly filled, the focus should be changed to blur the field and render it homogeneous—the color is not altered in the slightest by the focus, as long experience has shown. In obtaining uniform illumination the candle has been selected as the most portable and convenient. With it the intensity of light can be regulated to impinge equally on the blood and the color-prism. The candleholder consists of two lateral springs attached to a shaft which is inserted into a guide on the comparison-case and retained firmly by an automatic catch. It holds

the candle rigidly in a vertical position midway between the blood and comparison-apertures at a distance from the field most favorable for accurate comparison.

Before drawing the blood the instrument should be prepared for immediate observation by swinging the screen outward and attaching the camera-tube and candleholder. The top of the candle and the springs should be on the same plane; if there are any curves in the candlewick they should be turned toward the instrument and in a line with the junction of the springs, so that the intensity of the candlelight will be equally divided between the blood and color-comparison sides. A means of lighting should be at hand, as the comparison should be made before the blood in the pipet shrinks from the edges and whitens the margin of the field—a phenomenon which occurs in from 10 to 20 minutes. The shade remains constantly the same until the retraction of the edges shows in the field; then the readings are no longer accurate. Before this occurs, however, a dozen or more readings can be made, even in blood undergoing contraction within the minimum time. If the pipet is washed in ether or alcohol and carefully polished this change does not occur for an indefinite period, for retraction is accelerated by an oily condition of the pipet glasses, or by incomplete filling of the capillary chamber.

No other preparation is necessary. When the instrument is used in daylight, the observation is best conducted in a darkened corner or a closet, if one is convenient; if not, the instrument should be held pointing toward a dark surface—a black coat, for instance—which does not reflect rays of light. The observer should stand with back turned toward the source of direct or reflected light. No provision is made for the occlusion of the violet rays of daylight, which, when transmitted through the field, change the tint of both the blood and the comparison-colors. They must therefore be excluded. The illumination by lamps or gas-lights does not interfere, as yellow light shuts out the violet rays.

Any appliance to make the observation entirely in camera would add to the bulk of the instrument—a

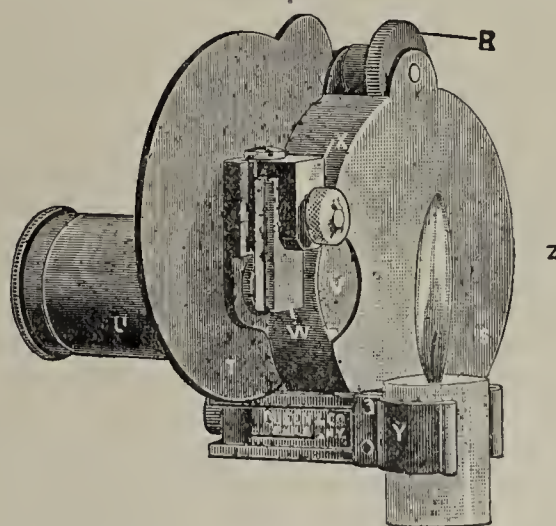


FIG. 4.—Instrument ready for use, illustration one-half natural size. *R.* Milled wheel by which the color prism is rotated by friction exerted upon its edge. *S.* Metal case enclosing color prism, showing stage upon which the blood pipet slides. *T.* Movable wing pivoted to case. When drawn outward screens the eyes of observer from the light. When not in use lies superimposed upon the circular prism case, occupying no extra space. *U.* Telescoping camera tube in position for examination. *V.* Opening in prism case, admitting light for illumination of color prism. The white glass disc of prism is seen inside. *W.* White glass of blood pipette. *X.* Pipet clamp held in position on the stage by grooves and guides. *Y.* Detachable candleholder. *Z.* Rectangular opening in edge of case for reading hemoglobin percentage indicated by beveled blade.

result which has been avoided in all ways possible. We have used a small inclosed 5-volt electric lamp, but

the weight and size of a satisfactory battery are a serious drawback to this; in fact, the expense and trouble of recharging it renders it absolutely impracticable.

Filling the blood pipet is the only act in the examination involving the slightest technical skill. Even this is accomplished without the slightest difficulty if the pipet is dry and clean. The lobe of the ear or finger-pad is prepared and punctured in the usual manner. The pipet, held with the transparent glass upward, is touched to the blood-drop as it emerges from the wound. If the blood is thin and watery and runs close to the surface, the pipet should be held against the skin below the flowing blood, which is then caught and drawn into the chamber. When this is completely filled, the excess upon the edge can be wiped off against the patient's finger or ear-lobe by a slight motion, but care must be taken that no blood is sucked from the capillary chamber by the movement. Blood-stains upon the flat surface of the pipet should be removed, but they may remain upon the edges if not in sufficient quantity to soil the instrument, as the edges do not come into the field of observation. When the observation has been completed the glasses should be removed from the clamp, washed, dried, and returned. Cleansing is more readily accomplished while the blood is fresh.

In making comparison of color the instrument should be held in much the same manner as field-glasses—that is, up before the eyes, so that they may be screened by it from the candlelight. The proper distance will be determined by the focus best suited to the vision of the observer. One eye, close to the lenses, should be used, as uncorrected refractive errors existing in either eye may influence the accuracy of color-vision. The most accurate comparisons can be made by observation lasting from 10 to 12 seconds; the eye should then be rested by dropping the screen, and the comparison repeated.

The instrument has several decided advantages over the others employed for a similar purpose.

1. The technical requirements and the possible errors of dilution are entirely eliminated by it, for only a small drop of fluid is needed, and this consists of pure blood, undiluted with artificial serums. Leukocytosis—a frequent source of error in hemoglobin estimation, because of the turbidity it imparts to mixtures of blood and water—becomes imperceptible when viewed by transmitted light against an opaque background. The red color of the hemoglobin alone becomes visible, while the opacity due to the increase in the number of leukocytes is negligible.

2. Accurate investigation is facilitated by the fact that the shades of color for comparison are very decided, even in blood markedly deficient in hemoglobin. For besides the colorimetric principle, there is an element of density due to the concentration of coloring-matter present in the blood-film, which magnifies the shade of color, gives a wider range between decimal points, insures more uniform comparison, and greatly reduces the "personal equation."

3. The examination—consisting merely of collecting the blood and estimating the hemoglobin percentage by comparison with a graduated color-scale—requires very little time. The plain surfaces of the blood pipet can be cleansed and the whole procedure ended in the time ordinarily required to take the temperature. This rapidity places hemoglobin estimation among the practical clinical methods.

4. The pipets all contain a blood stratum of standard thickness and can therefore be used with any instrument—a distinct advantage over the calibrated pipets which have a capacity only adapted to one particular apparatus.

In conclusion a few comparisons may be drawn between the instruments of von Fleischl, Oliver, and that which is the subject of this paper.

In the von Fleischl instrument the capillary blood pipet is a fragile glass pipe requiring the most careful handling. It is cleansed and dried by blowing a mixture of alcohol and ether through its caliber. Blood-clots forming from too long retention or from conditions hastening its coagulation narrow the capillary tube and introduce a source of error. The dilution not only requires some technic and considerable time, but also a ready supply of distilled or perfectly clear water. Leukocytosis, furthermore, imparts to the mixture of blood and water a turbid appearance which does not correspond with the clear tone of the color compartment, and the opacity thus interposed to the reflected light viewed through a thick stratum of muddy mixture makes the comparison inaccurate unless clarified by caustic alkali. And, finally, the exceedingly delicate shades of color to be compared render exact comparison difficult in blood deficient in hemoglobin. A camera-box or a dark room is absolutely necessary for its application.

The Oliver instrument is in several respects an improvement over the von Fleischl. The blood pipet is much stouter, and can be readily and perfectly cleansed by passing through its caliber a needle threaded with woolen yarn. By using a smaller quantity of diluting serum with an equal quantity of blood a more concentrated mixture is obtained, the color of which is still more intensified when viewed by doubly reflected light. Nor is leukocytosis so pronounced in the Oliver instrument as in the von Fleischl, where the light traverses the turbid mixture interposed between it and the eye. A bubble of air invariably forms when the blue tinted cover-glass is adjusted over the blood-cell (unless overfilled) but by rotating the cell or moving the cover-glass, the shadow cast by the bubble may be made to fall at a point out of the field of observation.

The difficulty with the Oliver instrument, on the other hand, is that frequently no manipulation will clear the field of the bubble or its shadow, which thus becomes a source of inaccuracy. Furthermore, for accurate work the examination should be made by candlelight, which requires a darkened room or camera-box. The variability of daylight is too great for satisfactory results. As the standard gradations in the Oliver instrument represent divisions of 10%, color comparison is greatly facilitated. But between these points the results are not so precise. The greatest objection to the instrument is the trouble of cleansing and assembling the sundry small parts.

The advantages of the instrument which is the subject of this paper, briefly recapitulated, are these: An immense amount of labor is saved by dispensing with dilution and its possible errors; leukocytosis cannot influence the results; adjustment is made for the color curve; the color shades for comparison are made more decided; the pipet is absolutely cleaned; and, most important of all, the readings are uniform and accurate and depend upon principles which allow the best analysis of color shades in the shortest time. Results within 1 or 2% are obtained with a certainty hardly obtain-

able with other instruments. Clinical patients who took a lively interest in the examination of their own blood, when asked to make comparisons, rarely exceeded a variation of 2% in successive trials. In the case of shop-girls who were accustomed to match colors the variation was still less.

In considering this instrument, its simplicity, its compact construction, lightness, and portability, as well as the accurate results obtainable with it, should be taken into account.

I wish to thank Messrs. Armour & Company for the specially prepared hemoglobin used in making the standards of comparison for this instrument.

ACUTE SEMINAL VESICULITIS.¹

By HENRY H. MORTON, M.D.,

of Brooklyn, N. Y.

Clinical Professor of Genito-Urinary Diseases in the Long Island College Hospital, Genito-Urinary Surgeon to Kings County and Long Island College Hospitals and the Polhemus Memorial Clinic.

ACUTE inflammations of the seminal vesicles are generally caused by gonorrhea, although a chronic inflammation may originate from other causes. A gonorrheal inflammation of the interior of the cavity of the vesicle is excited when the gonococci pass from the posterior urethra through the ejaculatory ducts, and are deposited within the vesicle. Its walls secrete pus and its cavity soon becomes filled up and distended with a purulent accumulation.

The *symptoms* are not very characteristic and are merely those of the posterior urethritis which of course is always present. Fever and a throbbing pain in the vesicles and tenderness in the suprapubic region are always observed.

Seminal discharges, which are red or chocolate-colored from the admixture with blood, often occur. The blood may be derived from the cavity of the vesicle itself or may be acquired by the semen from a congested posterior urethra, as it passes through it. If the posterior urethritis is cured the urine is clear at first, but later in the disease, the vesicles pour out their purulent contents into the posterior urethra and the pus flows back into the bladder, discoloring the urine when it is passed.

The *diagnosis* of seminal vesiculitis can only be made by rectal examination and the vesicles can be felt swollen, soft, fluctuating, and intensely tender. Epididymitis is a most frequent result of vesiculitis and is brought about by some of the gonococci-laden pus-cells being carried through the vas deferens and deposited in the epididymis. Peritonitis, which sometimes becomes general, may occur, from the close relation which the peritoneum bears to the vesicles.

The *treatment* of acute vesiculitis is chiefly expectant and consists in putting the patient to bed and giving a saline cathartic, which is always in order in every pelvic inflammation. Hot sitz baths and copious irrigations of the rectum with hot water are useful in allaying the inflammation. If the posterior urethritis is severe, sandal-wood oil relieves the tenesmus and renders the urine less irritating. Injections into the anterior urethra of course are contraindicated, but above all things any attempt at massage or stripping the vesicles should be absolutely interdicted. Under this plan of treatment most cases of acute vesiculitis will recover in from two to

four weeks' time, but when resolution does not occur, the disease passes into the chronic state.

CHRONIC SEMINAL VESICULITIS was but little understood until 1893, when Eugene Fuller published his first paper on the subject. Chronic vesiculitis may originate from an acute attack of vesiculitis which has not undergone resolution, but as a rule it develops insidiously, as the result of extension of a chronic inflammatory process which begins in the posterior urethra and extends through the ejaculatory duct. The ejaculatory duct is never compressed by the changes, but throughout the whole course of the disease it remains open and patulous and sterility does not occur.

Pathology.—In chronic vesiculitis the inflammation, instead of causing the cavity of the vesicle to become filled with pus, as in the acute form, attacks the *walls* of the vesicles and the perivesicular connective tissue. The inflammatory products which were thrown out into the connective tissue around the vesicles become organized into a hard, fibrous tissue, which binds the vesicles down to the bladder, and the entire mass composed of vesicles imbedded in fibrous tissue appears like a part of the prostate and may be easily mistaken for it on rectal examination. During exacerbations a good deal of pus may be secreted in the walls, which results in a filling up and distention of the cavity of the vesicle with pus.

Two varieties of chronic vesiculitis are recognized: (a) Simple and (b) gonorrheal. The symptoms and treatment of these forms are identical and they only differ in etiology.

SIMPLE VESICULITIS may originate as a result of sexual excesses, masturbation, etc., exciting a low grade of inflammation in the posterior urethra, which extends along the ejaculatory duct. The ejaculation of semen is interfered with, and the contents of the vesicles which are retained become thick and inspissated. The diseased process is still further complicated by germ-infection. Simple pyogenic organisms pass from the urethra along the ejaculatory duct or *Bacillus coli communis* works its way in from the rectum. In old men who are being broken in to catheter life, the traumatism often excites a subacute inflammation of the vesicles which frequently extends to the epididymis.

GONORRHEAL VESICULITIS may result from an acute attack which does not undergo complete resolution, but is more commonly occasioned by a chronic inflammation of the posterior urethra caused by gonococci, which extends slowly along the ejaculatory duct.

The gonococci enter the cavity of the vesicle, penetrate the epithelial lining and may remain dormant until excited to activity by various causes, such as a long walk or bicycle ride, or an excess of beer, or coitus. Under such slight provocations a relapse occurs with abundant pus-formation, and gonococci are found, on microscopic examination, in the secretions.

Diagnosis.—The clinical history of these cases is generally significant of involvement of the vesicles. The patient complains of a gonorrheal discharge which lasts, with intermissions, for years. Any slight indiscretion brings on an exacerbation, which is often mistaken for a fresh attack of gonorrhea. The discharge lasts for a few days and then subsides, until another indiscretion lights it up again.

The *symptoms* depend chiefly upon the accompanying posterior urethritis, and consist in frequent urination, and spasm or irritability of the cut-off muscle. On straining at stool a glairy, sticky discharge escapes from the meatus, which is the secretion expressed from the

¹ Read before the Kings County Medical Association, April 10, 1900.

prostatic crypts by the muscular efforts and is termed prostaticorrhea.

The mental symptoms are always very prominent and the individual suffers from depression of spirits and melancholy, irritability of temper and quarrelsomeness. Hypochondria is notably marked and patients are alarmed over ridiculous trifles. They complain of the penis being shrivelled, cold or numb, that the testicles are retracted or that one hangs lower than the other, and suppose that the testicles are beginning to atrophy and they are growing impotent. In their alarm they consult some of the advertising quacks who prey upon their fears and deluded ignorance.

Another important group of symptoms is connected with the sexual function. In the early stages there is an increase in the sexual desire, with frequent nocturnal emissions and premature ejaculation on coitus. The seminal discharges are often mixed with blood which may be acquired from the posterior urethra or the cavity of the vesicles. As the case progresses, erections cease, the sexual desire is lost and at last a condition of true impotence is established.

The diagnosis can only be made by rectal examination, and in order to determine the condition of the vesicles a very considerable amount of practice is necessary in order to attain the necessary "tactus eruditus." As the vesicles and prostate are continuous it is difficult for the beginner to differentiate them and until one is experienced a diagnosis of enlargement of the prostate is generally made, when the vesicles alone are enlarged and the prostate is normal in size.

Technic of Examination.—The patient, with his bladder moderately distended with urine, assumes the "leap-frog" attitude, bending over a chair and grasping the sides with the hands. The surgeon makes counter-pressure with one fist doubled up, pressing against the bladder, and the index finger of the other hand is inserted into the rectum. In order to get well up beyond the upper margin of the vesicle, it is necessary for the surgeon to support his right foot on a chair and by means of his knee, make strong pressure against the elbow of his examining hand, in order to drive it well in.

If the vesicles are normal they feel soft and the amount of distention depends on circumstances. If endovesiculitis is present they feel large, distended, tense and very painful. If perivesiculitis exists, they are hard, indurated and brawny, feeling like a piece of pork, on account of the infiltration through the connective tissue, which surrounds the vesicles and forms adhesions which binds them down upon the bladder.

After examining the condition of the vesicles their contents should be stripped or expressed by the examining finger, beginning at the upper margin and squeezing or stroking in a downward direction, so as to press out the contents through the ejaculatory duct. The quantity of expressed material which runs out at the meatus varies from a few drops to half a dram or more. On examination the material is found to be thick and jellied or purulent and the spermatozoa are dead. As the case improves the spermatozoa regain life and motion.

The treatment consists in stripping or expressing the contents of the vesicles once in from 5 to 7 days. The effects of stripping are to empty the vesicles of their inspissated contents, without forcing the muscular fibers to contract and eject the semen and through the rest thus afforded them, the muscles recover their tone. The

inflammatory thickening around the vesicle is absorbed as a result of the massage.

Contraindications to stripping are the existence of an acute attack of vesiculitis, blood in the expressed material, or excessive tenderness. With these conditions present there is always danger of setting up an epididymitis.

The posterior urethra should not be overlooked but should receive appropriate treatment, with irrigations or instillations or by the endoscope. It is desirable, however, not to use local treatment to the posterior urethra and strip the vesicles at the same sitting, but to allow a couple of days to intervene. The duration of treatment is protracted, requiring from two to twelve months to effect a cure; but since Fuller's work upon the subject, it is possible to cure cases which were beyond the reach of treatment before.

TUBERCULOUS VESICULITIS.—In this condition the vessels are involved by an infiltration with tuberculous nodules. The symptoms are not marked and the disease exists unsuspected. Tuberculous vesiculitis has its origin primarily in epididymis and extends upwards along the cord to vesicle, or, primarily in the vesicle and involves the epididymis and testicle subsequently by extension downwards through the cord.

The diagnosis is made by feeling the vesicles through the rectum, and the hard, irregular nodules can generally be felt in addition to the perivesicular induration. Tuberculous deposits are usually found in other organs, particularly the lungs, bladder and epididymis, and it is a good rule to examine the vesicles in every case of suspected tuberculosis of the epididymis or testicles.

The treatment consists in hygienic measures alone, of which the most important is an outdoor life in a suitable climate. Codliver oil and creasote are the drugs most in vogue.

The local treatment by stripping is contraindicated and will only make matters worse.

THE INJURED TRAMP; WHO IS RESPONSIBLE FOR HIM?¹

By F. JULIAN CARROLL, M.D.,

Local Surgeon at Summerville, S. C.

THE tramp is a prominent and ubiquitous member of that large army generically classed as "the poor," and "the poor ye have always with you."

Nowhere, I suspect, is the omnipresence of this congenitally weary son of the soil more felt than in and about railroad towns. He is too tired to walk along rural roadways, but manifests an alarming amount of energy in boarding and getting off railroad trains.

Indeed, the tramp is as much a part and parcel of a well-conducted railway as is the engine and cars, the track, the trainman, the superintendent, or the receiver, and, along with the rest of railway employes and appurtenances, he is occasionally subject to injury.

Once injured the tramp falls to our lot and becomes of interest to us as railroad surgeons. If this accident has happened near a large city where hospital facilities are at hand, all is plain sailing, and we know what to do with our dirt-begrimed son of ease. Should this accident, on the other hand, occur elsewhere, and should this gentleman of much sand and little water who has

¹ Read before the Association of Southern Railway Surgeons, at the annual meeting in Charleston, S. C., May 11, 1900.

been inconsiderate enough to get himself injured, further aggravate his offense by electing the locality of his accident in or near some small town, the local surgeon at the aforesaid small town is assailed by a peck of difficulties, the most prominent of which suggests a part of the title of this paper,—“Who is responsible for him?” What are we to do with him? Truly we have an elephant on our hands!

If we have been provident enough to have saved our contract signed in triplicate between ourselves and the Southern Railway System, we hasten to consult that. In Form 1402, in effect January 1, 1897, we find the following clear and specific (*sic*) directions laid down for our guidance and direction:

“In case of tramps the patient should be turned over to the authorities or to charitable institutions.” We are also informed that the Company is not responsible for our fees after the first visit.

Now these directions are all right so far as they go, but, like Montijo's cannon at the battle of Manila Bay, they don't go far enough. Perhaps some of you have been out with a gun looking for those authorities which the kindly author of Form 1402 speaks so affably of. If you haven't you don't appreciate the keen irony of this sentence as we who have, do. Besides, “the authorities” is rather vague. What authorities? Railroad? State? County or town? If this is our first case we might spend a couple of profitable hours sending telegrams to the various authorities trying to find out which one of these is the responsible party. Of course, the profit above alluded to comes in for the Western Union Telegraph Company. Meanwhile, how about our patient? Are we to pay our first visit, chalk up two dollars against the Southern Railway, and leave this human being, tramp though he is, to suffer, perhaps to die, while he is waiting for “the authorities” to come along?

And what about those “charitable institutions” which our instructions so generously place at our disposal?

Now the only reasonable objection we can urge against these “charitable institutions” is that they do not exist. They are phantoms created by the kindly imaginations of philanthropists, and if brought into the world they are still-born.

“Charity covereth a multitude of sins.” Charitable institutions many multitudes. In truth we might paraphrase an old and eloquent passage to read “Charity! Charity! how many crimes are committed in thy name!” But we are wandering afield, for in small towns we haven't either “charitable institutions” or institutions bearing the name of charity. We have no hospitals of any kind.

And all this time what of the injured tramp? “Hadn't thought of him” I can almost hear some one say. Unfortunately that is precisely the attitude of those mythical authorities and alleged charitable institutions, but we as physicians can't get this injured human being off our minds so easily; for, accepting David Harum's dictum that “thar's as much human natur in one man's in another—ef not more,” we are bound to help this human being.

As humanitarians we are often willing to take our two-dollar fee and attend this tramp without further remuneration, but the question that “will not down” confronts us: “Where are we to put him? Who is to provide nourishment and nursing?”

There is a widespread belief among a large class of people that railroad companies are invariably responsible for all injuries received on their lines, regardless of whether inflicted on employe, passenger or a tramp stealing a ride, and never mind how criminally careless the injured party may have been. Besides which, many persons otherwise charitable fear and abhor a tramp and will have none of him. Reasoning thus, private individuals, who under other circumstances might serve in lieu of the absent “authorities” or “charitable institutions,” wash their hands of the whole business and “pass by on the other side.”

We have, I think, most of us, had this condition of affairs forced home to us on more than one occasion. I recall at least three instances in my own experience, one of which I record as typical and illustrative of the others.

On September 15, 1899, John Sanders, a colored youth of about 18, was injured fatally while attempting to board a train on the Southern. This accident occurred at about 10 A.M., in the depot at Summerville, and I was promptly summoned, reaching the boy a few moments later.

On arrival I found my prospective patient lying in the colored waiting-room, surrounded by the usual collection of idlers. On a hasty examination I discovered that his right leg was crushed and pulpified from the foot to above the knee-joint; his right hand was also badly lacerated and several of the fingers were mashed off. He exhibited all the well-known symptoms of shock and seemed unusually weak, besides which he was suffering intensely, so I promptly administered morphin with atropin hypodermically and put a temporary dressing on his leg. The patient having lost considerable blood I also applied an Esmarch's tourniquet, which apparently controlled the hemorrhage effectively.

I now telegraphed the only authority I knew anything about, *i. e.*, the railroad superintendent, for further instructions. The results were not as satisfactory as I might have desired. I was told to send my patient home. As will subsequently appear I obeyed instructions in so far as in my power lay, and if that boy isn't home yet it isn't my fault. If we consider home in the nature of a mere earthly abode, however, I failed most dismally.

It appears that this boy had an uncle living in Summerville, so I summoned this gentleman post haste, and requested that he take my patient to his home. He reluctantly acquiesced, and the boy was put on a wagon to be hauled to his uncle's domicile. In the meanwhile, however, either through the potency of his wife's loving arguments or by the advice of friends, this affectionate uncle changed his mind—and made a bad swap—the result of the change being that he met us when we were about half way to the house and positively declined to have anything to do with the case.

All my eloquence, including threats, arguments, and persuasion, failed signally to make this old codger see matters in their proper light, and we must perforce turn about and take the boy back to his downy couch of planks at the depot.

Leaving a medical student in charge I went to attend to some necessary business, directing that my patient should be liberally stimulated during my absence.

On my return at 2 P.M., I found my patient considerably weaker and apparently losing ground rapidly. I examined the leg and found that considerable oozing

had taken place through the dressings in spite of my Esmarch.

Seeing matters were growing graver with each moment of wasted time, I again communicated with the superintendent's office and obtained permission to do everything necessary for my patient. I now made desperate efforts to get some of the bystanders to take this boy in at their homes for a moderate consideration. Finally one of them, contrary to the advice of the rest, was moved to accept my proposition. The half-dead boy was accordingly again placed on a wagon, after having received nitroglycerin hypodermically, and taken to this negro's cabin.

We now made ready to operate in the meantime; as soon as a bed could be prepared, my patient was placed on it and surrounded by hot-water bottles, the foot of the bed raised and the patient warmly covered. In spite of the above, together with bandaging all the limbs, and giving hypodermics of ether, whisky, nitroglycerin, strychnin, etc., my patient failed to react, and died at 4 P.M., just in time to escape the transfusion which I was preparing to give.

Now I am not prepared to say that this negro could have been saved had I been able to afford prompt attention, for he showed a remarkable degree of shock from the first; still I believe that if we had been able to take this boy where he could have been promptly transfused and otherwise stimulated, and where hemorrhage could have been promptly checked, his chances would have been considerably enhanced. It is our duty to give our patients every possible chance of recovery, and under conditions similar to the above it is impossible to do so.

Unfortunately we are unable to suggest a remedy because we do not know who to look to as having authority. In other words, who is responsible? Which brings us back to our starting-point.

We have consulted Form 1402 without obtaining any solid information, so we look for knowledge in the South Carolina statutes, with results which are absolutely discouraging. A diligent search on the part of myself and a legal friend failed absolutely to unearth anything in the slightest degree germane to this subject. And I am as much in the dark as ever. As far as I can understand the matter, a railway company is situated very much in the same manner as a houseowner in a small town without a hospital would be if an unfortunate were taken sick and lay down on this houseowner's door steps. The houseowner isn't responsible for the man getting sick, nor is he responsible for his being on the door steps; still he doesn't want him to stay there, and he is willing to make some sacrifices, pecuniary or otherwise, to get rid of him. This isn't charity, but it often amounts to the same thing, and the motives which inspire the property owner are about as worthy as those of the average charitable individual. Now the Southern makes its donation to charity when it pays us \$2.00 for our first visit. After that it shakes the dust of the tramp from its feet—if a railroad can be said to possess such appendages. It has paid its donation and is glad to be rid of the tramp so cheaply.

I do not for a moment intend to reflect on the railroads in what I have said, for in my opinion they are a much-abused body, and my observation has always been that they are willing to do more for the injured tramp than any one else except perhaps the physician who gets into the case and can't get out.

What I do want to know, and what it seems well nigh impossible to find out, is who I can blame. I've lots of surplus steam I want to work off if I can only find the culpable party, and the principal object of this paper is to gain information on this, to me, very important and interesting subject.

If no one is responsible it seems to me that some efforts should be made towards fixing the responsibility. It would appear feasible to make some agreement between the railroad authorities and the county or State authorities, whereby such cases could be looked after without the whole burden falling on either party.

Intestinal Obstruction.—Winslow (*Maryland Medical Journal*, September, 1900) says intestinal obstruction is caused by a number of conditions, but in any case it is always characterized by stoppage of fecal evacuation. There are the acute and chronic forms; the former being due to a variety of pathologic conditions, the most common of which are strangulation by bands, by kinks due to adhesions, by intussusception, by volvulus, by foreign bodies, strictures, tumors, and fecal impaction. Usually the patient is in good health and the condition arises suddenly. The most constant symptoms are sudden pain radiating about the umbilicus, vomiting and the usual symptoms of acute indigestion. The bowels may move at first, but soon this ceases and flatus accumulates, distending the abdomen; tympanites, however, does not supervene if the obstruction be situated high up. At first the vomiting is only of the gastric contents, but later becomes stercoraceous. A slimy, bloody discharge from the rectum is suggestive of invagination. The urine is markedly diminished in quantity, due to vomiting of the fluids. The pulse soon becomes rapid and the patient, if not relieved, passes into profound shock. The prognosis is always grave, but Smith is quoted as stating that 80% of patients should recover if promptly treated. Saline and other purgatives may be tried at first, but after 24 to 36 hours if there is no relief laparotomy should be performed. [A.B.C.]

Diaphragmatic Hernia.—Walker (*International Journal of Surgery*, September, 1900) relates the case of A. L., aged 29, who was injured by a falling tree. The symptoms present were characteristic, leading to the diagnosis of intestinal obstruction, with diaphragmatic hernia and strangulation of the prolapsed gut as a possibility. The pulse was 145, weak, thready and intermittent. The dyspnea was marked. The respirations were shallow, rapid and jerky, and 42 to the minute. The patient complained of an agonizing pain in the left breast, which was increased by coughing and deep breathing. The last attacks of vomiting showed stercoraceous material. It was impossible to get a movement from the bowels. The abdomen was very much distended with gas. There was a diminished expansion of the left side of the chest and a tympanitic note at the base of the left lung. The breathing was amphoric. A succussion sound was developed by shaking the patient. The apex beat of the heart was displaced two inches to the right of the normal position. The seventh and eighth ribs were fractured behind on the left side. On operation a knuckle of the bowel was found firmly held in a rent in the diaphragm, and reduction was obtained only by considerable traction. The surface of the lung showed no rupture and there was no blood in the pleural cavity. After the insertion of four interrupted catgut sutures during deep expiration in the rent in the diaphragm, the condition of the patient became so serious that efforts for union were discontinued, and the external wound sewed up. Recovery was uninterrupted. The author concludes: In all cases of so-called internal strangulation, the possibility of a diaphragmatic hernia must be considered. When a diaphragmatic hernia is probable, operation is imperative when the symptoms of obstruction are present. In recent cases diagnosed early laparotomy is probably the better operation. In old cases, on account of the difficulty of reducing the gut, ligating the sac, and stitching the rent in the diaphragm, the transpleural route is preferable. If, after making a laparotomy, the gut cannot be reduced, a thoracotomy is justifiable. [G.C.C.H.]

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GEORGE M. GOULD, M.D., *Editor*

Collaborators

JOSEPH SAILER, M.D.
D. L. EDSALL, M.D.
D. RIESMAN, M.D.
J. M. SWAN, M.D.

M. B. TINKER, M.D.
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The Spread of Disease in the Garbage-Gathering of Cities.—In all of our hygienic concern and progress it seems strange that, the world over, there is such great carelessness in the gathering and disposal of the refuse of city houses. It is usually stored or rather dumped about cellars and back-yards for a reckless week, in which all the elements necessary to fermentation and putrefaction have ample time to ripen and dry. Then it is mixed and set out on the pavement for the winds to carry to the mouths and noses of all the inhabitants. If the wind happens to be at all active, the dumping into the wagons and carts soon fills the city with the clouds of dust. Then for miles the loose-jointed, over-filled wagons jostle over and scatter a large part of the contents along the streets, until at last, in dumping (perhaps down a long steep), the wind has another opportunity to send abroad all but the heaviest and least noxious portion of the load. Every city permits carpet-beating and rug-dusting, so that all tuberculous or other disease-germs secure every possible chance to find a lodging-place in human throats and clothes, and, if once failing, they are beaten up and resown incessantly until the seed no longer falls upon barren ground. If the health of the community were only a tenth of the importance to our masters that the election of the boss is!

The Sufferings of Animals in War do not seem to cause much solicitude to our antivivisectionist critics. One would suppose that, if sincere, their compassion would strike at the great abuses instead of at the small and unimportant ones. The fact proves that their compassion is not sincere. What is real is the concealed and inexpugnable hatred of Science, and hence the ludicrous much-ado-about-nothing concerning painless vivisection. We chanced recently to come upon one instance out of a hundred that might be brought forward—the shipment of horses from New Orleans to South Africa for the English cavalry service. For thirty or more days the horses are crowded together and compelled to stand in the ship without exercise, and with no possibility of lying down a minute. Imagine the awful torture! The expense prohibits space to permit of any resting. As a result, in every shipload a great number drop from sheer exhaustion, and are trampled and kicked to death by the others. Those that survive are hustled from the ship to the cars and from the cars to the front, where, with cruelties, necessary or not, they

are put to the merciless service which in a few weeks ends in merciful death. All vivisectionists should logically join the antiwar societies and for a thousand years devote all their energies to lessening disgraceful outrages against animal life that are inevitable results of war. To prevent the coincident human suffering would hardly seem to them a sufficient motive, and we therefore appeal to them on behalf of "our brother the horse."

The Menopause Bogey has long been one of the superstitions of medicine. Cooperating with the natural preoccupation of women with the sexual element of their lives, the mystery of hysteria and even of many diseases has served to make practitioners at least assent to the exaggerated importance attached by the lay world to the cessation of a function; as a result the menopause has been credited with an astonishing influence in producing both health and disease. In checking the vogue of the belief in one direction—as to the insanities and psychoses of the menopause—Dr. Chapin (in our issue of August 25) has undertaken a much-needed reform. Strangely enough, to this ending of a function has been credited no end of diametrically opposite effects. On the one hand, to it has been ascribed a multitude of positive assaults upon the psychic and physical organism, while at the same time it has been customary for patients and physicians to promise purely negative results, *i. e.*, relief from another large category of ills by the same mysterious agency. Post hoc has been constantly held as propter hoc, according as mystery baffled therapeutics or as whim and fancy should dictate. The mere ceasing of a function that has been superadded to life at the adult period of life, that is henceforth useless and no longer required, can certainly have little result per se, either positive or negative, upon the organism. One of the principal reasons for the lay and professional blunder lies in the fact that the morbid consequences of eyestrain are not infrequently exaggerated just prior to the menopause, and cease again soon after. Thus arises the confusion of post hoc and propter hoc. The relief ascribed to the menopause is often due to presbyopia with which it happens to occur synchronously. Increasing accuracy of diagnosis and observation, with a progressive science, will, it is hoped, soon lay the ancient ghost of menopausal superstition that has too long worried us.

Carrying the Antivivisection Argument to the Extremes of Absurdity.—Not very long ago in one of the principal inland cities an organization known as the "Educational League," whose membership was composed of teachers both from the public schools and colleges and professional schools, had an open meeting in which the principal subject of discussion was the protection of song birds. It can hardly be supposed that any fair-minded person can be found who objects to proper measures for protecting the lives of the feathered songsters that add so much to the happiness of creation. "But when the sons of God were gathered together, there was Satan in the midst of them;" and so there was the antivivisection crank at this meeting of educators, ready and anxious to rehearse the old wornout libels against animal experimentation, and especially against the medical profession. The main-spring of his argument on this halcyon occasion was that "every bird and animal has inherent rights that man must respect and which should be guarded by law." The absurdity of a man wearing calf shoes and kid gloves pleading that "inherent legal rights" of birds should be considered, while he forgot the inherent rights of calves and kids to wear their own skins and not be forced to give them up for the ornamentation of mankind, never seemed to occur to him.

The inherent right of superior orders of the animal creation to use the lower orders for their convenience and pleasure has been well recognized in the history of human progress. Humanity demands that that right be exercised with as little suffering as possible, but it must continue to be exercised. Any attempt to set up laws recognizing the "rights" of lower animals as superior to those of man, can but result in ridiculous failure. Pretty soon we shall hear from these extremists, pleas that all insects shall be anesthetized before birds are permitted to eat them; that all fish-hooks shall by law be made aseptic before being used to tempt a fish out of his native element; that farmers shall be restrained by judicial injunction from the cruel destruction of potato bugs, grasshoppers and other happy little denizens of the fields; that mankind (and womankind too) shall discard leather shoes and return to the use of sandals made of rushes, or that they shall adopt the primitive method of tying pieces of gunny-sack about the feet; that all cows shall be paid cash for the milk that humanity has hitherto filched from them without proper remuneration; that no horse shall be driven or forced to pull a load until his legal acquiescence, properly attested, has been placed on file in the courts. "Every animal has inherent legal rights which mankind must respect." Let us have a new crusade with the antivivisection society in the van of the invading army.

Medical Men and Juries.—Within a short time the idea has been advocated that all juries for criminal

cases should be composed of medical men. The argument in support of this proposition is that in many cases the offender has a disordered mind and a diseased brain, and hence none but medical men are capable of dealing intelligently with his case. That a diseased condition of the nervous system is responsible for many crimes no one can question, but that the condition warrants so radical a change in the present jury system seems extremely doubtful. Surely the number of those who commit crime from an insane impulse is not so great as to warrant the presumption that this is the rule, and that we must construct our juries accordingly. The idea that a jury composed of medical men could weigh each case, determine the degree of insanity, if any, and suit the punishment to the degree of criminal responsibility, appears to us wholly impracticable. Perhaps no two persons were ever actuated by absolutely the same motive, and were ever criminally responsible to absolutely the same degree in committing crime; yet human limitations force us to apply the same punishment in many cases. In practical civilized life we are forced to lay down rules of conduct, and whoever violates these is declared guilty of crime, and to merit the prescribed punishment, provided he was capable of appreciating right and wrong at the time of the offence. If a question arises as to his sanity, that, of course, should be determined by medical men; but he is presumed to be sane until evidence arises to establish the contrary. That there are grades of criminal responsibility perhaps none will deny, but to forsake the well-established rule which makes the knowledge of right and wrong the basis for the infliction or withholding of punishment would carry us at once into a maze of uncertainty. If we could bring ourselves to accept the belief that all or any very large percentage of crime is the result of diseased minds, we should then admit the necessity of juries composed of medical men. When the plea of insanity is so frequently used in attempts to shield the guilty criminal we shall be slow to advocate innovations which may give him other loopholes of escape.

Jumping at Conclusions in Regard to Disease-Distribution.—Recently a medical practitioner who had spent some years in South Africa, returned to England and was invited to deliver addresses before several of the London societies in regard to climatic conditions and prevalent diseases in Africa. Among other things that he is reported to have said by the veracious reporters of the medical press was something to this effect: That diphtheria was a disease of rare occurrence at altitudes of 2,500 feet above sea level, and that it was absolutely unknown at altitudes of 3,000 feet and over. From this observation the deduction was drawn that it is impossible for diphtheria to prevail anywhere at an altitude exceeding 3,000 feet above the level of the sea.

Without for a moment doubting the accuracy of the

observations of the South African practitioner, it seems proper to point out that a too sweeping inference has been drawn from them. Because a disease has not as yet been introduced into a particular locality is no reason for asserting that it cannot exist under the conditions or environments of that locality. It is a well-known fact that diphtheria prevails both endemically and epidemically at altitudes far exceeding any noted by the South African observer. Both from Switzerland and America reliable reporters have detailed observations of diphtheria at altitudes of 10,000 feet and over. Some of the most fatal outbreaks of the disease have been observed at Leadville and Georgetown, Colorado, both of which towns are about 10,000 feet above sea-level. From Denver some of the most accurate observations in regard to the prevalence of diphtheria during the past twelve years have been from time to time published in this and other journals, the altitude of Denver being 5,280 feet. From the same city Sewall, Hall, and other observers have published some of the most reliable observations in regard to the development of tuberculosis at high altitudes, while Mitchell and Crouch, of Denver, and Gardner, of Colorado Springs, have published some very accurate observations in regard to the time required for the destruction of virulence of tubercle-bacilli by direct sunlight. These latter observations have thrown considerable light upon the possible acquirement of tuberculous infection in the altitudes and have disposed with some definiteness of the fallacious claims that consumption could not originate in mountain climates. The fallacy of the past has been based upon the assumption that because the disease had not as yet become endemic in newly-settled regions, it never could become so. Time and the development of many cases have served effectually to dispose of many such mistaken ideas in many parts of the world. The original observers who have published the actual facts have in some instances been subjected to somewhat severe criticism by the commercial interests of the various localities that imagine their "glorious climate" is being libelled. But this is also a matter that time will eventually remedy, since the faithful record of the truth is not a libel, nor can commercial interests ever hope to control or to stifle the voice of the scientific investigator.

The Bacillus of Yellow Fever.—At the recent International Congress of Hygiene and Demography, held in Paris, an important paper on this subject was read by Proust and Wurtz. Of the three great epidemic diseases of the tropics—plague, cholera, and yellow fever—the last has attracted least attention in recent years, and its etiology still remains a subject of some debate. The paper of Proust and Wurtz is the latest contribution to the subject, and has been translated by Dr. M. J. Rosenau, of the Marine-Hospital Service, and published in the official *Health Reports* of that de-

partment of the Government. In 1897 Sanarelli announced the discovery of the *Bacillus icteroides* and claimed that it was the pathogenic organism of yellow fever. This discovery has been less widely and brilliantly confirmed than in the cases of the microbes of the two other diseases named. Proust and Wurtz describe the characteristics of the bacillus. It is found in the blood and tissues, but not in the gastrointestinal tract of individuals sick or dead of the disease, and is always associated with other microbes. This latter fact, together with the fact that its presence is very transitory, makes it difficult to recover it. This bacillus survives in nature for a very long time; the surest agent for its destruction is moist heat. It dies immediately in water at a temperature of 65° C. It is anaerobic, and its growth is favored by molds, warmth, moisture, and lack of ventilation. It is especially flourishing in sea-water. It is pathogenic for most of the domestic animals, but birds resist it. Its toxin is extremely active, and in dogs produces the same lesions as the bacillus itself. Sanarelli inoculated 5 persons with a bouillon culture, filtered and sterilized, and produced typical yellow fever with all the symptoms and anatomic conditions. Among those who have confirmed the work of Sanarelli in this country are Geddings, and the commission of the U. S. Marine-Hospital Service. This commission found the bacillus in 100% of cases in Cuba in one year. Proust and Wurtz quote all those who have confirmed Sanarelli both in this country and abroad, and evidently consider that the claims for the specificity of the bacillus are well founded. The experimental disease is almost identical with that in man. The injection of the toxin in man reproduces the symptoms of yellow fever. Further, the serum of persons attacked by yellow fever agglutinates the *Bacillus icteroides*. This specific reaction seems to the authors to be a decisive proof that the bacillus of Sanarelli is the cause of yellow fever. The mode of its entrance into the organism is not yet decided. It is still an open question whether the infection is by inhalation, ingestion, or direct contact. The theory of Finlay, that the mosquito is the carrier of the microbe, has not been established. From the standpoint of prophylaxis less progress has been made than in etiology. Sanarelli hopes to solve this problem by the use of a serum. The difficulty is to make animals tolerate heavy doses of the bacillus and thus to obtain a serum having both preventive and curative power. The authors quote the few results thus far obtained, but these are meager.

The Prophylaxis of Plague.—The Marine-Hospital Reports contain a translation by Dr. M. T. Rosenau of Dr. Calmette's paper on this subject read at the International Congress of Hygiene and Demography, 1900. Two methods are employed. One is by the antipest serum, the other by cultures of the *Bacillus pestis* killed by exposure to 70° C. for one hour. The serum

conveys an immediate and effective immunity, but this immunity, unfortunately, is of very short duration, rarely exceeding 12 or 14 days. The injection is neither painful nor harmful, and the serum retains its potency almost indefinitely. The cost of producing it, however, is great, and the difficulty of inducing persons to accept a vaccination which must be repeated so frequently is a great disadvantage. The other method, known as Haffkine's method, by inoculation of cultures of the *Bacillus pestis*, has the undoubted advantage of conferring a much longer immunity. This method has been applied on a very large scale by M. Haffkine for the past three years in India. The duration of this immunity varies greatly, according to the quality of the culture, and may be from a few days to several months. Dr. Calmette undertook by experiments on animals to determine the duration of the immunity procured by Haffkine's method. He satisfied himself that the immunity after one inoculation of 3 cc. of the bacilli in culture one month old, is not established until after the seventh day. It lasts about three weeks in a guineapig, one month in a monkey. In a rat it lasts longer—as long as three months. From these experiments no conclusions can be applied in the case of man, but as the rat is much more susceptible to plague than is either the guineapig or monkey, and the immunity lasts longer in this animal, it may be inferred, according to Calmette, that a single injection can confer a longer immunity in man than in animals.

Some of the advantages of Haffkine's method are the following: The culture is easily and cheaply obtained. The inoculation causes only a little inflammation and lymphangitis for five or six days. The entire population of a village can be inoculated with ease and rapidity. The one serious objection to this, as to the other, method is the difficulty of obtaining the consent of people to be inoculated. To be effective, the inoculation should be obligatory on a whole population. A grave risk from Haffkine's method is in the fact that during immunization the person is much more susceptible to plague, and if he had already contracted even a mild case the inoculation might be fatal. Calmette demonstrated this fact on animals during the recent epidemic in Oporto, Portugal. Several cases of rapid death from this cause have followed Haffkine's inoculations in India. The heated cultures retain their activity a much shorter time than the serum. In spite of these objections the inoculation of Haffkine's cultures is especially indicated during epidemics, and may limit the disease to its focus. The antipest serum, however, is the only efficacious remedy for the plague after the disease has appeared; in other words, it is curative. As the plague is now an actual menace to Europe and America, it is incumbent, Dr. Calmette thinks, upon every country to arm itself, as France has done, by providing antipest serum for prompt use by all physicians, in order to arrest in the first case a nascent epidemic.

Pneumonomycosis Aspergillina.—This rare affection has recently been described by Pearson and Ravenel (*University Medical Magazine*, 1900), their case being the first instance of its observance in a mammal in the United States. It occurred in a Jersey cow. The disease is a form of parasitism by the mold mycosis, known as the *Aspergillus fumigatus*. It has been observed in Europe not only in birds and mammals, but also in man, and has been experimentally produced. Among men it has been especially observed in the pigeon-feeders and hair-sorters of Paris. The men who perform the operation of "gavage" in pigeons take into their mouths a mixture of millet and vetch-seeds in water and force this mixture into the throats of the birds. The hair-sorters use rye flour to absorb the grease of the hair, in order to enable them to disentangle the knots. The air becomes contaminated, and animals kept in it die. By these two occupations the workmen may become infected with this fungus, which is very widely disseminated in nature.

The disease was first observed by Mayer, in 1815, in a jay. Rivolta, in 1857, reported the first case of mycotic infection in one of the lower animals—a horse, which had a tumor of the pharynx in which mold mycelium was discovered. In 1842, however, Hughes Bennett had found a fungus in the sputum of a phthisical patient; but Sluyter, in 1847, was the first to clearly demonstrate the aspergillus as the fungus in a case of pneumonomycosis in man. Since that time some important contributions, notably by Renon, of France, and Saxer, of Jena, have appeared, but the disease is still an uncommon one in man and practically unknown to most physicians.

In Pearson and Ravenel's case, in a Jersey cow, the animal had been failing for six months, with progressive emaciation and a bad cough. As tuberculosis was suspected, the patient was given tuberculin, but gave no reaction. She was removed to the Veterinary Hospital of the University of Pennsylvania, but did not respond to treatment, and died, with marked symptoms of pulmonary involvement, a few days after admission. The authors present a very elaborate and well-illustrated report of the pathological findings, in a paper which is evidently a most valuable contribution to the literature of this rare disease. The mycelium was found in numerous dark-red nodules, scattered through the lung, the surrounding lung-tissue being normal in color and appearance. The fruit-heads of the fungus, with myriads of spores, were easily demonstrable. The diagnosis was thus readily made, and it was afterwards confirmed by cultures. A new growth was promptly obtained by transferring a portion of the mold to a suitable medium. Its characteristics are described in full by the authors. The aspergillus makes no toxin, and its pathogenic action is simply that of a trauma. The foci readily multiply. The authors conclude that their case was one of primary, not secondary, aspergillosis, from the

fact that the aspergillar nodules were by far the most extensive lesions, only a few tuberculous nodules being found, these being confined to a portion of one lung.

The S. P. C. A. and the Rockaway Hackmen.—We quote from the *New York Sun* of September 25:

When the season is ended the hackmen of Far Rockaway make it a practice to meet at some nearby place and have a race in which all of the horses they own are entered for a cash prize raised from entry fees. These prizes in nearly every case exceed the market value of all the horses entered. The race this year was planned to be held at Woodmere, but the residents there, who knew from past experience the nature of the event, organized a movement to arrest the whole crowd of hackmen. The hackmen learned of this move, and went to "Bill" Smith's place, on the Merrick road, between Valley Stream and Rosedale.

The races were held on the open road, and the wretched animals were beaten and lashed into the semblance of a gallop which for some was the last. One of the horses fell dead in the race, while another fell dead a few moments after. Two years ago the race was held on one of the main streets of Far Rockaway, and when it was over three dead horses were left lying where they fell.

There are about forty hackmen who do business in Far Rockaway during the summer season, and the majority of them drive animals that are scarcely fit for any service. Broken down, half-starved, lame and foundered animals are kept in harness twenty hours out of the twenty-four. When the season closes many of the horses are so worthless that no one will take them for a gift. So the hackmen turn them loose to die on the highway. Last year a herd of five cast-off horses was found wandering about on the verge of starvation and were taken off into a lot and shot. Throughout the summer many complaints have been lodged against the hackmen for cruelty to animals and in several instances arrests have been made. The S. P. C. A. has had its attention drawn to the state of affairs in Far Rockaway during the summer, but no officer was sent to that section. An effort was then made to raise \$300, the amount necessary to pay the salary of an officer for the four months of the summer season, but it failed.

We wonder if the devoted members of the S. P. C. A. will excuse the poor hackmen by saying that it is all the fault of the medical vivisectionists. But how will they manage to excuse the S. P. C. A.? *Quis custodiet ipsos custodes?*

Medical Sermonets No. 22. The Antinomy of Life's Valuation.—Students of speculative philosophy remember with peculiar pleasure Kant's treatment of antinomies or the proofs by irrefutable logic of two seemingly absolutely contradictory statements. Thus the theorem that the world began in time and that it had no beginning are equally provable or disprovable, although one must be false if the other is true. But Kant did not set forth one antinomy which is encountered every day in private practice by the physician. This pertains to the personal valuation of life. To some patients this life is of infinite value and the thought of it becomes a disease and a monomania, while with others a furious recklessness takes the place of the engrossing egotism. A physician may in the same hour pass from the house of the ludicrous hysteric who has been 20 years in bed nursing her imaginary ills, to the suicide whose life is saved only by outwitting his hundred tricks to kill himself. Between these two extremes there are innumerable degrees and variations of life-valuation, shading into each other by subtle differences which confuse us and seemingly contradict all our judgments and theories. But such antinomies are not the only ones. The most perplexing

and irritating are those we encounter irreconcilably clashing in a single patient. We find that we are sometimes confronted by an illogic love and contempt of life exhibited by one person. A physician in New York tried to get the consent of several patients to be examined, periodically and systematically whether healthy or ill, in order to detect the beginnings of disease and insure better prophylaxis, but he soon found that they cared nothing for their physical condition ten years from now; all they desired was to follow fashion or to gain the fortune and the success now, and to be tided over the present-day difficulty, however life might be shortened or crippled. Every oculist is daily angered by the utter indifference of women to future injury or ruin of the eyes, betrayed in the refusal to wear spectacles. Most English people would rather wreck health and eyesight than wear a glass—unless perhaps it were the fool's monocle. The awful vogue of the pain-deadening quacks and syndicates vividly illustrates how much both people and profession care for stopping symptoms and how little they are concerned about the etiology and the causes of disease.

As with all antinomies there must be some genuine harmonizing and solution either theoretic or practical or both, so here as to the valuation of life there must be a wise and correct estimate. The disregard of disease and life by the professional tramp, the criminal, the drunkard, the loafer, the suicide, the quack, and the nostrum-vender, cannot be right any more than the self-coddling of the hysterics and the nostrum swallows. It cannot be wise to sacrifice future health and longevity for the riot and the rout of luxury and the power of today's recklessness. The valuation of life must be made rational and consistent. Even the medical profession is in danger of erring as to an overvaluation of life in the case of monstrosities, idiots, and hopelessly diseased sufferers, or as to an undervaluation in the rage for rapid operation, in some past vivisection experiments, etc., while a contradictory estimate is practically illustrated in our oft exemplified intemperance as to cocaine, morphin, alcohol, banquets, hospital abuse, college politics, etc. To increase the total of healthy and moral life of the world is probably the simplest and best law of conduct. Even the purest self-sacrificing love may be useless and irrational, and the most splendid science may be cruel and immoral. It is not impossible to blend the two in a consistent and dignified life motivated by philanthropy and governed and directed by a reason that is erudite and scientific. An intellectualized love, a scientific religion, a gracious reason, a preventive medicine—these are not meaningless terms incapable of practical realization. The ideal physician is he who best realizes them in daily work and who best teaches his patients the proper valuation of their lives.

Operative Treatment of Mastoid Inflammation.—Bradford (*Transactions International Otological Congress*, August, 1899) speaks of the great increase in the number of operations for the relief of mastoid inflammation, and he thought it augured well; also of the fact that the operations are now done by the otologist and not by the general surgeon. He considers there are but 2 signs which indicate operation: local tenderness over the region of the mastoid antrum (not over the tip of the mastoid process); a sagging of the upper and posterior wall of the external auditory meatus, close to the membrana tympani. The author says when intracranial complications exist, operative treatment offers the only means of relief, and in his experience this is usually attended with good results. He operated on 13 cases of thrombosis of the lateral sinus, with 2 deaths; and 14 cases of epidural abscess, all of which recovered. He discussed at some length the technic of the operation and the preparation of the patient for operation. [A.B.C.]

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Calendar of Meetings of Philadelphia Medical Societies for the week ended October 6, 1900:

Wednesday, October 3—College of Physicians.

Tuesday, October 2—College of Physicians, Section on Otology.

Thursday, October 4—Obstetrical Society.

Pennsylvania Hospital.—A new entrance building is being constructed at a cost of \$60,000.

Bee Sting Causes Death.—Blood-poisoning followed the sting of a bee and caused the death of a man in Paterson, N. J., recently.

Impure Water Caused Typhoid.—Typhoid fever is prevalent in Pottstown. The local Board of Health has made an investigation, and traced the malady to the impure well-water.

Poisoned by Jimson Weed.—William Noll, an 8-years-old boy of Philadelphia, has been poisoned, and it is reported may lose his reason, because he ate the pods of the jimson weed.

Public Baths to Close.—The 9 public bathhouses, which were opened early in June, have closed for the season. The attendance during the summer has far eclipsed that of any previous season since the institutions were established.

Conjunctivitis Caused by Baths.—New York has had a visitation of this disease and now it is epidemic in Philadelphia. Physicians believe the public baths are to blame for the disease, or the towels that are used at these baths.

Death from Circumcision.—An infant in Philadelphia recently died from hemorrhage following circumcision by a rabbi. A physician was called after unsuccessful efforts had been made for 2 hours to control the hemorrhage. The child died 5 hours after the physician was called to see the case.

A Victim of Brass Poisoning.—A patient died at the Williamsport hospital recently from brass poisoning. It is reported that his system had been so impregnated with the poison that his teeth had become oxidized, and the perspiration as it oozed from his pores was greenish in color. He was an expert metalworker.

An Aged Man Undergoes Operation.—Recently a man in his ninety-fifth year was operated upon for strangulated hernia by Dr. De Forest Willard, assisted by Dr. Ludington, at the Presbyterian Hospital. The man made a speedy recovery; has been perfectly well since; does not wear a truss, and is now 96 years of age.

Pollution of the Navesink.—The residents of Red Bank, N. J., have complained to the New Jersey Sewerage Commission that the Navesink River is polluted by sewage. It is said that oysters taken from the river are unfit to eat. The property-owners are in favor of building a sewage-disposal plant if the town commissioners will aid them by an appropriation.

Vessels Held at Quarantine.—The Italian barks *Gregoria*, from Genoa, and *Nuova Eleanor Madse*, from Marseilles, have been detained at the State Quarantine Station, pending the examination of a lot of cotton waste and bagging which the vessels bring as cargo. The ravages of the plague in Mediterranean ports have made the quarantine officials careful of what they admit to this port.

Seashore House in Debt.—The Children's Seashore House in Atlantic City closed last week, when 60 mothers and children left the institution, the last of more than 1,800 cared for during the summer. No room could be found for 375 applicants during the 3½ months the institution was open, and lack of funds made a longer season impracticable. There is even now a deficit of nearly \$1,000 to be provided for.

Bequests to Charity.—By the will of the late John P. Murta, of Philadelphia, his nephew and niece are devised \$2,500 each in trust, with reversion of the principal, upon their deaths, in the Society of St. Joseph for Educating and Maintaining Poor Orphans and the Little Sisters of the Poor, respectively. The residue of the estate is devised to Archbishop Ryan for the Catholic Protectory for Boys, situate at Fatland, Montgomery County.

Charitable Bequests.—The will of the late Dr. Jacob M. DaCosta, of Philadelphia, contains bequests of \$5,000 each to the Pennsylvania Hospital, the Children's Hospital in Philadelphia, the College of Physicians, and the University of Pennsylvania, and \$1,000 to the Sunday Breakfast Association of this city. Dr. DaCosta devised his medical museum to the Jefferson Medical College and his medical library to the College of Physicians.

Adulterators of Food Held.—The heads of the firm of Burns, Metzger & Co., charged with having sold adulterated spices, have been held in \$1,000 each for a further hearing. Under analysis starch and small bits of wood were found in black pepper, manufactured by the firm, while the white pepper was found to contain a substance resembling ground olive seeds. Cinnamon was adulterated with starch, ground bread crusts and the bulbs of olive seeds.

A free scholarship in the Philadelphia College of Pharmacy has just been established whereby meritorious students may, after successfully passing a competitive examination, and producing satisfactory evidence of ability before the committee of the college, become entitled to free tickets to all the lectures. The scholarship thus established embraces all the branches taught in the college, and has been created through the desire of Mr. Henry G. Keasby and Dr. Richard V. Mattison, both of whom are graduates of the college. All persons desiring to avail themselves of the privileges of the scholarship should address the Dean of the Faculty, Prof. Joseph P. Remington, at once.

The Company Doctor.—There is one feature in the present struggle of labor against capital which is seldom mentioned and which, if the truth is reported by the lay papers, is nothing more or less than robbery. It is that of the company doctor. Every married miner is charged 75 cents per month, while the single man escapes with 50 cents. Taking the Markle operations as a basis, and averaging the 2,400 employes at 50 cents each, the company gets \$1,200 monthly, but the physician does not receive this amount. At Jeddo there are 3 physicians. The chief of this staff receives about \$200 per month, while the others receive but \$50 per month. This leaves \$900 that monthly reverts to the company.

Mining Fatalities.—James T. Roderick, chief of the mining department, is about to issue his annual report, which will contain some very interesting data. The ever-increasing number of lives lost in the mines will attract attention. Mr. Roderick's figures show that during the decade from 1870 to 1880 the deaths averaged 215 annually, between 1880 and 1890 the number was 311 annually, between 1890 and 1900 the average per annum was 439. The report attributes this increase of loss of life to two causes, viz.: First, the greater depth of the mines; and, second, the large percentage of non-English speaking, unskilled and unintelligent men employed in the mines in more recent years. Mr. Roderick apprehends that no improvement will be experienced during the next ten years.—[*Wilkesbarre Record*.]

Dr. Alfred Stillé, who for nearly 20 years was professor of theory and practice of medicine at the University of Pennsylvania, died at his home in Philadelphia September 24, aged 87. Dr. Stillé was graduated from the University of Pennsylvania in 1832 and as doctor of medicine in 1836. Between this date and 1839 he pursued his medical studies in Paris and in other European capitals. From 1844 to 1850 he lectured on pathology and the practice of medicine to the Philadelphia Association for Medical Instruction. In 1849 he was appointed physician to St. Joseph's Hospital, and in 1854 was elected professor of theory and practice of medicine in the Pennsylvania Medical College and filled that chair until 1859, when he was chosen to occupy a similar chair in the University of

Pennsylvania. This position he held until 1884, when he became professor emeritus. He was president of the American Medical Association in 1867, of the Philadelphia College Medical Association in 1862 and of the College of Physicians of Philadelphia in 1885. From 1865 to 1871 he was physician and lecturer on clinical medicine in the Philadelphia Hospital. The honorary degree of doctor of laws was conferred upon him by the Pennsylvania College, at Gettysburg, in 1876. He was the author of numerous medical and scientific publications.

Vital Statistics of Philadelphia for the week ended September 22, 1900:

Disease.	Cases.	Deaths.
Total mortality		356
Inflammation of appendix 5, bladder 2, brain 8, bronchi 4, kidneys 14, liver 1, lungs 16, heart 2, peritoneum 4, stomach and bowels 17		73
Lungs—tuberculosis of 39, hemorrhage of 1, edema of 1		41
Heart-disease of 33, fatty degeneration of 1, neuralgia of 4		38
Debility 2, marasmus 16, inanition 18		36
Cholera infantum		21
Apoplexy 9, paralysis 8		17
Carcinoma of bowels 1, liver 3, rectum 1, stomach 4, uterus 3, lymphadenoma 1, brain tumor 2, abdominal tumor 1		16
Diphtheria	101	15
Convulsions		12
Casualties		9
Cirrhosis of liver		9
Whooping-cough		6
Typhoid fever	41	5
Septicemia		4
Old age		4
Drowned		4
Suicide—carbolic acid 1, hanging 1		2
Scarlet fever	12	2
Pelvic abscess, alcoholism 1, asthma 1, anemia 1, aneurysm of aorta 2, burns and scalds 1, cholera 1, diarrhea 1, hip disease 1, dropsy of chest 1, puerperal fever 1, remittent fever 2, hemorrhage of stomach 1, hernia 1, obstruction of bowels 1, rheumatism 1, suffocation 1, sunstroke 2, teething 1, ulceration of stomach 1, gunshot wounds 1		

NEW YORK.

Bequests to Charity.—By the will of the late Mary Ann Turner, of Brooklyn, the St. Christopher's Home for Children will receive \$2,000 and the Seney Hospital \$500.

City Physician Suspended.—Dr. McDonald, of the Metropolitan Hospital on Blackwell's Island, has been suspended for 30 days for having turned away a tuberculous individual in a dying condition.

State Hospital for the Tuberculous.—The special commission appointed by Governor Roosevelt has selected Lake Clear as the place to erect the State Hospital for tuberculous individuals, subject to the approval of the Forest Preserve Board and the State Board of Health. It is one of the most salubrious places in the Adirondacks.

Wants \$10,000 Damages.—A suit for \$10,000 damages has been instituted by Dr. Elias P. Iliff against Dr. C. C. Carroll, both of New York. Dr. Iliff claims that his attitude toward tuberculosis has been misrepresented by Dr. Carroll and his usefulness as a physician impaired by his remarks. He has always taught that tuberculosis is neither infectious nor transmissible.

Zeta Phi Antedated.—A letter from one of our correspondents states that the Beta Phi Fraternity of Syracuse University is not the first and only woman's medical fraternity in this country, that at least three of like import antedate it, namely one at the University of Buffalo, one at the University of Michigan, and another at the Northwestern University Medical School.

The "man with the iron mask" has just died in Bellevue Hospital of Bright's disease. He lost his nose while a child, and the hospital physicians made him another from one of his own fingers, after a remarkable operation. The result was passable, but he developed a great aversion to

having people see his features, and took every possible means of concealing them. It was this that gave him the title of "the man with the iron mask."

Victim of Patent Bitters.—A New York undertaker appeared at police headquarters in Denver, Col., recently, attired in overalls, his hands calloused from hard work, and asked to have his wife communicated with and told of his condition. He said he remembered nothing since July 4, which he spent in New York, until he suddenly realized that he was in a strange city. He attributes his mental lapse to excessive use of patent bitters prescribed by a physician as a tonic.

A Protest Against Old Paper Money.—A protest has come from Brooklyn to the New York Board of Health against the reissue and use of old bank notes and Government paper money. The statement has been made that the banks and general Government are reissuing bank notes which have been passed from hand to hand until they are in a filthy condition and are the means of conveying contagious diseases from one to another. The matter has been taken up by Secretary of Treasurer Gage.

Dr. Lewis A. Sayre, who has been called "the father of orthopedic surgery," died at his home in New York, September 21, aged 80. He was born in Bottle Hill, N. J., was graduated from the University of Pennsylvania in 1839 and from the College of Physicians and Surgeons, New York City, in 1842. Dr. Sayre was professor to the professor of surgery in the College of Physicians and Surgeons and professor emeritus to the same institution when he died. He was one of the founders of the Bellevue Medical College and of a number of medical societies. In 1871 he went to Europe, where he was chosen an honorary member of many medical societies in England, Russia, and Sweden. He has written several standard medical works.

NEW ENGLAND.

The Connecticut Children's Aid Society, of Hartford, received \$5,000 by the will of the late Elisha Turner, of Torrington.

Charity Receives \$50,000.—By the death of the widow of Judge Gafney, of Rochester, N. H., \$50,000 has been left in care of trustees to be used for any public, charitable, or benevolent purpose in the State of New Hampshire that they may think best.

Another Broken Neck.—Holbrook Mann, who met with an accident while diving August 7, and who was operated upon in Portland (Me.) Hospital, has been removed to his home. Two vertebrae were found crushed and pressing on the spinal cord. The fragments were removed. The case is similar to that of Walter Duryea.

Hartford Retreat for the Insane.—Dr. Gurdon W. Russell, of Hartford, who has been connected with the Retreat for the Insane in that city for nearly half a century, has presented to the Retreat his Maplewood Lodge on Cedar Mountain with 9 acres of land. The place will be used as a summer home for the inmates of the institution. Dr. Russell also gave \$500 to be used in fitting the house for its new purpose.

New Hampshire Surgical Club.—The annual meeting of the New Hampshire Surgical Club was held at the Farragut House, Rye Beach, September 6, 1900. Two very interesting and able papers were read by Professor J. M. Gile, of Hanover, and Dr. J. C. Irish, of Lowell, Mass., who was present by invitation, on **The surgery of the gall-bladder and bile-ducts**. The presidential address was given by Dr. George D. Towne, of Manchester. Dr. Ira J. Prouty, of Keene, was elected President.

Board of Health and City Physician.—A new Board of Health will be appointed in Springfield, Mass., one member of which will be a physician. The duties of the body are to be broader than those of the present board. The duties of the city physician have been considered, and in addition to the present work will include the examination of applicants for the fire department, the attendance on prisoners or members of the police force, and the examination of persons bringing suit against the city for sustaining physical injuries.

CHICAGO AND WESTERN STATES.

The new hospital which is being erected at Washburn, Wis., will be ready for occupancy, October 1.

St. Luke's Hospital.—The corner-stone for the addition to St. Luke's Hospital, San Francisco, was recently laid.

Diphtheria Claimed 7 Children.—Within a year 7 children of one family in Wenasha, Wis., have died of diphtheria.

Dr. Hensley Acquitted.—Dr. E. T. Hensley, of Okmulgee, I. T., who has been on trial there in the U. S. Court for murder, has been acquitted.

Mount Sinai Hospital.—A hospital in Chicago bearing this name has been incorporated by Drs. Rudolph Menn, George M. Silverberg, and Adolphus E. Berting.

The Denver Health Department has discharged its milk inspector and meat inspector, and closed the Steele Hospital for Infectious Diseases, for lack of funds.

Leaps From Window.—A patient in the City and County Hospital, San Francisco, recently jumped from the window of his ward in that institution, and was killed.

Beatrice Institute for Feeble-Minded.—Dr. B. F. Lang, superintendent of the Institute for Feeble-Minded in Beatrice, Nebraska, has been removed and Dr. Dearing has been appointed in his place.

Extracted the Wrong Tooth.—A suit to recover \$1,000 damages has been instituted by a woman of Portland, Oregon, against a dentist of that city because he extracted a sound tooth in place of a decayed one.

Hospital Corner-Stone Laid.—The 5 corner-stones of the new building to be added to the Deaconess' Hospital, at Bloomington, Ill., were laid recently with appropriate ceremonies. The new building will cost \$20,000.

Asylum Contract Inquiry.—The plumbing contract for the new buildings at the State Asylum for Feeble-Minded Children at Lincoln, Ill., is being investigated by the grand jury. The contract involved the expenditure of \$54,000 of State funds. The new buildings when complete will cost \$200,000.

Veterans' Home.—Walter Houston, an old soldier, who died recently in Utica, Wis., bequeathed \$12,000 to the Veterans' Home at Waupaca, Wis. Mr. Houston visited the Home some time ago disguised as a tramp soldier, and he was so kindly treated that he determined to remember the institution when he died.

Deformed and Crippled Beggars to be Removed. A medical society in Cleveland has started a movement for removing offensively deformed and crippled beggars from the street. The number has greatly increased in recent years and the doctors believe that the public display of deformity is injurious to the community.

For Sick Soldiers.—Winfield Scott Garrison Regular Army and Navy Union, Cheyenne, Wyoming, has passed resolutions and placed the matter before the senators and congressman of the State, looking toward the relief of any soldier or sailor of the army and navy, honorably discharged, who may be so unfortunate as to become ill without friends or means to prevent such a one from becoming a public charge.

Five Boys at One Birth.—A remarkable birth is reported from Mary's Home, near Jefferson City, Mo., where Mrs. Henry Smith gave birth to 5 baby boys at one time. They are reported to be well and weigh a total of 30 pounds. Smith has been married less than 7 years and is the father of 16 children. Only one time has there been born a single baby. The others are 2 pair of twins, 2 pair of triplets and the quintette.

Glanders Among Cavalry Horses.—Glanders has again broken out among the horses at the Presidio in San Francisco and 17 of the diseased animals were shot. Some

weeks ago the disease attacked the horses of the Ninth Cavalry, and to prevent its spread 150 fine animals were shot and their bodies buried. Several animals, however, were held for observation, and recently the suspicious cases were submitted to a final test, with the above results.

Blow to the Pure Food Law.—The new pure food law was given a death blow recently when Judge Smith, of Chicago, ruled that no conviction can be made unless it is shown that the storekeeper had guilty knowledge of the selling of impure food. Representatives of the State Pure Food Commission expressed their disappointment at the result of their efforts to enforce the law, and they admit that punishment can be meted out in but few cases, because it is almost impossible to show a guilty knowledge on the part of the storekeeper.

A Doctor's Carrier Pigeons.—The success of an experiment in the use of carrier pigeons to carry messages from a sick-room to the doctor's house, is announced by a daily paper. Dr. H. G. Leisenring, of Wayne, Neb., has been the experimenter. He has trained 20 carrier pigeons, and when he makes his round of professional visits he leaves one bird at each house where his services may be required in an emergency. When the doctor is needed one of the pigeons is released, and carrying the message tied to its leg flies at once to the doctor's house.

State Health Board Superior to Local Boards.—After an unpleasant contest between the State and City Board of Health of Denver, which threatened to culminate in spirited litigation over the question as to whether the State Board had authority to demand from the City Board reports of all contagious diseases, the latter announced that the State Board was vested with such a prerogative by law. The reports which have been withheld since June 7 will therefore be sent in to the State Board with due regularity hereafter. In view of the fact that the statute vests the State Board with authority to suppress contagious diseases by quarantine, and in view of the fact that the district attorney had threatened a suit for a penalty under the statute, it was deemed wise to acknowledge the supreme authority of the State officials.—[*Colorado Medical Journal*.]

The Physicians' Business Association, recently organized in Detroit, would be more appropriately called the Detroit Physicians' and Surgeons' Union No. 1, the *Tribune* of that city says. In intent it is a union, its chief object concerning wages. "If an employer refuses to pay his doctor, or insists on compensating him with wages below the union scale," the *Tribune* explains, "the doctor will strike, just as the miners have struck—that is, he will refuse to treat him any more. All other union doctors must likewise strike, and refuse treatment to the employer who refuses honest pay for honest service." At the first meeting of the association there was violent talk on a proposition to boycott doctors who should refuse to join the association. A section of the constitution offered for approval went so far as to provide that association members should refuse to recognize as physicians, either personally or professionally, such boycotted doctors. There was at first some objection to so radical a measure, but the vote showed that the sentiment favored it in overwhelming measure.

A Study of Suicide.—Public attention has been called of late to the increasing number of suicides in Chicago, but if the mean annual rate shows a tendency to advance it is merely obeying a rule which appears to be common to most civilized countries. Tables of statistics indicate only one exception to this rule. In Norway the annual rate per 1,000,000 of the population has decreased steadily from periods beginning with 1831-35 and ending with 1881-90. The range is from 108 in the first period to 67 in the last. The decrease coincides with the decrease in the consumption of alcohol. But elsewhere this mania is increasing to an alarming extent. In France the rate per 1,000,000 per annum went from 98 in the period 1841-60 to 212 in the period 1885-88, and it was almost steadily progressive. Saxony, the most suicidal of all countries, went from 223 in the first period to 333 in the last. Italy and Ireland, have the lowest rates, but this is explained in great measure by a large emigration. In general the increase of the rates of suicide is attributed to conditions which are the result of modern progress.

Patent Medicine Prices and the Importation of Opium.—At the Chicago Convention recently, the Proprietary Association of America united with the Wholesale Druggists' Association, the National Retail Druggists' Association, and the American Pharmaceutical Association in a close agreement to uphold the retail prices of proprietary medicines and drugs. As a result of this action all proprietary medicines will be put upon the market at the prices listed, and not at a reduction of from 20 to 40%, as department stores and distributing concerns are in the habit of doing. The Committee on Adulterations made a report which caused something of a stir. Instances of adulteration were given as follows: Some olive oil, branded with imported labels, is cottonseed extract manufactured in Eastern cities; Lehigh coal dust is palmed off as powdered antimony; soda is substituted in borax; essential oils in a pure state are almost unknown to the market, and practically cannot be obtained. It was the unanimous sentiment that proper labels, as well as purity, should be insisted upon, and that the Brosius pure food and drug bill, introduced into Congress last session, should be passed. Importation of opium into the United States free of duty was advocated by the National Wholesale Druggists' Association. The plan to abolish the duty on the drug was urged as a means to make its use more available and save the druggists \$300,000 a year now paid to the Government. Opium was declared to be discriminated against by the Government in a false belief that a heavy duty on the drug discourages the opium habit.

SOUTHERN STATES.

Sale of Tobacco Prohibited.—The State Legislature of Louisiana has passed an act forbidding the sale of tobacco, cigars, etc., to minors, which law is now in force.

Somnambulist's Neck Broken.—John Muelhausen, of New Orleans, recently walked in his sleep from the roof of his house, and fell 40 feet to the pavement. His neck was broken by the fall.

Southern Surgical and Gynecological Association.—The meeting of this association will be held in Atlanta, November 13, 14, and 15, under the presidency of Dr. A. M. Cartledge, of Louisville.

Texas Favors a Board of Health.—At a representative political meeting recently held in Texas a resolution was passed favoring the establishment of a Board of Health instead of the present system of one health officer.

Victim of Christian Science.—The Coroner's jury recently investigated the death of a boy at New Berne, N. C., and rendered a verdict that he died of improper treatment and neglect. The boy was not allowed any medical attention, but was left in the hands of a Christian Science "healer."

The Medical College and Quarantine Station at Galveston.—Arrangements have been perfected for the immediate repairing and refurnishing of the Medical College at Galveston. The session will be opened November 15 with the same faculty. The State will rebuild at once on its old site, and in the strongest manner possible the quarantine station at Galveston.

Richmond (Va.) News.—The new annex now being built to the Virginia Hospital, will bear a tablet inscribed in the honor of Hunter McGuire and will be known as "The Hunter McGuire Annex."

Dr. Stuart McGuire has assumed full control of St. Luke's Hospital, so long and well conducted by his father.

Virginius Harrison, A.M., M.D., has been elected to the chair of Materia Medica and Therapeutics in the University College of Medicine.

Georgia Pasteur Institute and Laboratory.—The charter members of the Georgia Pasteur Institute and Laboratory met in Atlanta September 21 and elected the following officers: President, Dr. Henry R. Slack, LaGrange; vice-president, Dr. J. H. McDuffie, Columbus; secretary, Dr. Claude A. Smith, Atlanta; treasurer, Dr. C. D. Hunt, Atlanta. This institute has the endorsement of the Medical Association of Georgia. In addition to using Pasteur treat-

ment for prevention of hydrophobia they propose to establish one of the best equipped pathologic and bacteriologic laboratories in the South, and hope to be open by November 1.

The Tri-State Medical Society of Alabama, Georgia, and Tennessee will hold its twelfth annual meeting in Chattanooga, Tenn., October 11, 12, and 13, during the reunion of the Army of the Cumberland and the Spanish-American War Veterans. One fare for the round trip has been granted by the Southeastern Passenger Association and will be given, doubtless, by the other passenger associations which will act on the matter shortly.

Embalmers must Qualify.—The Louisiana State Board of Health has recently issued public notices to the effect that on and after September 1, 1900, those wishing to practise embalming in the State of Louisiana must pass a satisfactory examination before a commission appointed by the Board. Those, however, who have actively practised embalming for 5 or more years previous to above date are exempt from examination, and may register if recommended by 2 reputable physicians. D. W. G. Owen and Dr. Arthur Nolte were recently reappointed members of the State Board of Health.

Diseased Cattle Seized.—The Maryland State Board of Health has been engaged for several weeks in a study of the quality of animals and meat at Claremont Stockyards and Abattoir. Recently 3 animals with actinomycosis were seized by the Board. Two of them were in a weak and emaciated condition. It is of great importance that the citizens should be protected by systematic daily inspection of stockyards and slaughterhouses. The board has but one inspector, and his duties are so many and various that he can devote but little time to this particular work. The examinations should begin with the live cattle. This would eliminate the animals which are obviously unfit for food. But those about which there may be some doubt must be inspected after death.

Sanitary Conditions at Galveston.—The Board of Health and the leading physicians state that no disease of an infectious character has yet made its appearance at Galveston, and none was expected under the vigorous measures of sanitation in vogue. The sanitary condition of the city is daily improving, except in the vicinity of the mass of debris cast up against the southern part of the city. The Health Board is positive in declaring that not more than the usual amount of sickness will follow the awful calamity. Dr. Wertenbaker has asked to be relieved of further duty, as the Board of Health had the situation well in hand and there was no further use for the Marine-Hospital's services. The work of distributing relief to the destitute, while daily getting upon a more systematic basis, is exasperatingly slow to the thousands of applicants of all ages, color, and condition, that stand in long lines at each substation for hours before their time comes to get their daily supply.

For the Sick and Injured at Galveston.—The Marine-Hospital Service, which is working in conjunction with the Board of Health at Galveston, has established a hospital on the beach. There the sick and wounded, now sheltered in unsanitary places throughout the city, will be taken for treatment, whether they wish to go or not. This hospital will be under the direction of physicians of the Marine-Hospital Service, who will be assisted by a corps of trained nurses. The hospital will consist of 300 comfortable tents, and will be thoroughly equipped in every respect for the treatment and comfort of the patients. The revenue cutter *Winona* has arrived and has been placed at the disposal of the Board of Health for the removal of the sick and wounded who are able to leave the city for interior points. Sickness of the malarial type is becoming quite prevalent among the sufferers, and considerable apprehension is felt that it may assume a more serious form.

Orleans Parish Medical Society.—At the meeting of September 8 there was a general discussion on new drugs to be introduced into the United States Pharmacopeia of 1900. A list was formulated to be forwarded to the Pharmacopeia Committee, care being taken not to recommend any preparation of a strictly proprietary nature.

Dr. T. S. Dabney reported a **case of anthrax treated by injecting initial lesion with pure carbolic acid.** In this instance the lesion was situated on the lower lip; and after the sloughing resulting from injection, constitutional symptoms began to abate; with ultimate recovery. Dr. Dabney stated that he had for many years treated simple carbuncles by the same method, with almost constant success. Dr. Dupaquier and other members related failures from the same treatment of carbuncle. Dr. S. P. Delaup's case of ligation of innominate artery for double aneurysm—reported in brief before the society immediately after the first operation—died from asthenia and shock after secondary operation, having survived the first operation 21 days.

MISCELLANY.

Havana sewerage work will soon begin under the direction of the Michael J. Dady Company, Brooklyn contractors.

The American Public Health Association will meet at Indianapolis, October 22-26, instead of the first week of the month, as originally arranged.

Unlicensed Medical Practitioner Jailed.—Dr. Preuss, of Williams, Arizona, has been found guilty of practising without a license. He pleaded guilty, was fined \$100 and sentenced to 100 days imprisonment.

Opium Seized in Havana.—The customs official in Havana seized 1,400 kilos of opium, which was being smuggled into the city packed in tins labeled sausages. The opium, which is worth about \$20,000, was confiscated.

Peary's Relief Boat Lost.—The *Lily of the North*, which left Halifax last month with supplies for the Peary Arctic expedition, is lost. The loss is reported from Cape Breton, but nothing additional save that the crew were saved has reached here.

The "Relief" at Nagasaki.—The hospital ship *Relief* has arrived at Nagasaki, Japan, from Taku, with sick and wounded soldiers from China. They will be brought to the United States on the first regular transports from Manila touching at Nagasaki.

Duties of Acting Assistant-Surgeons.—An opinion has been rendered from the office of the Judge-Advocate-General of the Army to the effect that acting assistant-surgeons of the Army may be detailed to duty other than that strictly professional.

Hospital Report from China.—The following cable-gram has been received from Surgeon Perley, at Nagasaki, Japan: "Will send 41, including 3 officers, to the United States, 84 remaining; 141 sick in hospital at Pekin; 125 at Tien-Tsin; many of them mild."

Smallpox in Alaska.—The entire territory of Alaska has been declared to be smallpox infected, and all vessels coming to Port Townsend, Wash., from Alaska will be inspected. Heretofore vessels arriving from Cape Nome, St. Michael and Dutch Harbor have been under quarantine regulations.

Hospital-Ship at Wei Hai Wei.—A dispatch from the American hospital-ship *Maine*, dated Wei Hai Wei, announces the arrival there of 2 additional surgeons from America, thus completing the medical staff. The *Maine* will remain at Wei Hai Wei. Sick and wounded men are already arriving on board.

Dentist for Guam.—The Surgeon-General of the Navy has arranged to send to Guam a dentist to treat the teeth of the men at that naval station. There has been much complaint from sufferers at Guam, and the services of a dentist are greatly needed. The dentist was enlisted as a hospital steward at \$60 per month.

Obituary.—HENRY L. SMYSER, of York, Pa., September 16, aged 74. —JAMES WILLOUGHBY PHILLIPS, at Clifton Heights, New York. —ROBERT F. FORREST, of Watertown,

Mass.—HENRY C. WILSON, of Omaha, Neb., September 20, aged 36.—PRESTON B. SCOTT, of Louisville, Ky., September 24, aged 68.—WILLIAM MUNN, of New York, September 24, aged 51.—J. R. POWELL, of Windfall, Ind., September 20.—JAMES HART CURRY, of Shrub Oak, N. Y., aged 73.

Leper Settlement in Hawaii.—Lepers who live outside the 2 homes draw from the Government a fixed amount of money as a "clothes ration order" every 6 months, in addition to a weekly allowance in provisions. The Bishop Home and the Baldwin Home draw their supplies through the board as required. Many of the lepers have friends outside who provide incomes for them. There are 716 buildings of all classes, including 2 schoolhouses, 2 Protestant, 2 Catholic, and 2 Mormon churches, a courthouse and a jail.

Americans to be Exhumed.—Arrangements have been made for the free transportation to the United States of the bodies of the soldiers, sailors, and civilians who lost their lives and were buried in the Philippines and in China. A burial corps will take passage on the transport *Hancock*, scheduled to leave San Francisco October 1 for the Philippines. All the bodies recovered are to be given an honorable burial in the United States at places selected by the next of kin. In all cases where not otherwise ordered the interment will be made in the national cemeteries, with preference for the cemetery at the Presidio at San Francisco and the Arlington Cemetery, near Washington. The approximate number of bodies to be exhumed is 1,331.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended September 22, 1900:

SMALLPOX—UNITED STATES.			
		CASES.	DEATHS.
KANSAS:	Cherokee Co. . . . Aug. 1-31 . . .	Reported.	
"	Crawford Co. . . . Aug. 1-31 . . .	11	
"	Eureka Aug. 1-31 . . .	1	
"	Olathe Aug. 1-31 . . .	1	
"	Parsons Aug. 1-31 . . .	1	
"	Sumner Co. . . . Aug. 1-31 . . .	11	
LOUISIANA:	New Orleans . . . Sept. 8-15 . . .	3	1
MICHIGAN:	Houghton Sept. 8-15 . . .	5	
"	Torch Lake Sept. 8-15 . . .	2	
MASSACHUSETTS:	Fall River Sept. 8-15 . . .	1	
OHIO:	Cincinnati Sept. 7-14 . . .	1	
"	Cleveland Sept. 8-15 . . .	8	
"	Portsmouth Sept. 8-15 . . .	2	
UTAH:	Salt Lake City . . . Sept. 8-15 . . .	6	
SMALLPOX—FOREIGN.			
BRAZIL:	Pernambuco . . . Aug. 8-15 . . .	3	
CANADA:	Province of Quebec		
"	St. Alexandro . . . Sept. 4	3	
"	St. Sebastian . . . Sept. 4	2	
ENGLAND:	Liverpool Aug. 24-Sept. 1 .	6	3
"	London Aug. 24-Sept. 1 .	2	
FRANCE:	Paris Aug. 24-Sept. 1 .		2
"	Rouen July 1-31	1	
INDIA:	Bombay Aug. 14-21	1	
MEXICO:	City of Mexico . . . Aug. 31-Sept. 8 .		4
RUSSIA:	Moscow Aug. 18-25	6	2
"	St. Petersburg . . . Aug. 24-Sept. 1 .	21	8
"	Warsaw Aug. 18-25		6
SCOTLAND:	Glasgow Aug. 31-Sept. 7 .	30	
YELLOW FEVER—FOREIGN.			
COLOMBIA:	Panama Sept. 3-10	2	
CUBA:	Havana Sept. 1-8		12
"	Sagua Sept. 17	2	
MEXICO:	Vera Cruz Sept. 1-8		6
CHOLERA.			
INDIA:	Bombay Aug. 14-21		764
"	Karachi Aug. 12-19	22	8
"	Madras Aug. 4-17		86
JAPAN:	Osaka and Hiogo Aug. 11-18 . . .	1	
PLAGUE—FOREIGN.			
CHINA:	Amoy July 28-Aug. 4 .		100
"	Hongkong July 28-Aug. 4 .	51	50
INDIA:	Bombay Aug. 14-21		65
SCOTLAND:	Glasgow Aug. 31	11	1
"	" Sept. 4	12 (4 under suspicion.)	
"	Govan Sept. 4		1

Yellow Fever in Havana.—In 2 days 31 cases of yellow fever have been reported in Havana, making 100 now under treatment. Private advices from Havana indicate that the outbreak is quite serious and that the fever exists in the best parts of the city and among the Americans who have gone there. It is said at the War Department that no fears are entertained of a serious outbreak among the United States troops, as they are outside of the city and not in infected districts. The present outbreak was not unexpected, as fever usually develops about this time of year, and is even worse during the months of October and November than in the spring. Surgeon-General Sternberg does not think there need be any apprehension concerning the spread of the disease.

Havana had 49 deaths from yellow fever in August. Efforts have been made to deduce from this fact the conclusion that the sanitary effects of American rule do not amount to much after all. The chief sanitary officer of the city asserts that, while the fatalities from the fever have been more numerous this summer than they were in 1898 and 1899, it must be remembered that in the August of 1898 all immigration was stopped by the blockade, and that in 1899 it did not begin until the next month, when the danger of infection was small. Major Gorgas says that the real condition of the city is shown, not by the deaths from a disease that is confined mostly to strangers, but by the general rate of mortality per 1,000 inhabitants. Thus tested, the work of the American authorities is fully vindicated, for, while the rate this August was only 27.60, in the first 8 years of the decade it ranged from the lowest, 31.92 in 1893, to the highest, 100.56, in 1898. Yellow fever will probably maintain something of a foothold in Havana for several years to come. The sanitation of the city has only begun, and, while the influx of strangers remains as large as at present, the considerable percentage of non-immunes will have its inevitable effect on the fever record.

Changes in the Medical Corps of the U. S. Army for the week ended September 22, 1900:

MANSFIELD, ELMER E., acting assistant surgeon, will proceed to Fort Bliss, to accompany Company A, Twenty-fifth Infantry, to the division of the Philippines.

BRUHL, CHARLES E., acting assistant surgeon, is relieved from duty at Cabana Barracks, Cuba, and will proceed to No. 21 Fifth Street, Vedado, Havana, Cuba, reporting to the commanding officer, headquarters Second Artillery, for temporary duty, relieving Acting Assistant Surgeon George R. Plummer.

PLUMMER, GEORGE R., will report to the chief sanitary officer, city of Havana, for sanitary duty.

MUNSON, Captain E. L., assistant surgeon, is, on surgeon's certificate, granted leave for one month.

RICHARDS, J. W., acting assistant surgeon, is granted leave for 20 days from about September 18.

GREAR, W. B., acting assistant surgeon, is granted leave for 20 days from about October 1.

DUNSHIE, JOHN F., acting assistant surgeon, will proceed from Fort Leavenworth to his home in New Orleans, La., and report by letter to the Surgeon-General of the Army for annulment of his contract.

WESTERDAHL, GUS J., hospital steward (reappointed September 14), now at Fort Columbus, will be sent to Manila, P. I., for assignment to duty in the division of the Philippines.

The following-named officers of the medical department are detailed as members of the board of officers appointed July 25 to meet in New York City, October 1, for the examination of lieutenants of the line of the Army with a view to selection for transfer to ordnance department: Major HENRY S. KILBOURNE, surgeon; Captain WM. D. CROSBY, assistant surgeon.

NEWLOVE, GEORGE, acting assistant surgeon, orders of September 11 are revoked, and he will proceed from Fort Leavenworth to Fort Sill for temporary duty during the absence of First Lieutenant Marshall M. Cloud, assistant surgeon.

CHAMBERLAIN, GEORGE E., acting assistant surgeon, will proceed from South Newbury, Vt., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for the Philippine Islands.

NICHOLSON, JOHN L., acting assistant surgeon, will proceed from Dorchester, Mass., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for the Philippine Islands.

Changes in the Medical Corps of the U. S. Navy for the week ended September 22, 1900:

HIBBETT, C. T., surgeon, detached from the Cavite Naval Station and ordered to the "Newark."

NORTON, O. D., surgeon, detached from duty with the marine regiment in China and ordered to the "Monadnock."

BENTON, F. L., assistant surgeon, detached from the naval hospital at Cavite, P. I., and ordered to the "Brooklyn."

HAWKE, J. A., medical director, detached from the New York Navy Yard, October 1, and ordered to the naval hospital, Mare Island, Cal.

BRADLEY, G. P., medical inspector, detached from the naval hospital, Mare Island, Cal., on reporting of relief and ordered home and to await orders.

COSTIGAN, G. D., passed assistant surgeon, detached from the "Newark" and ordered to the "Yorktown." (Orders issued by commander-in-chief of Asiatic Station.)

DAVIS, E., assistant surgeon, detached from the "Yorktown" and ordered to the Cavite Naval Station.

Changes in the U. S. Marine-Hospital Service for the week ended September 20, 1900:

CARTER, H. R., surgeon, is upon expiration of leave of absence directed to proceed to Louisville, Ky., and assume command of service.

WERTENBAKER, C. P., passed assistant surgeon, is directed to rejoin station at New Orleans, La.

GWYN, M. K., assistant surgeon, upon being relieved by Surgeon H. R. Carter, to report to him for duty and assignment to quarters.

McKAY, MALCOLM, hospital steward, is directed to report to medical officer in command at Wilmington, N. C., for duty and assignment to quarters.

PECK, F. H., hospital steward, to proceed immediately to Galveston, Tex., and report to Surgeon Peckham for special temporary duty.

Foreign News and Notes.

GREAT BRITAIN.

Plague at Glasgow.—Another death from bubonic plague has been reported in Glasgow, making a total of 7 deaths since the outbreak. Only 40 persons are now under observation.

Insurance for bathers is the newest enterprise in the insurance line in England. Penny-in-the-slot machines will be erected in popular bathing places. Before you enter the water you drop in your copper, and out pops a 24 hours' life insurance policy. Then if you do not return your widow or next of kin is entitled to \$1,000.

A sanatorium for tuberculous individuals has been established at Dundee. A gift of \$10,000 by Ex-Provost Moncur largely met the financial responsibility in regard to the building and an anonymous donation of £500 for 5 years was made for its maintenance. The ground for the building was the gift of the late Earl of Airlie. The site is 800 feet above sea level, and comprises 21 acres of ground. Later Ex-Provost Moncur added £5,000 to his original gift.

No Hydrophobia in England.—According to the *Medical News*, the State Department has received from Lord Pauncefoot, the British Ambassador, a memorandum as to the importation of dogs into Great Britain. By enforcing the strictest regulation in regard to muzzling and the importation of dogs the disease of rabies in dogs and hydrophobia in man has been practically stamped out in England. Under the present ruling of the Board of Agriculture licenses must be obtained for the landing of dogs in Great Britain, and a penalty of £20 and the possible seizure of the dog is enforced when a license is not obtained. Masters of vessels are liable to prosecution if dogs are landed illegally, and cannot accept dogs for shipment to Great Britain unless the license is shown at the port of embarkation. Imported dogs are isolated for from 4 to 6 months and are moved about only upon license from the board. When taken out for exercise they must be properly muzzled and in charge of competent persons.

CONTINENTAL EUROPE.

University of Heidelberg.—Professor Carl Gegenbauer, the distinguished professor of anatomy, has resigned his chair on the ground of his advanced age.

Model of Heart.—A German physician has succeeded in making a model of the human heart, which works as in life, pumping blood through artificial arteries.

An Edict Against Long Skirts.—The local board of health in one of the districts of Vienna has placed placards in all the public gardens and parks, directing the women

who visit these places to hold up their skirts if they trail upon the ground. The notice states that as these enclosures are devoted to the recreation of persons desirous of escaping from the dusty town, the authorities forbid dust to be swept there into heaps by trailing skirts.—[*Medical Record*.]

Destruction of Plague-Infected Rats.—It is well known that rats are important agents in spreading plague when it has once gained entrance to a town. The safest plan of extermination appears to be that proposed by M. J. Danysz, of the Paris Pasteur Institute. It consists in the infection of a given rat population with a bacillus of common occurrence which is fatal to the rat. This plan has already been tried with considerable success at Lille, Hamburg, Copenhagen, and Tunis, as well as in Paris itself, for the extermination of rats quite apart from their connection with the plague.

Is France Infested?—Physicians of the Pasteur Institute have advised the French Government to take certain sanitary measures to prevent the propagation of bubonic plague in case it should drift from England to Paris. Under the title "Is France Infested?" a Marseilles newspaper ventilates rumors that not less than 20 plague deaths occurred in southern seaports of France during the past summer, and that the secret had been carefully guarded by the Government in order not to alarm visitors to Paris. One of the Pasteur Institute scientists says he fully expects the disease to break out simultaneously all over Europe and North and South America next summer.

Petroleum Drinkers.—The Medical Society of Paris has expressed the opinion that it is necessary to adopt some measures against the alarming spread of petroleum drinking. At first it was thought that this habit had sprung up from the increased taxation on alcohol, but an investigation showed that this was not the case; the habit had been prevalent some time previous in the suburban town of Bastille, and had spread with great rapidity. The victim of the petroleum habit does not become brutal, only morose. The opinions differ among the physicians as regards the effects of petroleum drinking on the human system, but they all agree on the harmfulness of this new vice.—[*Diet and Hygienic Gazette*.]

MISCELLANY.

Female Physicians in Asia.—Within the last 20 years the number of American and English female physicians in Asiatic countries has increased from 20 to 220.

Goat's Serum in Leprosy.—It is stated that experiments are being made with goat's serum in the treatment of leprosy at the Pasteur Institute at Hanoi, the capital of Tonkin. Two patients in whom this method of treatment has been employed are said to have been benefited considerably.

Emperor Kwang-Su has Carcinoma.—Dr. Bachmann, of Shanghai, has recently stated that Emperor Kwang-Su suffers from carcinoma of the throat, and is unable to reign. Dr. Sheng Lian Feng and a French physician, Dr. Dethère, have both reached the same conclusion. This seems to be a disease to which rulers are specially prone.

Obituary.—TREVOR AUGUSTUS DAGG, of Worthing, England, September 4, aged 38.—ROBERT WHITWORTH PAYNE, at London Hospital, September 6, aged 29.—ARTHUR WYNNE FOOT, of Dublin, September 1, aged 62.—JOHN PRIESTWICH, in South Africa, August 28.—JOHN BURTON ST. CROIX CROSSE, of London, aged 85.—MAX SCHÄFER, of Bremen.—PIERRE LEBRUN, of Brabant.—PROF. FRANZ MICHL, of Prague, aged 50.—DR. JANKULOW, of Philippel.—MANUEL ISIDRO OSIO, of Madrid.

The Wounded in China.—The Grand Ducal Government of Baden has decided to grant the use of their bathing establishments, with all their therapeutic appliances, to officers and soldiers of the allied forces wounded in China free of all cost. A committee has been formed, consisting of the most prominent officials and leading citizens, who have begun their work by circulating a notice to this effect to such physicians, chemists, sanatoriums, hotels, and boarding-houses as are likely to receive inquiries.

Leprosy in Lithuania.—The Lithuanian Society for the repression of leprosy, as the report for 1899 shows, received during that year 24,928 and expended 49,787 roubles. The excess of expenditure over income is due chiefly to the erection and equipment of a new leper house with 120 beds, which was opened at Tarwast in October, 1899. In the 4 leper houses at Muhli, Nennal, Wenden, and Tarwast, there were at the beginning of the year 137 patients, as against 143 in the previous year. During the year 24 died, 20 discharged themselves, and 72 new cases were admitted. At the close of the year the total number of patients was 165. The 4 leper houses together provide accommodation for 280 cases.—[*British Medical Journal*]

Medical Society of Japan.—Eleven years ago, Dr. Senya Saito founded a medical society at Kyao, Japan. That society, of which he is president, now numbers 291 members. The members give disinterested help to the Government and the authorities of the town on medical and hygienic questions. Thus last winter they saved the town from the plague, and 10 years ago they were instrumental in saving innumerable victims after the great earthquake. They meet every month for the discussion of professional questions, and they have a journal which is published monthly. There are in Japan 2 universities and 5 medical schools. There is in addition a kind of practical medical school under the auspices of the Government.

The Treatment of Prisoners by the Boers.—Lord Roberts in his comment on the report of the Court of Inquiry, according to the *Lancet*, states that the officers were fairly well treated, but that the men were badly treated. The treatment of the prisoners belonging to Colonial corps raised in South Africa Lord Roberts considers to have been opposed to the usages of civilized warfare in that they were treated as criminals, and the same remark applies to British subjects resident in the Transvaal who were treated in a like manner because they refused to take the oath of allegiance to the Republic. Lord Roberts also considers that the inhuman treatment of the sick prisoners throws the greatest discredit on the authorities at Pretoria, since they must have known that proper hospital accommodation and equipment had not been provided, that suitable food and medical comforts were not forthcoming, and that the supply of medicines and medical comforts was wholly inadequate. The commander-in-chief's conclusions form a severe indictment of the Republics, but the documents which are included in the dispatches, appear to warrant the conclusions.

Treatment of Apparent Death of the Newborn.—Schultze (*St. Louis Medical Review*, September 8, 1900) says that if the child is reddish-blue and there still exists some tension of the muscles, he defers severing the umbilical cord as long as the heart-beat is perceptible. He removes the mucus from the mouth, and excites the skin-reflexes. If there is not immediate reaction, cut the umbilical cord, plunge quickly and for a very short time into very cold water, and then into warm water. Repeat these immersions until the child cries loudly. If the body of the child has the pallor and flaccidity of a cadaver immediately after death, do not expect to obtain anything by excitation of the reflexes. Cut the cord at once, remove the mucus from the mouth and pharynx, pull out and press down the base of the tongue to elevate the epiglottis and then do artificial respiration, either by Sylvester's method or by swinging the child. Commence with a long expiration. There is no better means of cleaning the aspired mucus from the large and small bronchi. After having changed the position from expiration to inspiration 8 or 10 times the minute, plunge the infant into a warm bath and watch it. You will see the heart-beat become stronger and more frequent, the skin redden, and the muscular tension return. If in a short time you have not succeeded, begin again to swing the child after the bath. The expiratory movement ordinarily causes the first inspiration spontaneously. If, however, the respiration remains superficial, plunge the child into ice water. It will react at once, bend the thighs strongly and cry aloud; the medulla now responds to reflex irritation. Never consider a child, born in a state of asphyxia, as completely resuscitated until it cries continuously and loudly. [G.C.C.H.]

Society Reports.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fiftieth Annual Meeting, Held at Wilkesbarre, September 18-20, 1900.

FIRST DAY.

THE Society was called to order at 9.30 A.M. by the President, DR. GEO. W. GUTHRIE, of Wilkesbarre. The delegates were welcomed to the city by the Mayor, Hon. F. M. Nichols, and by Dr. H. M. Neale, President of the Luzerne County Medical Society. The forenoon session was devoted to the reports of the various officers and committees of the Society.

At the afternoon session the first paper read was the **Diagnosis and treatment of the early stages of tuberculosis**, by CHARLES REA, of York. An afternoon temperature-rise, attaining the maximum at 5 or 6 P.M. is of great diagnostic value. Next in importance is increased pulse-frequency, associated with a lowered arterial tension. The early diagnosis must be made more from the history and symptoms than from physical signs. Skiagraphy is an aid only to those who are expert in its use. Tuberculin is a dangerous diagnostic agent, as it may change a local condition into a general infection. In the treatment more attention should be paid to bodily resistance of individuals and thus prevent the disease. Abundant nitrogenous diet should be given, and the best air secured. If change of climate is suggested, the facilities of the new place should first be carefully studied. Rea finds pulmonary gymnastics to be of great service, especially when combined with intrapulmonary treatment by nebulization. Ichthyol often answers as well as creasote.

Old-time treatment and result of typhoid fever was the subject of a paper by W. H. HARTZELL, of Allentown. The speaker reviewed the various drugs which at times were considered of great efficacy, as digitalis, aconite, potassium iodid, etc. Bathing is one of the few old-time treatments which have survived. The early treatment he divided into three periods: First, the period of indifferent treatment by drugs from the recognition of the disease to 1860, the mortality being 27%; second, the period of incomplete antipyretic treatment, 1860 to 1866, mortality 16%; third, the period of systematic antipyretic treatment, 1866 to 1875, mortality 8%. In the discussion ESHNER, of Philadelphia, said that the formula of Brand should be used in a general way but not literally in every instance. Each case has its own indications and the temperature of the water, frequency of bathing, etc., should be determined by the intelligence and discretion of the physician, and not by a rigid formula. It is also better to reduce the temperature only 2 to 3 degrees every 3 hours. If the digestive function be good the patient will do well on a semiliquid diet such as junket, soft eggs, rice, etc. KOENIG, of Pittsburg, believes that giving large quantities of water is beneficial and claims that in cases where large quantities of urine are passed the prognosis is good regardless of the symptoms present.

The next paper, **Lecturing not teaching**, was read by T. D. DAVIS, of Pittsburg. He believes that many of the failures before the State Board are due to faulty methods of instruction in the medical schools. The student does not actually learn so much in one year in a medical college as he formerly did under a preceptor. It is impossible for a lecturer to adapt his lecture to the varying capabilities of a first-year class. Hence during the first two years of the medical course the chief method of instruction should be recitations and compulsory quizzes. Later on the lecturer would have a foundation in the common knowledge of all the students on which he could build.

The human temperaments and their application in medicine was the topic treated by J. C. BATESON, of Scranton. The physician should have a knowledge of the various temperaments as well as of physiology, as the two are closely connected. A knowledge of temperaments aids materially in the treatment of many cases.

J. EMMET O'BRIEN, of Scranton, read a paper upon the **Analogies between nervous and electric mechanisms**, illustrating the joints by a series of charts. He believes that nerve force and electricity are identical. If nature produces electricity in the organic cells of certain fish and eels for offensive and defensive purposes, why can she not do this in the cells of human beings? The term "nerve force" is meaningless and has handicapped physiology as much as has the term "vital force." Nerve fibers are insulated as are the wires in a cable. The sympathetic system is an exception, but it does not convey special messages as do other nerves. Summary: Nerve force is electricity; it is produced in the nervous system by chemical processes analogous to those which produce heat in the general tissues; it would advance knowledge of the nervous system and its functions to acknowledge this proposition, at least as a working hypothesis.

The treatment of pneumonia with antipneumonic serum was discussed by EDWIN ROSENTHAL, of Philadelphia. This treatment often brings the crisis in 12 to 24 hours. The serum is given hypodermically, preferably in the affected side of the chest. The temperature, pulse, and respiration are taken as a guide for the size of the dose. From 20 to 40 cc. are given as the initial dose. Double the initial dose is then given every 4 hours until the desired effect is obtained, which is generally in from 24 to 48 hours in cases of primary pneumonia. When the pneumonia is secondary alternate doses of the antipneumonic and anti-streptococcic serums are used. Any indication, as weak heart, etc., should be met by drugs the same as though the serum was not being used. The serum is harmless and may be used to any quantity. The best results follow its early use.

THOMAS C. ELY, of Philadelphia, reported a case of **meningitis complicating pneumonia**. The patient was a boy of 6, the symptoms of meningitis appearing on the twenty-third day of an attack of pneumonia at first croupous, then lobular, in type. Cerebrospinal fever and tubercular meningitis were both excluded. The case ended in recovery.

JUDSON DALAND, of Philadelphia, read the notes of **A case of Raynaud's disease**. At times an excessive quantity of indican appeared in the urine, and aceton was also found. During these periods the patient was improved by treatment which relieved the autointoxication.

The diagnosis of ectopic pregnancy, with notes of a case, was the subject of a paper read by J. M. BALDY, of Philadelphia. The patient ceased menstruating in June. Pelvic pain was felt in July and August and became severe in September. Operation revealed a 3-months' ectopic pregnancy. All the classic signs of this condition, with the exception of one, were present. That one was the presence of vaginal or uterine bleeding. Not a sign of blood or decidua had appeared. The case was reported to show that such cases do exist, i. e., there is no effort made to throw off the decidua. The presence of blood or decidua is therefore not necessary in order to make the diagnosis of ectopic pregnancy.

At the evening session PRESIDENT GUTHRIE delivered the annual address. Following this was a reception by the Luzerne County Medical Society at Hotel Sterling.

The president's address was a review of the various forms of quackery which flourished in olden times and which so delude the people at present. There is no limit to human credulity, especially in matters of health and sickness, and any method of healing that claims to be supernatural in power finds hosts of followers. The speaker, in discussing Dowieism, Christian Science, osteopathy, etc., disclaimed any intention of inveighing against medical sects practising under legitimate conditions. There is no justification for medical sectarianism, and all honest investigators should be united under one banner in the contention against quackery and deception of every kind. The size of a dose of medicine is a little thing upon which to split and retaining a distinctive sectarian title as a trade-mark is not becoming honest, scientific investigators. Legal practitioners should unite in an appeal to the Legislature for the passage of an act defining justly the term "practice of medicine," as attempts to execute the laws now existing would simply give the pretender a little cheap martyrdom which would aid rather than deter him in his business. Medical legislation

has been productive of much good and with a proper definition of the practice of medicine all persons pretending to heal would be obliged to come before the State Board of Examiners and meet the same requirements as are demanded of legal practitioners.

SECOND DAY.

The morning session began with the **Address in surgery**, by WALTER LATHROP, of Hazleton. The subject of this admirable paper was fractures of the spine, particularly of the dorsolumbar region, and their treatment. The speaker stated that of spinal injuries 20% were dislocations, 20% fractures, and 60% fracture-dislocations. In the diagnosis the most important sign is displacement of the spinous processes. Attempts to elicit crepitus are decidedly dangerous. As to treatment, reposition of the fragments suggests itself, and extension, watching the bladder, etc., is often followed as a routine measure by surgeons. Lathrop believes that extension does little if any good and may do a great deal of harm. Loose fragments of bone may be pressed into the cord and thus cause damage in addition to that of the original injury. The use of an air bed and perfect rest is better than extension. Operative measures give relief when pressure is being exerted. Nothing can be more rational than the removal of fragments of bone which are pressing upon the cord, and the number of patients that have been relieved by this procedure justify operation. It should be done within 48 hours after the accident. In thus speaking of operation Lathrop excludes injuries of the cervical region, operative interference in that region not being advisable. Strychnia should be given some hours before the operation, heat applied, the anesthetic given very carefully, and the operation done as rapidly as is consistent. The greatest danger is infection. If the dura is intact it should not be opened unless there be evidence of pressure beneath. Oozing will demand a change of dressing within 24 hours, but after that it should not be done oftener than every 48 hours. The present average of 7% cured should be increased with earlier operations. Lathrop has had 7 cases of undoubted fracture with 3 deaths, 3 greatly benefited, and 1 cured. Four other cases refusing operation have remained paralyzed for periods of over two years each and are at present inmates of the poorhouse.

The second number was a **Symposium on typhoid fever**. In the absence of J. M. ANDERS, of Philadelphia, his paper on **History and statistics** was read by DR. TAYLOR. The predilection of the disease for camps and crowded quarters and its occurrence in every regiment during the Spanish war, regardless of location, was mentioned. The **Etiology** was discussed by CHARLES H. MINER, of Wilkesbarre. A paper on **Diagnosis**, by J. I. JOHNSTON, of Pittsburg, was read by title. H. A. HARE, of Philadelphia, spoke of the **Complications and sequels**. Attention was called to the fact that textbook descriptions are only pen-pictures and each case may have many points of difference. Constipation is probably present in the majority of cases. Many cases have a more sudden onset than the classical type, and curiously enough the convalescence in these cases is often more rapid than in those of slower and seemingly more mild onset. Hare believes that the disease is undergoing a modification in type. There is a constant decrease in frequency and a still greater decrease in mortality. He cannot attribute this entirely to advance in therapy and thinks that the disease is decreasing in virulence or that there is an increase in the resisting power of individuals. ALFRED STENGEL, of Philadelphia, spoke of the **Treatment**. The first indication is to support the system. The bath treatment is undoubtedly the best supportant, but cannot be used in every case because absolutely refused by patient or friends, because it may lead to hysterical manifestations, or cause excessive discomfort by shivering, etc. In 196 cases so treated at the University Hospital he has had 9 deaths. It is irrational to omit hydrotherapy unless the temperature is above $102\frac{1}{2}^{\circ}$. It is advisable to use it in some form in cases having a low temperature, as its chief value lies in its supportive and roborant powers. Alcohol is a valuable stimulant, but is too often administered and in too large doses. When 6 to 8 ounces in 24 hours does not suffice, larger doses will not do good. It is better, then, to use small doses of strychnin in conjunction. Injections of camphor, 1 grain in 15 m. of olive oil, act as a stimulant and also quiet the

nervous system. The second indication is to avoid complications. Silver nitrate and opium are used to check diarrhea. Diet is of more importance than drugs for this indication. A paper on **Diet**, by JAMES TYSON, of Philadelphia, was read by title.

WILLIAM H. DUDLEY, of Easton, read a paper on **The question of the enforcement of the medical laws of Pennsylvania**. There is a growing disregard of existing medical laws. Dudley made a plea for a more definite interpretation of the law and the providing of means for its enforcement. At present regular physicians would have to prosecute illegal practitioners at their own expense and bear the brunt of public opinion. MCINTIRE, of Easton, stated that the law had two weak points: (1) There is no official registration of legally practising physicians; (2) there is no official body to look after the prosecution of illegal practitioners. The power of conviction in such cases should be taken from juries and vested in judges alone.

A resolution was adopted providing for a committee of three to enforce compliance with the medical laws of the State and appropriating \$1,000 from the treasury of the society for that purpose. The members of the committee are WEAVER, of Wilkesbarre; McCORMICK, of Williamsport; and HAMAKER, of Meadville.

T. M. T. McKENNA, of Pittsburg, reported **some medico-legal cases**. These were classified under three heads: (1) Cases of severe primary injury; (2) apparently mild injuries followed by important symptoms; (3) mild injuries with assumed symptoms. Under the second class were considered cases of traumatic neurosis. Many of these are induced by psychical rather than by physical trauma, the former having the same effect as in cases without physical injury. In the discussion DALAND spoke of traumatic hysteria and said that some of these cases do not recover after receiving heavy damages. DAVIS spoke of medical experts in these cases and said that many physicians were afraid to give testimony because it was claimed that they brought discredit upon the profession. This sentiment should be changed. Lawyers do not agree, judges' decisions are reversed, and there is no discredit if doctors do not testify to the same things.

Four phthysical remedies which have proved most valuable in my experience was the subject of a paper by T. J. MAYS, of Philadelphia. These remedies were stated to be rest, food, strychnin, and silver nitrate. The latter is injected hypodermically in the cervical region. Of the cases treated by the latter method 11 incipient cases are well; of 18 advanced cases 6 have been much improved; of 15 far advanced cases 12 are dead and 3 yet living. In the discussion J. SOLIS COHEN said that the use of silver-nitrate injections was on the same principle as the stimulation of the pneumogastric nerve by the hot iron, etc. Strychnin is very valuable, especially in small doses often repeated— $\frac{1}{100}$ grain every hour. Red meats are the best food. Rest in the open air is always to be used. In the Home for Consumptives at Chestnut Hill the patients are kept in the open air even during the winter.

The afternoon session opened with the **Address in Obstetrics** by CHAS. P. NOBLE, of Philadelphia. Puerperal infection was the first topic treated. The great advances made in this line in hospitals made the question of morbidity at present of greater importance than that of mortality. That antiseptic and aseptic methods have not thus permeated private practice can be proved by statistics, and better work should be done by private practitioners. As the normal vagina has been proved to be sterile, antepartum douches are not to be employed. Efficient prophylaxis, therefore, consists in the thorough disinfection of (1) the external genitals; (2) the hands of the physician; (3) the hands of the nurse; (4) all instruments employed. There is a connection between the frequency of internal examinations and puerperal sepsis. The physician is culpable who neglects to study carefully each maternal case before labor. Prophylaxis and conservatism in gynecology were then discussed. The great majority of pelvic inflammations are due to puerperal infection or to gonorrhea. People should be educated in the importance of the latter. It has been learned that the removal of healthy ovaries will not cure diseases of the nervous system, and the substitution of myomectomy for hysterectomy in single women under 35 is another advance in conservatism.

G. G. DAVIS, of Philadelphia, read a paper on **Applied**

anatomy; its value and place in the medical curriculum. This differs from either regional or surgical anatomy. Students who leave school after studying anatomy as it is usually taught and practitioners cannot meet on a common ground in examination. Hence the question of the practical examination of candidates by State boards arises. The outlines of a course in applied anatomy were then given. This included the study of surface markings, the tracing of vessels and nerves with crayon, the study of the deformities caused by fractures and dislocations, and the changes in the joints, etc. In the discussion, HENRY BEATES, JR., stated that anatomy was one of the branches he had recently called attention to when speaking of the necessity of systematizing the curriculum of medical colleges. All branches should be put upon a common basis in all medical schools. The question of interstate reciprocity could then be based upon the pedagogical principles of the medical schools and would settle itself.

Appendicitis and its treatment was discussed by MORDECAI PRICE, of Philadelphia. Attention was called to the fact that operative mortality was increased by cases held too long by medical treatment. Pus cannot be removed by medicine, and of his 139 cases pus was found in all but 2. Thorough irrigation and gauze drainage are the two great essentials in operative treatment. After-treatment, by allowing the wound to close too soon, may easily be responsible for death. In the discussion G. G. DAVIS stated his belief that physicians as a whole are almost too eager for operation, calling in the surgeon when the diagnosis is not at all certain. BALDY does not believe in a lengthy search for the appendix without breaking up adhesions. It is said that normal appendices are being removed. He has seen the removal of what appeared to be normal organs. Yet the patients were operated upon because of symptoms and the symptoms disappeared after the removal of the appendix.

PRESIDENT GUTHRIE exhibited the youngest patient upon whom he has operated for appendicitis. This was a boy 2 years and 9 months of age, operated on in July with a perfect recovery.

O. C. GAUB, of Pittsburg, read a paper on **The surgery of the gallbladder.** Cholecystitis is probably the cause instead of the effect of gallstones. The majority of the attacks of biliary colic are not effective in moving the stone, hence early operation is advisable. The disease is more treacherous and obstinate than appendicitis and the patient should be watched carefully. The merits of the operations of cholecystectomy, cholecystotomy, and cholecystendesis were discussed. Gaub fails to see benefit from suturing the gallbladder to the abdominal wall. Cholecystotomy leaves the diseased area. He believes cholecystectomy to be the operation of choice for the following reasons: (1) the diseased organ is removed and there can be no sequel; (2) convalescence is shortened; (3) the mortality in suitable cases is no greater than that from the other operations. Three cases of cholecystectomy at the Mercy Hospital were reported. A good recovery followed in each case.

E. O. KANE, of Kane, described **A removable buried suture for abdominal incisions.** Silver wire is drawn through each layer of tissue separately by means of a silk thread in a needle. The chief feature is the removal of a section of skin where the sutures are introduced in order to prevent infection. The sutures are fastened by buttons. They may be removed together or separately.

Tuberculosis of the bladder was the subject chosen by F. P. BALL, of Lock Haven. Extensive notes of a case were read. Twenty years ago Dr. Agnew diagnosed it as hypertrophy of the prostate. Two years ago another expert made the same diagnosis. Tubercle-bacilli were afterward found in the urine. An extensive operation was done, death following. The case was cited to show the difficulty in diagnosis and the necessity of operating before a large area was involved. Symptoms include pain, greater when the bladder is full, pain at the middle of the penis, hematuria, frequent micturition, and a contracted bladder. In the discussion NOBLE stated that the microscope almost invariably failed to show tubercle-bacilli in the urine. He has cured a number of cases in women by the application of fused nitrate of silver. In one case a vesicovaginal fistula was made to allow of irrigation and application, the fistula being closed afterward. BALDY said that few cases of undoubted tuberculosis are cured. When the process is localized the part should

be resected. Those cases cured by medicine are not tuberculosis.

J. C. DUNN, of Pittsburg, spoke of the efficacy of **silver nitrate in dermatology.** He has used this drug in all varieties of eczema, in strengths varying from 3 grains to the ounce up to the solid stick, with excellent results. It also acts well in some cases of psoriasis. In an extensive case he applies the silver nitrate and either salicylic acid or chrysarobin to opposite sides of the body for the first applications. Whichever gives the best results is then chosen and continued. A strong application of silver nitrate is very efficient in relieving the pain of herpes zoster.

Primary tubercular adenitis—surgical treatment, was the title of a paper read by L. J. HAMMOND, of Philadelphia. The location, etiology, and pathology were considered. The surgical treatment was divided into three stages—glands, abscesses, and sinuses, details being given for each of these conditions.

W. M. BEACH, of Pittsburg, read a paper on **Constipation or obstipation and its surgical treatment.** He reported 26 cases in which permanent relief was secured by the removal of the rectal valves. The majority of cases of obstipation are caused by the hypertrophy of these valves. The operation of valvotomy as he performs it was described, the instruments used being exhibited. General anesthesia is seldom necessary. Cocain, followed by suprarenal extract, is applied. The chief dangers are hemorrhage and peritonitis. To guard against the former a styptic tampon is applied after the operation, considerable pressure being used. Beach thinks the operation is practically limited to the proctologist. This procedure not only cures obstipation, but is the key to the relief of many cases of seminal emissions, autoinfection, etc.

Surgical diagnosis by the Röntgen method was the subject of a paper by CHARLES L. LEONARD, of Philadelphia. To use this means of diagnosis the observer needs a broad foundation of surgical anatomy and pathology, as well as a knowledge of the electrical and mechanical technic. This method now furnishes absolute diagnosis in many cases where formerly exploratory operation was the only means of determining the condition present. Besides locating fractures it gives valuable indications for treatment by showing the pathologic conditions to be overcome. Thus in some cases operation is indicated for simple fracture. The greatest advance in diagnosis has been in differentiating calculous nephritis from those conditions simulating it. Of 90 such cases examined by Leonard, only 20 were shown to be real cases of calculus. Symptoms in 8 of the other cases were so urgent, however, as to demand operation. The negative diagnosis by the x-ray was confirmed in each instance. The method is valuable then because of the absolute accuracy of its negative as well as positive diagnosis. The smallest calculus found by this method weighed $\frac{1}{10}$ of a grain.

THIRD DAY.

The morning session began with the **Address in hygiene** by JOSEPH T. ROTHROCK, of West Chester. The two topics considered were water-supply and the treatment of incipient tuberculosis. Regarding the first topic two facts were insisted upon: 1. The most important use of water is to sustain human life. 2. Water supply should never be allowed to pass into the control of citizens who have other uses for it. Filthy water filtered will always be a poor substitute for pure water. Three methods for obtaining pure water suggest themselves: (1) State ownership of the heads of water-supply; (2) the use of water from the clouds; (3) the use of distilled water. The first method is the best and is that held in view by the State Forestry Commission. The State is now in possession of 123,000 acres of forest land and there are 2,000,000 acres in the State which could not be devoted to a better purpose. In connection with this it was stated that the State must at some time care for its consumptives and these public forests will solve that question. The Forestry and Sanitary Commissions might well join hands for this purpose. There are many people suffering from tuberculosis who can not afford to go to Colorado or Florida. With the State in possession of large tracts of forest not less than 1,200 feet above the sea level, it could say to these sufferers, "There is healing in our woods." Buildings to afford shelter from storms, but allowing free access of air could be erected by the State and rented to consumptives, they living according

to their means. The rental would soon repay the cost of erection.

DR. H. BERGEY, of Philadelphia, in a paper entitled **Recent advances in the bacterial purification of sewage**, reviewed the various methods employed for rendering this material innocuous. President GUTHRIE spoke of the healthfulness of Atlantic City being secured by thus disposing of its sewage and by using artesian well water.

Humanology, or higher physiology, was the subject of a paper by E. N. RITTER, of Williamsport. She stated that the greatest danger came, not from degenerates, but from parents of average type who were ignorant of the care of unborn and born children. The active power or tendency of the pregnant woman becomes the dominant power in the child. Children should be instructed regarding maternity. They can be educated sexually without injuring their morals and this will accomplish much more for the human race than will legislation. In the discussion of this paper BATESON agreed with the author. He spoke of an effort being made in Ohio to make compulsory the examination, by physicians, of those intending marriage and said that the question should be agitated. The profession should give more attention to the morals of the people from a medical standpoint. MASSEY said that the medical profession had been slow in causing women to know the danger in marrying unexamined men. Parents should go slow in teaching young pubescents sexual matters, but both parties in a contemplated marriage should be educated. MYERS would castrate every man who is a criminal. GIBBONS said that every child should be trained by women alone up to the age of 12 or 15 years. He would not unsex criminals. BISHOP said that it was a mistake to talk of controlling human beings by breeding, etc., as was done with brutes. Man has a higher purpose and cannot be limited in this way. It is debasing to talk of examining persons contemplating marriage.

Sanitary milk for children was the topic of B. H. DETWILER, of Williamsport. He spoke of the effect that gestation in cows has upon their milk. He formerly recommended the milk of *one* cow for an infant, but now recommends herd milk. The effect upon the milk by the operation of spaying was discussed. Two cows in the herd at Danville have been spayed and careful experiments with the milk will be conducted and reported. STENGEL spoke of the good work done among the milk-producers by a committee of the Pediatric Society of Philadelphia. He believes that the State cannot regulate the milk-supply and that societies of medical men can do much toward the securing of sanitary milk for children by stimulating the producers. He urges the appointment of committees by local societies for that purpose.

G. BETTON MASSEY, of Philadelphia, made a **further report on the cataphoric treatment of cancer**. Of the 37 cases treated since 1893, 10 have been cured, 3 are doubtful, and 24 were failures. Of this number 7 were operable and 30 inoperable.

JOHN M. BATTEN, of Downingtown, detailed his treatment of the **nausea and vomiting of pregnancy**. A careful trial of remedies has convinced him that this condition cannot be relieved by the use of drugs; constant feeding has given the best results. A glass of milk, a cracker, or orange is kept constantly on the table near the bed during the night as well as the day, the patient making use of them whenever hungry. A breakfast of coffee, milk, chops, steak, etc., is given while the patient is in bed in the morning and 3 or 4 full meals during the day. Fasting during the night is conducive to morning sickness.

Paroxysmal delirium—a short study in auto-intoxication, was the subject discussed by W. C. HOLLOPETER, of Philadelphia. Notes were read of 3 cases of delirium in children, the symptoms disappearing with the use of calomel and irrigation of the bowels. DALAND spoke of the lack of any really sure signs at present that will demonstrate auto-intoxication to the clinician. An exact method of detecting indican and other matters in the urine is needed. PEARCE finds the wet pack of value in the treatment.

Nephritis as a complication in gynecological disease was spoken of by G. E. SHOEMAKER, of Philadelphia. The various conditions giving rise to nephritis were mentioned. An important one is cystitis resulting from cystocele and sacculatation of the bladder. An acute cystitis following a pelvic operation may extend to the kidney. Chronic pel-

vic suppuration is a fruitful source of kidney disease. An acute renal irritation as a cause of high post-operative temperature must be borne in mind.

J. H. MUSSER, of Philadelphia, read a paper upon **Myocarditis**. The various forms of myocarditis were spoken of, especial attention being paid to the fibrous variety or coronary artery disease. An important sign of this condition is the sallow pallor of the countenance, which is not seen in any other condition. Another is the prematurely old appearance of the patient. A murmur is not heard until late in the disease.

REED BURNS, of Scranton, reported **three cases bearing on the question of ovarian hydrocele**. They were not strictly ovarian hydrocele, but showed how the ovary can be shut in by a local plastic peritonitis. The ovarian fossa was unusually deep in each case.

Do we resort too frequently to surgical operations? was the subject under which R. H. GIBBONS, of Scranton, showed what a great boon surgery has become, and also justified the surgeon.

The afternoon session opened with the **Address in ophthalmology**, by CHARLES MCINTIRE, of Easton. The history of a people can be learned better from a study of their words than from their literature. So in ophthalmology. The speaker showed this from words beginning with *a*. First was the alpha of euphony, as in *a-maurosis*. Following this came the alpha of negation and *a-metropia* was coined. This was only possible by research and inquiry. Later came *a-sthenopia*, denoting failure to perform function rather than disease of the organ.

E. B. HECKEL, of Pittsburg, spoke of **The electro-magnet in eye surgery**. The speaker described a magnet of his own pattern which has given excellent results. The main features are the tapering point of the core and the fact that the core is of soft steel. This causes the magnet to gain strength slowly and thus cause less jerk when it acts. Heckel thinks it is never justifiable to make a new opening in the eyeball while the original one is patent.

C. A. VEASEY, of Philadelphia, made **A plea for the earlier recognition and treatment of squint in children by the family physician**. Between 4 and 5 years is the usual age for squint to develop and treatment should be instituted. The treatment was detailed. Operation, when necessary, should be after the sixth year.

P. J. KRESS, of Allentown, read a paper on **The relation of the oculist and optician to the profession and the public**. The paper emphasized the need of medical training in those who prescribe glasses.

CHAS. A. MINER, of Wilkesbarre, exhibited patients showing **Leukemia and pseudoleukemia**. The former was a boy of 12, who had had malaria. The spleen rested on the pubic bone and by pressure on the bladder caused incontinence of urine.

Surgical intervention in purulent discharge of the ear was discussed by JOSEPH E. WILLETS, of Pittsburg.

F. SAVARY PEARCE, of Philadelphia, read a paper on the **Climatology of neurasthenia**. Damp, low localities are to be avoided. No case does well at an altitude of over 2,000 feet. Localities where heavy storms occur are not beneficial. Suitable places are the inland regions of New Brunswick and Nova Scotia and the regions of the Great Lakes.

A. A. ESHNER, of Philadelphia, reported two cases of **Paralysis agitans without tremor**. The tremor was so slight as to be of no diagnostic importance.

L. J. LAUTENBACH, of Philadelphia, read a paper on the **Best method of removing postnasal adenoids**. This is by means of the finger alone, or reinforced by a metal fingernail in obstinate cases. Cocain is used, and the operation lasts only 10 to 25 seconds. Recurrence is very rare.

FRANCIS R. PACKARD, of Philadelphia, gave a review of the literature on **Living animal organisms in the ear**. He has found two cases of maggots in nonsuppurating ears. Treatment was detailed, carbolic acid in warm water being considered the best solution.

Typhoid, its etiology, course, treatment, and pathology, concisely considered, was the title of a paper read by JAMES FULTON, of New London.

CHARLES H. FRAZIER, of Philadelphia, read a paper on the **Treatment of cicatricial esophageal stricture**,

with particular reference to the König method. Notes of a case were given by Frazier. No instrument could be passed through the stricture. A set of silver balls were secured, and the smallest, anchored to the patient's collar by a thread, was swallowed by him. It did not pass the stricture for 24 hours. A larger size was then used. Finally a bougie was passed and the caliber is now nearly full size. This procedure is a safe one and may save an operation, as in the case reported. This closed the scientific program of the meeting. The registration of delegates reached 304. A gratifying feature of the meeting was the able and intelligent report of the sessions by the local newspapers.

The officers elected for the ensuing year are President, T. D. Davis, of Pittsburg; vice presidents, first, W. B. Ulrich, Chester; second, L. H. Taylor, Wilkesbarre; third, A. A. Eshner, Philadelphia; fourth, M. L. Herr, Lancaster; secretary, C. L. Stevens, Athens; assistant secretary, W. L. Pyle, Philadelphia; treasurer, G. B. Dunmire, Philadelphia.

The next meeting of the society will be held in Philadelphia, beginning the third Tuesday of September, 1901.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Thirteenth Annual Meeting, Held in Louisville, Kentucky, September 18, 19 and 20, 1900.

[Specially reported for the PHILADELPHIA MEDICAL JOURNAL.]

DR. A. GOLDSPOHN, of Chicago, read a paper in which he pointed out the erroneous objections to **bilateral inguinal celiotomy** and shortening of the round ligaments via the dilated internal inguinal ring, and alluded to its superior ultimate results in simple and complicated aseptic retroversions of the uterus. For a description of the technic the writer referred to a previous article by him on this subject.

Dr. D. TOD GILLIAN, of Columbus, Ohio, read a paper on **Round ligament ventrosuspension of the uterus**, and described the steps of the operation he performed as follows: 1. A median abdominal incision three or four inches in length, and at the usual site between the umbilicus and pubis. 2. The adhesions are broken up and the fundus brought forward, after which the patient is placed in the Trendelenburg position. 3. Seize the round ligament on one side and bring it to the opening. This may be done either by the fingers or by the aid of forceps. Carry a thread under the ligament at a distance of about one and a half inches from the uterus. The free ends of the thread are brought out of the abdomen and secured by clamp forceps. 5. The other round ligament is secured in the same way. 6. Expose the rectus muscle near the lower end of the incision by retracting its sheath and by rolling it out of its sheath on the tips of two fingers applied to the peritoneal surface under it. 7. Select a point one inch external to the margin of the incision and something over an inch above the pubis through which the perforating forceps specially devised for this purpose is thrust into the peritoneal cavity. The two fingers already in the cavity guard the instrument in its passage and place the thread which surrounds the ligament within its jaws. 8. The perforating forceps is now withdrawn, after removing the clamp forceps from the thread, and both thread and ligament are brought up through the perforated wound in the abdomen. 9. While the ligament is held taut, fasten it into the wound by a to-and-fro catgut suture passed deeply through the ligament and including the tissues on either side. 10. Treat the opposite side in the same manner, and close the median abdominal incision. Rigid observance of all the rules of aseptic surgery is essential to prevent suppuration, and only a small loop of the ligament should be drawn up through the wound.

DR. W. E. B. DAVIS, of Birmingham, Alabama, reported an interesting case of **composite teratoma of the ovary**. Pathologic and microscopic examinations were made and a report appended to the history of the case.

DR. CHARLES G. CUMSTON, of Boston, read a paper on the **Treatment of chronic cystitis in the female by curetment of the bladder, and instillations of corrosive sublimate**. See Abstracts of *Medical Record*, this issue.

DR. A. VANDER VEER, of Albany, N. Y., read a paper entitled **Some points regarding the surgery of the gallbladder**. Four interesting and instructive cases were reported, and the following summary made: 1. An early diagnosis of cases. (2) In suppuration of the gallbladder with adhesions, a most thorough examination should be made from within by digital exploration, and use of the probe for any possible deep-seated calculi. 3. In prolonged operations upon the common duct or hepatic ducts, where adhesions are present, and it is difficult to close the incision, after removal of the calculus, drainage through the peritoneal pouch by means of the lumbar stab is advisable. 4. When the patient is suffering seriously from cholemia, with marked ecchymotic spots over the body, intense itching, and the blood is examined and found in a septic condition, an operation is not to be encouraged. It is too late, in the vast majority of cases, for the patients to recover. 5. General practitioners as well as surgeons should place more earnestly before the patient and friends the dangers of repeated attacks of gallstone irritation resulting in cancer of the ducts, stomach, or liver.

DR. JAMES F. BALDWIN, of Columbus, O., followed with a paper entitled **Diagnosis of ectopic gestation before rupture, based on 11 cases**. The paper consisted of a brief report of 6 cases of tubal pregnancy which, added to 5 similar cases previously reported by the author, made 11 in all, in which he made a diagnosis of tubal pregnancy and had operated before the occurrence of rupture, his experience having been in direct contradiction to the dictum of Lawson Tait that such an early diagnosis was not possible.

The surgical treatment of uterine displacements was the title of a paper by DR. CHARLES A. L. REED, of Cincinnati, O., in which attention was directed to a couple of modifications of technic in the management of a class of cases that is happily becoming less and less perplexing. In a majority of all cases of retrodisplacements that demand operation at all, the author believes that the intraperitoneal shortening of the round ligaments is the operation of choice. It has been his practice during a number of years to effect this by making a letter of S fold in the ligaments and stretching them thus folded to the parietal peritoneum along the line of Poupert's ligament. This method has yielded him better results than any which he has previously tried. He has, however, become convinced that the parietal fixation of the folded ligament is not necessary for the purpose of holding the uterus in its normal position, and that the technic devised by Mann is all that is required to accomplish this object. His application of this technic differs a little from that originally adopted by Mann, the modifications being those of convenience rather than of necessity.

DR. L. H. LAIDLEY, of St. Louis, Mo., read a short paper on **Fibroma of the ovary, and exhibited specimens**. He also reported an interesting case of **hernia or diverticulum of the chorion**.

DR. EDWARD J. ILL, of Newark, N. J., read a paper on **Diffuse nonmalignant papilloma of the vulva**, and showed a specimen which he had removed from a patient, 68 years of age. The growth had been over three years' standing. The inner surfaces of the vulva were thickened, at some places appearing horn-like, white and smooth; at other places there were heavy papillae which rose considerably above the surrounding tissue and were from 3 mm. to 15 mm. in diameter at their base. The disease extended from the beginning of the vulva above down to the posterior commissure. It covered the whole vestibule except the tissue immediately surrounding the external meatus of the urethra, and was well defined, but stopped at the vaginal mucous membrane. The vulva as a whole stood out far beyond its normal elevation. The whole vulva was excised. The structure of the tumor corresponds with that usually found in papillomata of the skin. A second case was referred to by the author. These two cases comprise all the experience he has had in this particular.

DR. RUFUS B. HALL, of Cincinnati, delivered his address as president. He selected for his subject **The education of the laity upon sexual matters; when shall they be taught and to what extent?** The family physician should be the educator of the people in sexual matters, and when he gets the endorsement, and is sustained in his position by the specialist, his influence will be greatly strengthened and widened. He advises that during the last year in

high school, in every school in the land, a textbook be used embracing embryology, hygiene, anatomy, and physiology, including sexual physiology, and that these subjects be taught to every student, both male and female. A female teacher should instruct the girls, and a male teacher the boys.

DR. JOSEPH PRICE, of Philadelphia, contributed a paper on **Private hospitals and their management.** These institutions offer advantages that are not given by the schools or political hospitals. The political hospital is not the only corrupt institution; a few of the well-endowed general hospitals, managed and handed down in families to the third, fourth, and even the fifth generations, are the most dangerous institutions in the profession. No one has ever made money and accumulated wealth out of a private sanitarium to his knowledge. He may do so out of the fees, but never out of the board, care and nursing of patients. The board of patients rarely pays 5% on the money invested. Private hospitals give the operator the best opportunity for doing good work. In well-managed private institutions the patient has one or more attendants with well-regulated relays. In public institutions the speaker rarely finds a nurse in a large ward, the only attendants about the patient being a convalescent patient, or an old pelican of an attendant. Fresh beds, and the numerous little attentions from young, intelligent nurses favor comfort and confidence.

DR. JAMES F. W. ROSS, of Toronto, read a paper on **Post-rectal or presacral growths.** He reported four cases of postrectal tumors, and discussed benign and malignant growths in this region; also their etiology, symptomatology, diagnosis, prognosis, and treatment.

The ligature and the value of dry sterilized catgut. A paper on this subject was read by DR. J. HENRY CARSTENS, of Detroit, Michigan. The author described a modification of the Boeckman method of preparing catgut, and emphasized the points that all buried sutures ought to be absorbable and absolutely sterile. Chemicalized sutures are no more sterile than plain sutures. A chemicalized suture is harder and remains longer in the tissues. The latter is a disadvantage. If, in a special case, it is desirable that a suture should remain longer, dry sterilized kangaroo-tendon should be used.

DR. FRANK F. SIMPSON, of Pittsburg, read a paper in which he pointed out some of the contraindications to the intraperitoneal use of normal salt solution after abdominal section.

DR. JOHN B. DEEVER, of Philadelphia, read a paper on **Simple methods in pelvic surgery.** Simplicity is the *sine qua non* of good surgery. It means safety, surety, confidence, neatness, and a great saving of time, which is an essential factor in the success of many operations. The abdominal route is by far the more rational and, therefore, the best method of operating on the pelvic organs in the majority of cases, and offers several advantages that render it preferable to the vaginal. It is simpler of performance. It is safer, as the surgeon can avoid distributing infection where infected areas are present. It reduces the danger of general peritonitis by the use of gauze packing. It renders injuries to the bowel, ureters, important bloodvessels, etc., less likely. It minimizes the danger of hemorrhage. It aids, generally, by the facility offered for inspection. Through the abdominal incision the surgeon is able to open the belly to the proximal side of the infected area, when, by the proper disposition of sterile gauze sheets, practically all risk of peritoneal contamination is done away with. It enables the surgeon to operate with a very few instruments. Radical operations per vagina are, with few exceptions, to be discountenanced, for several good and sound reasons. First, the limited area for manipulation. Second, the impossibility of inspection without destruction and removal of the uterus, which should not be removed except for good and sufficient disease of that organ itself. Third, the marked increased liability to hemorrhage, both primary and secondary. Fourth, increased danger of injuring ureters, bowel, bladder, and large bloodvessels. Fifth, danger of doing incomplete surgery. Sixth, inability to repair satisfactorily injuries to bowel, bladder, etc. Seventh, inability to deal safely with an inflammatory mass which involves the vermiform appendix.

DR. E. F. FISH, of Milwaukee, read a paper on **The treatment of fibroids in the nonpregnant uterus.** The author's conclusions are that myomectomy is the operation

of choice, first, where the tumor is pedunculated. Second, when single, whether subserous, interstitial, or subcutaneous, and can be enucleated without loss of uterine tissue, and the tumor cavity closed and covered with peritoneum. Third, when the desire for an heir outweighs all other considerations. Hysterectomy is indicated: 1. When the tumor involves so much of the uterus that a cavity too large to be properly closed and covered with peritoneum would follow its removal. 2. When several tumors exist, especially nodules. 3. When the adnexae are diseased to such an extent that they must be sacrificed. 4. When the disease ceases to be local. 5. When hemorrhage, pressure, or pain is a persistent symptom. 6. Whenever malignancy is suspected, or the tumor is of rapid growth. 7. After the change of life. Palliative treatment is indicated when the patient is much reduced from loss of blood, as a prelude to rational cure, when the existence of chronic nephritis, diabetes, tuberculosis, or other constitutional disease forbids rational cure; and when the patient is past 40 years of age, the tumor small, the main annoyance hemorrhage, and she is desirous of awaiting the effect of the menopause.

Acute Senile Endometritis.—DR. L. H. DUNNING, of Indianapolis, Indiana, read a paper with this title, it being the second written by him on this subject, and in which he reaffirms his belief that it is a distinct lesion that has not heretofore been adequately described. Since his previous paper he has encountered 3 more cases, 2 of which were attended by sanguineo-purulent discharges from the uterus, and 1 in which there was a large pelvic abscess. The inflammation tends to spread beyond the endometrium into the Fallopian tubes, ovaries, and pelvic peritoneum, resulting in such suffering and ill-health, and not infrequently leading to so serious involvement of these structures as to demand operative procedures, such as extirpation of the uterus and appendages, or vaginal incision and drainage of a pelvic abscess. The chief cause of the lesion is infection. It is not definitely self-limited, but tends to become chronic and to lead to marked degenerative changes within the uterus. The treatment recommended is, in cases where the appendages are not involved, dilation, curetage, the application of a mild caustic and prolonged drainage. When the uterine appendages are involved in the inflammatory process, extirpation of the uterus and appendages is advocated.

Tuboovarian Abscess and How to Deal with It.—A paper on this subject was read by DR. EDWIN RICKETTS, of Cincinnati, Ohio. Tuboovarian abscess is frequently caused by the proximity of the ovary to an infected Fallopian tube. The disease may be complicated by normal or ectopic pregnancy, intestinal, vaginal, or vesical fistulae, and by appendicitis. In the dormant stage the author operates by the abdominal route; in the acute stage he explores by the abdominal route, and then decides between completing the operation in one or two sittings. Following abortion or delivery at full term, vaginal drainage, in his opinion, often puts the patient in better shape for an abdominal section later on.

The following officers were elected for the ensuing year: President, Dr. W. E. B. Davis, Birmingham, Ala.; first vice-president, Dr. Edwin Walker, Evansville, Ind.; second vice-president, Dr. A. Goldspohn, Chicago, Ill.; secretary, Dr. William Warren Potter, Buffalo, N. Y., reelected; treasurer, Dr. X. O. Werder, Pittsburg, Pa., reelected. Cleveland, O., was selected as the place for holding the next annual meeting; time, second Tuesday in September, 1901.

University of Athens.—Dr. Savas, a Greek Army physician, has been appointed professor in the newly-founded department of hygiene and bacteriology in the University of Athens.

The Congress of German Naturalists and Medical Men held its seventy-second annual meeting in Aix-la-Chapelle, last week. Among the papers read were "Development of Scientific Medicine," Professor J. H. Van Hoff of Berlin; "The Neuron in Anatomy and Physiology," Professor Verworn of Jena; "The Neuron Doctrine from the Pathologic and Clinical Standpoint," Dr. Nissl of Heidelberg; "On the Development of Biology," Professor Hertwig of Berlin; "On the Development of Pathology," Professor Chiari of Prague.

The Latest Literature.

British Medical Journal.

September 8, 1900. [No. 2071.]

1. The Augmentation of the Royal Army Medical Corps in War. J. EDWARD SQUIRE.
2. Volunteer Medical Organization. PETER BROOME GILES.
3. How to Link the Medical Service of the Auxiliary Forces with the Royal Army Medical Corps. JAMES CANTLIE.
4. Volunteer Brigade Bearer Companies. G. S. ELLISTON.
5. First Aid and Transport of Sick and Wounded in Civil Life in Large Towns. GEORGE A. HUTTON.
6. First Aid in Civil Life. JOHN J. DE ZOUHE MARSHALL.
7. Cavalry Ambulance Service. T. F. S. CAVERHILL.
8. Note on Ambulance Service for Mounted Troops. VALENTINE MATTHEWS.
9. The Cycle in the Field for Medical Service. F. L. STEPHENSON.
10. The Royal Army Medical Corps, Past, Present, and Future. J. B. HAMILTON.
11. Modern Small-Bore Rifle Wounds. CLINTON DENT.
12. Infectious Disease on Board Ship. W. J. COLBORNE.
13. Sanitation in Camps. JAMES.
14. A Discussion on the Indications for the Intranasal Treatment in Diseases of the Ear. PETER MCBRIDE, CRESSWELL BABER, DUNDAS GRANT, SCANES SPICER, HERBERT TILLEY, WALTER JOHNSON HORNE, PATRICK WATSON WILLIAMS, RICHARD LAKE, HOLBROOK CURTIS, and L. HEMINGTON PEGLER.
15. A Discussion on the Pathology and Treatment of Toxic Paralysis of the Larynx. PATRICK WATSON WILLIAMS, SAMUEL LODGE, HERBERT TILLEY, and SCANES SPICER.
16. Auditory Results of the Removal of Postnasal Adenoids; Modified Operation. DAVID MCKEOWN.
17. Two Cases of Thrombosis of the Lateral Sinus. SAMUEL LODGE, JR.
18. Two Cases of Chronic Frontal Sinus Empyema Presenting Features of Unusual Interest. HERBERT TILLEY.
19. The Vocal Resonator. WILLIAM A. AIKEN.
20. A Case of Bezold's Complication of Suppurative Mastoiditis. ERNEST WAGGETT.
21. On the Surgical Treatment of Certain Forms of Nasal Insufficiency. L. HEMINGTON PEGLER.
22. Liverpool School of Tropical Medicine: Yellow Fever Expedition. Some Preliminary Notes. HERBERT E. DURHAM and WALTER MYERS.
23. Two Cases of Amputation at the Hip-joint for Gunshot Fracture of the Thigh During the Intermediate Stage, Followed by Recovery in One. F. J. W. PORTER.
24. Diphtheria and its Treatment by Antitoxin. R. W. MARSDEN.
25. Cervello's Treatment of Phthisis. NEVELL E. NORWAY.

1, 2, 3, 4, 7, 8, 10.—The articles refer to conditions pertaining to the medical service of the British Army. [J.M.S.]

9.—Stephenson reports on the use of the **bicycle** as a means of conveying the field department of the **medical service of the army**. He has had an ambulance made by fastening 2 bicycles together so that a stretcher may be placed between them. This device would seem to be a very useful one for getting the wounded off the field and back to the first stationary hospital. [G.B.W.]

11.—Dent does not believe in the so-called hydraulic theory as explaining the explosive action of the **small-caliber bullets** at short range. The great destruction of tissue which sometimes follows in the track of these bullets is due rather to a radiation of the missile's energy outwards in lines from the long axis of the bullet track. His experience in the Boer war also shows that far better results may be obtained in perforating wounds of the abdomen by conservative surgery, than by opening the abdomen and endeavoring to stitch up the intestinal perforations. He says that the South African climate had a great deal to do with the rapid healing of the wounds. [G.B.W.]

12.—One of the first duties of the medical officer of a ship visiting a given port is to make inquiries from the port authorities as to the prevalence of **infectious disease**, its

extent, and the district affected. If necessary, the proper authorities **aboard ship** should be informed so the men may be warned from visiting a particular district or so the leave may be restricted. The medical officer will also have to pay attention to the people who are allowed on board the ship. If infectious disease exists ashore particular attention must be paid to all minor ailments that may occur among the men so as to detect the first indication of the appearance of the disease among the crew. The first suspicious symptom should determine the isolation and careful watching of the patient. In addition, the immediate neighbors of the suspected man, both at mess and at night, should be watched. Colborne then details the methods of isolating a patient and his attendant on board ship. During the presence of infectious disease all the men should be warned to report every slight ailment so that the early isolation of every case may check the spread of the disease. Should a case of smallpox occur, every man should be vaccinated. [J.M.S.]

13.—The conditions to be kept in mind in the **sanitation of all camps** are: 1. The protection of the troops from the weather and the climate. 2. Feeding them and preventing the occurrence of disease communicated by food. 3. The disposal of excreta and refuse. 4. The prevention of local and endemic disease. 5. The prevention of the spread of communicable disease. According to James the possibility of carrying out sanitation properly must depend upon: (1) the choice of the site of the camp; (2) whether the camp is a standing or temporary one; (3) whether the supplies can be obtained locally or whether they have to be transported; and (4) upon the climate. The primary essentials for properly carrying out sanitary measures in camp are: (1) Discipline and intelligence among the occupants; and (2) an efficient and well-trained sanitary staff. [J.M.S.]

14.—McBride, in speaking of the indications for **intra-nasal treatment in disease of the ear**, contends that the aurist is now in a position to separate 2 classes of cases, viz., (a) the so-called sclerotic; (b) the catarrhal. In the former it is questionable whether operating on the nose can ever be of benefit, and it may do harm. In the latter it is better to operate on a gross nasal lesion which is causing nasal symptoms, and upon a nasopharyngeal condition if it be present, *e. g.* adenoids, for these may involve the ear without causing other local symptoms. At the same time he deprecates the operative removal of small deviations and spurs which cause no symptoms appreciable to the patient. Baber believes in operating on cases in which inflation, either by Politzer's method or by catheterization, improves the hearing. Grant says that there is a causal association between nasal obstruction and some forms of disease of the middle ear, especially the moist catarrh; but not the typical sclerotic catarrh. In some cases of nerve deafness good results may follow the improvement in nerve tone produced by the removal of nasal obstruction. [G.B.W.]

15.—In the section of Laryngology and Otology of the British Medical Association, Williams opened a discussion on the **pathology and treatment of toxic paralysis of the larynx**. There are 2 distinct possible methods by which laryngeal paralysis may arise: (1) From the direct application of the toxic substance to the larynx; and (2) from the selective affinity of various poisons in the blood for the laryngeal nerves or their bulbar nuclei. There is evidence to show that the axon does not receive all its nutrient material from the ganglion cell, but rather that it depends on local processes of diffusion. The toxic paralyzes of the larynx are due to neuritis, and may conveniently be divided into 2 distinct pathogenic groups. 1. Infective neuritis, commonly occurring in the course of diphtheria, and less frequently observed in typhoid fever, typhus fever, scarlet fever, measles, influenza, rheumatism, tuberculosis, syphilis, cholera, and malaria. 2. Toxic neuritis, most frequently due to lead poisoning, but also reported to have occurred in poisoning by copper, arsenic, antimony, phosphorus, alcohol, atropin, and morphin. The following are the conditions for the treatment of these toxic paralyzes of the larynx: 1. The resort to the general treatment appropriate to the infective disease concerned in the etiology of the condition. 2. The intralaryngeal application of the faradic or the galvanic current, combined with the internal exhibition of strychnin, either by mouth or, when feasible, injected directly into the affected muscles. 3. The relief of dyspnea and threatened

asphyxia in cases of bilateral abductor paralysis by intubation or tracheotomy. [J.M.S.]

16.—McKeown says that the **improvement in hearing following the removal of adenoids**, in a large number of cases, begins as soon as the operation is finished. He reports several cases on whom tests as to hearing had been made just previous to the operation and as soon after as possible. In all of these the evidence of improved hearing was so marked as to leave a very large balance to the credit of the operation. This improvement he believes is due not to the relief of intertympanic pressure, but rather to the relief afforded by the operation to the circulatory mechanism, the local depletion removing or diminishing the disorder of the circulation caused by the presence of the adenoids. [G.B.W.]

17.—In the first case, a Stacke's modification of tympanomastoid exenteration was done for relief of the mastoid disease from which the patient was suffering. At this time the **lateral sinus** did not seem to be **thrombosed**, nor was there any sign of extradural abscess. The wound was thoroughly packed, and after the operation the patient seemed much better. Within a day or two, however, hectic temperature developed, the wound was again opened, and this time a thrombus of the lateral sinus was found. The clot was notably purulent and required quite extensive removal before the blood current was reestablished. The patient finally made a good recovery. In the second case, the true condition was not discovered until the necropsy, though the patient was twice operated upon. It was then seen that the internal jugular on the right side from the bulb to its junction with the subclavian was a solid fibrous cord, while the left lateral sinus was occluded by a fresh antemortem clot. [G.B.W.]

20.—**Pus** escaping from the **mastoid cells** into the digastric groove is difficult of diagnosis until the physical signs have become well established and the case is far advanced. In the case reported by Waggett the symptoms resembled closely those of an adenitis secondary to the mastoid disease. But pressure on the swelling, which was limited anteriorly by the ramus of the jaw, caused pus to exude through the minute opening in the tympanic membrane. After opening the mastoid cells and antrum a fistulous tract was found leading to an abscess cavity about the size of a filbert and situated with its long axis pointing to the parotid region. The patient recovered readily from the operation and, except for an ugly scar, was none the worse for either the disease or operation. [G.B.W.]

22.—Durham and Myers have studied **yellow fever** in Cuba. Among the many conflicting opinions and statements concerning the disease it appears certain that neither the handling of or contact with yellow-fever patients nor the performance of necropsies is capable, *per se*, of conveying the disease to nonimmunes. It also appears probable that general ships' cargoes and the fomites of patients are also not directly infective. On the other hand, it seems to be fairly definitely established that a yellow-fever patient may become a danger by "infecting the house" in which he is placed. In such an infected house an interval of about 14 or 21 days obtains before the first secondary cases occur. This curious and somewhat prolonged interval is suggestive of a development of the infecting factor in or about some agent or matter in the house, the nature of which is not yet demonstrated. It is commonly stated that one attack of the fever confers a long and lasting immunity against further attacks. The completeness of this immunity, however, is called in question by the recent investigations of the disease. [J.M.S.]

24.—Marsden has studied the effects of the **treatment of diphtheria by the antitoxin** in 105 cases. Of these patients 85 were under 12 years, and 20 were adults. Among the adult patients 16 complained of sore throat as the first symptom of the disease, while 2 complained of sore throat accompanied by shivering as the first symptom. Among the children there was fever before the complaint of any symptom in 28 instances; in 16 cases the patients complained of sore throat as the first symptom; in 5 the first symptom was croupiness or hoarseness, and in 3 a discharge from the nose was first seen. Pyrexia at the beginning of an attack of diphtheria was found to be very variable. In more than half of the cases the antitoxin was injected during the first day of the disease, and in the majority of the cases during the first 2 days. There was but one death in the series of cases

studied, and this favorable result is accounted for by the early administration of the antitoxin. In the majority of cases the advisability or nonadvisability of injecting antitoxin must rest on the clinical diagnosis. The amount of antitoxin given in this series of cases varied from 750 to 14,000 units. In 59 of the cases the temperature returned to normal within 3 days after the administration of the antitoxin. The membrane disappeared in 83 out of 99 cases within the first 4 days. In 47 cases either no albumin or the merest trace could be detected in the urine; in 19 instances there was a very marked trace of albumin, and in 23 cases the amount was considerable. There were 7 cases in which the patients were suffering from the nephritis of scarlet fever, or in which they had just recovered from that complication when the diphtheria developed. In 4 of these cases the antitoxin had not the slightest deleterious effect upon the kidney, and in 1 case there was an exacerbation due to the antitoxin alone. One must, therefore, conclude that the antitoxin may have an irritant effect upon the kidney, yet this is by no means the rule, and in many cases the action is only temporary. Postdiphtherial paralysis was seen in 7 out of 104 cases that recovered. Laryngeal symptoms were present in 6 cases. The symptoms attributable to the antitoxin have not differed materially from those so frequently described. They have appeared from the sixth to the eighteenth day after the injection. An erythema was the most common symptom, and was found in 20 cases. [J.M.S.]

25.—Norway reports the case of a woman of 25 who had **tuberculosis of the lungs**. She had had hip-joint disease for 20 years, and the pulmonary condition was of 10 years' duration. There was a large cavity below the left clavicle; the morning temperature was 103° and the evening temperature was 105°. No food could be taken and no medicine could be administered because they produced vomiting and hiccough. The patient was **treated with Cervello's igazol** and in 3 weeks she was out of doors as much as possible and had gained 6 pounds in weight. The author has used igazol in 2 other cases. [J.M.S.]

Lancet.

September 8, 1900. [No. 4019.]

1. Some Aspects of Biology. SIR WILLIAM TURNER.
2. The Expectancy of Life in Cases of Cancer of the Breast. ARTHUR E. BARKER.
3. On the Pathology and Therapy of Angina Pectoris. PROFESSOR THEODOR SCHOTT.
4. Some Remarks upon the Treatment of Heart Disease, with Special Reference to the "Hill Heart." H. J. CAMPBELL.
5. Tracheotomy with Antitoxin in Laryngeal Diphtheria. W. BLAIR BELL.
6. A Note on the Pathology and Treatment of Gastric Ulcer. WILLIAM STUART LOW.
7. A Case of Diffuse Suppurative Peritonitis from Gangrene of the Appendix; Laparotomy; Recovery; with Notes on the Frequency and Mortality of Peritonitis. HENRY A. DUFFETT.
8. The Removal of Septic Effusions from the Cavities of the Human Body. EDWARD ARMITAGE.
9. Note on a Case of Acute Glaucoma the Result of an Operation for Secondary Cataract. CHARLES BELL TAYLOR.
10. A Case of Malignant Disease of the Ovaries. PERCY J. BAILY.
11. Prussic Acid in Sweet Cassava. PROFESSOR CARMODY.
12. York County Hospital: Four Surgical Cases. W. H. JALLAND.
13. A Case of Typhoid Fever; Two Relapses; Recovery. J. M. ATKINSON.

2.—Barker calls attention to the improvement which has occurred in the results following **operations for carcinoma of the breast** in recent years. Still further improvement depends, above all things, upon the spread of knowledge among the general population and the profession. In regard to the danger of neglecting any tumor of the breast, he states, as pathologic axioms, the following: Carcinoma is for a short time a purely local disease; it soon begins to spread into the surrounding tissues by

way of the lymphatics. Three systems of lymphatics participate: the epimammary under the skin, the mammary in the breast substance, and the submammary in the fascia covering the pectoral muscles. The glands of the axilla receive most of the lymph from these systems and act as a dam to further progress for a time. In rare cases the flow of lymph takes place toward the lymph channels underlying the pleura. It is probably possible to reinfect healthy tissues during excision of the breast by the juices of the infected material or by contact of the cut surfaces of the infected area with the dissected surface. When carcinomatous infection has reached the underlying muscles spread to the internal organs has occurred. Bearing these facts in mind, it is now generally held that excision of the breast, to be effectual, must be early. The overlying skin, subcutaneous fat, the pectoral fascia, axillary fat and glands, with the entire breast, must be widely and deliberately removed. During this dissection all divisions of carcinomatous tissue should be avoided, and if unavoidable freshly sterilized instruments, etc., must be used. As little direct handling of the parts as possible should take place. Arrest of all hemorrhage should be accomplished by forcipressure and by ligature, elastic pressure, and bandaging. Rest for the wound should be secured for at least 2 weeks. Extensive removal can thus be accomplished with little risk to the patient in early cases. When the disease has infected the muscles, palliation alone can be expected from surgical intervention, and it is questionable whether extensive operations involving risk from shock should be performed with this end in view. Barker reports the results of 100 consecutive excisions of the breast since 1888; 90 of these excisions were for malignant disease; 26% of the patients have lived over 3 years, and yet succumbed to carcinoma; 15 patients are alive over 3 years after the operation; and 16% have lived over 5 years, giving 33% over 3 years. Only 7 of the patients suffered from local recurrence, the disease returning usually in the internal organs. In almost every case the diagnosis was confirmed by microscopic examination. With still further improvement in early diagnosis and treatment, a far larger proportion of the patients may be saved. [M.B.T.]

3.—Associated with **angina pectoris vera** we find sclerosis of the coronary arteries, alterations of the aortic valves, and aortitis, especially the form that causes an ectasia of the ascending portion of the arch. The coronary arteries may present sufficient lumen in other parts; but often the point from which they arise from the aorta is so diseased that the lumen at the beginning of the vessels is so reduced that a bristle can scarcely be introduced. As a result, weakening of the heart and defect of energy necessarily follow, so that every demand for additional effort is likely to be followed by an additional and sudden failure of energy. Schott has never been able to observe any absolutely characteristic condition of the circulatory system before, during or after the access. It must be especially noted that anginal attacks are readily excited by bodily exertion and by mental excitement. For the relief of the pain the author advises the use of hot water in a rubber bag so that the bag, at a temperature of from 140° to 170°, may be moved with light touches over the whole chest. In many cases this procedure results in marked relief or absolute suppression of the pain. In some cases morphin must be used. Sodium iodid is useful during the attacks. In the interval of the attacks it is necessary to stimulate the heart and to strengthen it. The author recommends camphor and caffeine as stimulants. Balneologic and gymnastic treatment is very valuable. He warns against hurrying the patient on to strong effervescent baths and to too cold or too warm baths. [J.M.S.]

4.—A healthy man who is constantly having to go up and down hills, working hard, eating probably somewhat largely, the food not always being very easy to digest, develops cardiac hypertrophy and slight gastric dilation. As time goes on the patient takes less exercise and his food becomes richer, although not diminished in quantity. If at the same time alcohol is used freely all the conditions are present that tend to produce dilation of the stomach and degeneration of the heart-walls. The condition is known as the "**hill heart**." The stomach should be treated by strict dieting as well as by gastric antiseptics. The meals should be taken dry and the fluids drunk when the stomach is empty. Concerning the heart, the most important thing is to diminish its work. Spartein sulfate has proved a good cardiac stimulant. [J.M.S.]

5.—Bell is strongly in favor of the **antitoxin** treatment of diphtheria. He has used it in all of his cases for the past four years without losing a single patient. He reports three consecutive cases of severe laryngeal diphtheria in which he performed **tracheotomy**. These were the only patients requiring operation. He is convinced that the success of the operation is due to the antitoxin given. A few years ago they would probably have died. The antitoxin loosens the existing membrane, prevents fresh membrane from forming, and so in severe cases tracheotomy will tide over the urgent dyspnea. [M.B.T.]

7.—Duffett reports a **recovery** after diffuse **suppurative peritonitis** from gangrene of the appendix. A boy of 14 was admitted to the hospital for acute pain and abdominal distention. While playing one of his playmates had sat upon his abdomen and the acute attack of pain had resulted immediately. The pain was chiefly about the umbilicus. He vomited frequently and was constipated; there was extreme tenderness; both legs were drawn up; and the lower half of the abdomen did not move on respiration. There was no distention or tumor to be felt. The patient's condition became gradually worse and it was evident that he was suffering from general peritonitis. Five days after the onset of pain the abdomen was opened in the median line below the umbilicus. Very foul pus escaped. No adhesions were present. The intestines were bathed in pus and there was a large collection of pus in the pelvis. The abdomen was thoroughly flushed with boiled water. A second incision was made over the outer half of Poupart's ligament, and the appendix was found lying free in an abscess-cavity which communicated with the general abdominal cavity through a ragged opening. A drainage-tube was passed into the pelvis and the iliac incision was drained by gauze. The remainder of both wounds was closed. The patient bore the operation well, but a few days later the pulse became rapid, the abdomen tender, and the temperature rose again. Another operation was undertaken, but on incision no pus was discovered. Gradual improvement resulted and the patient left the hospital about 6 weeks after the operation, with all wounds healed. [M.B.T.]

8.—Armitage believes that the ideal **treatment of gonorrheal arthritis** is incision of the joint under strictly aseptic precautions, removal, if necessary, of infected synovial membranes, irrigation with some sterilized solution and closure without drainage. This treatment is impossible in many cases, however, and in such cases he believes that medical treatment may be effectual. Several cases are reported which were treated successfully by the use of tonic mixture of iron, arsenic, quinin, etc. [M.B.T.]

10.—Lord reports a case of rapidly growing **sarcoma of the ovary** with extensive infiltrations, occurring in an unmarried woman of 56, who had suffered from insanity for many years. Microscopic examination of the tumor after removal showed a great diversity of component elements and the following cell forms: 1. Extremely small, darkly stained, round cells, about $\frac{2}{3}$ the size of a red corpuscle, which may have been nuclei of broken-down cells. 2. Cells a little larger than a red blood-corpuscle, staining poorly, with a small nucleus or nucleolus. 3. Still larger cells staining deeply and containing many granules. 4. Cells similar to No. 3 but oval. 5. Cells like large leukocytes with 2 or 3 nuclei present. 6. Large flat cells, oval or irregular, sometimes containing a nucleus. 7. Small branching cells; and 8 red blood-corpuscles, some showing a degree of poikilocytosis. [W.K.]

11.—Carmody confirms the observations of Francis concerning the existence of **hydrocyanic acid in sweet cassava**. The prussic acid is found chiefly in the skin and outer cortical layer. [J.M.S.]

12.—Jalland reports a case of **exploratory celiotomy** for severe abdominal pain in which no disease was found. Perfect recovery followed, and the patient gained very much in weight and general health. In a second case, a woman of 28 was operated upon successfully for a large cyst of the liver. The cyst was drained by incision after suture to the abdominal wall. In a third case, a male child, 11 months old, was taken with vomiting, and mucus and bloody discharge from the bowels. There was a distinct tumor felt in the left hypochondriac region. This condition had existed for 12 hours, when celiotomy was performed. The abdomen was opened in the median line, and the lower part of the

ileum was found invaginated in the cecum. Reduction was effected by pressure, and an uneventful recovery followed. In the fourth case cesarean section was performed on a woman of 21, who had an extremely distorted pelvis with a conjugate diameter of 2 inches. Both mother and child are perfectly well. [M.B.T.]

13.—Atkinson and Lowson report the case of a man of 25, who suffered from **typhoid fever**. The disease lasted 41 days, when convalescence began. After the temperature had been normal for 13 days a **relapse** began which lasted 20 days, and after an interval of 14 days he suffered from a **second relapse**, which lasted 13 days. The patient was sent from Hong Kong to England, after being in the hospital 149 days. [J.M.S.]

New York Medical Journal.

September 22, 1900. [Vol. lxxii, No. 12.]

1. The Treatment of Chronic Cystitis in the Female by Curetment of the Bladder and Instillations of Corrosive Sublimate. CHARLES GREENE CUMSTON.
2. Generalized Tuberculous Lymphadenitis, with the Clinical and Anatomical Picture of Pseudoleukemia. The Study of a Case. THOMAS R. CROWDER.
3. A Report of Three Cases of Ascending Urinary Infection Due to the Bacillus Pyocyaneus and the Proteus Vulgaris. GEORGE BLUMER and AUGUST JEROME LARTIGAU.
4. Membranous Enteritis. H. F. SLIFER.
5. A Resume of Some Papers Presented to the Thirteenth International Congress of the Medical Sciences.

1.—Cumston describes in detail his method of treating **chronic cystitis** with curetment of the bladder and instillations of corrosive sublimate. The instillations should be given daily beginning with a solution of 1 to 4,000 or 5,000. The strength of the solution is to be progressively increased according to the tolerance of the mucous membrane of the bladder. The solution should never be made with alcohol. The proper amount to be instilled is from 2 to 4 cc. and from 10 to 15 drops in the neck of the bladder and the deep portion of the urethra. He reports 10 cases treated by this method, and draws the following conclusions: (1) Sublimate instillations will often produce a very great improvement in the distressing symptoms met with in both tuberculous and nontuberculous cystitis, such as a diminution in the frequency of micturition, a decrease of pain, an increase in the capacity of the bladder, and an improvement in the condition of the urine. In some cases a complete cure may be obtained; (2) when the instillations fail to produce the desired effect, **curetment of the bladder** is indicated in both tuberculous and nontuberculous cystitis; (3) in gonorrheal cystitis instillations of sublimate are particularly efficacious, and rapidly subdue the pain; (4) under favorable circumstances a radical cure of tuberculous cystitis may be obtained by curetment when the vesical lesions are localized and the kidneys free from the disease. Curetment through the urethra will not allow the surgeon to reach the entire surface of the bladder, so that when the lesions are extensive they should be directly treated by suprapubic cystotomy; (5) much relief may be afforded by curetment to a large number of patients suffering from tuberculosis of the bladder, but who on account of the advanced stage of generalized infection are in no condition to undergo a more radical operation; (6) when cystitis is caused by a prolapsus of the genital organs, and when hysteropexy, combined with anterior and posterior colporrhaphy, does not relieve the bladder-symptoms, curetment of the bladder, followed by sublimate instillations, is the proper treatment. [W.K.]

2.—Crowder concludes his paper on **generalized tuberculous lymphadenitis** by giving a summary of the findings of the case abstracted in this journal last week. He quotes extensively from the literature and there is an extensive bibliography. [J.M.S.]

3.—**Bacillus pyocyaneus** has time and again been demonstrated in connection with whole series of pathological conditions, but no mention can be found relating to its connection with an **ascending urinary infection**. The three such cases reported in which this bacillus was found are therefore of peculiar interest. All of the cases proved fatal. In the first case the main symptoms were referable to the

nervous system, the most important of these being partial paraplegia, loss of reflexes, anesthesia, and analgesia. It was noticed that no cord lesion was present to account for such a condition. The subsequent development of a bed sore and its infection with the *Bacillus pyocyaneus* is of interest in connection with the point of origin of this infection. Whilst conceding the possibility of its skin origin, it would seem more likely that the skin became infected by the urine from the urinary lesion, and such a belief is supported by the fact that the infection occurred a considerable time after the first clinical manifestations. Furthermore, the postmortem showed the urinary lesions to be of long standing. Case 2 was a simple case of ascending urinary infection following stone in the bladder. Case 3 presented clinically the symptoms of a hemorrhagic septicemia, probably incidental to a puerperal streptococcus infection. The *Bacillus pyocyaneus* was found only in the urinary organs. From an anatomic standpoint and in contradistinction to some other forms of pyocyaneus infection, the ascending urinary form produces no specific picture. The urinary lesions were merely inflammatory hyperplastic processes. One of the most striking things noticed was the relative nonvirulence of the *Bacillus pyocyaneus* isolated from these cases. This was probably because the cases were chronic, as in the acute infections from this germ it is rare to find nonvirulent forms of this organism. [G.B.W.]

4.—Slifer reports 3 cases of **membranous enteritis**—one in a woman of 30; another in a woman of 35; and the third, in a woman of 40. [J.M.S.]

Medical Record.

September 22, 1900. [Vol. 58, No. 12.]

1. The Phelps Operation for Hernia and Method of Closure of Abdominal Wounds. A. M. PHELPS.
2. To What Extent Does "Rheumatic and Gouty Diathesis" Enter Into Traumatic Joints (Sprains and Bruises), Septic and Gonorrheal Joints, Acute Articular Rheumatism, Neuropathic Joints, Arthritis Deformans (Osteoid, Rheumatoid), as an Etiological Factor? What is the Scientific Basis for Such a Term? WILLIAM HENRY PORTER.
3. Primary Carcinoma of the Parovarium. B. S. TALMEY.
4. Simple Fracture of the Shaft of the Femur, with Report of Two Cases of Delayed Union. WILLIAM H. SHIPPS.

1.—Phelps believes that the reason why so many **relapses** occur in **operations for hernia** is because the scar tissue is stretched. Since 1892 he has operated upon 216 cases of hernia; 46 were relapsed from Bassini's operation; 51 from other operations, chiefly McBurney's. In all these cases he closed the abdominal wounds with silver wire. He believes that his method of closure is original. He uses continued sutures of fine silver wire which becomes encysted. In case the abdominal walls are extremely thin a mattress of loops of silver wire is introduced over the transversalis fascia. A glass drainage-tube is inserted down to the wire mattress. These relapses occurred after primary operations in our best hospitals and by prominent surgeons. Phelps predicts that the use of the subcutaneous silver-wire mattress will become general and that other methods will soon be abandoned. He has personally had 16 infections. In such cases he lays the wound open, cures out all the infected material and fills the wound with pure carbolic acid, afterwards washing it out with alcohol, and allows the wound to heal by granulation. In no case has a relapse followed. [M.B.T.]

2.—Porter, after first calling attention to the extremely unscientific nature of the terms **diathesis, gout and rheumatism**, undertakes by a consideration of various chemic theories and problems to determine what the nature of the last 2 conditions may be. Taking the most prevalent theory, namely—that gout is due to the non-elimination of uric acid from the blood-stream and its subsequent discharge from the blood as uric acid into the protoplasm of the various structures of the body, he first undertakes to determine what conditions give rise to the production of uric acid and where it is produced. In answer to the first, he looks upon uric acid as a product of suboxidation and disregards the fact that it is the principal excretory substance of birds and reptiles. He does not believe that it is found in the blood as

free uric acid nor as uric acid in combination, although he admits that it possibly does not exist as such. He thinks, however, that the most logical theory is that it is produced in the renal cells where it has a solvent action upon calcium phosphate that would otherwise form calculi. In cases of prolonged high tension, sub-oxidation occurs, and there may be an increased production of uric acid. Under these circumstances, it may be found in excess in the urine or may in fact be produced by the various tissues of the body. This theory, of course, is not in accordance with the bacteriologic theory. Porter admits that various microorganisms have been found associated with rheumatism, chiefly of the coccus form. Nevertheless, we know that chemic toxic substances are capable of producing definite trains of symptoms, and it is not unreasonable to suppose that such substances may be the cause of rheumatism and gout. Admitting this we can look upon gout either as the result of the prolonged ingestion of greater amounts of nutrition than the system can perfectly oxidize, or of some morbid condition reducing the oxidatory power of the tissues. The toxic substance itself may be either a by-product or an isomeric alteration of a normal product. Various conditions give rise to the alterations in the joints, perhaps the most excessive forms of these occur as the result of long-continued imperfect oxygenation of the tissues. These may act by preference upon a joint that has been the subject of some form of traumatism or infection. [J.S.]

3.—A woman, 43 years of age, having been operated upon for **carcinoma of the pylorus**, died a few weeks afterward. The autopsy revealed the presence of a malignant ovarian tumor on each side. Microscopic examination of the tumors showed the main mass of the growth to be composed of various irregular spaces lined with a single layer of high cylindrical epithelium within a richly cellular stroma. There occurred also solid nests of these cylindrical epithelial cells. Since these cylindrical epithelial cells are peculiar to the parovarium, while the epithelial elements of the ovary, the genital epithelium, as well as the follicular epithelium are cubical, the logical conclusion was that these growths were **primary carcinoma of the parovarium**. Talmy agrees with Ribbert in his claim that the main cause for the origin of a cancer is always the proliferation of the connective-tissue elements resulting in a separation of the epithelial cells from their organic coherence and their implantation within the connective tissue. The isolation of the epithelial cells once accomplished, they begin to proliferate within the connective-tissue and lead to atypical growths. If all the so-called ovarian tumors were systematically examined under the microscope, a great part of them would certainly be found to be of parovarian origin. [W.K.]

4.—Shipps reports two cases of simple fracture of the shaft of the femur with delayed union. The patients were treated with extension apparatus, and after nonunion seemed probable systematic massage was employed, together with the use of hypophosphites internally, with a successful result in both cases. Shipps recommends the early employment of **massage in fractures** as an aid in facilitating consolidation. It improves the nutrition of the parts and prevents stiffness or ankylosis of the kneejoint. [M.B.T.]

Medical News.

September 22, 1900. [Vol. 77, No. 12.]

1. Studies in Surgical Technic, with a Report on Operative Surgery at the City Hospital for 1898 and 1899. GEORGE EMERSON BREWER.
2. Toxicity Versus Septicity in the Infectious Pathogenic Bacteria. EUGENE WASDIN.
3. Total Extirpation of the Ureter. WILLY MEYER.

1.—The results obtained by Brewer at the New York City Hospital show very clearly the wonders of **modern antiseptic and aseptic surgery**. During his first month there, there were 43 cases operated on for various diseases and injuries, and not one clean case escaped infection. At this time there were absolutely no appliances belonging to the modern surgical operating room, and the technic was faulty to a criminal extent. As time went on Brewer was able gradually to get modern appliances and modern technic installed and the results are very well

shown in the following summary: First year, 147 operations, mortality 5.4%, infection in clean cases 39%. Second year, 109 operations, mortality 8.2%, infection in clean cases 9%. Third year, 165 operations, mortality 9%, infection in clean cases 7%. Fourth year about the same and the fifth year, 168 operations, mortality 7.1%, infection in clean cases 3.2%. The improvement in technic shows to a much greater advantage from the standpoint of clean wounds than it does from the standpoint of a lessened death-rate. [G.B.W.]

2.—Wasdin believes that microorganisms cause reacting symptoms 2 ways, either they produce a toxin which permeates the whole system and gives rise to intoxication or with slight development at the point of inoculation they rapidly multiply and permeate the tissues giving rise to **septicemia**. As examples of **intoxication**, he mentions particularly the diphtheria-bacillus. He is not certain that we have any pure type of septicemia, but thinks that the plague bacillus approximates most closely, and that of typhoid fever must be regarded as in part a septicemic condition. Plague he considers primarily a pulmonary infection producing little reaction but rapidly becoming generalized. Many microorganisms exhibit both toxic and septic power; the relative proportions of the 2 varying; as for example, in typhoid fever. [J.S.]

3.—The operation of **total extirpation of the ureter** may be done either simultaneously with the nephrectomy (primary) or some time after this interference (secondary). In case of nephrectomy for malignant disease the ureterectomy will generally be a primary one, but only partial. In cases of tuberculosis it is best to remove as much of the ureter at the time the nephrectomy is done as is thickened and, to the naked eye, diseased. Total extirpation of the ureter in combination with removal of a tuberculous kidney is indicated only if the tube is visibly enlarged and suppurating. Meyer reports a case in which he removed the whole ureter, secondary to a nephrectomy, for hydropyonephrosis. The nephrectomy healed readily and for 15 months the patient was not seen. At the end of this time he again came under observation, and when examined the left ureter was found to be suppurating and rendering the urine turbid with pus. The operation was carried out through an incision devised by James Israel, and the whole ureter was exposed without entering the peritoneal cavity. After the ureter had been removed the entire abdominal wound was closed layer by layer with continuous sutures. The patient made an excellent recovery. The cause of the trouble was found to be a stone lodged in the lower part of the ureter causing ulceration which had cicatrized, causing stenosis. [G.B.W.]

Boston Medical and Surgical Journal.

September 20, 1900. [Vol. cxliii, No. 12.]

1. Treatment of Pott's Disease after the Development of the Deformity. EDWARD H. BRADFORD.
2. Joseph W. England's Fat-Free Tincture of Digitalis. ELBRIDGE G. CUTLER.
3. Knee-joint Surgery for Nontubercular Conditions. A Report of 38 Operations for Synovial Fringes, Injured Semilunar Cartilage, Loose Cartilage, Coagula, Exploratory Incisions, etc. JOEL E. GOLDTHWAIT.

1.—A study of the statistics of **forcible correction of deformities** resulting from **Pott's disease** of the spine is given; 639 corrections were performed by 34 operators. The time elapsed varied from a few days up to 3 years and more. Of the separate detailed cases, in 7 more than 1 year had elapsed; in 35, more than 6 months. Deaths reported from all causes, 25; various diseases, 5; general tuberculosis, 4; trauma of the operation and chloroform, 5; intercurrent disease, 7. Immediate results: Respiratory embarrassment, 7; pain, 6; severe shock, 3. Abscess present before operation, 19; ruptured, 4; benefited or absorbed, 6; appeared after operation, 2. Paralysis present before operation, 23; relieved, 17; not relieved, 2; made worse, 1. Paralysis appeared after correction in 4. Direct effect on deformity in 240 cases: Complete correction, 130; incomplete, 94. Result in 77 cases: No relapse, 20; some relapse, 50; total relapse, 7. From these figures it appears that more force can be used with safety in the attempt at correction of a kyphosis than was formerly considered possible (639 cases with but 5 deaths

from the procedure itself). The amount of force to be employed with safety depends upon the amount of resistance and solidification of the affected bone. Eight different methods of applying force have been employed. These different modes involve the employment of 2 methods of application of force—pressure and pulling. Experiments upon the cadaver at the Harvard Medical School are reported, showing that the correcting force to be preferred is pressure rather than traction, as it is more precise in its effect than pulling, which is partly expended upon the secondary curves. Pulling force involves unnecessary strain upon the neck and lumbar region which, when an anesthetic is not used, causes pain not essential to correction. Pressure force may be made to act more directly and with less waste. Anteroposterior pressure, corrective force of the type of the Metzger-Goldthwait appliance, appears to meet the necessary conditions for correction and application of the bandage more precisely than Calot's method. A retention appliance is as important as correction, and it is necessary that fixation in a corrected position be carried out for a long period. Unremovable plaster jackets form the most feasible means of immediate fixation, accompanied at first with recumbency which removes the superimposed weight, but as recumbency is incompatible with the healthy condition necessary for repair, the patient should, as soon as possible, be allowed locomotion. It is stated in conclusion that correction or rectification of the curve in Pott's disease is to be considered in every case of active disease with deformity. The employment of force should depend on the pathologic conditions, and not on the extent of the curve. Force should be used with great reserve. Improvement of the curve is to be considered in every case, and is to be attempted wherever the spinal column can be made straighter without great force. The main dependence, however, for an ultimate success remains in the surgeon's careful, continued, and thorough employment of retention appliances which hold the spine in the straightest possible position for a sufficient length of time for consolidation of the diseased bony structures. Success is won more by careful attention to detail than by an operative attempt. [M.B.T.]

2.—Cutler calls attention to the great advantage of **England's preparation of fat-free tincture of digitalis**, the object being to eliminate the irritative oils. This is made by soaking the leaves in purified benzine repeatedly until all the fat is removed. The residue is then treated with alcohol and ammonia, the latter neutralizing the free acids. He quotes some of the cases treated with this fat-free tincture and mentions two cases of his own in which it was readily tolerated and apparently acted well. [J.S.]

3.—Goldthwait shows very conclusively by considering the results obtained in 38 operations which he has performed, that **operations upon joints** need not be feared more than operations upon other parts of the body. He urges the importance not only of operating to relieve definitely recognized conditions, but of exploratory incisions in doubtful cases to determine the exact nature of the disease. Without this it is impossible in many cases to differentiate in the incipient stage between several different conditions, and it is at this very time that the most can be accomplished in the way of treatment if the exact condition is known. In determining this with the joint open it has been found necessary to depend more upon microscopic examination than upon macroscopic appearances, as more than once a condition which was supposed to be nontubercular has revealed the characteristic lesions of that disease in the microscopic preparation, and vice versa. Of the 38 operations, 1 was for the removal of a loose cartilage; 2 were for permanently dislocated patellae; 7 were for exploration to determine the nature of the disease; 9 were for removal of an injured or displaced semilunar cartilage; 19 were for the removal of synovial fringes or masses of coagulated fibrin. No unpleasant results followed the operations except in a case of osteoarthritis, in which the disease was apparently made more acute. The exploratory incisions, with this one exception, did not alter the course of the disease. The patients from whom semilunar cartilages were removed have functionally normal joints. Goldthwait considers removal of the cartilage much preferable to suture, for suture of any kind, because of the structure of the cartilage, must be uncertain, and at the best it necessitates a long course of carefully supervised protection of the joint afterwards. The cases in which

synovial fringes and coagulums were removed are improved in proportion to the nature of the disease which caused the condition to be present. [M.B.T.]

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1. Specialism in Medicine. FREDERICK C. SHATTUCK.
2. Trauma as a Cause of Nervous Diseases. CHARLES W. BURR.
3. Traumatic Neuroses from the Standpoint of a Surgeon. ARTHUR DEAN BEVAN.
4. Medicolegal Relations of Traumatic Nervous Affections. JAMES HENDRIE LLOYD.
5. Prognosis and Treatment of the Traumatic Neuroses. WHARTON SINKLER.
6. Physicians as Speakers. WILLIAM WHITFORD.
7. The Identification of Dextrose in Human Urine. HEINRICH STERN.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. VI, p. 529.

2.— “ “ “ “ “ V, “ 1349.

3.— “ “ “ “ “ “ “ 1287.

5.— “ “ “ “ “ “ “ “

6.—Mr. Whitford shows clearly that for the physician who is to take active part in the progress of medical science pleasing and effective elocution is a useful accomplishment. Such ability is important for reasons other than those purely professional. Physicians are often summoned to testify in courts of justice, where their resources of expression may be taxed for hours. They are frequently placed on boards of education, on committees dealing with sanitary conditions, and on the common councils of cities. In meetings of citizens they are asked for their views on propositions affecting the public health, and, if successful in their professional careers, may be associated with the faculties of medical colleges. They are also members of city, county, State and national medical associations, where debate is had on papers read and questions relating to the rights, privileges, or standing of the profession, or regulations for the management of the organizations. Yet for such positions many, otherwise qualified, are unsuited because they have neglected the study and practice of free expression. The essentials of good **public speaking** are discussed, some more common faults are pointed out and examples are given from the speaking of various prominent members of the profession. [M.B.T.]

7.—Stern discusses at considerable length the nature and value of the most frequently applied **tests for urinary glucose**. He concludes that there is no single method which is entirely free from possible sources of error. Absolute reliance, therefore, should not be placed on any single test. Among the numerous methods in vogue, 3 specially are of considerable value, namely, Nylander's, Penzoldt-Rubner's, and the fermentation tests. The great value of Nylander's modification of the bismuth-test is virtually but an indirect one—the nonreduction of the bismuth salt being positive evidence of the absence of pathologic amounts of dextrose. Penzoldt-Rubner's ammonia-lead acetate reaction is the most reliable process, the fermentation test being a close second. There are 2 great advantages the Penzoldt-Rubner test possesses over the fermentation process, viz., it renders immediate results and its limit of reliability is more extended. The copper tests, as Fehling's, Pavy's, and Purdy's, serve admirably when employed for quantitative determination after identification has taken place. The employment of a copper test without a control process, even in mere routine work, is objectionable. [M.B.T.]

Lymph Nodes as a Factor in Diagnosis.—Wheaton (*St. Paul Medical Journal*, September, 1900) says the nodes are physiologically engaged in a constant warfare against contamination, and hence their increased size informs us that pathologic processes are at work somewhere. He criticises the attitude of the surgeon toward those enlarged nodes, claiming that he too frequently deems it his duty to remove them. An intelligent sifting of evidence, an intelligent review of subjective as well as of objective conditions, will render our list of operations shorter, but our meed of praise the greater because we have secured the best possible results with a minimum of injury to the patient. [A.B.C.]

Original Articles.

APPENDICITIS.*

BY SAMUEL LLOYD, M.D.,

Professor of Surgery, New York Post-Graduate Medical School.

It was my privilege to be invited to read a paper before the New York Medical Union,¹ at their meeting on December 26, 1899; and at that time I gave the statistics of 25 cases of appendicitis that I had seen during the first attack and followed for years, until the final outcome was known.

These 25 cases offer some suggestions in regard to what happens in the so-called conservative treatment of appendicitis. Of the 25 cases, 6 terminated fatally. This is a mortality of 24%, and is somewhat startling when compared with the statistics of experienced operators. Fitz gives the mortality in his statistics, compiled in 1886, as 26%.

Eighteen of my cases had recurrent attacks. In other words, only 7 escaped without recurrence. This is contrary to the usually accepted statements of physicians who have reported that their cases of appendicitis *always* result in recovery under medical treatment. The explanation seems to me to be a comparatively simple one: They do not follow up their cases. Many of these cases I traced from one physician to another before their histories were complete. In this series of cases a gradual tendency to an increase in the frequency and severity of the attacks was noticed. I do not mean by that that every attack was worse than the last, but that the general condition gets worse, and the sum total of the attacks one year is apt to be greater than that of the year before. Nor do I mean to be understood as claiming that the attacks need necessarily follow one another in rapid sequence. On the contrary, several months or even years may elapse between attacks, but in the end the testimony of the patient will be that the colic is more frequent and more severe, constipation less readily combated, and indigestion more constant and more marked. The right spasm is more distinct and more tense; the patient is inclined to protect this side and keeps it turned away from danger as much as possible; the appendix becomes more readily palpable and more painful to the touch. Flesh is gradually lost, and the general tone is decidedly below the proper and usual standard.

Similar ideas have been advanced by many other authors. Mynter² says that most authors agree that all attacks of appendicitis predispose to new attacks unless the appendix happens to be totally destroyed by gangrene, complicated by a local circumscribed abscess, or unless obliterated by destruction of its epithelium, and cicatricial retraction of the new formed tissue. His cases showed recurrence in 35 out of a total of 75 (47%).

German statistics on this point are interesting. Thus, Rotter,³ at the St. Hedwig Krankenhaus in Berlin, gives the statistics of all the cases treated in both the medical and surgical wards of that hospital. He claimed that 84% of all cases which were brought to the hospital in the first 6 days of the disease recovered spontaneously, and the whole number of spontaneous recoveries, that is of cases admitted at any stage of the

disease, was 74%. If the cases of circumscribed abscesses alone are considered, the percentage of recovery without operation rises to 90%. In the Moabit Hospital in Berlin, in three years and a half there were 149 cases, with a mortality of 14%. In these cases in the Moabit Hospital, Sonnenburg operated 94 times, or in 63% of all the cases, while Rotter only operated in 25.3% of his cases.

Ewald,⁴ in considering these reports, draws two conclusions: (1) That it is unnecessary always to operate at the earliest possible moment, and (2) that in cases of periappendicular abscess, spontaneous resolution occurs in an appreciable number of cases. He adds that "it cannot be doubted that a resorption of the pus . . . took place. In what manner this is accomplished, whether by autodrainage into the cecum through the perforated vermiform process, by direct perforation into the gut, or by resorption on the part of the peritoneum, must remain problematical."

Rotter also gives some data in regard to recurrences. In the histories of his cases, only 21 or 24 were recorded as having had previous attacks. They rarely had more than two attacks, and the second usually occurred within a year after the first. Attacks occurring later than that were rare.

These statistics are so absolutely at variance with those of other observers and with my own, that they are given only to show how a medical man can be led astray. These cases were largely observed in large hospitals and in Germany. In that country they do not generally class appendicitis as a surgical disease, but treat it medicinally, until an abscess is formed when they open and drain, and it is of course a fact that the statistics of cases seen in hospital practice are essentially different from those seen in private practice when the future condition of the patient is to be considered.

Every one admits that the majority of cases will recover from their first attack, and even from several attacks; every operator has seen large abscesses disappear, but the difficulty is that when these patients are observed by the physician he records them as triumphs for his skill in therapeutic application and forgets to observe them for the next five or ten years. That is the difficulty with Rotter's cases. They were not watched long enough. This, I think, I was able to show in my recent article on this subject, and I have no doubt that if everyone would take the same precaution, to follow up his cases, no matter how much it might hurt his pride to ask his successor in the patient's confidence, about him, we should have statistics so abundant that this question would be incontestably settled.

We concede the fact "that it is unnecessary always to operate at the earliest possible moment," but that is not the point. The question is how are we going to tell whether the patient will recover from the present attack or whether operation must be done to save his life. There is another question also that enters into this discussion at this point. Which method of treatment, in the end, is going to be most economical for the patient from the standpoint of both physical and financial wellbeing? In other words, Which will cause the least loss of time, the least risk, and the least pain and discomfort?

If it could be proved that these statistics from St. Hedwigs Krankenhaus and from the Moabit Hospital in Berlin, as interpreted by Ewald, were correct, there

* Read before the Alabama State Medical Association April 19, 1900.

would be no question about it. But Toft⁵ found the appendix diseased 110 times in 300 autopsies and in a stage of active ulceration in 5% of the examinations. Hawkins,⁶ in 100 bodies of patients dead from other than appendicular disease, which he examined at St Thomas' Hospital, London, found 16 in which there was past or present disease of the appendix. Fitz⁷ in 1886 placed the recurrences at 11%, but later he raised it to 44%.⁸ Krafft's⁹ statistics also disprove these statements of Rotter's, for he found that 24 of his 106 cases had had previous attacks, generally one to three years before, but in one case 20 years had elapsed. Treves has mentioned a patient that had had 14 attacks and McBurney one with 12. My cases showed, as we have already said, recurrence in 18 out of 25 cases, 72%. This is so much greater than the results already mentioned that it cannot but cause comment. It is explainable, however, when one considers that my cases were watched for years and careful records kept of their condition. Hawkins, out of 250 cases, found a history of previous attacks in 23.6%. Wood¹⁰ studied the question especially and reports as follows: Irish, 50%; Price, 50%; Richardson, 49.8%; Ransohoff, 13%; Knaussold, 23%; Porter, 9.5%; Bryant, 11 to 17%; Sahli, 20%; Gage, 33.5%; Wyeth puts it at 80%, and Willy Myer¹¹ at 90%. Finally, Lennander¹² says that all the cases he has observed long enough have had relapses.

Could we throw out of consideration the question of relapses, we could then adopt Ewald's views, but unfortunately all surgeons have been obliged within the past few years to recognize the fact that recurrence is the rule and not the exception, and it is this that has led to the axiom *that operation should be performed in every case of relapsing appendicitis.*

A question that is raised by this statement is how many times should the patient have an attack before we operate? McBurney has said twice, and to my mind this is the limit, although I am free to confess that I feel safer for my patients after they have had one well-marked attack when I know that the appendix is removed.

Large masses in the right iliac fossa during an attack of appendicitis have disappeared; how or when we do not know. Is it always safe to wait for this disappearance? Are we not quite as likely to have a rupture of a tense abscess into the general peritoneal cavity, or have it burrow upwards until it penetrates the diaphragm and empties into the lung? I have seen this happen in my own cases. Even when it empties into the gut it does not mean freedom from recurrence by any means; 2 cases terminating in this way in my own experience had to be operated upon later for recurrence.

On April 16, 1896, I read a paper before the Medical Association of Georgia.¹³ As the basis for that paper, I took 558 cases from literature and tabulated them. Since then I have examined 1,011 in the same way, of which 878 resulted in abscesses, perforation, peritonitis, etc.

The following table gives the pathological details :

Perforation or abscess	315
“ “ with ulceration.....	17
“ “ “ peritonitis	69
“ “ “ concretion or foreign body	133
“ “ “ gangrene.....	68
“ “ “ gangrene and concretion..	18
“ “ “ inflammation	6
“ “ “ hardened feces	17

Perforation or abscess with concretion and peritonitis	27
“ “ “ foreign body and peri- tonitis	15
“ “ “ lumbricoid worms	6
“ “ “ hernia	5
“ “ “ rupture in bladder, rectum or vagina	15
	711
Foreign bodies	26
Fecal concretions	5
Inflammation	36
Enteroliths	3
Gangrene	34
Gangrene with concretion	8
Inflammation with concretion	4
	116
General peritonitis with foreign body and gangrene	22
General peritonitis with ulceration	29
	51
Total number of cases.....	878

This leaves only 133 cases in which the condition was unknown or where there was no definite pathological condition found.

As the result of this study, I tabulated the conditions usually met with as: 1. Cases in which the disease follows trauma. 2. Cases following septic inflammations in other parts of the body, such as salpingitis in the female, postpartum septic inflammation of the uterus, typhoid fever, tuberculosis, etc. 3. Direct infection of the mucous membrane of the vermiform appendix by its contained bacteria. 4. Alterations in its position and shape, so as to occlude its lumen, preventing the escape of its natural secretions and contained intestinal contents. 5. Alterations in its position, and pressure upon its mesentery by growths and impacted feces in the cecum. 6. Alterations in its position or shape so as to shut off its blood-supply. 7. Foreign bodies, including fecal concretions.

A most interesting case of the sixth division was operated upon by me at the New York Post-Graduate Hospital this winter. The patient was a boy about ten years of age who was sent to me by Dr. Shufelt. He had been ill only two or three days, and on admission his temperature was only 101° , but his pulse was over 130 and weak. A tumor could readily be mapped out in the right iliac fossa. Operation was performed immediately, and the appendix was found to be gangrenous from the tip to within half an inch of its base. The gangrene was due to the appendix having been twisted three times on its own axis, so that its own mesentery was wound around it, forming a firm band and completely strangulating it.

Taking this classification of cases, the question of treatment in each set naturally interests us. A traumatism in this region does not differ in any essential from a traumatism in any other part of the abdominal cavity, producing contusion or injury of the intestine, and should be subjected to the same rules and to the same treatment. So, too, in rheumatic or septic or infectious disease, the treatment would be the same as for similar lesions anywhere else in the abdomen. If the obstruction to the circulation is prolonged or permanent, so that the vessels are occluded, it is perfectly evident that there can be but one result, sphacelation of the whole organ beyond the point of circulatory obstruction. It is not necessary here to have any septic infection in the beginning, but the sphacelation of the

organ will naturally produce the same train of symptoms that would follow gangrene elsewhere. It offers the proper field for the development and growth of the different bacteria, and in a very short time it naturally becomes the seat of pathogenic and pyogenic changes. Naturally this evolution depends upon the rapidity with which the disease progresses. If the obstruction is complete, the gangrene is rapid and perforation occurs before the appearance of an abscess or inflammatory change that is sufficient to agglutinate the folds of the intestine lying about the iliac fossa. The natural result of this is perforation into the general peritoneal cavity with all the symptoms of an acute general peritonitis. If, on the other hand, the progress of the disease is less rapid, agglutination of the surrounding folds of the peritoneum will wall off the appendix, and then if perforation results the general peritoneum is protected. This is true of all the other conditions. The longer the irritation, the less rapid its extension, the more certain is the involved area to be protected by inflammatory adhesions.

The formation of a tumor, then, is not solely and in every case due to the presence of an abscess. In the great majority of cases it is impossible to recognize fluctuation. In the earlier stages, and when the disease progresses slowly, inflammatory lymph without the formation of pus may be thrown out around the diseased organ, forming an almost impenetrable barrier to the escape of the contents of the appendix into the peritoneum, and producing a well-marked induration. It does not necessarily follow that because a tumor is present in the right iliac fossa, the case will not resolve and recover without operation. On the contrary, a simple inflammatory induration and adenitis following a not too active germ-infection, may on the disappearance of the original point of infection be so well provided for by the natural conditions that it will gradually be absorbed, and frequently completely disappear. That is, of course, provided no secondary attacks occur.

The patient is not always safe, however. This probably accounts for many of the cases of which Ewald speaks, of resorption of pus, even when the tumor seems to have developed so slowly as to be comparatively well walled in by the agglutinated fold of peritoneum. The erosion of the pent-up fluids may cause perforation into the peritoneal cavity, and naturally, if this happens, a virulent septic peritonitis must result. Spontaneous evacuation into the lung, bladder, intestine or bowel may follow, but it is hardly safe, in view of the rapid mortality following perforation into the peritoneum, and the risk of such an accident, to take any chance of waiting for this to occur. If an examination of the blood shows marked leukocytosis it will help in the diagnosis of abscess.

I do not suppose that the question of the advisability of operation in this disease, in the cases where the appendix is gangrenous, where abscess has already formed, or where a fecal concretion or a foreign body are probably present would be opposed by any one. It must be perfectly obvious that in these cases, unless the causes of the irritation are removed by mechanical means, the patient is in imminent danger and likely to develop general septic peritonitis at any moment. By a reference to the table it will be seen that these cases make up the vast majority of all the cases of appendicitis.

It is also probable that in the present state of surgery

the majority of medical men are in favor of surgical intervention in cases tending toward general peritonitis, even though the symptoms do not point to perforation or abscess formation, in the hope that drainage of the abdominal cavity and the removal of an irritating focus of disease may forestall what would otherwise be a fatal complication.

This leaves a comparatively small number of cases in which the question of what should be done would be debatable. It is for these reasons that I do not believe any case of appendicitis should ever be considered as purely medical. Given a case of appendicitis, whether it has a history of recurrence or not, the medical attendant should be prepared for operation at any moment, and if not himself an expert abdominal surgeon, he should at once arrange with some one who has had the necessary experience to hold himself in readiness to operate.

It has been abundantly proved that the best time to operate is in the interval between attacks, but it is sometimes very difficult to say whether, if we wait, the patient will live to have an interval. I know of no absolute rule for this, and personally I am guided more by the condition of the pulse and the abdominal rigidity and tenderness than by the temperature. If the pulse is rather weak and rapid, the countenance very anxious, the tongue badly coated, the abdominal tension marked and the induration as felt through the rectum excruciatingly painful and the leukocytosis marked, I believe delay to be dangerous. Operate then and operate at once.

In the course of my clinics at the New York Post-Graduate Medical School and Hospital, on the subject of appendicitis, I am in the habit of giving this rule. In all cases of appendicitis where the symptoms are progressing unfavorably, after 24 hours have elapsed, operate and operate immediately, but in those cases where there is an undeniable amelioration during this time wait until the interval and operate then. In recurrent cases operation should be the invariable rule.

We are forced to the conclusion that operation is the only rational course to pursue, for, as McBurney has said, "no purely medical treatment of actual value in preventing or controlling the disease has yet been presented to the profession." And he might have added that with the definite information we now possess of the etiology and pathology of the disease none will be presented until, in the natural course of events, the appendix is evolved out of existence.

The next question then is how to operate. The evolution of individual surgical opinion on the subject is interesting. Most of us have begun by considering the question from a most conservative standpoint, only operating under the severest necessity; then, with increasing experience and a ripper personal knowledge of the progress of the disease, we have found ourselves gradually advising earlier and more radical procedures. Is this the result of mature thought, or is it the rashness born of familiarity? The general tendency of all surgeons who once begin to work in this field toward the same general conclusions, that the earlier the operation the greater the number of complete recoveries and the shorter the loss of time, proves that it is the result of ripe experience.

In 1827 Melier¹⁴ described the forms of appendicitis and mentioned both perforation and recurrence as possible complications. He suggested the possibility of treating the disease by surgical means "if it were

possible to establish the diagnosis." In the case of Hancock, 1847,¹⁵ so often quoted as one of the earliest operations for appendicitis, the incision was made "from the spine of the ilium to the inner side of the internal abdominal ring, to relieve intestine, if found, or omentum, or, if pus, to evacuate it." "Upon opening into the abdomen a quantity of excessively offensive turbid serum with fibrinous flocculi poured out and also patches of false membrane." This was therefore not a planned operation for appendicitis, but rather an exploratory laparotomy. Parker¹⁶ also operated about the same time, but did not publish his case until 1867. He then advocated cutting down to the peritoneum and then puncturing with an aspirating needle. Parker operated again on a patient of Burge's,¹⁷ and then Leonard Weber¹⁸ operated by cutting down to the peritoneum and waiting for the abscess to rupture. Buck,¹⁹ in 1874, reported 3 cases together with 1 each by Krackowizer, Ward, Sands, Kelsey, White, and 1 of his own. He varied the technic by enlarging the trocar puncture by incision with the knife. It should be noted that in 1856 Dr. George Lewis,²⁰ in an article on abscesses in the appendix vermiformis, said in regard to treatment that he was inclined to favor the making of a free incision down upon the tumor. Parker's method continued to be the mode of operating, and in July, 1880, Sands,²¹ in reporting 26 cases, said that "in every case that has fallen under my observation the operation has been performed essentially in the manner recommended by Dr. Parker." "An incision several inches long, and usually parallel with Poupart's ligament, was made over the most prominent part of the tumor, through the skin and subcutaneous fat. Subsequently the deeper layers were divided until the fascia transversalis came into view. If fluctuation then became evident, the abscess was immediately opened, otherwise the fascia was penetrated in various directions by means of a hypodermic syringe until the seat of the abscess was discovered, when the operation was completed by entering a narrow bistoury alongside the needle." He adds at this time that "an external incision of two inches will afford ample space, and the wound should grow narrower as it increases in depth, while the direct opening into the abscess need not be longer than will readily admit the forefinger." Bull²² in 1873 read a paper in which, while he still advocated the method proposed by Parker, he brought out the fact emphatically that as soon as suppuration was made out the tumor should be incised. This was the general position of surgeons in 1882. At this time the truth was just beginning to dawn; the profession were just realizing that instead of the cecum being the point of involvement, the disease was almost invariably confined to the vermiform appendix. This evolution in opinion was not sudden, but gradual; the accumulating experience of operators with the so-called perityphlitic abscess was revealing the true state of affairs. From an operative point of view the field was clouded by the assertion made by Sands that these abscesses were always extraperitoneal, developing in the cellular space below the mesocecum and spreading from that point along the fascial planes of the back of the abdomen outside of the peritoneum. His advice in regard to operating and trying to avoid the peritoneum was followed by many, and as it delayed the thorough inspection of these appendices by this brilliant surgeon, it delayed by just so much the true knowledge of appendicitis. Therefore, in 1879, when Biermer, in 1880, Matterstock, and

in 1882, Talamon described the part played by the appendix in the production of perityphlitis, surgeons were almost ready to accept the proposition. In 1885, Treves exploded the extraperitoneal theory, and in 1886 and 1888, Fitz, of Boston, conclusively settled the position of the appendix in disease of the right iliac fossa. Sands, in 1887, conducted the first planned operation for the removal of the appendix. Treves, of London, advocated a similar procedure the same year.

A resume of appendicitis from this time until the present would be practically a history of American surgery and American attainment in abdominal surgery. In 1891,²³ in a discussion before the New York State Medical Society, McBurney took front rank as the exponent of appendiceal surgery, a position he has continued to hold up to the present time. McBurney's point was as important from the position of the diagnostician as his plan of operating is to the surgeon of the present day. He said: "I have found the *exact* locality where the greatest sensitiveness to pressure exists to be a valuable means of diagnosis, so that in every case of abdominal pain, not otherwise satisfactorily explained, I make a careful search for it, and in the first hours of all attacks of appendicitis, if firm pressure is made with the finger tip, and especially if the patient is made to cough while such pressure is being exerted, it is invariably easy to determine that the most sensitive point is a definite one in most cases. This point is very accurately determined, in the adult from one and a half to two inches inside of the right anterior superior spinous process of the ilium on a line drawn to the umbilicus. In children it is, in proportion to their size, so much less distant from the spinous process."

Edebohls²⁴ also made an important addition to our diagnostic resources when he, in 1894, described the method of palpation of the vermiform appendix. In carrying out his procedure the patient must lie "on her back. Placing three or four fingers of our right hand flat on the abdomen, we feel for the margin of the right rectus muscle, in the line between the navel and the anterior superior spine of the ilium. The fingers are introduced with a light, steady pressure under the margin of the rectus until we feel distinctly the pulsation of the common iliac artery. The appendix is felt, as a rule, just outside the artery, its insertion about an inch distant, while its tip often crosses the artery. We move the fingers slowly outward as soon as we feel the pulsation of the artery, and note with care the condition of the posterior abdominal wall—that is, the ilio-psoas muscle covered with the iliac fascia. This is the point of resistance against which we compress the appendix and which makes it possible to palpate it."

The operation divides itself naturally into that for the nonsuppurative and the suppurative cases. When, following this discussion at the New York State Society, operations became more frequent, it was soon evident that the large incisions and the interference with the integrity of this portion of the abdominal wall, rendered the patient extremely liable to hernia through the cicatrix. This led to a general revision in the method of operating and a study of the best means to avoid this accident. Kammerer,²⁵ Mynter, and others at this time suggested an incision just under the outer edge of the rectus muscle, drawing the muscle inward. The disadvantages of this incision are that, when the sheath of the rectus is opened, branches of the deep epigastric artery are cut, and this often gives a hemorrhage neces-

sitating a prolongation of the incision to control it. The incision is also at a greater distance from the appendix itself, especially if it is curled under the cecum and bound down by adhesions.

Willy Meyer²⁶ has recently suggested a method of opening the abdomen in complicated cases of appendicitis, which he calls the "hockey stick incision." He makes first a modified McBurney incision, and then, "after having entered the abdominal cavity, it will become evident whether or not the incision is large enough to enable us to do the necessary work. If the appendix is found to be situated inward or downward, and a wider entrance be needed, the incision can be lengthened straight upward as far as the surgeon thinks proper." With reference to lengthening the lower end he proceeds as follows: "Entering the peritoneal cavity at the lower angle of the wound with my left forefinger, I slide it inward to where the epigastric artery pulsates. I then curve the lower end of the incision by drawing the knife in a horizontal line; that is to say, perpendicular to the median line of the body, thus forming a rounded-off angle of about 135 degrees. The entire wound then has the shape of a hockey stick. In the horizontal part of the incision care is taken not to injure the epigastric plexus. It is primarily caught between two forceps, then cut and ligated. The incision ends at the border of the right rectus muscle. If still more room be needed, the belly of the rectus can easily be drawn inward, and the fascial layers beneath it be incised in the same direction, as the case may demand. In pulling the borders of this wound apart, it will be seen that an easy access has been gained to the organ situated within the small pelvis."

Personally I prefer a combination of the Morris²⁷ and McBurney²⁸ incisions. A curved incision, 1½ inches long, is made so that the center of the incision is directly over McBurney's point. The aponeurosis of the external oblique is then carefully exposed, and split in the direction of its fibers, never cut. This brings the muscular surface of the internal oblique into view. These fibers are also split in a direction as they run at right angles to the fibers of the external oblique. Now instead of using the retractors as suggested by McBurney, the guy-lines of strong silk or catgut are put into position, one on each side of the divided internal oblique, and taking up as much of the divided muscle in each stitch as possible. This exposes the transversalis, which is also split in the direction of its fibers and also caught by two guy lines. The transversalis fascia and peritoneum are now taken up together and divided as much as possible in the long axis of the wound. The use of the guy-lines in the place of retractors, taking up less room, we are able to get along just as efficiently with a small incision. If now it becomes necessary to enlarge this wound, the fibers may be split and the skin-incision enlarged, until the muscular fibers are separated from insertion to attachment. In closing the wound we should always remember that the aponeurosis splits more and more as we manipulate the wound, and we should, therefore, draw the skin down and then up until we are certain that our sutures have reached the highest and lowest point of separation.

The management of the appendix is also important. Some operators are satisfied simply to ligate it, and then after cauterizing the stump to render it aseptic, drop it back into the abdomen. Others have adopted

the purse-string method of Dawbarn.²⁹ This consists of a circular continuous Lembert suture (silk) which is introduced through the superficial layers of the cecum a quarter of an inch from the insertion of the appendix, and tied loosely; the appendix is then amputated a half an inch or more from the insertion, and then dilated by introducing a pair of fine forceps into the cecum and opening the forceps. The stump of the appendix is then seized by fine-toothed forceps, and invaginated half an inch into the cecum, while the cecum is pressed against the forceps by the fingers of the other hand. The circular suture is then tied firmly and the toothed forceps removed. Edebohls advocates invagination of the whole appendix into the cecum. I have been always in the habit of closing the appendix as follows: Having tied off the meso-appendix in section, and cut it free from the appendix, I cut through the peritoneum covering the appendix about half an inch from its base. This peritoneum is then pulled back until about a quarter of an inch of the cecum is exposed. Then a fine curved needle armed with 00 catgut is passed through the muscular coat of the denuded cecum and base of the appendix, and brought out about one sixteenth of an inch below the point where the peritoneum was cut. The needle is then carried across and inserted the same distance below the cut peritoneum and carried down through the muscular coat until it comes out at the margin of the reflected peritoneum. Then the needle is carried to the other side of the appendix, where a similar stitch is taken. The field of operation is carefully protected by a piece of gauze, and the appendix removed at the line of section of the peritoneum. Its lumen is then swabbed out with pure carbolic acid, and then with alcohol, and dilated. Now, while the operator holds the two loops of catgut by means of a pair of forceps so that they will pull on the margins of the appendical stump, the assistant draws the two ends taut. This invaginates the whole stump of the appendix, and draws the cecum together over it at the same time. The two ends of the stitch are now tied, and the reflected peritoneum is turned back so as to completely cover the denuded portion of the cecum. This is closed over by means of a continuous Lembert stitch, which may be carried down so as to cover over the cut places in the mesentery, if desirable.

In cases of suppuration we should invariably be supplied with hydrogen dioxid at 10 to 15 volumes strength. As soon as the pus is found the dioxid should be poured in until it is evident from its action all pus has been destroyed. At the Post-Graduate Hospital this is routine practice in all cases of appendicitis accompanied by abscess or general peritonitis. And I am confident that by its use I have saved cases that would otherwise have been inevitably lost. Within the past month I have operated upon a case of general peritonitis where 4 pint bottles of peroxid were used in the general peritoneum. This froth and foam was then washed out with hot normal saline solution. This patient made an uninterrupted recovery.

There can no longer be any question in regard to the advisability of operating in appendicitis. This is no place for the recital of cases, nor have I the time, but my own statistics now show 160 appendectomies with 4 deaths—2.62%. This, compared with any medical statistics that can be advanced, will, I think, offer a sufficient argument for the early and radical operation for disease of the vermiform appendix.

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ON SOME CASES OF PLEURAL EXUDATE WITH THE
PHYSICAL SIGNS OF PNEUMONIA.

By HERMAN B. ALLYN, M.D.,

of Philadelphia.

Instructor in Physical Diagnosis, University of Pennsylvania; Physician to Philadelphia and St. Joseph's Hospitals.

THE physical signs of serofibrinous or purulent exudate in the pleura are usually so different from the physical signs of pneumonia that one is likely to feel, early in his practice, an unwarranted confidence in his ability to diagnose one condition from the other. Among the most important physical signs of an exudate in the pleura are diminished or absent vocal fremitus, diminished or absent vocal resonance, and faint or absent breath-sounds, except posteriorly over the compressed lung. On the other hand, in pneumonia the most important and constant physical signs are increased vocal fremitus and resonance, and bronchial breathing. But, just as there are cases of so-called massive pneumonia in which the vocal resonance and fremitus are not increased, and in which bronchial breathing is absent, so there are cases of pleural exudate in which vocal resonance and fremitus are present or increased and in which the breathing is bronchial or tubular. It is to the latter class that I wish to direct special attention. For the most part such cases are discovered at autopsy, but there are a few clinical reports.

In 1882, Austin Flint¹ reported the case of a man aged 31, who had a pleural effusion with the following physical signs: flatness on percussion over the whole of the right side. Over the scapula and in the infraclavicular region, the respiration was bronchial, and there was marked bronchophony. Over the remainder of this side there was absence of respiratory murmur, but vocal resonance and fremitus were somewhat greater than on the left side. The circumference of the right side was increased and the apex of the heart was displaced an inch and a half to the left of the nipple. Puncture obtained serous liquid, and the patient rapidly convalesced. Flint says the vocal resonance below the scapula and clavicle was not bronchophony conducted from the compressed lung. It had the characters

of normal vocal resonance and was accompanied by a proportionate amount of vocal fremitus. Comparing these signs on the two sides during the continuance of the effusion and after its removal, there was evidently some diminution caused by the liquid, but not enough to render the signs on the two sides equal. Flint does not explain the increase of vocal resonance and fremitus, but suggests that they may be due to the patient's voice, which was notably strong and of low pitch.

Flint alludes also to a case of empyema in which the loud voice and the whispered voice were conducted over the whole of the affected side of the chest with such intensity that there had been doubt as to the presence of liquid, although the patient had been previously aspirated. The aspiration was repeated and a large quantity of pus was withdrawn.

Vincent Y. Bowditch² reports four cases in which the typical signs of a pleuritic effusion, especially that of a diminished respiratory murmur was supplanted by marked bronchial respiration. Synopses of his cases are as follows:

CASE 1.—Man, aged 31, with pneumonia of the right lung with the usual signs of that disease. Bronchial breathing persists after fall of temperature and apparent convalescence of patient. Aspiration proves presence of 1½ pints of clear serum in the area showing bronchial respiration.

CASE 2.—Man aged 21, with a typical case of pneumonia. Harsh bronchial respiration persists several days after fall of temperature and marked improvement of general symptoms. Tentative aspiration over site of bronchial breathing was resorted to, with withdrawal of 12 ounces of brownish serum and immediate diminution of bronchial respiration.

CASE 3.—Male, 14 Pericarditis and endocarditis with pleuritic effusion in left lower back, proved by aspiration in spite of marked bronchial respiration in that region. In this case the effusion was moderate and was suspected from the upward curve of dulness in the lower axillary region. The fluid was blood-stained.

CASE 4.—Female, aged 20 No definite physical signs for a week after entrance. Development of dulness in right back diminishing upward, with crepitant rales, bronchial respiration, and slightly amphoric voice over area of dulness. Tentative aspiration proved presence of fluid. There was no special difference in fremitus, and no sign of fluid as distinguished from pneumonia except slight change of percussion noted on change of posture.

DaCosta³ says: "There are, however, exceptional cases of pleuritic effusion, in which bronchial breathing is heard all over one side of the chest. Especially does this happen if pneumonic consolidation accompany the effusion; but even in simple compression of the lung, and where the collection of liquid is not extensive, bronchial respiration may be perceived." He suggests that the lung-tissue is probably compressed around the bronchial tubes.

Musser says the breath-sounds may be heard, and are then weak and distant, or bronchial. Tubular breathing is said to be almost constant in children.

The explanation of the free transmission of fremitus, voice and breath-sounds in pleural effusions is not satisfactory. Flint, as already mentioned, suggests that the quality of the voice, which was notably strong and of low pitch, had something to do with the increase of vocal resonance and fremitus in his first case. West, after remarking that sometimes, although the quantity of fluid be very great, loud bronchial breathing is heard all over the affected side, says that "the loudness depends not inversely upon the quantity of liquid effused,

¹ *Amer. Jour. Med. Sciences*, April, 1882.² *Boston Medical and Surgical Journal*, April 22, 1897, p. 336.³ *Medical Diagnosis*, 8th edition, p. 403.

but directly upon the openness of the air-tubes; for liquid is a good conductor of sound."

Osler says that in children there may be much effusion with retention of fremitus; and that in rare cases the vibrations may be communicated to the chest-walls through localized pleural adhesions.

I recently encountered the following case of empyema, with unusual physical signs:

M. H., white, female, 29 years old, a native of Philadelphia, was admitted to the Women's Medical Wards of the Philadelphia Hospital, in the service of Dr. J. H. Musser, on December 12, 1899. Her chief complaint on admission was dyspnea, pain in the left side, and prostration. The family history threw no light on her present ailment. The father had died when the patient was a child; the cause of death was unknown. The mother had died of worry over the death of a daughter. One brother as the result of an injury to the superior maxilla; another brother of some unknown cause. One brother is living and well. One sister died at the age of 17, of some unknown cause. The patient's habits were good, she was single, was a domestic, and stated that she had always been in good health. She was plump and well-nourished, and seemed to be above the average in intelligence. The patient's account of her illness was as follows:

On December 11 (nine days before her admission to the hospital) she got her feet wet and took cold. Two days later, she was taken ill, had fever and vomited, but there was no history of a distinct chill. She was in bed for a few days and then able to be up for a day. Four days before admission she had a very severe chill followed by pains in the left chest. These pains continued up to the time of her admission to the hospital, and then subsided.

On examination it was noted that the pupils were equal and reacted readily to stimulus. The tongue was protruded easily; it was moist, coated on the dorsum, with edges and tip clean. Herpes labialis was quite marked. The pulse was quick and frequent with diminished volume and low tension. The chest was well developed, symmetrical, and the expansion diminished. The superficial veins were prominent. The breathing was shallow and largely abdominal. Cough was slight. There was no history of bloody expectoration. The left lung was flat on percussion from base to apex, anteriorly and posteriorly; the resistance was much increased. Fremitus was increased. The breathing was typically high pitched and tubular. Posteriorly below the angle of the scapula and along the posterior axillary line were heard numerous moist subcrepitant rales. Bronchophony was marked and pectoriloquy could be demonstrated. There were also areas over which superficial rubbing could be heard. The coin-test was not made. The right lung, just below the root posteriorly showed areas over which moist rales were heard. The breath-sounds over the lower lobe were bronchial. The apex-beat of the heart was slightly displaced to the left. The heart's action was accelerated, but there were no abnormal sounds. The abdominal viscera appeared normal. There was no edema of the extremities.

On the 21st the heart was noted as regular, but rapid, the sounds being short and sharp. The second pulmonic sound was not accentuated. The entire left lung excepting a small area at the apex was flat on percussion. There was slight pain in the chest. The patient vomited after taking milk.

On the 22d the heart was about the same, but respiration was more labored. A few large bronchial rales which change on coughing were noted. Respiration was slightly harsh over the right lung, but there was no impairment of resonance on percussion. The patient expectorated tenacious sputum and perspired freely.

On the 23d, the patient was about the same. Cough was more annoying.

On the 24th she was slightly weaker. Perspiration was less frequent. More moist rales were audible over the base of the left lung. Cough worse and expectoration freer. There was some cyanosis. During the night, while resting comfortably, the patient suddenly died.

The urine on the 21st contained numerous hyaline casts and albumin $\frac{1}{10}$ by volume. There was no sugar. The specific gravity was 1.030. The temperature on the night of

admission was 102.5°. The next day it ranged from 100° to 101° and then gradually fell to normal. On the afternoon of the 23d, it again rose to 100°. The pulse ranged from 120 to 160 and generally from 132 to 140. The respirations ranged from 44 to 56.

To sum up, here was a young and apparently intelligent young woman who said that she had been perfectly well until nine days before admission, and that four days before admission she had been taken with a severe chill and since had been in bed with fever, cough, pain in side, and expectoration. The physical signs on admission bore out her statement, and consisted of flatness on percussion over the left lung, increased vocal fremitus, bronchophony, and pectoriloquy, tubular breathing, and some subcrepitant rales at left base. At the autopsy there was found a thickened pleura, with about 250 cc. of pus, a fibroid lung, with bronchiectasis and old tuberculous foci in both lungs. There was probably just enough air-space above the small layer of pus to act as a resonator for the voice and breath-sounds transmitted through the dilated bronchus.

The question naturally arises, Is there any certain way in which a pleural exudate can be recognized? Evidently there is no pathognomonic sign. The only safe way is to examine for all the physical signs and not expect any one sign to have a fixed and definite value. The value of a particular sign must be determined with reference to the special case under study and in connection with all the other signs. Thus, flatness on percussion and greatly increased resistance indicate fluid in the pleural cavity rather than consolidation of the lung; but they are far more significant if the upper line of flatness follows the curves studied by Garland and Ellis; if there is change in the level of flatness on change of posture of the patient; if above the level of flatness anteriorly there is skodaic resonance; if there is displacement of organs, and if there is restricted or absent movement of the diaphragm on that side.

In the same way, diminished or absent vocal resonance and fremitus, and distant or absent breath-sounds, while very valuable and, indeed, almost constant signs of pleural effusion, can not be relied on exclusively. Confirmatory signs must be sought for, and in all doubtful cases the question decided by puncture with a sterile needle.

West says: "By percussing the chest in front with two coins and ausculting behind as for the bell sound, a pleural effusion will sometimes be found to transmit a clear, metallic sound (penny sound, *signe de sou*), quite unlike that heard through healthy or solid lung.

T. H. Kellack¹ says that if the left hand is used to palpate in front under the nipple, while the corresponding ribs, just posterior to their angles, are percussed sharply with the finger or pleximeter, much greater vibration will be felt when fluid is present.

The most important test of the presence of fluid in the pleural cavity is puncture with an aspirating needle. The large syringe and needle used for antitoxin injections are preferable, because if the fluid is thick, it may not flow through the small needle of an ordinary hypodermic case, or the latter needle may not reach far enough. In spite of such precautions, however, fluid may be present and not be reached. In small, old empyemas the amount of pus may be small and not be reached unless the puncture be made lower than the sixth or seventh interspace, in which case there is danger of puncturing the diaphragm or liver. Or the needle

¹ *Lancet*, London, 1896, i, p. 485.

may be thrust into a fibroid lung and a dry tap result. Or the pus may lie between the lobes and be difficult to reach. Sometimes a number of punctures has to be made before the pus is struck.

On the other hand, pus may be obtained from a sub-phrenic abscess, from the pericardium or from a dilated bronchus or lung-cavity.

The x-rays are of great service in the diagnosis of pleural effusion, and of the amount of fluid present. Williams says that when the effusion is large no more rays pass through it than through the liver and the outlines of the diaphragm, ribs and heart are obliterated on the side of the effusion. If there is a smaller amount of fluid, the outlines of some of the upper ribs are seen, and with a small effusion the outlines low down in the thorax only are ill-defined. The fluoroscope detects displacement of organs which may not be discovered by percussion, and so helps to distinguish between pleural effusion and thickened pleura. The upper line of the shadow may be made to move by shaking the patient.

A DIGEST OF 200 CASES OF PNEUMONIA.¹

By C. Z. WEBER, M.D.,

of Norristown, Pa.

As I am not presuming to pose as an *authority* upon this subject, but merely as a student and colaborer in the art of healing, I beg patient consideration of my effort, to digest in a somewhat statistical manner, as thoroughly as time will permit, the cases which have come under my observation during 18 years of practice.

Geographically, in our location, lying sufficiently adjacent to the sea-coast to be influenced by the damp, heavy winds of the ocean and alike by the abrupt changes in the air-currents moving north and south—two potent factors in the etiology of pneumonia—the prevalence of the disorder is naturally to be expected. Different years vary in the number of cases furnished, according as climatic influences vary. The least number of cases met in a single calendar year was 4, the largest number 25; average for the 18 years 11 and a fraction. The mortality varies also in different years—in 10 of the 18 years there were no deaths. In the 8 years in which deaths occurred, the smallest number was 1, the largest 4. In all, 18 deaths occurred, or an average of 1 per year.

Climatic changes play an important part in the mortality, though less than epidemic influences, such as la grippe. Comparing calendar years the mortality ranges from 100% of recoveries to 25% of deaths.

As different years vary in number of cases furnished, so do even more prominently the months.

January furnished 35 cases.	July.....furnished 4 cases.
February " 33 "	August " 8 "
March " 26 "	September " 1 "
April " 27 "	October " 3 "
May " 13 "	November " 9 "
June " 4 "	December " 37 "

Taken by seasons the winter months furnished 105 cases, or 52.50% of the total number; the spring months 66, or 33%; the summer months 16 cases, or 8%; the autumn 13 cases, or 6.5% of the total number.

In reviewing the number of cases two other distinctive features were observed: The frequency with which

certain individuals are attacked, and the marked susceptibility of certain families to the malady. Under the first heading 13 individuals suffered at different times 31 separate attacks at intervals of from 3 months to 17 years. One individual suffered 5 different attacks during 15 years; 2 others each 3 at varying intervals, the 10 remaining each had 2 attacks, after longer or shorter periods. Contrary to expectation, here the deaths occurred not in any of the 3 who suffered the greatest number of attacks, but they occurred, 3 in number, from the list of 10 who suffered the second attack. Again, comparing the number of deaths in this class with the number of attacks, the mortality is $9\frac{3}{4}\%$ or increased only by $\frac{3}{4}\%$, as we shall find further on.

Under the second heading we find 26 families have contributed 69 cases, or 34.5% of the entire number.

One family alone contributed	6 cases.
Two families each " 5; total 10 "	
Two " " " 4; " 8 "	
Three " " " 3; " 9 "	
Eighteen " " " 2; " 36 "	

A study of these multiple cases in families demonstrates conclusively a transmitted susceptibility as a legacy from parent to child, and, also, in the instances in which both husband and wife were afflicted coincidentally with the children, the also indisputable fact that miasmatic, unsanitary and faulty hygienic influences play an important role in causing the disease.

DIFFERENT FORMS AND FREQUENCY.

The disease has been observed in the following forms: Croupous, catarrhal, interstitial, and bilious.

Croupous form contributed 63 cases or $31\frac{1}{2}\%$ of total number.	
Catarrhal " 131 " " $65\frac{1}{2}\%$ of " "	
Interstitial " 4 " " 2 % of " "	
Bilious " 2 " " 1 % of " "	

In 116 cases, or 58%, the disease was right-sided.	
In 70 " " 35% " " " left-sided.	
In 14 " " 7% " " " double.	

Croupous form was left-sided.....	40 times.
" " right-sided.....	23 "
Catarrhal " left-sided	47 "
" " right-sided.....	76 "
Interstitial " left-sided	3 "
" " right-sided.....	1 "
Bilious " double-sided.....	2 "
Catarrhal " double-sided	14 "
Catarrhal and croupous forms were combined	4 "

COMPLICATIONS.

Pneumonia was found coexisting with other diseases in one-half of the entire number of cases, or 100 times, as follows:

La grippe.....	40 times.
Phthisis.....	13 "
Measles.....	8 "
Valvular disease of heart.....	8 "
Whooping-cough	6 "
Bright's disease	5 "
Cerebrospinal meningitis.....	5 "
Pleuritis.....	5 "
Typhoid fever	4 "
Cerebral meningitis.....	2 "
Remittent fever	2 "
Bronchial asthma	2 "

Total 100

In combined forms there were 18 deaths, or 9%	
In complicated " " " 11 " " 11%	
In uncomplicated " " " 7 " " 7%	

¹Prepared by appointment and read at the meeting of the Montgomery County Medical Society, March 14, 1900.

As the general mortality was represented by 9%, the uncomplicated by 7%, and the complicated shows but 11%, it would seem that complications detract very slightly, or but 2%, from the general mortality percentage. Upon the other hand, when the whole number of deaths is compared with the fatal complicated cases, it is seen that $6\frac{2}{18}\%$ of the deaths are chargeable to the complications. Of the double forms, 14 cases, including those in complicated and uncomplicated forms, 10 were fatal or $71\frac{3}{11}\%$.

In the number of fatal cases, age plays a conspicuous part—the extremes of life furnish almost the entire number of fatalities. Thus 7 deaths occur prior to 10 years of age, 1 case from the tenth to the twentieth, none between the twentieth and thirtieth, none between the thirtieth and fortieth, none between the fortieth and fiftieth; 2 occur between the fiftieth and sixtieth, 3 between the sixtieth and seventieth, 3 between the seventieth and eightieth, 1 between the eightieth and ninetieth, and 1 in the ninety-second year.

If we divide life into three periods of 25 years each, the first or early period furnished 8, or $44\frac{4}{5}\%$, of the deaths; the middle period, that between 25 and 50, furnished 2, or $11\frac{1}{5}\%$; and the late period, that from 50 years upward, furnished 8, or $44\frac{4}{5}\%$, the same as the early period.

In reviewing the list of cases, I am reminded of a class comprising 6 cases, which I will classify as "walking cases." They were observed in both the croupous and catarrhal form, there being three of each. The following histories may prove interesting:

1. A. F., aged 27, weaver, sought office treatment for pain in side and general weakness. Upon careful examination of chest, the middle lobe of the right lung was found to be hepatized.

2. W. H., aged 30, merchant, sought office treatment for what he described as lumbago. He complained of general malaise, but was free from cough. Examination revealed solidified left lower lobe.

3. Boy, aged 7, attending school, summoned me because the family feared he was suffering from mental disorder. Examination disclosed right-sided catarrhal pneumonia, apex hepatized, which accounted for the mental perturbation, walking in sleep and other irrational phenomena observed.

4. H. R., clerk, aged 23, complained of shortness of breath and reported at office, being suspicious of heart-trouble. There was no cough, except an infrequent, nervous hack. He had been ailing for upwards of 10 days. While investigating the cardiac region, a solidified lower left lobe was discovered.

5. L. F., butcher, received office advice and examination, concerning a fissure in ano. There were no visible, objective symptoms, indicative of organic trouble, so far as could be ascertained except those referable to the fissure. Dilation under anesthesia was arranged for the following afternoon. He slaughtered cattle in the forenoon, suffering no unusual inconvenience. Chloroform was administered, the operation performed, when it was accidentally discovered that he had been carrying about a hepatized lower left lobe.

6. School-boy, aged 7, was sent from school by teacher because he looked tired and inanimate, and exhibited symptoms of fever, associated with severe cough. A chill occurred Saturday. He attended Sunday school on Sunday, and public school on Monday and until Tuesday noon. Upon auscultating, the thorax the fourth day after the initial chill I discovered a solidified left lobe.

These cases were taken in hand, placed in bed and after a more or less protracted period, they all recovered.

In striking contrast with the rational management of this class of cases, it may be interesting to note the history of the following case:

Male, age 34, had been 12 days ill with croupous pneumonia in the left lower lobe. We had just taken up the alternative

plan of treatment, when the patient abruptly refused to be further restrained or yet to continue treatment, and against the earnest protestations of both family and physician returned to his work, that of a tailor. He had been a confirmed, steady drinker. With the resumption of work, he also resumed his former habits. Singular to state, after a lapse of two months, visiting another member of the family, I utilized the opportunity to examine his thorax, when, to my surprise, I found as good a vesicular murmur as on the opposite side, every evidence of the trouble having disappeared. The original attack occurred in February, 1894, and he has enjoyed unimpaired health since.

As already stated, interstitial pneumonia appeared *left-sided* in 75% of cases. The only right-sided case met, occurred in a severe case of croupous pneumonia, immediately following an attack of la grippe.

In this case a vigorous man was much reduced in strength and 2 months after the original attack, while at a Southern health resort, contracted a severe cold, when interstitial pneumonia set in. After the lapse of a fortnight, an abscess occupying the position of the whole middle lobe, developed. This victim vomited and expectorated pus by the pint. After the acute symptoms subsided and the patient spent a year in a Southern climate, his health was completely restored. Two years after this occurrence, the subject passed a critical examination for life insurance, every vestige of the disorder having entirely disappeared. It is now five years since the attack, his health remains good, nor does he suffer from catarrhal affections more than formerly.

In the only interstitial case that proved fatal, after the patient survived the acute symptoms, a direct hereditary phthisical predisposition carried him into rapid consumption, to which he succumbed six months later. Of the two remaining interstitial cases, one patient has lived 17 years since the abscess discharged, after having for a period of three years exhibited symptoms of tuberculous trouble in both lungs and throat, the trouble in this location not yielding until the vocal cords were hopelessly destroyed. Her health at present, while not good, is such that she is able to assist in the maintenance of a large family by sewing and performing other light duties in the home.

The remaining patient has lived three years since the discharge of the abscess and has now fully regained her lost vitality. The first year following her convalescence, the rigor of our winter was shunned by living South and the depressing heat of our summer was avoided by sojourning North.

The cases of bilious pneumonia occurred at the same time in brothers. They occurred in the early part of November, while the family were having sewer connections and building operations under way. These boys, characteristic of their age, were much in the trenches and excavations incident to the improvements, so it would seem that this unsanitary state of the premises was the exciting cause. They both exhibited symptoms of catarrhal pneumonia and catarrhal jaundice. They were both actively delirious, which symptom does not attach to catarrhal jaundice; and again, they were both much jaundiced, which does not attach to pneumonia. It was interesting, again, to observe the depressing effect of the jaundice on the morning temperature and also the effect of the hyperpyrexia of the evenings in increasing the irritability of the stomach, and all the while the areas of bronchial breathing were unchanged by the misleading morning remission of the temperature.

Before taking up treatment, a few general observations would seem to be warranted by a review of these records.

1. The most frequent predisposing cause of inflam-

mation of the lungs is some preexisting disease. In fact, idiopathic pneumonia may be attributed entirely to depressing influences. Given susceptibility, pre-existing disease, or even an individual in whom for any cause functional activity is out of balance with constructive metamorphoses, and add abrupt temperature-changes, with or without exposure, and the resulting combination is readily pulmonary inflammation.

2. Pulmonary inflammations are not only more prevalent in periods, comprising sometimes several consecutive years, but the *type* is also more virulent. Take for example the years of 1897 and 1898, in which extremes of temperature seesawed abnormally throughout. These 2 years contributed 44 cases, or 22% of the total number under consideration. During this period there were 7 deaths, yielding a death-rate of $15\frac{1}{11}\%$, or $6\frac{1}{11}\%$ above the general average. With this period we would contrast the 2 years next preceding, throughout which more normal weather conditions prevailed and in which but 14 cases were met with, recoveries, 100%.

3. La grippe, since its advent in this country during the winter of 1897, has not only augmented largely the number of cases, but has increased also our mortality. As previously shown, this affection alone has contributed 20% of the total number of cases. Prior to the prevalence of la grippe, 56 cases were treated from 1883 to December of 1889, with 2 deaths, or a mortality of $3\frac{4}{7}\%$. Subsequently to December, 1889, while la grippe has been more or less a factor in the etiology, 144 cases have contributed 16 deaths, or a mortality of $11\frac{1}{12}\%$. In the period embraced by the years 1897 and 1898, just alluded to, 5 of the 7 deaths in the 44 cases, la grippe was present, and 3 of the 5 were in children who succumbed in the early stage of the catarrhal pneumonia coexisting.

4. Left-sided croupous pneumonias have proved more difficult to manage and have contributed more frequently to the class of cases in which the croupous condition merged into that of phthisis.

5. Catarrhal pneumonias, when the apexes of the lungs are involved, are always associated with delirium. Case in illustration:

W. H. was suffering from profuse metrorrhagia, having missed two menstrual periods. She was ordered to bed and a nurse placed in charge. On the second day the nurse complained that she could not induce the woman to remain in bed. I had never known the woman to be untruthful, but when I urged her strictly to obey orders, she denied point blank having been either disobedient or incorrigible. On the evening of this day, I made a second visit, when all doubts as to the charges of the nurse and the denial of the woman were removed by meeting the patient in the vestibule, bare-footed, clad in her night dress, and holding a lighted lamp in her hand. She addressed me by her husband's first name. Immediately seizing the lamp, I made an impromptu diagnosis of *acute mania complicating miscarriage*. Upon going more thoroughly into the case, having got the patient back to bed with the aid of the nurse, now upon the scene, I found a temperature of $103^{\circ}+$, which was scarcely accounted for by the threatened miscarriage, and associated with it was found a hepatized right apex. So, a diagnosis of pneumonia complicating miscarriage was substituted for the one made a few minutes before in the vestibule, and the doubt as to the sanity of the woman and the ability and veracity of the nurse was cleared up. The delirium was here found to be of a spasmodic type.

It is due the credit of the nurse to explain that, under the circumstances, the patient's escape from her vigilance was pardonable. She had stepped into an adjoining room for a glass of water at the patient's request. At this instant the door-bell rang and quick as a flash

the patient sprang from the bed, grasped the lamp from the table on her way to the upper hall, descended the stairs, traversed the lower hallway, and appeared at the front door as described.

6. Alcoholism and typhoid fever do not chance to enter as a factor in our mortality, but both have been observed to retard the stage of resolution and otherwise lengthen the period of convalescence.

Upon the subject of the treatment of pneumonia, volumes have been written. That there is little conclusive evidence in support of the germ-theory, is certainly apparent. Nor is it essential that we recognize a specific *materies morbi* in the etiology of the disorder. So long as we can comprehend cerebritis, splenitis, hepatitis, nephritis, endocarditis, meningitis, synovitis, and pleuritis, developing without specific cause, so long will we be able to cope with pneumonitis in disregard of tangible cause.

Of the various causes ventured as an excitant of the disease, I would prefer the nervous theory. In tests of the textile strength of metals there is an old maxim "That no chain is stronger than its weakest link." So every individual may be regarded as having a weakest link—an organ, for instance, which gives way at point offering the least resistance. There is, naturally, this point of difference, however, though the analogy is not less striking—that with animate structures the point of resistance may shift from organ to organ, according as seasons, heredity, age, environment and climatic conditions may elect.

Given, therefore, an exciting cause, the respiratory organ by virtue of some more or less established, depressing influence, the most vulnerable part of the physical anatomy, the result is rationally an inflammation of the lung. To serve the purposes of this paper, however, our treatment is based upon the idea that we are dealing with an organic, inflammatory affection.

To be brief, our armamentarium for first stage,—that of general malaise and congestion—is made up of counterirritants, arterial sedatives, antipyretics and anodynes. I am confident I have seen cases of incipient pneumonia nipped in the bud by the timely employment of sinapisms over sensitive pulmonary areas, together with the administration of aconite, acetanilid or veratrum viride and also by the mixed arterial sedative and anodyne formula of morphia sulfate and antimony.

In no affection is it more important than in pneumonia to treat conditions more than the disease itself. In other words, we need to be more mindful of the patient than his disease.

In the second stage, that of infiltration and hepatization, it is well to bear in mind the old saying "That things are seldom so bad but they may become worse" and vigorously but cautiously employ arterial sedatives, antipyretics and even the counterirritants, with the view of limiting the area of infiltration and hepatization so far as possible. In my experience it is usually in this stage that a physician's services are first enlisted. It is at this stage when the progress of the case in hand has been arrested or held in abeyance that the carbonate and iodid of ammonium are especially indicated, while only sufficient of the antipyretic, as, for instance, sodium salicylate is employed to keep the temperature well in hand. I seldom find it advantageous to combine opium with the prescriptions regularly employed. Opium in the form of dover powder is best given alone when indicated. As we approach the stage of resolu-

tion or what might be termed miliary purulent suppuration, serpentaria in the form of the fluid extract, combined with ammonium carbonate and liquor ammonia acetatis, is found to be of great advantage.

Venesection was employed in two cases. In the first case there was marked cerebral congestion which was relieved by the bleeding, but there was observed no appreciable effect upon the hepatization. In the second case, the blood-letting, at the beginning of an extensive hepatization, was followed by a long and tedious convalescence complicated by bedsores. Cups, both wet and dry, applied to relieve pleuritic stitches during the early active, inflammatory process, were found decidedly helpful.

It is in the third stage that the patient's chances are fraught with the greatest danger. We have here to combat exhausting vital force, pulmonary structure loaded with debris, hereditary influences, and complications adding to the gravity of the situation; in short, a crippled train on a wrecked roadbed to get back on schedule time with the surest means of safety and the least possible delay. It is here that antipyretics are discontinued, alteratives are brought forward, such as corrosive sublimate and iron, the iodid or carbonate of ammonium, administered in increased doses. Strychnin sulfate is perhaps employed, or, if the case has been complicated with la grippe, it has been used from the beginning of the second stage. If resolution is delayed or tardy, tincture of iodine and cantharidal plasters are employed to vesicate the surface and hasten absorption. I have observed a rapid solution and absorption, in some cases, of the products of inflammation by a copious, artificial night-sweat, induced by a full dose of jaborandi or an hypodermic injection of pilocarpin.

The affected lung once restored to its normal condition, or frequently pending such termination, I have found the official formula of the compound syrup of the hypophosphites to be eminently serviceable in favoring general reconstructive metamorphosis.

PYLORECTOMY FOR ADENOCARCINOMA, WITH REPORT OF A CASE.

By JOS. H. BRANHAM, M.D.,

of Baltimore, Md.

Professor of Surgery and Abdominal Surgery, Maryland Medical College.

J. R., white, male, came under my charge about September 1, 1899. His family history was good, no cases of malignant disease being noted. His general health had been good until about 18 months before, when he had a severe attack of malaria. This was followed by recurrent gastric attacks characterized by cramps and vomiting, the vomit containing bile. During this time he had to be careful as to food, coarse articles causing distress and a sense of distention in the upper region of the abdomen.

Examination.—The patient is tall and spare; skin sallow and muddy, pulse weak and rapid on exertion, mucous membranes pale. Physical examination of abdomen shows thin walls, tenderness over region of stomach, which organ was slightly dilated, and the spleen much enlarged. Under large doses of quinia the splenic enlargement rapidly disappeared, but the gastric symptoms grew worse. Gastric lavage gave little relief. September 26 he was admitted to the National Temperance Hospital and shortly afterward Prof. C. Urban Smith was able to make out a small mass at the right of the median line above the umbilicus. This could only be felt when the patient sat with his legs well apart and stooped well forward.

The following notes by Prof. Smith elucidate the points of

diagnosis: Contents of stomach, acid; hydrochloric acid, .09%; free lactic acid; free butyric acid. Pepsin and rennet normal; excess of mucus; yeast-cells and a few cells resembling cancer; the salol-test showed good motor functions. Potassium-iodid test showed delayed absorption; indican was found in the urine. Diagnosis, cancer of pylorus.

Preparation for Operation.—The patient was put on a strictly liquid diet and for two days was given 3 grains of salol and $\frac{1}{16}$ grain of strychnin nitrate three times per day. The night before he was given a purge and immediately before taking the anesthetic his stomach was carefully washed out with sterile salt-solution. The usual preparations of the parts to secure surgical cleanliness were made.

Operation was done on October 12. A median incision about four inches in length enabled us to examine the organs in situ. The pylorus was slightly lower than normal and was freely movable. A small growth about two inches in length and an inch broad was found occupying the anterior and inferior aspect of the pylorus, encroaching on the duodenum. Its length corresponded to the circumference of the gut. This growth extended about two-thirds around the organ, and was firm but not very hard. No other abnormality was found in the neighboring parts. The attachments of the omentum to this part of the organ were tied off and severed. The diseased part was now drawn well forward into the abdominal wound and surrounded by sterile gauze sponges. The attachments were divided and the duodenum severed about an inch below the neoplasm and the stomach the same distance above. An end-to-end anastomosis was next made by means of a Murphy button which was reinforced by peritoneal sutures. The abdominal wound was closed after carefully cleansing the parts with salt-solution, part of which was left in the peritoneal cavity. All the sutures used were catgut hardened in a solution of mercuric chlorid in alcohol 1 to 1000.

The patient was very weak and had several subcutaneous infusions of salt-solution during the first 24 hours after the operation. He was also given about $\frac{1}{16}$ grain of strychnin nitrate during and after the operation. He rallied slowly. For the first 5 days he had nothing by the stomach, being nourished entirely by the rectum. On the 14th he had his highest temperature, 101°. He was allowed to wash his mouth with cold water.

On the 17th he was given small quantities of albumen and panopeptone. This collected in his stomach and caused great distress, and was washed out on the 19th by the stomach-tube. This procedure gave great relief and was continued about every second day for two weeks. As little of the food taken by stomach was absorbed, the rectal feeding was continued during this period. On the 30th, 18 days after the operation, the Murphy button was removed from his rectum by the resident physician. He gradually became able to digest food, and gained strength slowly. His temperature was nearly always subnormal, both before and after the operation; this I attributed to the bad nutrition due to insufficient assimilation.

He left the hospital November 20th, and returned to his home in North Carolina, weighing at this time about 84 pounds. He reported by letter from time to time to me and gradually gained strength and weight until April, 1900, he had reached the very respectable figure of 147 pounds.

Pathological Report.—Prof. R. L. McNeer. "The growth is a carcinoma, showing at points sufficient glandular arrangement to justify the name adenocarcinoma. Beside the principal mass a number of small points of invasion of the surrounding tissue is noted. The growth seems to have encroached on the mucous membrane of the duodenum to a great extent."

General Considerations.—The recent great improvement in operative technic and in means of diagnosis giving better results, have aroused much interest in the surgical treatment of disease of the stomach. Pylorectomy was first done in man by Pean in 1879, and the first successful case was by Billroth, 1881. The mortality was high in the early cases, but recently it has been much diminished. The following table is probably not nearly complete, but will give a general idea of the mortality, and also of the improved results of recent operations.

	CASES.	RECOVERED.	DIED.
¹ Winslow	60	16	44
² Mikulicz	32	8	24
Billroth.....	19	8	11
Guinard	299	194	105
Czerny	29	18	11
Kronlein	24	19	5
Carle.....	14	11	3
Mikulicz	20	15	5
Hartmann	10	6	4
Wilmot', Evans...	13	12	1
Morison	5	5	0
Kocher.....	57	50	7
Maydl	25	21	4
Roux.....	12	9	3
Tuffier.....	9	6	3
Lamotte	5	4	1
Van Kleff.....	4	1	3
Leeds Infir'y Staff	7	3	4
Karg	4	4	0
Gussenbauer	13	7	6
Mayo	3	3	0

Referring to the above table we find that the cases collected by Winslow and Mikulicz (1 and 11) were the early cases done before 1885. They are probably duplicated to an extent, but as they give almost the same results, this does not impair their value for comparison. Taken together they show a mortality of 74%. The rest of the table, taken from an article by Mayo Robson,³ which shows the combined mortality of both the old and new cases, shows 572 cases; recovered 398, deaths 174, mortality 30.4%. Could the old cases be eliminated, this mortality would be much further reduced. The remarkable result shown by Kocher, 57 cases with a mortality of less than 9%, gives hope that we will soon be able to class this as one of the operations not excessively dangerous.

The remote results of the operation unfortunately have not been so good, most of the cases being relieved for only a short time, and later showing recurrences. The 50 successes of Kocher show one woman living 10 years without recurrence, one 5 years, one 3 years, and one 2 years. Four died of other troubles without recurrences after 3 or more years, so we may claim these 8 cases as permanent cures out of the 57 cases operated on. The other cases of the 52 who survived the operation were made more comfortable and in the aggregate had many years of useful life added to their existence.

Unfortunately we are still in the dark as regards the etiology of malignant disease. True, much recent work has been done along this line and reports have been made. This will no doubt be of great value in the future; as yet, however, we have nothing accepted by the profession as proved. We have good reason to hope that we shall soon have light on the cause of this terrible scourge, and that this may lead to improved methods of treatment.

Great advance has been made along the line of diagnosis. Some points in the natural history of the disease will assist in reaching a correct conclusion. Cancer occurs usually after middle life, but there are many exceptions to this rule. A paper by Prof. William Osler and Dr. McCrae gives the proportion under 30 years in a collected table of 3,257 cases as 2.5%. In 150 cases from the Johns Hopkins Hospital 4% were under 30. Men are more often the subject of gastric cancer

than women. The position of the growth is most frequently the pylorus, over 60% of cases being found here. Among the symptoms pointing to this disease we note briefly pain, dull, often continuous, and increased after eating; belching of gases, often foul; vomiting of partly digested food, later, mixed with decomposed blood (coffee-grounds); loss of weight and energy; temperature not infrequently subnormal, but may be elevated in rapid cases near the end. There is usually some dilation of stomach when the growth is at the pylorus. The presence of a mass can usually be determined by examining patient frequently and in various positions. The value of change of position was well illustrated in my case. The stomach should be examined empty, and distended both by gas and fluid. Great assistance may be obtained by careful examination of the contents of the organ. Absence of HCl, while not a positive sign, points strongly to the existence of cancer. Excess of lactic acid is suggestive of cancer; the finding of parts of the growth in the wash-water may enable a positive diagnosis; unfortunately, this is possible only late in the disease, and often after the time for radical operation has passed. The x-ray may outline the mass. Finally, the exploratory incision should be relied on more frequently; such procedure should be considered as almost harmless, as it is in other parts of the abdomen, and should be employed early, as soon as there is strong suspicion of cancer; this will enable the surgeon to attack the growth while it is still small.

When a neoplasm is found after opening the abdomen the selection of the proper operation for the case is of great importance. If the lymphatic glands are involved and many adhesions are present the operation should be abandoned, or in case there are symptoms of stenosis present a gastroenterostomy should be done. Pylorectomy is indicated when the growth is in the pylorus, and when the glands are free and the organ not much adherent. Partial or complete gastrectomy is to be done when the tumor occupies other situations and the organ is free from adhesions. When adhesions are present the operation becomes excessively dangerous, and even when successful recurrence soon takes place.

The method of operating differs much with surgeons. Kocher first does a gastrojejunostomy, and some weeks later excises the mass, closing the two cut ends of gut. He has had better results than any other surgeon who has had a very large number of cases. He does not like the Murphy button, as he says it often fails to pass, and he reports one case in which it was found in the stomach 14 months after the operation. Dr. Mayo, of Rochester, Minn., who has had five successful cases and no failures, always uses the button. Its advantages are the ease and rapidity with which it enables closure of the bowel. The slough which it causes is probably advantageous, as it removes tissue which is near the growth and is possibly infiltrated. It is not necessary to draw on the organ to so great an extent when it is used, thus dragging on the nerves; other important parts are avoided, which, together with the saving of time, lessens the shock and the other bad results of long exposure and manipulation of the parts.

The case reported illustrates some important principles. The marvelous improvement in the patient's general condition and the small extent and slow growth of the tumor lead us to hope that this will be one of permanent cure. The repeated washing out of his stomach after the operation relieved the patient of great distress and probably saved his life. Too many physi-

¹ *American Journal Medical Science*, 1885.

² *Wiener med. Woch.*, No. 24.

³ *Lancet*, March 24, 1900.

cians and surgeons tend to despair of the unfortunates who are attacked by this dread disease. Many, like Micawber, are waiting for something to turn up from the laboratory workers. That some other means of destroying or preventing cancer may be discovered we all hope, but it would be the height of folly to fold our arms and wait for such a consummation; better try to improve known methods of attack. Nothing will help us so much in this direction as early diagnosis and operation. Much is due to the stomach specialist in helping to perfect means of diagnosis; but often he treats these cases until the disease has advanced too far. Careful lavage and diet not infrequently lead to temporary improvement; both physician and patient are soothed into a fatal sense of false hope, and procrastinate until the time for radical operation has passed. The exploratory operation will probably do more to save these poor unfortunates than anything else, and should be more frequently employed. Practically all these cases are operable at some period of their existence, and we have reason to hope that in the future they will be referred to the surgeon at a time when the tumor can be successfully attacked, and not only temporary relief be possible, but when a large proportion can be permanently cured. The cases of absolute cure of cancer in other organs are becoming more and more common; surely we can hope for this same advance in cancer of the stomach in which glandular involvement comes late in the disease.

INHIBITION OF THE HEART AS AN AID IN DIAGNOSIS.*

By ALBERT ABRAMS, A.M., M.D.,

of San Francisco.

Consulting Physician to the Mount Zion Hospital and the French Hospital.

PHYSIOLOGISTS have taught us that the inhibitory nerve of the heart is the vagus, stimulation of which stops the heart in diastole. Stimulation of the sympathetic cardiac nerves has exactly the reverse effect, causing increase in force or rate of the heart-beats; these are the augmentor and accelerator nerves. The latter are less easily tired than the vagus fibers; thus, if the vagosympathetic of the frog is stimulated, the first effect is inhibition, due to vagus action; the vagus fibers then tiring, the effect of stimulation of the accelerator fibers become evident and the heart commences to beat more forcibly and rapidly than before. If the cardioinhibitory center in the medulla is stimulated, inhibition of the heart ensues. The afferent nerves from the abdomen and intestine are in close communication with the center, so that reflex inhibition of the heart can easily be produced in the frog by tapping a loop of the intestine with the handle of a scalpel. Severe abdominal affections, like peritonitis and appendicitis, are frequently attended with symptoms of heart-collapse, owing, no doubt, to reflex inhibition of the heart. Morphin and digitalin slow the heart-movements by stimulation of the cardioinhibitory center. Muscarin and physostigmin inhibit the heart by stimulating the nerve-endings of the vagus. The slowing of the heart is probably carried out by the afferent impulses ascending the vagi from the heart to the cardioinhibitory center, from which inhibitory impulses are sent down

the vagi. Czermak was able to press his vagus nerve against a little bony tumor in the neck, and by thus subjecting the nerve to mechanical stimulation was able to slow or even to stop the beating of his own heart. This was the first demonstration in a healthy person of facts already known to the physiologist. If, in a healthy person, the carotid artery, or a point immediately adjacent to it in the neck, is compressed, as a rule, slowing or complete inhibition of the heart-action and pulse ensues. The latter may be made to disappear for fully 75 seconds; with prolongation of the pressure, the cardiac function is resumed. Such pressure often induces in the patient experimented on symptoms of vertigo, and even syncope. Many of my patients on whom this maneuver was attempted suffered from precordial pain—in fact, it was always found to be extremely painful. (Quincke explained the phenomenon by attributing it to pressure of the vagus lying alongside of the carotid artery. He discountenanced the theory that the cardiac phenomenon was due to compression of the carotid artery and cervical veins, with consequent circulatory disturbances in the brain.) The phenomenon is best observed in thin and long-necked persons, in whom the vagus is most easily and conveniently reached.

Sometimes the phenomenon is only observed after pressure is made on both vagi, whereas in other instances cardiac inhibition is attained after pressure is made on one vagus, which, experience has taught, is usually the right vagus. The investigations of Wasylewsky show that the irritability of the vagus is frequently increased in the sick and among convalescents. Intermittency of the heart is a condition in which the heart-movements may be inhibited for several seconds. Heart-intermittency is differentiated from simple irregularity of the heart-movements by the fact that in resumption of the cardiac contractions they are regular from the beginning. Many persons can voluntarily produce intermittency of the heart, and among Indian sorcerers the phenomenon is regarded as a marvelous feat. Donders was the first to solve the riddle, which he explained as follows: By voluntary contraction of the neck-muscles, innervated by the nervus accessorius, the branches of the latter running in the vagus-path were irritated, resulting in temporary stoppage of the heart-action. What I have denominated the *heart-reflex*¹ is yet another means of momentarily inhibiting the cardiac action, although less markedly than by the methods previously cited. If we irritate the skin in the precordial region, a contraction of the myocardium is thereby reflexly induced. Receding from the precordial region, irritation of the skin will proportionately diminish the myocardial contraction.

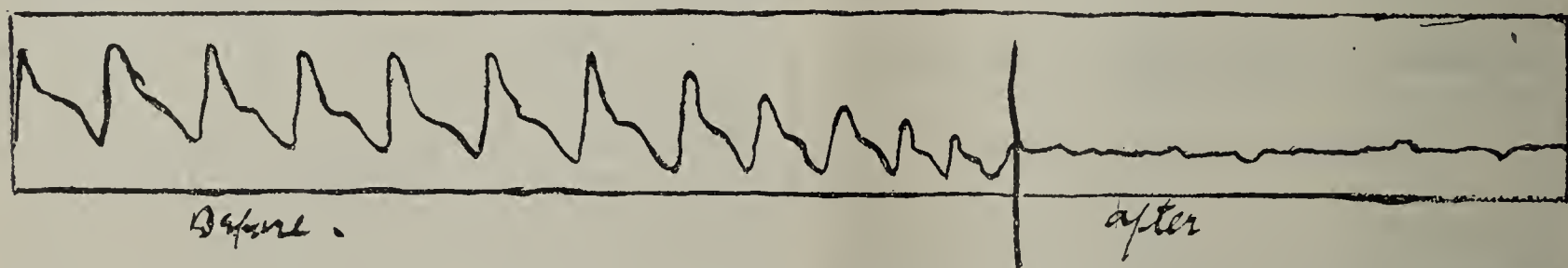
These facts are not demonstrable by percussion because the same stimulus results in the production of the *lung reflex*, which in itself is an acute lung dilation, thus making percussion for the superficial area of cardiac dulness elusive. The phenomenon of myocardial contraction (*heart reflex*), is only manifest by means of the Röntgen-rays and the fluoroscope. The heart-contraction is sudden and of momentary duration and, like other reflex acts, soon becomes exhausted. By whatever method heart-inhibition is attempted, the pulse should not be selected as a guide. The paradoxical pulse has lost much of its clinical significance as a diagnostic aid in mediastinopericarditis, since observa-

* Read before the annual meeting of the Medical Society of the State of California, April 17, 1900.

¹ Transactions of the Medical Society of the State of California, and the PHILADELPHIA MEDICAL JOURNAL, January 6, 1900.

tion has shown that in health distinct respiratory changes in the pulse are demonstrable by means of the sphygmograph. The sphygmogram shows a fall in the pulse-curve during inspiration and a rise during expiration. Sommerbrodt has shown that by means of his sphygmograph, many healthy persons can, during inspiration, extinguish the pulse. Knoll suggests, however, that by this maneuver we must guard ourselves against a possible error. If the person from whom the sphygmogram is obtained inclines toward the radial artery from which the tracing is secured, then, and then only, does forced inspiration obliterate the pulse, which is not observed when the recumbent posture is maintained. Knoll inclined toward the belief that the cause of the phenomenon observed by Sommerbrodt is really due to the enlarged thorax pressing on the axillary artery. Mere elevation of the arm, as I have already shown,² will cause the radial pulse to become less and less evident, until, when the arm has attained the vertical position, the pulse in some persons is no longer palpable. The foregoing facts demonstrate that by direct auscultation of the heart only are we able to take cognizance of heart-inhibition. Prof. Sewall, of Denver,³ has investigated cardiac murmurs under increased pressure of the stethoscope. He found that murmurs of aortic stenosis audible at the apex disappear under pressure there, and are herein distinct from mitral regurgitation. Also, that in great dilation of the aorta,

diagnosis. For clinical purposes, inhibition of the heart, according to my experience, is best attained by voluntary contraction of the muscles of the neck, which, however, must be forcible to effect the purpose. It is a maneuver readily learned, even in children, and, once mastered, any person is capable of temporarily restricting the heart-movements. If undue exertion is used in contracting the muscles of the neck, the reverse effect is induced, viz., acceleration of the heart-movements. In a few instances, I have found that if the patient draws the head backward slowly, though forcibly, the hypertension of the cervical muscles is more effective in inhibiting the action of the heart than the maneuvers previously described. There are many persons to whom no instruction is intelligible, and with such individuals I place a long, narrow cushion on the anterior surface of the neck and ask them to press with all their might on the cushion with their chin. Many of my colleagues who attempt to employ this method will at first be disappointed with the results, but gradually they will learn to eliminate those adventitious factors so necessary for success in the employment of any new method. They will also find disappointment in the fact that the heart-movements are not inhibited nor the heart-pulsations decreased. It is seldom that we are able to stop the heart-action. What we do accomplish is the inhibition of the intensity of the heart-tones and here lies the real value of this method in



the murmurs of aortic regurgitation may be annulled by pressure at the base, but not at the apex. Inorganic murmurs at the base, he maintains, may all be obliterated by pressure. Friedreich⁴ was the first to direct attention to the stethoscopic phenomena observed by Sewall. The general observation was made by Friedreich that pressure on the chest would often cause murmurs to disappear. My own results with the method suggested by the latter investigator confirm what he has already observed, viz., that it is usually only in the young with elastic thoraxes that the stethoscopic phenomenon is of value.

Friedreich was of the opinion that the disappearance of cardiac murmurs by pressure with the stethoscope on the thorax was caused by mechanic interference with the cardiac movements. Studying the phenomenon under the x rays, my own conclusion is that the theory of Friedreich is wrong, that stethoscopic pressure is tantamount to any other cutaneous irritation in the precordial region, resulting in what I have called the heart-reflex, which in itself is myocardial contraction with momentary arrest of cardiac function. Having, as a rule, failed to get results with the stethoscopic method, I sought to secure the same results by other means. Indeed pressure with the stethoscope will, in not a few instances, intensify both organic and inorganic murmurs. Cardiac inhibition is of undoubted value in

diagnosis. Another fact will be noted, that while the patient is perfectly able to control the heart-movements on the first or second attempt, every succeeding attempt will diminish this power. This is in accordance with the well-known physiologic fact, viz., that if in the frog we stimulate the vagosympathetic, the first effect is inhibition, due to vagus action; the vagus fibers then tiring, the effect of stimulation of the accelerator fibers becomes evident. Usually a few seconds elapse before the effect on the heart becomes manifest, then while the subject is still forcibly contracting the muscles of the neck, the cardiac tones become less and less evident, assuming an embryocardial character, until finally they are no longer audible. The accompanying sphygmogram was obtained from an individual on whom the method of heart-inhibition was tried for the first time.

The sphygmogram shows the pulse-tracing before and after cardiac inhibition. We note in the sphygmogram the almost total annihilation of the pulse-curve after vagus irritation. Now, with regard to the clinical application of this maneuver, let us recall a few facts relative to heart-murmurs. The site of a murmur is usually determined by noting its position of maximum intensity and the direction of its transmission. The loudness of a murmur indicates as a rule good compensation. Increase in the force of the heart-action will usually increase the intensity of a murmur; in fact, it is often necessary to elicit a faint murmur or augment its intensity by having the patient undergo some slight

² A new method of eliciting the subclavian murmur, the *Medical Standard*, October, 1899.

³ "System of Medicine," Albutt.

⁴ *Lehrbuch der physikalischen Untersuchungsmethoden*, 1881

exertion, such as walking or breathing rapidly. Even loud murmurs may become weak or disappear in the course of febrile affections and in the moribund state owing to the slow and feeble action of the heart. It is the latter fact which is of special significance to us in the clinical application of the inhibition maneuver. The following essential facts may be summarized as a result of my investigations.

1. The inhibition maneuver will cause organic cardiac murmurs to become faint and in exceptional cases will render them inaudible.

2. Transmitted murmurs are more amenable to the maneuver.

3. The fainter the murmur, the more easily is it suppressed by the maneuver.

4. When a transmitted murmur can be inhibited, the tone which it masks can be auscultated.

5. Heart-tones are less amenable than are heart-murmurs to inhibition.

6. Hemic murmurs are more readily inhibited than are the organic murmurs.

7. As a rule, the murmurs of anemia may be suppressed and their evanescence is marked by the reappearance of tones.

8. Exocardial murmurs are easily influenced by the inhibition maneuver.

9. When the inhibition maneuver is incorrectly executed, the result is to increase the intensity of the murmurs owing to increased exertion which intensifies the force of the heart's action.

10. The inhibition maneuver when often repeated is futile in its results owing to overstimulation of the vagi.

11. In irregular action of the heart or in delirium cordis, the inhibition maneuver, by momentarily inhibiting the rapidly of the heart, renders signal service in determining the time of a murmur; the maneuver being practically in its effects like the physiologic action of digitalis on the heart.

12. The inhibition maneuver enables us to determine the condition of the vagi as inhibitors of the heart and guides us in the administration of cardiotonics.

Cardiac inhibition suggested itself as a therapeutic method to correct rapid and irregular action of the heart, but up to the time of writing it has rendered me little or no service. The following cases selected from practice, will serve to illustrate the real value of the inhibition maneuver.

CASE 1.—Murmur audible during diastole in the second right interspace. It is moderately loud. At the apex a systolic tone and a diastolic murmur are heard. During the inhibition maneuver, the murmur in the second right interspace becomes fainter while the diastolic murmur at the apex disappears and is replaced by a diastolic tone. Diagnosis: aortic incompetency. The diastolic murmur at the apex is a transmitted murmur.

CASE 2.—A loud murmur, audible during diastole, in the second right intercostal space. At the apex, systolic murmur and diastolic tone. Inhibition maneuver; murmurs over the aorta and apex persist, but are less loud. Diagnosis: aortic incompetency and mitral insufficiency. The systolic murmur at the apex is not transmitted, but is dependent on mitral incompetency.

CASE 3.—Systolic murmur at the apex which is transmitted to the axilla and back. In second left interspace, systolic murmur and diastolic tone. Inhibition maneuver; all the murmurs are inaudible. Systolic murmur at the apex is not supplanted by a tone. At the second left interspace, systolic murmur is replaced by a tone. Diagnosis: mitral insufficiency. The systolic murmur over the pulmonic ostium is a transmitted murmur.

CASE 4.—Systolic murmurs over all the ostia. They are not transmitted away from the heart. They are soft and blowing in character. Murmurs likewise heard in the jugular veins. Blood-evidence of oligocythemia and hemoglobinemia. Inhibition maneuver; systolic murmurs over all the ostia replaced by systolic tones. Diagnosis: murmurs of anemia.

CASE 5.—Murmur systolic and diastolic in time in the third interspace on either side of the sternum, modified by pressure with the stethoscope and position of the patient. Anemia not present as determined by the hemocytometer and hemoglobinometer. Inhibition maneuver; murmurs disappear and the cardiac tones become evident. Diagnosis: pericardial murmurs.

CASE 6.—Murmur heard loudest at the fourth left interspace. Heart very rapid and irregular in action. No anemia present nor physical signs of pericarditis. Inhibition maneuver; murmur disappears and tones systolic and diastolic heard over all the ostia. Diagnosis: cardiomyocardial murmur. An examination of the heart a week later when the heart-irritability was allayed by rest in bed and the use of digitalis, the foregoing diagnosis was confirmed.

CASE 7.—Cantering rhythm of the heart. A slight murmur is present. The time of the latter is impossible to determine. Inhibition maneuver; systolic and diastolic tones are clearly distinguished over all the orifices with the exception of the mitral orifice. At the latter orifice, only a diastolic tone is heard. Diagnosis: the murmur is evidently dependent on mitral incompetency.

HEMORRHOIDS: ETIOLOGY, PATHOLOGY, AND TREATMENT.

By J. WILLIAM J. DOYLE, M.D.,
of Philadelphia.

Clinical Assistant, Surgical Clinic, Polyclinic Hospital and College for Graduates in Medicine.

THAT the rectum and its diseases are considered as worthy of but little attention is evidenced by the *very little* attention they receive from the teachers of our colleges and universities. On the contrary, that they are deserving of profound study by the student and practitioner of medicine is attested by the complaints of the sufferer, the expensive exploiting of innumerable ointments, the suggestive circular of the charlatan, and the inability of the Regular to cope with them.

In order to intelligently and successfully treat any diseased condition, we must be able to recognize it. I quite lately read an article on the treatment of piles, wherein the writer boldly makes the assertion that, in a large experience of more than 20 years in the treatment of hemorrhoids, he has never seen a solitary case requiring operative treatment. Truly, such teaching is demoralizing.

Hemorrhoids are primarily a diseased condition of the vessels, as the books tell us, but they are also something more. The veins of the rectum are disposed to become dilated and varicose, because they are devoid of valves; their position being perpendicular, the column of blood is being pumped up-hill, and the resistance is great because of the weight of the column above, while the peculiar office of the rectum subjects them to conditions not elsewhere commonly found to exist.

Much more frequently, perhaps, than is generally admitted, this dilation and varicose condition is designated hemorrhoids. This definition is radically wrong, as it totally ignores an advanced pathologic condition absolutely necessary to constitute piles. Undoubtedly, this previous dilation, etc., is a preliminary step in the formation of a pile, but it does not by any means constitute the disease; for given this varicose state, with

opportunity for the vein to empty itself, you will never produce a pile. Should, however, an obstruction of any kind exist, sufficient to keep the vein distended, congestion is produced; and, because of the friction to which the parts are subjected, inflammation is added, an inflammatory exudate is deposited, and a *tumor* is produced—a tumor that can be both seen and felt, which by plastic infiltration under favorable circumstances tends to grow larger. When the veins within the external sphincter-muscle are affected, the hemorrhoids are said to be internal. When those outside the muscles are involved, piles are called external. There is also a "combination" pile, partaking of the nature of both the internal and external varieties. Commonly two distinct kinds of external piles are described—a blood-tumor and a peculiar inflammatory condition of the integument.

This blood-tumor is said to be a clot enclosed in a cyst formed by a dilated vein, and we are taught that if we cut into it we evacuate this clot. I must take exception to this teaching. Instead of the vein forming a cyst enclosing this mass of blood, I am satisfied that the vein-wall has ruptured and that the clot is not encysted at all, but lying loosely in the tissues, circumscribed but not encysted.

The pile due to an inflammatory condition of the integument is due to enlargement of flaps of skin existing naturally in certain individuals, and I have never witnessed this form of growth in persons having a smooth regular surface at the anal opening. Therefore, in my opinion, this growth is not to be included as a variety of hemorrhoid.

The most prominent symptom of external piles, often, in fact, the only symptom, is pain, whereas in internal piles it is often nil unless they are irritated or ulcerated. A patient suffering from internal piles may endure them for months or even years without special inconvenience, while one suffering from the external variety demands immediate relief. External piles are said to be much more frequently met than internal. My experience is opposed to this, as I am sure that I have encountered half a dozen internal to one external. I believe the opinion is due to the fact that the practitioner seldom makes an examination of the parts, but simply quiets his conscience by writing a prescription for piles after accepting the patient's diagnosis.

The causes of piles have been variously ascribed; but as a matter of fact, it is decidedly hard to trace them. Sedentary habits and constipation are "old standbys," but as supports they are gradually crumbling to pieces, as the disease is found as frequently in the robust individual, whose entire life has been spent in active pursuits in the open air, as in the puny, cadaverous fellow who spends hours perched upon a stool in a dingy foul-aired office. Pregnancy is a common cause, but it is quite evident that it acts mechanically by obstructing the lumen of the vessels; an overloaded condition of the rectum could be causative for the same reason; but that the simple atony of the muscular coat of the bowel is sufficient does not satisfy me. Displacement of the uterus is cited as a common cause, but many patients present themselves in whom none of the accepted causes are to be found, and in whom cannot be found any sufficient or probable cause.

While quiescent external piles (if in this state they can be truly called piles) are practically without symptoms, especially those composed of enlarged flaps of integument, it is the inflammatory condition, or the blood-clot exciting as a foreign body to inflammatory

reaction, that directs the sufferer's attention to his condition. Pain then becomes decided, a feeling of heat and fulness and tenderness to pressure exists, while reflex symptoms form a prominent feature of the case.

External hemorrhoids are frequently but a symptom, if I may be permitted such a term, of other diseases, as ulcerations, fissure, internal piles, abdominal tumors, displaced uterus, enlarged prostate, etc. It follows that, in treating them, other troubles should be looked for and attended to at the same time.

We are taught that external piles are usually an unimportant matter, not often demanding operative interference. While not wishing to deny the possibility of resolution taking place under local palliative methods, I am constrained to say that return to the original condition, while agreeable to the patient, is not cure, and that such cases are like a smouldering fire, liable to light up upon the slightest provocation and demand constant attention for months and years.

One reason advanced in opposition to operation is that wounds involving the mucocutaneous surface do not heal kindly, are apt to degenerate into ulcers, etc., and that such ulcers are extremely hard to heal. Personally, I cannot subscribe to this teaching, and must affirm such has not been my experience. We are informed also that all that is needed oftentimes is to incise the pile, turn out the clot, and our patient is immediately at ease. It reads very prettily, but in practice it doesn't seem to meet the indications; in fact, it will be found that the knife excites additional inflammatory action, and our patient is made worse. By far the most satisfactory method of dealing with this form of pile is bold and free excision under antiseptic precautions.

With regard to the palliative treatment of external piles we can only say that we can hope to accomplish but little. We exhaust our ingenuity in efforts to relieve our patient; finally lose him because of failure. The books are profuse in instructions in this direction, and the journals occasionally contain infallible formulas, but it is only occasionally that you derive benefit from them. We are dealing with inflamed skin, or inflamed skin plus a foreign body—clot of blood—beneath it. Such conditions are not favorable to absorption of local remedies.

If your patient is suffering, induce him to go to bed, and apply a series of generous poultices as hot as he can stand them; then after the subsidence of the acute trouble an astringent and sedative lotion will probably give you more satisfactory results than almost anything else. Always impress upon the patient the fact that you are simply affording him temporary relief and insist upon the advisability of radical cure. If he expresses his willingness to submit, let me impress upon you not to fall into the fatal error of waiting until the acute trouble "quiets down," but operate immediately, as then you remove both the trouble and its cause.

Internal piles are a much more serious trouble than the external, yet to the individual patient it does not appear so, as the one suffering from the external variety will complain most, because of pain and distress, while acute pain is prominently absent in uncomplicated internal piles. A patient suffering from internal piles will endure for weeks, months, and years the inconvenience of protrusion, staining of the linen, etc., without complaint. It is only when a complication supervenes, as ulceration, pronounced bleeding or perhaps inability to return his piles within the rectum, that he recognizes the necessity of medical advice. There appears to

prevail among doctors an idea that piles are usually situated high up the bowel. This is not so, the plexus involved is just above the line of junction of skin and mucous membrane. The degree of protrusion varies greatly in different cases because of the greater or less size of the pile, but the point of origin is invariably the same, *i. e.*, the terminal venous plexus.

It appears to me not only useless but misleading to apply a variety of names to hemorrhoids, as the venous, the arterial, the capillary, the white, etc. It is far more convenient to make a division into internal and external; further, that internal piles when large will protrude, that the most dangerous form is the small internal—so-called capillary—because of the fragility and delicacy of its covering. They are just forming, are readily broken down and serious hemorrhages may result; while the large variety are most troublesome, as they are likely to protrude, become irritated by friction, inflamed and ulcerated.

It appears strange, but nevertheless it is a fact, that many physicians advise their patients against operation for fear of "being thrown into consumption," saying the bleeding acts as a safety-valve, etc. Such teaching is absurd, and in the light of the advances of physiology and pathology, is unworthy of an educated profession.

Other diseases are frequently associated with piles, often indeed acting in a causative relation to them; for example, displaced uteri, abdominal growths, affections of the bladder, prostate and urethra. So commonly are such troubles said to bear a causative relation to hemorrhoids that many surgeons claim it is useless to treat the piles until these troubles are corrected. I cannot endorse such teaching; on the contrary, feel perfectly justified, in fact, in duty bound to relieve my patient of suffering in this particular first, and cure the other troubles afterwards if I can. If I have, for example, a patient suffering from piles that constantly protrude, plus a large and displaced uterus, her uterine disease causing comparatively little trouble, while her piles inflict upon her constant distress, I do not feel justified in waiting for the gynecologist to repair the womb trouble, even granting, for the sake of argument, that the womb disease is the sole cause of the hemorrhoidal disease. I operate at once, knowing that I can afford her almost instant relief and put her in better condition for the gynecologist. Bear in mind I am addressing myself to hemorrhoids, not to a simple varicose condition of the veins. Moreover, I do not believe that correcting these troubles will *cure* the piles, though such treatment will undoubtedly relieve them and will cure simple dilation.

Internal piles that do not bleed and do not protrude present but few if any decided symptoms. The earliest symptom of importance is hemorrhage, and as the small, badly-organized pile is most apt to bleed and seldom protrudes, we must make an examination with the speculum to locate the source of bleeding. The next important symptom is protrusion, the degree of protrusion depending upon the size of the pile. The protruding mass causing little pain and being easily replaced within the bowel, assures us we are dealing with an uncomplicated case. If, however, decided pains exist we will find complications existing in the form of abrasions, fissures, ulceration, etc., a feeling of fulness, as of something still remaining within the rectum, the patient feeling he has not fully completed the act of defecation due to the tumors acting as foreign bodies. Reflex symptoms are very distressing at times, and the patient will complain of pain in the back, thighs, etc., while the entire

nervous system may respond to the irritation, and the patient be miserable generally. In persons of an advanced age there is a tendency for the tumors to remain protruded, owing to a relaxed condition of the sphincter. An examination should be made of all cases complaining of rectal trouble. Your personal interest demands that you make your own diagnosis and forbids you accepting the patient's.

The treatment of internal hemorrhoids can best be considered under the single head of radical cure. Palliative treatment is not worth wasting time on except as a means of inducing the patient to submit to operation. The hemorrhoidal tumor can be removed in a few moments, the cure is radical and complete; yet by education in a false theory and a temporizing method by the general practitioner, many of these sufferers fall into the clutches of the charlatan and are treated for months and years without benefit. There are only two operative measures for the radical cure of internal hemorrhoids worthy of consideration—the ligature and the clamp and cautery.

While the method by clamp and cautery has of late gained much headway and is advocated by many able men, I am satisfied that it can only be adopted in selected cases. For general use it has little to recommend it and much to discourage its use. We cannot feel sure that it has sufficient cautery effect upon *all* vessels, therefore hemorrhage is more liable to occur than after the ligature properly adjusted, recovery from the operation is slower, there is often considerable sloughing and we are all familiar with the extensive scar tissues following burns.

The ligature in the radical cure of internal hemorrhoids has withstood the test of time, and is accorded the endorsement of the most skilful surgeons of all countries. It is easy of execution, gives the very best results with less pain and speedier convalescence than any other method. Allingham, Sr., undoubtedly expresses the conviction of the profession in saying there is not within the range of surgery any proceeding worthy of the name of operation, exhibiting greater success and smaller death-rate than the ligation of internal hemorrhoids. In fact, when we consider that in thousands of instances the operation has been done under the most unfavorable circumstances by inexperienced and even ignorant operators, its success is phenomenal.

Notwithstanding the brilliantly successful record of this operation, there are certain details to be observed in the method of applying the ligature. The operation as usually performed does not appear to me to be the best, and is open to the serious objection of inviting possible infection, a risk to which I do not feel justified in subjecting my patient. See any textbook of surgery for description of classical operation. A better, less painful, eminently more satisfactory procedure and the one personally adopted, is to throw a strong ligature *around* the base of the smaller piles while grasped in the bite of the forceps, and put strongly on the stretch by an assistant, tying tightly and leaving as small a stump as is compatible with safety to the patient; this surface is cut off from the general circulation by the tightly drawn ligature, consequently there is not any danger of infection. For larger tumors a double ligature is passed through the base of the pile and tied tightly on either side and the redundant growth treated as above. Usually the patient is put to bed on light, easily digested diet, and in a week is discharged cured. In selected cases I have known patients to resume busi-

ness the day following operation without experiencing any inconvenience whatever.

The combination pile involves some cutting, but it is on the cutaneous surface only. Commencing at the junction of the skin and mucous membrane, the knife is carried cleanly and boldly around the tumor to the same point upon the opposite side, the pile is then grasped firmly at its base by the forceps and lifted well away by the assistant, a double ligature is then passed through the base and tied firmly both on the skin and mucous surfaces. Cut off the tumor as close as possible to avoid slipping, bring edges of skin round together by S. W. G. suture, and dress in usual way under strict antiseptic precautions. An important detail to bear in mind in forming the stump is to employ straight scissors for the reason that, if curved scissors are employed, the cut will be deeper in the middle than at either side, and might promote the slipping of the ligature, while the cut made by straight scissors or scalpel, owing to the compression exerted by the ligature, will bulge upward at center, and throw the edges downward, thus acting as an additional precaution against hemorrhages due to the ligature slipping from its position. Let me also insist upon a bold use of the scissors in forming the stump; do not cut off a *little* of the mass only. Bear in mind *why* you are cutting, keeping *as close* to the ligature as you dare, thus leaving as little tissue as possible to come away as the ligature cuts its way through, saving your patient much discomfort and inconvenience.

While this paper is specifically intended to set forth *what should be done*, it offers so strong a temptation to protest against a certain more or less popular method of *what should not be done*, that I cannot resist. I refer to the injection of carbolic acid and other irritants into the hemorrhoidal mass, in the expectation of radical cure. In spite of all that has been written of the evil results of such practice, I am grieved to say it still finds advocates among men whose medical education should be a guarantee of intelligence. This practice was devised some 20 years ago and was "*farmed*" out without regard to ability, to any one who could pay the price demanded, all being pledged to secrecy. After a time the secret was divulged and regular physicians all over the country adopted it. It gained for itself many strong adherents even among men of national reputation, until, appalled by the awful results, they one by one receded from their positions. However, I find it still in use in the hands of men who should know better, who are apparently undeterred by the evil results of others and are waiting for a personal experience. They will get it, too, and to their sorrow. In the meantime they quiet themselves with the argument that it is the man and not the method that is to blame. As a method of treatment it should not be countenanced by medical men; it is unscientific, fraught with danger, intense pain, and does not produce radical cure; at the very best it should be classed with palliative methods. We cannot predetermine just how much acid should be injected into the individual hemorrhoid; sloughing and great destruction of tissue are perfectly natural consequences, and fistulas, abscesses, and strictures are common results, while violent hemorrhage, pyemia, and death are not rare.

Largest Hospital in Europe.—Moscow has the largest hospital in Europe, with 7,000 beds. There are 96 physicians and 900 nurses, and about 15,000 patients are taken care of every year.

SOME CLINICAL EFFECTS OF AMMONIO-FORMALDEHYD.¹

By EDWARD L. KEYES, JR., M.D.,

of New York.

THE more important effects of urotropin² (the ammonium salt of formaldehyd) have been widely exploited first in Germany and more recently in this country, so that the following data may be accepted as axioms:

1. The effects of urotropin are almost entirely confined to the urinary passages.

2. These effects are due, in part at least, to the liberation of formaldehyd in the urine, and

3. These effects are, heightened acidity, marked antiseptic properties, and variable irritation of the neck of the bladder.

It is my purpose to illustrate some advantages of the drug and certain limitations to its usefulness, as well as to suggest what has seemed a practical way of handling it to the best advantage.

The dose of urotropin is given as 15 to .45 grains a day, and most writers assert that the irritation, the pollakiuria and dysuria caused by it, is not to be found if the daily dose is kept below 30 grains. The following case, however, is an example of a sharp reaction to a much lower dose.

CASE I.—Mr. W. S., 70 years of age, has had locomotor ataxia and paralysis of the bladder since 1868. The use of the catheter long ago occasioned cystitis and pyelitis both of which are controlled by systematic catheterization, daily washing of the bladder with boracic acid or silver nitrate solution, and the use of salol, 45 grains a day. The catheter is passed five times in the 24 hours and causes no irritation whatever. Under this treatment the urine is acid and hazy, containing a trace of albumin. The centrifuge (3 minutes at 1200 revolutions) throws down a small deposit of pus and epithelium. The cloud is bacterial. December 29, 1898. Stop salol. Take urotropin 7.5 grains twice daily. January 11, 1899. No improvement; make urotropin 7.5 grains, three times daily. January 20, 1899. The new dose continued for four days, causes so much vesical irritation that the patient discontinues the drug for three days, in which time the irritation subsides. But two days more at the increased dose causes a more serious disturbance than ever. He has to catheterize himself five times during the night. The urine thus passed looks like the previous specimen, but the centrifuge now throws down 0.5% of deposit, leaving the supernatant fluid clear. This deposit consists of pus, squamous and transitional epithelium with few bacteria; there is a trace of albumin. This irritation subsided under liquor potassae and tinctura hyoscyami, the urotropin being discontinued. As a result the urine promptly became bacterial again, containing a small and variable amount of pus. No further attempt was made to administer urotropin until November, at which time 15 grains a day cleared the urine of bacteria and all shreds, leaving only a centrifugal deposit almost entirely epithelial, of $\frac{1}{4}$ of 1%, while 20 grains a day doubled the deposit and caused some irritation. Up to the present time any remission in the use of the urotropin is followed by a reappearance of the bacteriuria, while 15 grains a day keeps him clean.

In this case the action of the drug has been eminently satisfactory, for, although it has not yet effected a cure, and possibly never will, yet while respecting the marked idiosyncrasy of the patient, it has greatly aided him in his long fight against infection.

In marked contrast to the above case is the follow-

¹ Read at the Congress of American Physicians and Surgeons, Washington, D.C., May 1, 2, 3, 1900.

² Having used the drug impartially in the form of urotropin, cystogen, and ammonioform, with uniform effect, I refer to it simply as urotropin throughout this article.

ing, in which high doses were necessary to conquer a similar infection, although it was attacked while yet in an early and mild stage.

CASE II.—S. E., female, aged 28; three days before the delivery of her first child the patient had a chill followed by a temperature of 103°. The following day there was a second chill and the temperature again rose to 103°. No diagnosis was made and no further rise of temperature was noted until after delivery. Beginning with the first day there was afternoon rise of temperature up to 101° or 102°, with slight chilliness and general malaise. This was repeated daily for 4 or 5 days, when the urine, which had contained a faint trace of albumin and a few hyaline and finely granular casts, during the last 6 weeks of pregnancy, was carefully examined. It was hazy, and the centrifuge threw down a very slight deposit of leukocytes and bacteria, leaving the haze undiminished. A trace of albumin persisted. The diagnosis of pyelitis was made and the patient put upon urotropin, 20 grains a day, and large quantities of water. The temperature became normal within 48 hours and remained so, but the bacteriuria persisted. The urotropin was continued for a month with no effect whatever. After an interval of a month the urotropin was resumed at 45 grains a day for 9 days, at the end of which time the urine when passed looked the same as before, but cleared up in the centrifuge, showing a deposit chiefly epithelial (vaginal) and with but very few hyaline casts and bacteria. The albumin was undiminished. The urotropin was then continued at 15 grains a day for a month, at the end of which time bacteria were still absent and the albumin had disappeared for the first time in 6 months. At the present writing, two weeks since treatment was stopped, the urine obtained by catheter contains a granular haze which is quickly thrown down by the centrifuge, leaving the urine clear. The deposit is chiefly epithelial. It contains very few hyaline casts. There is no albumin.

The contrast of vesical irritability in these two cases is sufficiently startling to demand explanation. I believe that the matter is entirely one of idiosyncrasy. I have known 20 grains a day to irritate one woman's bladder and to soothe the vesical irritability of her daughter, and Case III is in marked contrast to Case I, in the great sensitiveness to instrumentation coincident with an ability to endure high doses of urotropin.

Neither can I explain why the effective dose for the long-standing inflammation of Case I was ineffective in the comparatively acute inflammation of Case II. The clinical point which this latter case suggests is that the drug must sometimes be pushed to the limit of endurance in order to conquer the inflammation, after which a lower dose will suffice to hold it in abeyance and finally to wear it out. A noteworthy point in both cases, and one which has come up in a number of others, is that the effect of urotropin on a urine swarming with bacteria may not be apparent at the first glance, but may require the aid of the centrifuge and microscope to show that the bacterial haze has been replaced by a purulent or epithelial cloudiness.

The following case, besides its contrast with Case I, already noted, exemplifies the effect of urotropin upon one of the commonest forms of urinary septicemia.

CASE III.—Mr. C. D., 32 years old, comes with a "gleet" of one year's standing. He urinates once at night and every three hours by day. He has recently had two bloody emissions. He is sallow and anemic; his tongue is coated; he is constipated and says he has "remittent fever." He has quasimalarial paroxysms at irregular intervals. Local treatment at the hands of an excellent specialist has resulted in three urethral chills, inguinal buboes, and an acute epididymitis. Examination shows urethritis, prostatitis, vesiculitis, and cystitis. There is hydrocele on the right side. Ten days of forced milk and buttermilk diet, rectal irrigation, arsenic, salol and sandalwood oil, improved both the general and local conditions. Then two weeks local treatment with thallin, bichlorid and ichthyol (silver nitrate and protargol

having previously made him worse, and there being a strong suspicion of tubercle) netted him three days of urethral fever and dragged him down nearly to where he had begun. He was then put on three 7.5 gr. tablets of urotropin and 30 minims of eucalyptus oil a day, on which he improved rapidly, gaining four pounds in weight in three weeks. Eucalyptus was then discontinued, and the urotropin run up to four, five, and six tablets a day. This last dose proving irritant, he was kept at five a day for ten days, during which time, two months after he came to the office, he got married without permission and "lived happy ever after." Sexual intercourse harmed neither him nor his wife. Two months after his marriage, four months after the beginning of treatment, he was entirely well but for a few dotted shreds in his urine. The wife, seen at two and again at eight months after marriage, showed no signs of infection and is now pregnant.

I have obtained similar happy results in dilating strictures without a chill, in which I believe urotropin internally and silver nitrate locally were responsible for the result. In fact it is my custom to employ urotropin in any case in which urinary chill or septicemia are present, or threatening, especially in operative work.

The following case (of which the exact record has unfortunately been destroyed by fire) was, as much as anything else, the foundation for my present routine practice of administering urotropin before as well as after all operations upon the urinary organs. For the facts as well as the inferences I am indebted to my associate, Dr. C. H. Chetwood.

CASE IV.—Mr. A. B., about 40, submitted to an external urethrotomy for stricture. During the 24 hours following operation he passed but two or three ounces of urine. His temperature rose to 105°, his pulse was tumultuous and irregular, and he was apparently about to die of acute suppression of urine. Urotropin was then administered (7.5 grains q. i. d.) and within 24 hours the floodgates were unloosed, the temperature and pulse came down, and for two or three days all went well. Then to test its efficacy, the urotropin was withdrawn. Within a day the urinary excretion became much less and the temperature and pulse ran up again. Again the urotropin was administered, kidneys, temperature, and pulse promptly reacted and the convalescence thereafter was uneventful.

Since instituting the use of the drug I have several times observed a similar postoperative diuretic effect, though never in so marked a manner as in this first case; but in no case have I known the drug to have any diuretic or other beneficial effect on chronic uremia. How it might affect the acute uremia of Bright's disease, I have had no opportunity to judge. I have not yet met with a case of postoperative suppression since using urotropin.

One accident has occurred, however, in this connection, which I wonder at not having seen reported heretofore. It is certainly a serious mishap and one that is likely to occur frequently.

CASE V.—J. H., 65 years of age, submitted to suprapubic prostatectomy on February 22, 1900. For 2 days before operation the patient received 5 grains of urotropin 3 times a day. After operation the drug was continued at the same dose. Although the patient was in poor condition before operation, and the urine ammoniacal and foul (there were 32 stones in the bladder) there was neither suppression nor suppuration in the wound at any time. The upper part of the wound which, had been sutured, united by first intention, but the lower part, left open for drainage, was covered on the second day by a superficial leathery slough. This was attributed to the irritating urine. In spite of vigorous irrigation, however, the sloughing progressed, and by the tenth day, when the drainage tubes were finally removed, the whole wound was lined with a dense adherent membrane, while from the deeper parts long shreds of necrotic tissue were daily clipped away. The edges of the wound were be-

ginning to be raised and leathery. On March 8, the eighteenth day, the condition of the wound was worse than ever. The skin along the line of union and about the suture-holes in the upper part of the wound was thickened, white and surrounded by an area of congestion. In the groin, where there had been some chafing, and about various papules caused by adhesive plaster, a similar change had taken place. The wound itself had not healed in the slightest. Nowhere was there any suppuration.

The condition of the wound and the surrounding parts could be attributed to nothing but the irritating urine. The condition resembled nothing more than a case seen in consultation, in which a wound in the scrotum which had been irrigated for some time with formalin, assumed an appearance of malignancy for which it was proposed to perform castration, but which disappeared as soon as the formalin irrigations were stopped. Accordingly I suspected formalin irritation, and exchanged the urotropin for salol.

March 12. The wound is decidedly more healthy-looking. March 18. Great plaques of slough are shaling off from the sides of the wound which is manifestly closing; although the patient's bladder has been irrigated per urethram, since the tenth day, he urinates today 2 ounces—for the first time.

After this the healing of the wound was slow but uneventful. On April 4, the suprapubic fistula had closed, and 8 days later the wound was entirely healed.

My experience with other operative cases, both before and since, convinces me that this tendency to slough is an idiosyncrasy, comparable to the tendency to bladder-irritation; but though unusual it is none the less important.

To sum up the conclusions suggested by this modest array of cases, it may be advanced as a basis from which to discuss the virtues of the drug that:

1. Urotropin seems to be almost a specific in the treatment of some cases of acute catarrhal pyelitis, uncomplicated.

2. To prove effective it may have to be administered in high doses until the urine is practically clear of bacteria, after which a smaller dose may suffice.

3. In judging the effects of the drug, the centrifuge and microscope should be employed.

4. The dose must not be sufficient to cause pollakiuria and dysuria by irritation of the neck of the bladder.

5. The possibility of such an irritation cannot be overlooked, even when very small doses are employed.

6. Urotropin is extremely serviceable as a prophylactic of the various forms of urinary septicemia and urethral chill.

7. Its routine employment both before and after operations on the urinary passages is indicated.

8. The urine containing urotropin occasionally has an escharotic effect upon wounds, which may constitute a contraindication to its employment.

Cardiac Dilation.—Stinchfield (*St. Paul Medical Journal*, September, 1900) divides **cardiac dilation** into acute and chronic. The former occurs suddenly and, therefore, the heart-walls are thin. In the chronic form the dilation is accompanied by hypertrophy and always comes on more or less slowly. One or more cavities may dilate, and the cause is always in front of the dilation. A dilation of the left heart is sure to be followed by a dilation of the right; and obstruction to the pulmonary circulation also causes dilation of the right heart, hence that side is most frequently dilated. Besides its effect upon the heart itself, dilation causes sclerosis and brown induration of the lungs, nutmeg

liver, stony kidney, chronic gastritis and an enlarged, dark, hard spleen. Acute dilation is caused by violent muscular exercise. Symptoms, physical signs, auscultation, diagnosis, prognosis, etc., are discussed by the author. In treatment 2 indications are to be met: (1) to keep up the general nutrition as well as possible; (2) to support and control the action of the heart. When compensation fails or dilation becomes excessive absolute rest is of prime importance. [A.B.C.]

The Value of the Newer Signs and Procedures as Aids in Diagnosis.—Head (*The St. Paul Medical Journal*, September, 1900) calls attention to the value of **Koplik's spots** in making the diagnosis of measles. In 1896 Koplik called attention to these spots. He said that on the buccal mucous membrane and on the inside of the lips we invariably see a distinct eruption. It consists of small irregular spots of bright red color. In the center of each spot, by strong daylight, can be seen a minute bluish-white speck. This eruption is almost absolutely pathognomonic of measles, and appears in the invasion stage or early rash stage. According to statistics which the author has collected these spots appear in 88% of cases of measles, and hence he regards them as a valuable aid to diagnosis. **Lumbar puncture** as an aid to diagnosis in meningitis is a procedure introduced by Quincke in 1891. The puncture is made between the second and third or the third and fourth lumbar vertebra. Cerebrospinal fluid is drawn off. In 123 cases of meningitis fluid was present in 117 and absent in 6. From these statistics we may draw the following conclusions: In diseases other than meningitis, the fluid withdrawn by lumbar puncture is usually clear and colorless. In some cases of meningitis the fluid withdrawn is clear. A bacteriologic study may help in the diagnosis of these cases. If the fluid is cloudy, milky or purulent, we are probably always dealing with a meningitis. Since this class embraces 84% of all the cases of meningitis analyzed, the value of lumbar puncture as a diagnostic procedure in meningitis is established. Failure to secure fluid when lumbar puncture is done does not exclude meningitis. **Justus' test in syphilis** consists of a fall in hemoglobin of from 10 to 20% following the administration of mercury to syphilitic individuals, either by inunction or subcutaneous injection. The author's conclusions, based upon statistics collected, are that this test is of little value in the chancre and in the tertiary stages, but of considerable value in the secondary stage, about 50% of cases reacting. **Kernig's sign** in meningitis consists of the impossibility of extending the patient's leg upon the thigh when the latter is at right angles to the body. From statistics collected the author concludes that Kernig's sign is present in 84% of the cases of meningitis, is not present in healthy individuals, but is present in some brain-lesions other than meningitis, viz., subdural hemorrhage, edema of the brain, gonorrheal arthritis, and general carcinoma of the brain. **Litten's diaphragmatic sign** consists of the following: If a person lies with his feet pointed straight toward a window and the chest exposed, there can be observed along both axillae a sort of shadow which descends during inspiration from above the seventh to about the ninth rib, passing up again during expiration. It is best seen in spare, muscular persons. The observer must stand with his back to the light. It can be seen in all normal persons, except the very fat and those who cannot take a deep breath. Litten claimed that his phenomena was absent in (a) conditions where fluid or air was in the pleural cavity, (b) where the pleural cavity was obliterated by adhesions, (c) advanced emphysema, (d) pneumonias of the lower lobe, (e) intrathoracic tumors low in the chest. **Babinski's reflex** was announced in 1898 and consists of a certain peculiarity observed in the plantar reflex which occurs in pyramidal tract disease. He noted that in the normal adult if one drew his finger nail lightly across the sole of the foot there would be a flexion of all the toes upon the metatarsus. But in disease of the pyramidal tracts this normal flexion was replaced by an extension of the great toe with or without extension and separation of the other toes. He claimed, (a) that this sign never occurred in normal persons or those suffering from functional diseases, (b) that it is the earliest of the objective signs of pyramidal tract disease to appear. He excepted from this statement newborn infants and patients with transverse myelitis. The author considers Babinski's reflex very reliable. [A.B.C.]

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GEORGE M. GOULD, M.D., *Editor*

Collaborators

JOSEPH SAILER, M.D.
D. L. EDSALL, M.D.
D. RIESMAN, M.D.
J. M. SWAN, M.D.

M. B. TINKER, M.D.
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Cremation at Galveston.—Some of the public journals seem to think that the great disaster at Galveston will make cremation more popular. The direful spectacle of the stricken city, with its many funeral pyres, is, of course, an object-lesson in cremation on a scale that is unprecedented. It will doubtless make the idea of cremation more familiar to the public mind, and therefore may, in a measure, tend to promote the cause of incineration. As we interpret human nature, however, the incident may work also in just the opposite direction. Cremation at Galveston will be associated in the minds of many persons with the thoughts of the horrible necessity which resorted to it. It was not a matter of choice, but of emergency. It was one of the elements of the great tragedy itself, and has become part of the enduring picture which has been so vividly impressed upon the public imagination. We think that for many persons who have heretofore had a prejudice against cremation, there will now be a downright horror for it. Nevertheless, the example at Galveston appeals to the reason, even though it may shock the sentiments. Perhaps reason will eventually prevail in this matter, although, unfortunately, on this subject of the disposal of the dead, prejudice and sentiment, founded on long-prevailing customs, rituals, and beliefs, are well nigh immovable in some minds. From the hygienic standpoint the cremation of infected and putrefying bodies is just as much to be commended as a regular practice in every city and town as it was at Galveston after that appalling calamity.

The value of teaching of first-aid-to-the-injured is illustrated almost every day, but in no case more aptly than in that of a brakeman on the Erie railroad who fell from his train. A leg was cut off by the car-wheels, but with admirable presence of mind the man constructed a tourniquet with his handkerchief and knife whereby he stopped the hemorrhage. Even in this condition he built a fire in order to warm himself, and awaited the next train, which he signalled; he was taken aboard and to a hospital. We trust that the time will come when school children in the upper grades may be taught so much of "applied physiology" as will enable them to act sensibly in the case of the thousand emergencies sure to take place in after-life with themselves or their fellows. It is strange that almost all lay people "lose their heads" in accidents and in-

juries, and do precisely what should not be done. This is especially true when hemorrhage is present. Many people either faint or are seized with panic at the mere sight of blood—a possible echo of primitive barbaric blood-rites and blood-frenzies. To supplant this loss of control by calm and intelligent action according to the circumstance and condition, is one of the duties we owe to the coming generations.

The First Cholecystotomy and the Man who Performed it.—Probably many Americans are not aware that in addition to the credit for the first ovariectomy by McDowell, of the backwoods of Kentucky, the first nephrectomy by Walcott, of Milwaukee, the first successful hysterectomy for fibroid uterus by Burnham, of Lowell, Massachusetts, and many other brilliant achievements, America may also claim the honor for the first cholecystotomy, which was performed by John Stough Bobbs, of Indianapolis, Indiana. Dr. Bobbs' paper, recording his operation, first appeared in the *Indiana State Medical Society Transactions*, in 1868, and has recently been reprinted in the *Indiana Medical Journal*, 1899, Vol. XVIII, p. 177. Briefly, the facts with regard to the case are as follows: A woman, 30 years of age, had been suffering for 4 years with a tumor in the right side of the abdomen, which had given her considerable pain.

The true nature of the enlargement was in doubt before operation, but the woman insisted upon operative measures. On June 15, 1867, assisted by a number of medical gentlemen, Dr. Bobbs performed the following operation: An exploratory incision was made, extending from the umbilicus to the pubes. Extensive adhesions of the omentum to the adjacent tissues were found. The incision was then extended above the umbilicus, and laterally over the most prominent part of the tumor. Tearing through the adhesions with his fingers, Dr. Bobbs reached a sac about 5 inches in length and 2 inches in diameter at its widest part, containing pellucid fluid. As no pedicle could be discovered, the lower point of the sac was incised, when a perfectly limpid fluid escaped, propelling with considerable force several solid bodies the size of ordinary rifle-bullets. The gallbladder was thus emptied, the incision in its walls stitched, and the gall-sac returned to the abdominal cavity. The external wound was properly closed. Recovery was rapid and uneventful.

The patient was still living near Indianapolis 32 years after the operation, and we have noticed no account of her death. In a letter to the *Indiana Medical Journal*, she wrote many interesting details with regard to the operation and her condition. As she remembers, between 40 and 50 stones were removed from her gallbladder, but she thinks one was left behind, which still causes her some trouble.

Dr. Bobbs was born in Green Village, Pennsylvania, December 28, 1809, and died at his home in Indianapolis, May 1, 1870. He began to read medicine with Dr. Martin Luther, of Harrisburg, when eighteen years old, and later studied at Jefferson Medical College, Philadelphia, where he graduated in 1836. Later moving to Indiana, he helped to organize the Medical College of Indiana at Indianapolis, became professor of surgery and later dean of the faculty. He served in the Union Army during the Civil War, and distinguished himself both for his courage and skill as a surgeon. He was president of the Indiana State Medical Society in 1868, and his paper, "Lithotomy of the Gallbladder," appeared in the same volume of the *Transactions* as his presidential address. Dr. Bobbs was a scholarly man, and one of the greatest general surgeons of his day. As a citizen, soldier, and philanthropist, as well as a surgeon, his name will long endure.

"**Applied Physiology**" is an ideal of education the value of which is being recognized more and more. It is strange how long the profession has neglected the duty of elementary teaching, with common sense and yet with scientific sense, of the simple truths of practical, personal hygiene. To this neglect is at last in part traceable the terrible vogue of quackery, and the wide prevalence of medical superstition. The family medicine book and the patent medicine almanac are sad evidences of barbarism active in the most advanced civilization. Because of the profound importance to the whole community and to future generations, of these facts, we feel justified in calling especial attention to an admirable attempt, for the most part highly successful, to bring to the intelligent lay-reader the principal truths of personal hygiene from the standpoint of sound science and educated common sense. The book to which we allude is "A Manual of Personal Hygiene," edited by Dr. Walter L. Pyle, and published by Messrs. Saunders & Co. Every practitioner must have many patients, and every school and college teacher many pupils, to whom such a work as this could be recommended, and whom it would greatly benefit. The volume is composed of chapters on "The Hygiene of the Digestive Apparatus," by Dr. Charles G. Stockton; "The Hygiene of the Skin and its Appendages," by Dr. George Howard Fox; "The Hygiene of the Vocal and Respiratory Apparatus," by Dr. E. Fletcher Ingals; "The Hygiene of the Ear," by Dr. B. Alexander Randall; "The Hygiene of the Eye," by Dr. Pyle;

"The Hygiene of the Brain and Nervous System," by Dr. J. W. Courtney; "Physical Exercise," by Dr. G. N. Stewart.

We hope that in a future edition there may be taken up some questions omitted altogether or too briefly treated,—such as those of habits, good and bad, especially concerning the use of tobacco, etc. There is in the volume no trace of the silly attempt of popular medicine books to replace the trained and living physician by a book, or by rules, or by self-treatment, but throughout there is the aim to enlighten the mind and prevent physical evils by the principles of applied physiology.

An Ophthalmologic Light is apparently beginning to break upon the English profession. While a number of American oculists are guilty of ignoring and belittling the very thing of which they should be proudest, and wearily continue to grind out the wheezy monotone of endless papers on operations and inflammatory diseases, the President of the Section on Ophthalmology of the British Medical Association devotes his presidential address to the all-important subject of refraction and ocular headache. We hope that his bravery may hereafter encourage our ophthalmologists to devote at least one paper in forty to subjects constituting nine-tenths of their daily practice, and that the operative mania may in the next one or two hundred years be relegated to its proper scientific place. Dr. Brailey should be heartily congratulated by discerning American oculists, although he is compelled to throw the inevitable sop to the conservative Cerberus by saying (what is not true) that "the great majority of headaches are, of course, independent of the eyes." We can also smile as cynically as the lecturer when he tails up with the charming astigmatic glance at "the citizens of the United States, who are eminently affected by ocular errors, so that a series of doctors and operators has arisen to take charge of that special subsection of practice." What a picture is incidentally drawn in the histories of some of his cases,—for instance in that of the poor woman with only a slight exophoria who during 20 years had been ordered 18 changes of glasses by her London ophthalmologist, who each time increased her "supporting" prisms bases in. Her disease was a slight hyperphoria! Although the increase of adduction by prism-gymnastics and many other things routine in American practice have not been able to cross the Atlantic, we are too glad of the dawning to criticise the clouds that temporarily, we hope, obscure the sun.

The Neuron Doctrine and Insanity.—In these columns recently we discussed this doctrine as expounded by Dr. Barker in reference especially to diseases of the nervous system. It has been very evident to our minds that the ascendancy of this doctrine at the present time presaged a new method in psychiatry

also, and that our textbooks on insanity would have to be recast or written anew on lines in accord with this conception of the nervous system. This need has already been recognized by Bevan Lewis, whose attainments as an histologist would naturally incline him to recognize this doctrine in the way he has done in the last edition of his book. It has remained, however, for Dr. Henry J. Berkley to seize the opportunity fully, and to enter the field with the first entirely new textbook that is practically based upon the teachings of the new histology. Dr. Berkley recognizes in every one of the insanities an affection essentially of the neuron, and builds his book on a foundation of the intimate histology of the nervous system. This scheme is thoroughly scientific, and will meet wide approval. The period has gone by for what may be called the merely metaphysico-clinical study of insanity. There is something more demanded now than the old essays on classification, and the old terminology of mental affections which has been largely inherited from metaphysical writers. With improved technic the demand will be more and more for the revelations in the neuron in all forms of insanity. This demand is already bearing fruit, for, while the secrets of the morbid anatomy of insanity are not likely all soon to be revealed, they are evidently being disclosed more and more every day in the minute changes in the nerve-cells. In other words, psychiatry is assuming its true place as one of the physiologic sciences. The interest and importance to be attached to the neuron doctrine are nowhere greater than in this wide field, for while this cannot be said to be a new field it is still in large parts a fallow one. Its fertility is nowhere shown more strikingly than in the acute psychoses, the infections and autoinfections, the degenerations, and the terminal dementias. From this standpoint of histology there is gained a conception of mental disease which, to be sure, is not entirely novel to the more original and advanced thinkers, but which is still much needed for some of the more conservative workers in this field.

Common Sense in the Interpretation of Statistics.

—In the school of the future that teaches sanitary science there will have to be a few special lectures on the interpretation of statistics. It is very essential that only those familiar with all the facts shall draw conclusions from some of them. We have a very good example of this necessity in the rapid-fire conclusions of some observers that the use of antitoxin increases the liability to postdiphtheric paralysis; it must be borne in mind that the use of the antitoxin causes the recovery of a large number of severe cases that would otherwise have died, and from this class the increase of paralytic cases is really recruited. In a seriocomic editorial paragraph recently a highly esteemed contemporary predicts that Colorado will soon become an Adamless Eden because the number of deaths of males

far exceeds the deaths of females in that State, while the female birth-rate is the higher. If one simply remembers that Colorado is a frontier State, and that its population contains a vast excess of young adult males, who always predominate upon the frontier, the undue proportion of male deaths will be readily explained. Centers of population that have acquired a stability not found in new towns are the only ones in which it is at all safe to draw conclusions even from all the facts as recorded at one time. Other statistics are of value in their variations; but the appreciation of the relative value to be attached to each group of figures or each variation therefrom can only exist with the careful student who has a knowledge of all the circumstances. We have heretofore commented upon the same lack of investigation in other lines in some of our recent literature; for example, some of the English and at least one of our best American medical journals jumped to the conclusion that diphtheria could not exist at an altitude exceeding 5,000 feet above sea-level because some observer had reported an absence of the disease at some points having that altitude in South Africa. These sapient writers ignored dozens of published communications in regard to the existence of diphtheria at high altitudes both in Switzerland and the United States, some of the most virulent epidemics during the last two decades having occurred in towns 10,000 feet above the level of the sea. All of which serves to emphasize the fact that there is no insularity quite so self-centered as that of the citizen of a big city who has never been outside of his own metropolis and whose mental vision fails to see beyond the literature of the present moment.

The Proposed North American Medical Association.—A project to organize a so-called North American Medical Association, to be composed of members of the profession in the United States and Canada, is in the air. A whisper has even gone the rounds to the effect that, either by absorption or amalgamation or expansion, whatever one cares to call it, the present American Medical Association might merge its interests in those of the new organization. The powerful body thus formed, it is said, would represent to better advantage the profession of the New World in all matters appertaining to medical reform. Perhaps the intensely warm weather of late has tended to bias the judgment of the advocates of this plan. We think the proposal is not commendable, at least just at present.

First, and above all, no need exists for a North American Medical Association; second, the individual interests, aside from those of a purely scientific character, of the Canadian and United States members would be distinctly at variance. The fact cannot be too strongly set forth that one of the best reasons for the existence and support of a great medical organization lies in its ability to influence legislation in behalf

of the medical profession as well as of the people at large. A disunited, warring profession accomplishes nothing; good organization and unanimity of action exert an influence which is not to be ignored. This expression of fact is platitudinous, but it is a true one, nevertheless.

The American Medical Association wields a powerful political influence. The trend of Canadian politics, whether in relation to medicine or not, differs somewhat from our own. As an instance of the clash of interests that would result, were the amalgamation to be carried into effect, it is necessary merely to draw attention to the question of National as well as local quarantine along the Great Lakes and the St. Lawrence. This feature alone, combining as it does such varied financial as well as hygienic interests, instead of serving to unite the profession of the two countries, would be a constant stumbling-block to cordial relations. The differences of opinion as to export and import duties on chemicals, on scientific apparatus, even on live-stock, also would contribute to prevent that cordial oneness of effort which should be so desired in a great medical organization. It should also be remembered that a large number of Canadian practitioners are members of the Canadian Branch of the British Medical Association, a fact that would probably put an effective barrier in the way of the proposed union.

On the other hand, no objection could be raised, and every indication would favor admitting Canadians to nonresident membership in the American Medical Association, such membership carrying with it the privilege of presenting and discussing scientific papers at the annual meetings, but not that of voting or joining in debate on subjects relating to the policy of the Association. Such a combination of interests, with the limitations specified, would result in a feeling of closer comradeship, a freer exchange of views on the scientific subjects of the day, and of amenities which would reflect to the advantage of all. Instead of trying to bring about a combination in a way different from this, those professing an interest in the future of the American Medical Association might to better advantage direct their energies toward the advancement of County and State Association interests, and fearlessly attack some of the many evils which have been allowed to creep into the administration of the organization. The first of these should be a determined stand against allowing membership in the Association of men who are not, or who have not been, members of their own County or even State Associations, in direct violation of the Association's constitution. And there are others.

The Bacillus of Typhoid Fever.—Since the discovery of the bacillus of Eberth, in 1880, the progress of research in typhoid fever may be divided into three periods. In the first period, this bacillus, critically studied by Gaffky, was considered as without doubt

the specific agent of the disease. But the discovery of the *Bacillus coli communis* by Escherich opened a new phase. First skepticism arose as to the distinction between these two organisms, and then, finally, the specificity of the bacillus of Eberth was denied. Rodet and Roux believed that this microorganism was only a variety of the *Bacillus coli communis*. The third period was marked by the use of Elsner's gelatin and the discovery of the agglutinating of Eberth's bacillus by specific blood-serum. Thus the specificity of this bacillus was recognized anew, although full accord in this belief is not yet established and the theory of the colon origin of typhoid fever still has its partisans. In order to solve this whole question, Dr. L. Remy, of Liege, Belgium, undertook extensive investigations, and these he has reported in a paper in the *Annals of the Pasteur Institute*, a translation of which, by Dr. H. D. Geddings, has just appeared in the *Health Reports* of the Marine-Hospital Service. Remy's paper is long and technical, but his aims and results can be briefly indicated. For those persons specially interested, however, in this line of work, the original paper or Dr. Geddings' translation is indispensable. The work comprises three parts. First, bacteriologic researches upon the dejecta of typhoid patients, with a new process for isolating the typhoid bacillus from the stools. Second, researches into the antagonism between the typhoid bacillus and the *Bacillus coli communis*. Third, researches upon the typhoid bacillus in waters, and a method for proving the existence of the Eberth bacillus in river and drinking waters. Remy's conclusions are briefly as follows: By aid of a differential gelatin the typhoid bacillus can be isolated in the presence of the colon-bacillus. This was proved in a series of cases. The typhoid bacilli, thus isolated, belong to one and the same type and are agglutinated by experimental serum. These results confirm the observations of Widal and others. The typhoid bacilli isolated from the stools in the second week, as well as those obtained from the spleen at necropsy, show remarkable vital energy, while those found in the stools at the end of the disease have only feeble vitality. In some cases the typhoid bacillus was found in the stools when the signs of typhoid fever, including the serum-reaction, were absent; hence the author claims that the typhoid bacillus, as we know it, is the only sign, which taken alone, can justify a positive diagnosis of typhoid fever. In other infectious diseases the typhoid bacillus is not found in the stools. Finally, the constant presence of this bacillus in the stools in typhoid fever, and its absence from the stools in other diseases, render it possible to assert that the *Bacillus typhosus* is in truth the causative agent in typhoid fever.

Pure Food Products.—Some time ago we had occasion to call at a "spice factory," and were struck by the fact that hundreds of tons of marble chippings

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Schools Closed.—The public schools of Marshallton, Pa., have been closed on account of the prevalence of diphtheria in that place.

Legacies to Hospitals.—Charles Sweeney, of Philadelphia, recently bequeathed a portion of his estate to the Woman's Hospital, Philadelphia Home for Incurables, and St. Joseph's Hospital.

Medical Schools Opened.—The important place held by Philadelphia as a medical center has been emphasized this week by the reopening of 3 large medical schools each with an increased attendance.

Oleo Dealers Held for Court.—Last week 9 more oleo dealers were held for court by Magistrate Stratton, of Philadelphia. The Food Commission has not relied entirely upon its agents, but has obtained the aid of the Pinkerton Detective Bureau in the crusade.

Calendar of Meetings of Philadelphia Medical Societies for the week ended October 13, 1900:

Monday, October 8—College of Physicians. Section on Gynecology.

Wednesday, October 10.—County Medical Society.

Thursday, October 11—Pathological Society.

Faith Healer Charged with Manslaughter.—"Dr." Victor B. Hall, Christian Scientist, and with a recipe for living forever, is back in Philadelphia after 6 months' mysterious absence, during which he has stood trial for his liberty in London, Canada. He treated a patient for pneumonia there, she died and the "doctor" was lodged in jail. His trial resulted in his release.

Bequests to Charity.—The will of Emmeline Macurdy, who died recently at Mt. Holly, N. J., devises \$5,000 to the Episcopal Hospital, and \$1,000 to the St. James Industrial School and Mission, both of Philadelphia. One-half of the residuary estate of \$100,000 was devised to the trustees of the fund for the relief of widows and orphans of deceased clergymen and the aged and infirm clergymen of the Protestant Episcopal Church.

Parents Sue Hospital.—In a suit instituted recently, John F. Matthews and wife, of Philadelphia, seek to hold the Presbyterian Hospital and Dr. Charles B. Worden responsible for the death of their son. The boy was injured by falling from a carriage. It is said he was examined hurriedly at the hospital and allowed to go home. Subsequently, it is averred, the boy was again taken to the hospital and died a short time after his admission.

Municipal Hospital Needed.—The medical profession of Camden, N. J., has presented to the Board of Health a petition signed by 56 physicians, asking that a municipal hospital be established. The petitioners, who include the leading physicians of the city, state that there is great need for the hospital, and ask that no time be lost. The board, which is mostly composed of physicians, unanimously voted in accord with the petition, and then referred it to the Conference Committee to consult with city councils.

University of Pennsylvania.—The medical department of the University of Pennsylvania has just announced some radical changes in the curriculum for the present year. The course of anatomy in the first year will be followed by physiology in the second year. Materia Medica has been changed from the first to the second year, and will be followed in the third year by the course in therapeutics. Another change is that of bacteriology from the second to the first year, and pathology from the second to the third year.

Mutual Aid Association.—Upon petition of Dr. J. B. Roberts, President of the Mutual Aid Association of the Philadelphia County Medical Society, Judge Penrose, in the Orphans' Court, has granted an order to prevent the consummation of a sale of the premises owned by the estate of

were being pulverized and used in the manufacture of all sorts of "ground spices." We also learned that the floor sweepings of such factories were regular articles of commerce, and listed at graded prices,—we suppose according to the varying quantities of disease-germs, dirt, and marble-dust in them. We do not know what other methods of adulteration may be practised, but the incident came to mind upon the receipt recently of a card announcing that a trustworthy firm of chemists, Messrs. E. R. Squibb & Sons, had placed with druggists, for sale, the more common spices, pepper, etc., which they speak of as "equal in purity to any of their preparations." The plan seems to us to have a professional and hygienic significance, and worthy of commendation.

For the Allied Troops.—The Korean Emperor has ordered shipped 1,000 bags of rice, 2,000 bags of flour, and 500 cases of cigarets to the allied troops at Pekin as an expression of his goodwill and wishes for the success.

When Shall We Operate for Cholelithiasis?—Albert Kocher (*Correspondenz-Blatt für Schweizer Aerzte*, 1900, vol. xxx, p. 193) has of late taken the position that all patients who desire to recover from gallstones should be advised to submit to an operation. It is impossible to dissolve gallstones by dieting or the use of drugs, and their crumbling up, as Naunyn reports, is so great a rarity that it cannot be counted upon. Whenever there is repeated biliary colic or evidence of numerous stones or of stones of a size that will not pass without harm, operative intervention is indicated. We should not wait until secondary changes have occurred; inflammations, perforations or malignant degeneration, for spontaneous recovery is extremely rare. As to the method of operation, he advises in uncomplicated cases immediate suture of the gallbladder as soon as it is emptied. He reports 6 operations of this kind at the Berne clinic, perfect recovery resulting in all. [M.B.T.]

Difficulties in Surgical Treatment of Gallstones.—George Henry Edington (*Glasgow Medical Journal*, September, 1900) reports two cases of operation for gallstones. In the first of these the gallbladder did not project sufficiently to enable the surgeon to suture it to the parietal peritoneum; in the second the difficulties were occasioned by the presence of dense inflammatory adhesions. In the first case the first incision made was a vertical one 4 inches long in the right linea semilunaris, but it was found necessary to supplement this by an oblique one running upward from above the middle line of the vertical one and parallel to the costal margin. No gallstones were discovered until the bladder had been opened; a number of calculi were felt lying in pouched recesses near the neck of the bladder, evidently excretions of the hollows between the folds which are normally present in the mucous membrane in this situation; these stones could not be extracted. A nodule was found on the under surface of the liver which was at first thought to be a tumor, but which was probably a biliary concretion. There having been some return of jaundice, on the twenty-fourth day after operation olive oil was injected through the opening left into the fundus of the gallbladder. This seemed to have solvent action upon the stones that could not be removed and was followed by cessation of pain; the stools thereafter were well colored and 4 days after the injection the flow of bile from the fistula ceased. In the second case it was exceedingly difficult to locate the bladder owing to the extent and density of adhesions probably associated with a rupture of the viscus during a severe attack of colic. The operator was unable to examine the ducts owing to the weak state of the patient on the table, and the use of olive oil to dissolve the calculi proved futile even when injected directly against the stones. The stones in the first case were of laminated cholesterol, in the second case of bilirubin-calcium. [G.C.C.H.]

Albert Fricke, deceased. It was stated that Mr. Fricke left one-half of his residuary estate to the association, and that his executor sold the premises at public sale for \$50, subject to a ground rent, whereas there is said to be a party now willing to give \$500 for the property, also subject to the ground rent.

Memorial to Dr. DaCosta Proposed.—The Faculty of Jefferson Medical College have recommended that a laboratory of clinical medicine be established in connection with the proposed new hospital, to be known as the J. M. DaCosta Memorial Laboratory of Clinical Medicine. The proposed laboratory, if erected, will be not only a valuable addition to the college, but also a fitting memorial to one of our most eminent physicians. Dr. DaCosta's affection for his alma mater has enriched the museum of Jefferson College by the addition of his most valuable collection of drawings, charts, specimens illustrative of various morbid conditions, and models in wax, prepared by the best French artists.

The Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about \$180, will be made on July 14, 1901, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the secretary of the college on or before May 1, 1901. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within 3 months after the award. The Alvarenga Prize for 1900 has been awarded to Dr. David De Beck, of Cincinnati, Ohio, for his essay entitled: "*Malarial Diseases of the Eye.*"

Vital Statistics of Philadelphia for the week ended September 29, 1900:

Disease.	Cases.	Deaths.
Total mortality		347
Inflammation of appendix 3, bladder 2, brain 7, bronchi 2, kidneys 16, larynx 2, lungs 12, heart 1, peritoneum 6, stomach and bowels 17		68
Lungs—tuberculosis of 50, hemorrhage of 1, edema of 1		52
Marasmus 21, debility 4, inanition 12		37
Heart—disease of 14, dropsy of 1, fatty degeneration of 4, neuralgia of 2		21
Carcinoma of breast 1, bladder 1, colon 1, face 1, liver 3, larynx 1, stomach 1, uterus 3, tumor of neck 1		20
Apoplexy 14, paralysis 5		19
Uremia 7, Bright's disease 8		15
Convulsions		13
Cholera infantum		11
Diphtheria	77	10
Typhoid fever	70	7
Casualties		7
Cirrhosis of liver		7
Septicemia 5, pyemia 1		6
Old age		5
Croup 2, membranous croup 2		4
Surgical shock		3
Scarlet fever	29	1
Abscess of side 1, abortion 1, asthma 2, aneurysm of aorta 1, burns and scalds 2, cellulitis 1, chlorosis 1, cyanosis 2, hip disease 1, drowned 1, dropsy 2, abdominal dropsy 1, epilepsy 2, malaria 1, remittent fever 1, gangrene of leg 1, hemorrhage of uterus 1, homicide 1, jaundice 1, locomotor ataxia 1, measles 1, obstruction of the bowels 2, arterial sclerosis 1, softening of brain 1, stricture of the esophagus 1, of rectum 1, suffocation—gas 2, suicide—shooting 1, syphilis 1, teething 1, ulceration of stomach 1, whooping-cough 1.		

Pittsburg Academy of Medicine.—At a regular meeting held September 24, Dr. J. I. JOHNSTON reported a case of **chronic parenchymatous nephritis with general anasarca** which failed to respond to ordinary

treatment, but is improving under the use of the continuous bath and a single dose of pilocarpin daily.

Dr. W. B. EWING reported a case of **cancrem oris** in a child of 4, following measles. The actual cautery was used with apparently little benefit. Ten cc. of antistreptococcic serum were then injected. Two days later the slough separated and granulation promptly followed. This is the third case of recovery following the use of this remedy. Dr. J. C. DUNN said that an important factor in the above case was that it came under observation early, and that the treatment was mostly of an extended trial. He also reported a case of **tertiary syphilis** with unusual manifestations in which both parotid glands sloughed away.

Dr. E. W. DAY reported a case of **acute otitis media** with severe purulent discharge, subnormal temperature, pulse 40 to 60, severe pain over parietal bone and optic neuritis. There was no mastoid tenderness, but on opening it was found filled with pus and granulations. The skull was trephined about one inch above the external meatus, and brain explored with a negative result. Prompt recovery followed, but a paralysis of the external rectus persisted. Dr. Day also reported a case of **old mastoiditis** with an operative sinus over mastoid which presented the classical symptoms of cerebellar abscess. The skull was trephined and the cerebellum explored in all directions with a blunt probe without result. Autopsy showed a cerebellar abscess, with firm walls, which had been missed by the probe.

Dr. ELTERICH reported a case of **impetigo contagiosa** in a child of 4 with complete destruction of one eye from infection with impetigo virus. The case was sadly neglected by the parents. Dr. EWING reported a similar case with destruction of both cornea from infection. Dr. DUNN said that eye infection in impetigo contagiosa is somewhat rare, but it is remarkable that such infection does not occur more frequently. Ordinarily it is a very mild disease and requires little treatment.

Dr. ELTERICH reported an instance of concurrent infectious disease, varicella and scarlet fever. The combined eruptions gave the surface of the body a very peculiar appearance.

Dr. R. J. B. MILLER reported a case of severe dysentery which developed scarlet fever.

NEW YORK.

Dr. Roswell Park has been appointed Medical Director General of the Pan-American Exhibition.

A new hospital laboratory, to be used in connection with the Willard Parker Hospital, will be built by the city of New York. The estimated cost is \$20,000.

The New York State Cancer Laboratory has secured the services of a physical chemist in the person of Mr. Clowes, of London, England, who will investigate from that side of the causation of cancer.

Hospital for Tuberculous Individuals.—The Erie county, N. Y., Board of Supervisors has authorized the erection of a hospital for the exclusive treatment of tuberculous patients; it is to be built near the Erie County Hospital at Buffalo.

Hospital for Convalescent Poor.—The Hartley homestead near Yonkers has been purchased by Adrian Iselin, of New Rochelle, N. Y., and a hospital for the convalescent poor of New York will be established there. It is reported that between \$50,000 and \$75,000 will be spent on the building.

Physicians Sued.—Suit has been brought against 2 physicians of New Brunswick, N. J., to recover \$10,000 damages by a man who claims that he was wrongly placed in an insane asylum on a certificate signed by them. He was released in 3 days, and asserts that his seizure and detention were the result of a conspiracy to which the accused physicians were party.

The Pan-American Exhibition has authorized an exhibit of sanitary methods and appliances adopted or in use throughout the Western Hemisphere by health boards. It will cover methods of procedure in all matters pertaining

to sanitation, and an exhibit of appliances and models of plants in use for disinfection, ventilation, heating, water-supply, and garbage and sewage disposal, etc.

Sneezed for Twelve Hours.—Ferdinand Dahn is in the Flushing Hospital, L. I., having burst a bloodvessel in one of his ears. Dahn had a fit of sneezing, which lasted 12 hours, and which ended in the bursting of the vessel. Every method known was adopted to stop the sneezing, but without avail. The man was in a condition of extreme weakness when the attack ended. The physicians at the hospital say he will recover.

The Eye, Ear and Throat Hospital, at Buffalo, N. Y., have installed the largest **magnetic apparatus** in the country for drawing steel or iron from the eye. Mounted on a stand of brass and iron it weighs about 400 pounds, the magnetizer is 35 inches long and pointed at both ends, and the coil consists of 21,000 turns of copper wire, which, if charged with 500 volts, will furnish force sufficient to support a ton weight. This instrument is an improved Haab magnet and cost in the neighborhood of \$300.

Malaria and Garbage.—An epidemic of malarial fever has broken out on Coney Island; over 300 cases have been reported. It is said in Coney Island that the epidemic is the result of the dumping of garbage from Brooklyn on the west meadows along Coney Island Creek. Last week 65 carloads of refuse were dumped on the meadows, and the residents of Coney Island are up in arms. Dr. Hill says the dumping of garbage on the meadows is an open violation of the laws relating to the disposition of city refuse. Mosquitos are in great abundance about the garbage.

Women's Club vs. Mosquitos.—As the mosquito has no greater enemy than the fair sex, the fact that the women of certain towns are forming clubs to fight it is news of direful import for *Anopheles quadrimaculatus*. At Richmond Hill, near New York, they got a scientist to explain the value of kerosene oil as an exterminator of the young of the mosquitos. They explored the country around their town with boys provided with oil cans, and wherever there was a puddle, ditch, pond, or marsh, they poured oil generously on the surface. The result has been, we are told, that the residents of Richmond Hill enjoyed sitting out on their porches last summer, having almost complete immunity from mosquitos.

The American Electro-Therapeutic Association held its tenth annual conference in New York recently. A paper on **Galvanization** was read by Dr. A. Tripler, of Paris. Dr. Charles O. Files, of Portland, Me., and Dr. Wolff Freudenthal, of New York, delivered addresses on **Electric light as a therapeutic agent**. Dr. Files spoke of the value of electric light concentrated on the patient and said that in each of a great number of cases which he had treated according to that method there had been marked improvement. Dr. Freudenthal gave a description of his experiments with chemical rays. Dr. Massey, of Philadelphia, spoke of the method of treating tuberculosis of the glands of the neck by forcing electrolytic salts of mercury into those glands by electricity and gold electrodes. Two cases were reported as having been cured. Dr. S. Knap, of New York, read a paper on the **Etiology of tuberculosis; its course and termination**.

Hour of Death.—Dr. Pilgrim, Superintendent of the State Hospital for the Insane at Poughkeepsie, has made a careful study of the statistics of that institution for the last decade and finds that 20% of the deaths occur between 3 and 6 P. M., and the next highest rate was between 3 and 6 A. M., though the fewest deaths in any one hour were between 4 and 5 A. M. And it is not an uncommon thing to notice a clearing up of the clouded brain a few hours before the final change; especially is this true of those dying of phthisis, or after surgical operations, or from acute intercurrent diseases. Dr. Pilgrim also remarks that the number of cases diagnosed upon admission as acute melancholia are about $2\frac{1}{2}$ times as great as that of acute mania. This not only proves that it is the rule for insanity to begin with depression, but it also shows that cases are sent to the hospital much earlier than formerly, before the later stage of mania has had time to develop.

Course for Trained Nurses at Columbia University.—At the request of the American Society of Superintendents of Training Schools for Nurses, the authorities of Columbia University are about to establish a special course in *hospital economics*, to be given at Teachers' College. The aim of the course is to fit persons who are already trained nurses for the responsible duties of superintendents of hospitals and principals of training schools for nurses. The prescribed course of study will include general psychology and its application in teaching; methods, practice, organization and supervision of hospitals and training schools, biology, physiology, hygiene, the production and manufacture of foods, home sanitation and management, bacteriology, and household chemistry. A series of special lecture courses has also been arranged.—[*Boston Medical and Surgical Journal*.]

Changes Needed in City Charities.—Dr. Robert W. Hill recently made an inspection of hospitals and almshouses in the city of New York. He advocates the removal of Bellevue Hospital and replacing it by a modern structure in keeping with the standing of the institution. He recommends the reservation of Blackwell's Island for the public charities of the city and making it, with Randall's Island, the permanent location of all charitable institutions. There are other islands farther removed from the city better fitted for prison use. Of the almshouse, the report says that the law against the sale or gift of intoxicants to inmates of public institutions should be enforced. The isolation of tuberculous individuals in the city hospital on Blackwell's Island is particularly urged. The Harlem Hospital, he declares, is "entirely inadequate to the service demanded of it and altogether unfitted for continued use as a public emergency hospital," although it has a competent medical staff and faithful attendants. The Fordham Hospital is similarly classed. The City Lodging House is called a worthy charity, and a better building is recommended for it. For the Emergency Hospital new quarters are recommended, if it is to be continued. The report calls the present condition of the institution "a disgrace to the city of New York."

The Buffalo Academy of Medicine—Section of Ophthalmology, etc.—At the regular meeting of this section, September 17, DR. A. L. BENEDICT read a paper entitled **Eye-strain or gastric reflex**, in which he contended that too large an importance was attached to eye-strain as a causative factor in the production of abnormal conditions, it being rather the result of these conditions. He believes that gastric disturbances are usually at the bottom of those conditions laid at the door of eye-strain. In discussion, DR. C. G. STOCKTON could not at all agree with the position taken, as his experience proved conclusively that eye-strain is repeatedly the cause of pathologic states and many times inducing disturbances of digestion which would produce the symptoms. DR. A. A. JONES differed with the speaker, contending that while gastric reflex is an extremely important factor and may bear either the relation of the cause or the effect to eye-strain, eye-strain is very often the primary cause. DRS. E. STARR, A. G. BENNETT, and A. A. HUBBEL said that their experience in the correction of errors of the eye as treatment for diverse pathologic conditions leads them to the conclusion that eye-strain is often the sole cause of these conditions.

Section of Pathology.—At the regular meeting, September 18, DR. H. G. MATZINGER presented a paper entitled **Blood-examinations**, in which he stated that out of all the mass of work of the past years the clinician had gathered little that was not subject to contradiction on the morrow or that he could verify and put to daily use; this was undoubtedly due to the difficulties of technic. That today it offers a ready-made absolute diagnosis only in some 5 or 6 diseases, while in the rest it ranks no higher in value than any other typical symptom; yet there are few diseased conditions on which it may not throw some light. He emphasized that a blood-count and hemoglobin estimation are of the greatest immediate and certain use in emergency work in surgery to determine whether the extreme condition of the patient is due to shock, concussion or compression, or due to hemorrhage, and in determining internal concealed hemorrhages such as may occur in extrauterine pregnancy. He pointed out that some subtle influence of which nothing is now known, is constantly at work keeping the number of both red

and white cells at a certain point, provided the physical conditions are the same and are normal, and that this is also true of the bulk of the blood notwithstanding that large quantities of fluid are absorbed periodically in the day into the blood-vessels. He called attention to the effects of vessel constriction more or less constant by pain, cold, emotion, vasomotor disturbance, suprarenal extract, etc., and to the changes in concentration and dilution by physical environment. He stated that while the profound physiologic changes are easily accounted for, the lesser ones are often overlooked and their value is difficult to gauge in the correction of observations. He called attention to the normal daily variation in the red cells and hemoglobin, and stated that these variations depended upon changes in the plasma and also to the subsidiary changes due to work, digestion and absorption. He spoke of the variation of the blood when taken from the different parts of the body surfaces and of the effects of massage, gravity, and exercise; the composition of the blood varying with the caliber of the arteries. In discussing the white cells he said that in a general way, other things being equal, their constant proportion has to do with the state of nutrition of the individual and therefore like the reds depends on the chemical condition of the plasma and its serum. He next discussed the mechanical difficulties, taking up in detail the Thoma-Zeiss instrument, the hemocytometer of Oliver (he recommended the Oliver on account of its simplicity and ease of manipulation), the Hoenach instrument, Gower's, Fleischl's, and the specific gravity method. He believes that at present uniformly reliable results cannot possibly be obtained; nevertheless, any careful, unbiased physician possessing a little knack and patience can get very useful information and help by studying the blood, and he recommends a specific gravity outfit for hemoglobin and an Oliver tintometer, a box of cover slips, and a microscope as all required to do good work. He closed by saying that it was to physiologic chemistry, and especially to a knowledge of the plasma to which we must look for the key to the situation—"the cipher code which will enable us to read clearly the meaning of what we are now able to observe." In discussion DR. A. E. WOEHNERT thought that the writer was too pessimistic, that much aid does come and will come from even our present methods; he agreed with the large number and degree of sources of error in the technic. DR. JULIUS ULLMAN believes that at the present state of our knowledge a smear preparation will give sufficient data for practical clinical use, but of course was not applicable for record work; he called attention to the Widal test and its accuracy. DR. C. S. JEWETT thinks that we have benefited by even our imperfect knowledge and technic, and that the future study of the chemistry of the fluid portions of the blood and a simplification and perfection of instruments will make blood-examination more important than that of any other body fluid. DR. A. L. BENEDICT said that even today he classed blood examination with that of the urine and made them with even more frequency. DR. DELANCY ROCHESTER believes that the blood not only aids in diagnosis but is of great advantage in indicating treatment; in support he related several cases. DRS. GROSVENOR and HARTWIG related cases showing aid from blood-examinations.

DR. H. P. FROST presented a specimen of a **heart ruptured** through the wall of the left ventricle, being the third case occurring within a year at the Buffalo State Hospital. The patient lived 30 minutes after occurrence, suffering most intense dyspnea. Patient was a young woman and in apparent good health; specimen showed left coronary artery occluded by atheroma and the myocardium soft from fatty change. DR. ROCHESTER also reported a case similar in character presenting same pathologic anatomy.

NEW ENGLAND.

Boston Almshouse and Hospital.—Dr. Archibald J. Ranney has been appointed superintendent, to succeed Arthur T. Hopkins, resigned.

Boston Baths.—The total number of baths taken at the public bathing-places of Boston for the months of June, July and August was 1,950,608. In 1899 the total was about 1,500,000.

Yale University.—Dr. Otto G. Ramsay, of the University of Virginia, and resident gynecologist at Johns Hopkins

Hospital, has been appointed to a professorship in Yale University.

The Willard Hospital for the treatment of dipsomania and narcomania at Bedford, Mass., was opened recently. It contains 30 rooms and is beautifully situated. The grounds contain 175 acres.

Dog with Wooden Leg.—A veterinary surgeon of Milton, Mass., has made a wooden leg for a dog. It is a complete success and the animal stumps around sturdily awaiting the advent of a new cork leg which has been ordered for him.

The Harvard Medical School, the departments of which are now scattered over Boston, will soon be moved to Brookline, near Boston, where all the departments will be together, and will occupy 27 acres of land and buildings valued at \$1,000,000.

Milk Dealers Organized.—About 200 milkmen, both contractors and dealers, met in Boston recently to organize for their mutual protection and to prevent the cutting of prices. Remarks were made showing that the State Board of Health preferred the use of tin cans to glass bottles, and a committee was appointed to work against glass jars with the board of health. The association was organized under the title of the Milk Dealers' Association of Boston and Vicinity, and a constitution was adopted.

Inebriety among Women.—The *Medical Record* reports that at the recent annual convention of the Connecticut Catholic Total Abstinence Union, the president stated that while habitual intemperance among men was decreasing, alcoholism among women was becoming more common. This statement receives startling confirmation as regards England by the fact revealed by a parliamentary report on the working of the Inebriates Act, under which magistrates are able to commit habitual drunkards to reformatories, that of 92 such commitments 90 were of women. Of 6 inebriate reformatory institutions existing in Great Britain, no less than 5 are for women.

CHICAGO AND WESTERN STATES.

An epidemic of diphtheria prevails in Menasha, Wisconsin.

Smallpox is said to prevail in a logging camp near Ashland, Wisconsin.

An epidemic prevails at Rose Hill, Ill., and physicians disagree as to whether it is diphtheria or tonsillitis. Out of 60 cases, 30 have proved fatal.

Diphtheria in Sheboygan.—The parochial school of Sheboygan has been closed on account of diphtheria, there being over 20 cases in the immediate neighborhood.

Health Commissioner Appointed.—Dr. William R. Parkes has been appointed Commissioner of Health of Evanston, Ill., in place of Dr. A. B. Clayton, deceased.

Bequests to Charity.—Bequests have been given by the late Anna M. Biddle to St. Joseph's Hospital, the Home for the Friendless, and the Orphans' Home, of Logansport, Ind.

Music as a Cure for the Insane.—Recently music has been introduced "as a method" in the detention hospitals of Chicago. The result is being watched with great interest by nerve specialists.

Infection from Vaccination.—A case of infection following vaccination is reported from Logansport, Ind. The person suffered severely, soon developed tetanus, and death appears inevitable.

After Facts About Milk.—The Board of Health of St. Louis is collecting statistics to prove that tuberculosis is caused by bad milk, or from milk given by cows that are kept in confinement and not permitted to graze in pastures. It is the purpose of the board to supply these statistics from time to time and educate the public thereby to a demand for milk that is pronounced good by the sanitary authorities.

The International Association of Railway Surgeons will hold its annual meeting for 1901 in Milwaukee, Wisconsin, the second week of June. About 200 delegates will attend the convention.

Michigan Insane Asylum had an inmate who talked herself to death. She would talk for hours at a time. Recently a spell lasted far into the night and resulted in spasm of the glottis, from which she did not recover.

Canned Salmon Poisons Students.—The members of a Fraternity in a Chicago dental school were poisoned recently by eating canned salmon. Some of the men are still in a serious condition, but it is not thought any will die.

A Deaf-Mute Cured.—A St. Louis man, who had been deaf and dumb for 50 years, from an attack of smallpox, fell off a roof and recovered both hearing and speech. It might be unwise to introduce this method of treatment at the State Deaf and Dumb Asylum.

Cat Spreads Diphtheria.—Two girls of Minneapolis, Minn., are in the hospital with diphtheria and the family cat is charged with being the source of contagion. The bacillus of diphtheria of unusual vitality and size was found in cultures made from its throat.

Elephantiasis.—A colored woman recently died at the Cook County poor-house of this disease. Up to the time of death she weighed 500 pounds. It is said that her limbs were the size of an average man's body. Her coffin was 7 feet long, 4 feet wide, and 3 feet deep.

Bulldog with False Teeth.—Modern dentistry has been brought into use to relieve the sufferings of a bulldog in Chicago. An up-to-date dental bridge, with 6 teeth of gold and 2 of porcelain, was fitted to his mouth. The operation was performed in the office of Dr. O'Connor.

An Osteopath Held.—A. L. Thompson, of Milwaukee, has been held for violating the laws of Wisconsin, governing the practice of medicine and surgery. The complaint is that he represented himself as a physician and a specialist in surgery without having first obtained a license from the Wisconsin Board of Medical Examiners. It appears that he is not a graduate of a regularly incorporated medical college.

After Unlicensed Physicians.—Warrants charging the practice of medicine without a license have been issued against Drs. B. F. Folsom and F. L. Sweeney, of St. Louis, at the instance of Dr. L. C. McElwee, Secretary of the State Board of Health. Dr. McElwee says there are about 30 other physicians in St. Louis who are practising without license, and he will ask for warrants against them as soon as he secures sufficient evidence.

The Kankakee Insane Asylum, at Kankakee, Ill., former Superintendent William G. Sterns and several attendants of the institution are defendants in a \$25,000 damage suit begun by Daniel W. Storms. He bases his claims for damages on his detention at the asylum while sane and his abuse there, which injured his health. The president of the hospital trustees says the suit will never be tried; that it is political and the aim is to bring the institution into disrepute.

The Medical Society of the Missouri Valley held its annual meeting at Council Bluffs, September 20. The society voted to contribute \$25 to the Rush Monument Fund, and a resolution was adopted providing for a banquet after each meeting. The following officers were elected: President: V. L. Treynor, Council Bluffs; first vice-president, B. B. Davis, Omaha; second vice-president, F. E. Sampson, Creston; treasurer, T. B. Lacey, Council Bluffs; secretary, Chas. Wood Fassett, St. Joseph. Next meeting in March, 1901, at Omaha.

Charges of Unprofessional Conduct Against Minnesota Physicians.—The Minnesota State Board of Medical Examiners, according to the *New York Medical Journal*, has served notice on 4 Twin-City doctors—Edward N. Flint, William K. Flatt, W. C. Dieterich, and Alois F. Hinz—citing them to appear before that body on October 11, and show cause why their licenses to practise medicine should not be revoked for unprofessional conduct which largely consists of

advertising cures in the public press. The physicians propose to make a fight, and will give the law a severe test.

Wants \$6,000 for Smallpox Damage.—Peter Hagee, of Plainfield, Ind., has presented to the commissioners a claim for \$6,000. A quarantine was established over Hagee's house because of a case of smallpox. The first victim was a domestic employed in the house. Hagee's claim is for nursing the domestic, for household goods destroyed, for nursing his children, and for being deprived of their society, and because the disease left them scarred. He alleges that the quarantine kept the children confined to the house, so that they caught the disease, when otherwise they might have been removed to a place of safety. The claim was refused.

Cannot Enforce Pure Butter Law.—The State Board of Health of Missouri has decided to withdraw its butter inspector from St. Louis, and to make no further attempts to secure the enforcement of the pure butter law in that city as long as the bench of the Court of Criminal Correction is occupied by Judge Clark. The sale of oleomargarine as butter will then be practically unrestricted. The law prohibits the coloring of any substance desired to be used as a substitute for butter, and also the manufacture, sale, or keeping for sale, of any such substance. It does not place any restrictions on the manufacture or sale of oleomargarine, or butterine, if sold on its merits, and not as an imitation of butter.

Pledged to Raw Food.—A Raw Food Society has been organized at Chicago. It has been decided to try to bring about the organization of kindred societies throughout the United States. Resolutions were adopted which contained the following:

"Resolved, That it is our firm conviction that man could live much longer in proportion to the number of years required for development by eating raw food; ill health would be the exception, rather than the rule, and pestilence and contagious diseases would be wiped from the land. We believe that children reared on uncooked foods will become giants physically and intellectually."

Court Stops Diploma Mill.—An injunction has been issued against the Metropolitan Medical College of Chicago, restraining J. Armstrong, its president, and other officers from conducting its business in violation of the terms of the charter. The petition on which the injunction was issued was filed by Attorney John A. Barnes, of the State Board of Health. The law passed at the last session of the Legislature regulating medical colleges requires the judges of the courts to issue a temporary injunction on a petition without a hearing. Under this law upon the medical college is devolved the labor of furnishing proof that it is not conducting its business in the manner alleged in the complaint. The bill of complaint filed was a copy of the charter of the college issued in 1896, which authorized it to conduct a school where the various branches of medical science should be taught. The basis of the petition is the allegation that the college, while advertising that it is doing business in a legitimate manner, did not require the attendance in person of applicants for the doctor's degree. Copies of the advertising matter of the college were also filed, in which its officials state that it is fully equipped with appliances for enabling its students to master the science of medicine. The petition states that this statement is not true, as the college confers the degree of M.D. on applicants who answer a list of questions sent to them by the officers of the college.

SOUTHERN STATES.

The State quarantine property at Galveston, Texas, was damaged to the amount of \$50,000 by the storm.

Druggist Fined.—Albert N. Conner, of Washington, D. C., has been fined \$100 for not having clerks employed fully competent to discharge their duties during his absence.

A Noble Charity.—The corner-stone of the Confederate annex to State Hospital at Vicksburg, Miss., has been laid. The funds were raised by the Vicksburg Chapter of the Daughters of the Confederacy.

Dr. Thomas M. Lippitt, of Berryville, Va., who accompanied the marine guard to Pekin and was severely wounded there, is not recovering rapidly. The femur was severely fractured, suppuration followed, and union has not yet taken place.

Short Skirts in Schoolroom as a Sanitary Measure.—The School Board of El Paso, Texas, require the teachers to wear short skirts, since the long ones sweep along the walks and gather germs that may injure the health of the children.

Rappahannock Physicians Meet.—The Rappahannock Valley Medical Association met at Fredericksburg, Va., September 28. The feature of the session was the reading, by Dr. W. J. Crittenden, of Unionville, of a practical paper on "Cerebrospinal Meningitis," and a general discussion of the topic.

Kentucky School of Medicine.—A former member of the faculty asserts that the college is not 50 years old, and that it is not the lineal descendant of and legitimate successor to the medical department of Transylvania University. There may be trouble over the proposed celebration of the semi-centennial in the present year.

Woman's Medical College.—Dr. M. Ekstromer has been elected professor of chemistry and Dr. Henry Lee Smith, associate professor in diseases of children in the Woman's Medical College of Baltimore. The place of adjunct professor of hygiene, vacated through the absence of Dr. Edith Eareckson, will be filled by Dr. Louis Erich.

"Shields' Healing Balm" is the subject of a circular issued by Anderson W. Shields, of Washington, D. C., at one time pastor of a colored Baptist church. The circular contains a list of about 20 complaints which the medicine will positively cure, and directions for its use are given. He has recently been arraigned before the court on the charge of being an unlicensed physician.

Blood Poisoning.—It is reported that many of those engaged in recovering the dead after the recent flood at Galveston, Texas, are afflicted with blood-poisoning as a result of handling the decomposing bodies of the victims and from wading in the infected salt water in which the bodies lay. The city is now reported in a good sanitary condition and the general health of the people is good.

Emergency Hospital.—A competitive examination was held recently at the Emergency Hospital, Washington, D. C., to fill vacancies in the staff of physicians caused by the resignation of Dr. F. C. Walsh, senior assistant, and the early expiration of the term of Dr. Charles G. Smith, resident physician. As a result Dr. W. R. Moulden will become resident and Dr. Clifford Sperow, a graduate of the University of Virginia, senior assistant.

Guarding Against Typhoid.—Strict precautions have been adopted by Engineer Quick, of Baltimore, to prevent pollution of the water-supply of that city. Several inspectors are constantly watching all cases of typhoid located near the sources of supply. Particular attention is also paid to the final disposition of excreta. The water in the reservoirs is in very good condition and the muddy condition of the water at times is due to local causes in the pipes.

Washington Needs a Modern Morgue.—The attention of the Commissioners of the District of Columbia has been called to the necessity of a modern morgue. During an autopsy held at the morgue recently the stench arising from a partially decomposed body was so great as to drive the officers and employes of the police department from their quarters, which are adjoining, notwithstanding the fact that every precaution was taken to prevent such result.

Physicians Asked to Help.—Health Commissioner Bosley, of Baltimore, has sent to the physicians of the city a circular letter, asking their cooperation in fighting diphtheria and scarlet fever. He urges physicians to immunize all children that cannot be isolated from a diphtheria case, and says that the Health Department will provide the anti-toxin where the family is unable to pay for it. The Department will also fumigate rooms and houses when necessary.

Dr. Jesse W. Lazear, formerly on Prof. William Osler's staff at the Johns Hopkins Hospital, and one of the demonstrators of clinical microscopy, died of yellow fever at Havana, September 25, aged 34. He had given up his position at the hospital to undertake special work in the army in Cuba, particularly in connection with the problems relating to malaria and yellow fever. He had charge of a laboratory in one of the military hospitals in the neighborhood of Havana. Dr. Lazear graduated from the Johns Hopkins University in 1889 and from the College of Physicians and Surgeons in New York in 1892. After 2 years' work in Bellevue Hospital he made a special study of bacteria in Berlin. In 1895 he became one of the house physicians at the Johns Hopkins Hospital and continued the study of germ diseases.

Orleans Parish Medical Society, meeting of September 22.—Dr. E. M. DUPAQUIER read a paper on **Alcohol as a etiological factor in diseases of the nervous system**; discussion on the essay was opened by Dr. P. E. ARCHINARD. The Louisiana State Medical Society will, at its next annual meeting, take this subject up in full; members of this section will be prepared to submit pertinent facts. Dr. E. W. JONES reported a case of blindness resulting from drinking vinegar. The patient was a lady, 30 years of age, who, being rather obese, was advised by her friends to drink vinegar to reduce her adipose tissue. She accordingly imbibed vinegar whenever she was thirsty, taking absolutely no water for the period of 3 weeks. At the end of this time she waked up one morning totally blind. Ophthalmoscopic examination revealed only a slight paleness of the optic nerve. Treatment has consisted of administration of strychnin, beginning with $\frac{1}{16}$ of a grain and rapidly increasing to $\frac{1}{2}$ grain daily. She can now recognize a letter an inch square at a distance of 10 feet, return of sight being gradual.

Richmond (Va.) News.—At a recent meeting of the Richmond Academy of Medicine and Surgery a committee was appointed to investigate and work with the Commonwealth's attorney in regard to the violation of the Medical Practice Law. There are several institutions here professing to "cure" different diseases, and the object of this inquiry is to ascertain if they have complied with the State laws regulating such practices.

Dr. E. C. Williams, who was recently elected to the chair of pathology and bacteriology in the Medical College of Virginia, has just returned from a year's study abroad.

An effort is now being made to separate the Street Cleaning Department from the Board of Health. Heretofore both of these branches have been under one head.

A fitting tribute to the memory of Dr. Hunter McGuire will be the naming for him of the splendid new annex to the Virginia Hospital. It will be called the "HUNTER MCGUIRE MEMORIAL ANNEX." When completed the annex will be used entirely for charity patients and will contain 75 beds. The cost will be approximately \$30,000. The arrangement of the beds in wards will make it well adapted for clinical teaching. In addition to the wards there will be built a new teaching amphitheater capable of seating 275 students. The building will be modeled after the most improved designs of hospital construction. A handsome memorial tablet will be placed in the building by the Faculty of the University College of Medicine.

The rate of mortality of Petersburg, Va., for the month of September was 23.04% per 1,000.

CANADA.

Quarantine at Murray Bay.—Many members of the American colony at Murray Bay, a watering-place of the Lower St. Lawrence, have been quarantined for scarlatina in their families. One family made purchases of Canadian rugs, homespun cloths, etc., manufactured by the local French Canadian housewives, and these are believed to have carried the infection.

Against Immigration of Diseased Persons.—The Canadian Government is now taking measures to protect itself from the immigration of diseased persons by arranging for the inspection of all immigrants bound for Canada at the foreign ports where they are to embark. This is responsive to the action of our Government in establishing a sanitary cordon abroad. We have secured from the steam-

ship companies which bring immigrants to Canada manifested to the United States a promise that they will let no diseased persons come, and a similar assurance from the railway companies entering this country from Canada. The course proposed by the Canadian Government completes the protective circle.

MISCELLANY.

Dawson Needs Ice.—The city of Dawson in Alaska is in need of an ice plant and a contract has been given for an ice machine to be placed in a cold-storage warehouse. The cost of ice last summer was at the rate of \$100 per ton.

To Pave and Drain Havana.—The municipality of Havana has been offered a complete sewerage and paving system for the city, in accordance with plans officially approved, for \$10,600,000. The offer is by Michael J. Dady, of Brooklyn, and is under consideration.

Fever Stamped Out at Santiago.—Owing to the efforts of the officers in charge of the Department of Santiago and Puerto Principe, no case of yellow fever has been reported there since December. The streets are swept daily, and previously infected houses have been 3 times disinfected. An inspection from house to house is made by surgeons and thousands of gallons of carbolic acid and tons of chlorid of lime have been used.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended September 29, 1900:

SMALLPOX—UNITED STATES.			
		CASES.	DEATHS.
ALASKA:	Port Safety . . . Aug. 25	Reported.	
COLORADO:	Arapahoe Co. . . Aug. 9-Sept. 11 . .	2 at Denver.	
"	El Paso Co. . . Aug. 9-Sept. 11 . .	2	
"	Fremont Co. . . Aug. 9-Sept. 11 . .	3	
"	Garfield Co. . . Aug. 9-Sept. 11 . .	3	
"	Glenwood Spr'gs Aug. 9-Sept. 11 . .	2	
"	Huerfano Co. . . Aug. 9-Sept. 11 . .	3	
"	Las Animas Co. Aug. 9-Sept. 11 . .	4	
"	Pueblo Co. . . Aug. 9-Sept. 11 . .	21	
LOUISIANA:	New Orleans . . Sept. 15-22	6	2
MICHIGAN:	Houghton . . . Sept. 8-15	2	
"	Torch Lake . . Sept. 8-15	2	
OHIO:	Cleveland . . . Sept. 15-22	6	
UTAH:	Salt Lake City . Sept. 15-22	3	
WISCONSIN:	Ashfield Co. . . Sept. 16	Present.	
"	Bayfield Co. . . Sept. 16	"	
"	Dane Co. . . . Sept. 16	"	
"	Eau Clair Co. . . Sept. 16	"	

SMALLPOX—FOREIGN.			
AUSTRIA:	Prague Sept. 1-8	1	
BELGIUM:	Ghent Sept. 8-15		1
EGYPT:	Alexandria . . . Aug. 28-Sept. 3 . .	1	
"	Cairo Aug. 18-26		3
ENGLAND:	Liverpool Sept. 1-8	3	
FRANCE:	Lyons Aug. 25-Sept. 1 . .		2
"	Paris Sept. 1-8		5
INDIA:	Bombay Aug. 21-28		2
"	Calcutta Aug. 11-26		18
"	Madras Aug. 11-24		2
MEXICO:	Vera Cruz Sept. 8-15		4
RUSSIA:	Moscow Aug. 25-Sept. 1 . .		1
"	Odessa Aug. 25-Sept. 8 . .	7	1
"	Warsaw Aug. 25-Sept. 1 . .		5
SCOTLAND:	Dundee Aug. 25-Sept. 1 . .	2	
"	Glasgow Sept. 7-14	31	
SPAIN:	Madrid Aug. 11-Sept. 1 . .		111

YELLOW FEVER.—FOREIGN.			
CUBA:	Cienfuegos . . . Sept. 22	1	
"	Havana Sept. 8-15		9
MEXICO:	Vera Cruz Sept. 8-15		15

PLAGUE.—FOREIGN.			
INDIA:	Bombay Aug. 21-28		64
"	Havana Aug. 11-25		136
SCOTLAND:	Glasgow Aug. 31-Sept. 14 . .	16	1

CHOLERA.			
INDIA:	Bombay Aug. 21-28		408
"	Calcutta Aug. 11-25		29
"	Karachi Aug. 19-29		13
"	Madras Aug. 18-24		87
JAPAN:	Yokohama Aug. 25-Sept. 1 . .	1	

Obituary.—LAWRENCE M. HICKMAN, of Haddonfield, N. J., September 23, aged 43.—S. M. PIERCE, of Cedar Falls, Ill., September 24.—E. N. WEBSTER, of St. Louis, September 25, —SAMUEL SMITH PURPLE, of New York, September 29, aged 78.—RICHARD H. WHITE, of New York, September 22, aged 32.

Smallpox at Cape Nome.—The Surgeon-General of the Marine-Hospital Service has received a report from Assistant Surgeon B. H. Earle, at Port Nome, Alaska, announcing that the epidemic of smallpox there has been stamped out, the last patient having been discharged from the detention hospital August 6. There was a total of 24 cases and 1 death during the epidemic. Occasional cases of smallpox are found among the neighboring Indian villages, and Dr. Earle reports having vaccinated a whole village.

New Food for the Army.—An experiment is to be made in Texas with emergency rations. From Fort Reno, 25 troopers will be sent on a 3 week's march. Rations in the form of concentrated chocolate and meat extracts will be taken. This form of rations is claimed to have all the merit of the ordinary bulky rations and may be used, if emergency requires, in the tablet form or in solution when convenient. The experiments will be watched with interest by army circles, and the effects both in the weight of the men and their general condition will be carefully noted.

Changes in the Medical Corps of the U. S. Army for the week ended September 29, 1900:

MACPHERSON, ALEXANDER T., hospital steward, now at Fort Michael, Alaska, will report to First Lieutenant R. S. Offley, Fifth Infantry, for duty with detachment ordered to Golvin Bay, Alaska.

HERMAN, DAVID L., private, hospital corps, now at Fort Michael, Alaska, will report to First Lieutenant R. S. Offley, Fifth Infantry, for duty with detachment ordered to Golvin Bay, Alaska.

SCHLAGETER, H. J., acting assistant surgeon, having reported in compliance with par. 2 S. O. 19, c. s., this office, will proceed to Nome, Alaska, and report to Major R. G. Ebert, chief surgeon of the department, for duty.

DIXON, JR., ARCH., acting assistant surgeon, is granted leave for one month from about October 10, 1900.

SCHERER, ELMER A., acting assistant surgeon, will proceed from Fort Grant, Ari., to Fort Huachuca, Ari., in time to report to the commanding officer on or before October 10, 1900, for temporary duty during the absence on leave of Acting Assistant Surgeon Arch. Dixon, Jr.

GOMEZ, VINCENT, acting assistant surgeon, is granted leave for one month.

COOKE, ROBERT P., acting assistant surgeon, now on duty at Columbia Barracks, Cuba, will proceed at once to Havana and report to the commanding officer of the transport "Crook," for duty as attending surgeon on said transport from Havana to New York City. Upon completion of this duty he will return by the first available transport to Havana, Cuba, and thence to rejoin his proper station, Columbia Barracks, Cuba.

HAVARD, Major VALERY, U. S. Army, chief surgeon of the division, will proceed to Rowell Barracks, Pasa Caballos, and Hamilton Barracks, Matanzas, Cuba, and make a medical inspection of these posts, and upon completion thereof will return to his proper station, Havana, Cuba.

STONE, RANDELL C., acting assistant surgeon, having reported at these headquarters, will proceed to the Presidio of San Francisco, Cal., where he will report to the commanding officer, Army general hospital, for temporary duty at that hospital, awaiting transportation to the Philippine Islands.

ROSS, CHARLES A., acting assistant surgeon, having reported at these headquarters, will proceed to the Presidio of San Francisco, Cal., where he will report to the commanding officer, Army general hospital, at that station, for temporary duty at that hospital, awaiting transportation on service abroad.

REYNOLDS, CHARLES R., acting assistant surgeon, having reported at these headquarters, will proceed to the Presidio of San Francisco, Cal., where he will report to the commanding officer for temporary duty at that post, awaiting transportation on service abroad.

EKWURZEL, GEORGE M., acting assistant surgeon, having reported at these headquarters, will proceed to the Presidio of San Francisco, Cal., where he will report to the commanding officer for temporary duty at that post, awaiting transportation on service abroad.

LYSTER, W. J., acting assistant surgeon, leave of absence is, by direction of the acting secretary of war, extended 15 days.

ALEXANDER, JAMES A., acting assistant surgeon, is relieved from temporary duty at the Presidio of San Francisco, Cal., and will proceed to his home, Monroe, La., and report by letter to the Surgeon-General of the Army for annulment of contract.

HEPBURN, JAMES H., acting assistant surgeon, is granted leave of absence for 1 month from about October 15.

FERGUSON, JAMES B., acting assistant surgeon, is granted leave of absence for 1 month and 14 days from about October 1.

CLOUD, First Lieutenant MARSHALL M., assistant surgeon, on account of sickness, is granted leave of absence for 3 months.

ASHBURN, First Lieutenant PERCY M., assistant surgeon, leave of absence is extended 14 days.

HENDRICKSON, WILLIAM M., acting assistant surgeon, is relieved from duty in the department of California, and will proceed from Fort McDowell, Cal., to Fort Flagler, Wash., and report for duty, relieving Acting Assistant Surgeon Stephen Wythe.

WYTHE, STEPHEN, acting assistant surgeon, will proceed to San Francisco, Cal., for duty in transport service.

PAGE, First Lieutenant HENRY, assistant surgeon, is relieved from further duty in the division of the Philippines and will proceed from San Francisco to Plattsburg Barracks, N. Y., and report for duty.

SPILLER, WILLIAM H., acting assistant surgeon, is relieved from duty on the U. S. transport "Grant," and will report in person to the commanding general, department of California, for assignment to duty on the U. S. transport "Hancock."

HYSELL, Major JAMES H., surgeon, U. S. Volunteers, in charge of the medical supply depot, Santiago, Cuba, is relieved from duty in the department of Eastern Cuba, and will report to Washington, D. C., and report to the Surgeon-General of the Army for instructions.

CARTER, Major W. FITZHUGH, surgeon, is granted leave of absence for 21 days.

TANNER, WILLIAM T., acting assistant surgeon, now at Fort Myer, Va., will proceed to Fort Wadsworth, N. Y., and report for duty, relieving Acting Assistant Surgeon Edmund Barry.

BARRY, EDMUND, acting assistant surgeon, will proceed to San Francisco, Cal., and report to the commanding general, department of California, for transportation to Manila, P. I., and on his arrival there will report for duty.

CHAMBERLAIN, First Lieutenant WESTON P., assistant surgeon, is relieved from further duty in the division of the Philippines and will proceed to San Francisco, and report for further instructions.

CLAYTON, First Lieutenant JERE B., assistant surgeon, is relieved from duty at Vancouver Barracks, Wash., and will proceed to Fort Myer, Va., and report for duty.

KIRKPATRICK, First Lieutenant THOMAS S., assistant surgeon, is relieved from duty at Fort Myer, to take effect November 10, and will proceed to Fort Barrancas, Fla., and report for duty, relieving Captain Champe C. McCulloch, Jr., assistant surgeon.

McCULLOCH, Jr., Captain CHAMPE C., assistant surgeon, will proceed to San Francisco and report for transportation to Manila.

TRUBY, First Lieutenant A. E., assistant surgeon, is assigned to temporary duty at Columbia Barracks.

FIELD, P. CONOVER, acting assistant surgeon, is assigned to the headquarters, Second Artillery, Vedado.

MAZZURI, PAUL, acting assistant surgeon, is assigned to Cabana Barracks.

KEAN, Major J. B., surgeon, chief surgeon U. S. Volunteers, will proceed to Cienfuegos and Matanzas for the purpose of making an inspection of the medical department at the posts of Rowell Barracks and Hamilton Barracks respectively.

MAUS, Major LOUIS M., surgeon, will proceed to Trinidad and vicinity, Province of Benguet, for the purpose of making an investigation of that section as to suitability for the establishment of a sanitarium and convalescent camp.

GRIFFIN, WALTER E., acting assistant surgeon, will report to the commanding general, department of Mindanao and Jolo, for assignment to duty.

MEY, CHARLES F., acting assistant surgeon, upon relief by Acting Assistant Surgeon Griffin, will be relieved from duty in the department of Mindanao and Jolo and will report to the chief surgeon of the division for instruction.

McPHERSON, WILLIAM E., acting assistant surgeon, is relieved from duty with the Twenty-first U. S. Infantry, and will report to the commanding general, department of Northern Luzon, for duty.

COX, First Lieutenant WALTER, assistant surgeon, upon arrival of Acting Assistant Surgeon William E. McPherson, will be relieved from duty in the department of Northern Luzon, and will report to the officer in charge, Army pathological laboratory, Manila, for duty.

LYON, PALMER H., acting assistant surgeon, is relieved from duty in the department of Northern Luzon, and will report to the commanding officer, Santa Mesa hospital, Manila, for duty, relieving Acting Assistant Surgeon Elvin W. Ames.

AMES, ELVIN W., acting assistant surgeon, upon relief, will report to the commanding general, department of Northern Luzon, for duty.

STRONG, First Lieutenant RICHARD P., assistant surgeon, is relieved from duty at the First Reserve Hospital, and will report to the chief surgeon of the division for duty in charge of the Army pathological laboratory, Manila.

CHAMBERLAIN, First Lieutenant WESTON P., assistant surgeon, is relieved from further duty in the division of the Philippines, and will proceed to San Francisco, Cal., and report by letter to the Surgeon-General of the Army for further instructions.

TANNER, WM. T., acting assistant surgeon, now at Fort Myer, Va., will proceed to Fort Wadsworth, N. Y., and report to the commanding officer of that post, relieving Acting Assistant Surgeon Edmund Barry.

BARRY, EDMUND, acting assistant surgeon, upon relief, will proceed to San Francisco, Cal., and report to the commanding general, department of California, for transportation to Manila, P. I., where he will report to the commanding general, division of the Philippines, for assignment to duty.

CLAYTON, First Lieutenant JERE B., assistant surgeon, is relieved from duty at Vancouver Barracks, Wash., and will proceed to Fort Myer, Va., and report to the commanding officer of that post for duty, and by letter to the commanding general, department of the East.

KIRKPATRICK, First Lieutenant THOMAS J., assistant surgeon, is relieved from duty at Fort Myer, Va., to take effect on or about November 10, and will proceed to Fort Barrancas, Fla., and report to the commanding officer of that post for duty, to relieve Captain Champe C. McCulloch, Jr., assistant surgeon, and by letter to the commanding general, department of the East.

McCULLOCH, Captain CHAMPE C., assistant surgeon, upon relief, will proceed to San Francisco, Cal., and report to the commanding general, department of California, for transportation to Manila, P. I., where he will report in person to the commanding general, division of the Philippines, for assignment to duty.

Changes in the Medical Corps of the U. S. Navy for the week ended September 29, 1900:

ELMER, M. K., assistant surgeon, is detached from Boston Navy Yard, and ordered to accompany Battalion of Marines to Mare Island, then to duty on "Ranger."

THOMPSON, J. C., assistant surgeon, is detached from "Newark" on reporting of relief, and proceed home and wait orders.

GROVE, W. B., assistant surgeon, is ordered to duty on "Vermont."

ODELL, H. E., assistant surgeon, is detached from "Ranger" on reporting of relief, and ordered to Asiatic Station with Battalion of Marines for duty as relief of Assistant Surgeon J. C. Thompson.

STEPHENSON, B. F., surgeon, is detached from the "Baltimore," when out of commission, and ordered to examination for promotion at Washington Navy Yard, October 1, thence home and wait orders.

BELL, W. H., assistant surgeon, is relieved from additional duty at Norfolk Hospital and ordered to continue duty on the "Vixen."

DUNN, H. A., assistant surgeon, order of September 22 modified, is ordered to report for duty on "Dorothea," October 1, instead of proceeding home.

OHNESORG, K., assistant surgeon, is detached from the Naval Academy, and ordered to the "Vicksburg."

STUART, A., assistant surgeon, is detached from the "Fortune," and ordered to resume duties on the "Yankton."

ARMSTRONG, E. V., is ordered to report to commandant of New York Navy Yard for duty on "Vermont."

GRAVATT, C. U., medical director, is commissioned medical director from August 24.

WILSON, G. B., surgeon, is commissioned surgeon from February 7.

WAGGENER, R., pharmacist, is ordered to duty at Naval Proving Grounds, Indian Head, Md.

Changes in the U. S. Marine-Hospital Service for the week ended September 27, 1900:

MEAD, F. W., surgeon, is granted leave of absence for 1 day.

CARMICHAEL, D. A., surgeon, is granted leave of absence for 30 days, from October 15.

WERTENBAKER, C. P., passed assistant surgeon, is granted leave of absence for 3 days.

FOSTER, M. H., assistant surgeon, will proceed to Port Angeles, Wash., for special temporary duty.

MOORE, DUNLAP, assistant surgeon, is relieved from duty at Dutch Harbor, Alaska, and directed to proceed to San Francisco, Cal., or Seattle, Wash., and await orders.

FOX, CARROLL, assistant surgeon, is relieved from duty at Dutch Harbor, Alaska, and directed to proceed to San Francisco, Cal., or Seattle, Wash., and await orders.

PRIMROSE, R. S., acting assistant surgeon, is granted leave of absence for 7 days, from September 24.

WALKLEY, W. S., acting assistant surgeon, is granted leave of absence for 11 days, from September 24.

WETMORE, W. O., acting assistant surgeon, is relieved from duty at Cape Charles Quarantine and directed to proceed to Buffalo, N. Y., and report to medical officer in command for duty.

ALLEN, G. C., hospital steward, is granted leave of absence for 5 days.

MASON, R. MYRON, hospital steward, is relieved from duty at Dutch Harbor, Alaska, and directed to proceed to San Francisco, Cal., or Seattle, Wash., and await orders.

Yellow Fever.—Reports continue to arrive at Paris indicating the gravity of yellow fever in Senegambia. The troops returning to France tell pitiful stories of their experience. There is cause to fear that the disease may be brought to some of the French ports, but the authorities are taking every precaution.

Garbage Disposal in China.—Consul Fowler says: "The cleanest cities in China are Hang-Chow and Ning-Po. In the center of these 2 cities I have myself seen dogs eating bodies of babies; the rotting corpses of cholera cases; snakes winding in and out—in fact the most horrible filth on one side, while across the way was the glitter of gold, pomp, and luxury."

foreign News and Notes.

GREAT BRITAIN.

New Baths at Cheltenham.—The new baths erected in Cheltenham by the corporation were formally opened by the Mayoress on September 10. The cost of the building is nearly £10,000.

Plague a Notifiable Disease.—The Corporation of Dublin has, by special resolution, declared bubonic plague to be a notifiable disease for a period of 12 months, and a similar measure is under consideration by various other bodies, at Leeds and Hull.

Typhoid from Oysters.—An outbreak of typhoid has occurred at Ipswich which has, it is stated, been traced to the eating of contaminated oysters purchased of itinerant vendors, and a notice has been issued warning persons of the dangers attending this practice.

Open-Air Swimming Bath.—The London County Council is about to open for bathing purposes the largest of the lakes in Brockwell Park. The lake has been entirely lined with hydraulic mortar, so that it will be comparatively easy to secure its thorough cleanliness.

Bristol Medical Charities.—A "collecting dog" at Bristol, known as "Punch No. 2," has during the past 6 years collected over £100 for the local medical charities. His father, "Punch No. 1," was also a hospital collector, and between them the two dogs have collected 48,579 coins.

Open-Air Treatment of Phthisis.—It was reported at the last meeting of the managers of the Poplar and Stepney Sick Asylum district that their proposal to hold a conference of Poor-law administrators for providing accommodation for the open-air treatment of phthisis had been successful, and it was estimated that representatives of about 60 unions and parishes would attend the conference, to be held in the ensuing month at the St. Martin's Town-hall, London, W.C.

CONTINENTAL EUROPE.

Medical Attendance on Chemists.—A case has just been decided in France in which the executors of a deceased chemist refused payment of medical fees on the ground that custom, if not law, entitled a chemist to gratuitous attendance. The verdict was in favor of the claimant.

Instruction in Tropical Diseases.—In the University of Bordeaux, France, M. Le Dantec has been appointed to give a course of instruction on tropical diseases. In Holland the teaching of tropical medicine has recently been inaugurated by Dr. J. H. Kohlbrugge in the University of Utrecht.

Suicides in the French Army.—A dispatch to the New York Times states that suicides are frequent in the French army, and it is no secret that it is the result of the insupportable treatment which the soldiers are subjected to and the general brutalizing condition of life which they are compelled during 3 years to lead. In one week 3 suicides occurred in a single regiment. The colonel has issued an order of the day declaring that suicides will henceforth be treated as deserters, and that no military honors will be rendered them at their funeral. No man, it concludes, who is a real patriot will commit suicide; but nothing is said concerning the noncommissioned officers whose brutal treatment has caused these suicides.—[*Medical Record*.]

Sanatoria in Italy.—On August 28 the Administrative Committee of Charities of the Milan Savings Bank decided that a subvention of 30,000 lire annually should be granted to the sanatorium for the tuberculous poor of the city and province of Milan. The sanatorium, which is to be erected by private subscriptions is to be called after King Umberto I. The municipality of Leghorn has decided to found a sanatorium of the same kind with the same name. The Communal Council of Pisa has decided to allocate 30,000 lire for the foundation of a sanatorium which is also to bear the name of the late king. Thanks to the initiative of Drs. Pisani and Romeo a sanatorium for tuberculous patients has re-

cently been opened in the neighborhood of Catanzaro.—[*British Medical Journal*.]

The German Association of Public Health.—The twenty-fifth annual meeting of the German Association for Public Health was held in Treves, September 12 to 15. The hospitality of the town provided the accustomed convivial meetings and fete. PROFESSOR GAFFKY, who was a member of the German Plague Commission to Bombay, read a paper on **Precautions against plague**. He thought the due observance of the Convention of Venice would provide sufficient safeguard, especially in conjunction with the new Infectious Diseases Act. The inspection of ships should be done thoroughly by competent persons, and not be a mere formality. The disinfection of the excreta and sputum should be carefully performed, and those exposed to infection should be inoculated. PROFESSOR C. FRAENKEL and PROFESSOR INTZE read papers on **Water-supply for towns by damming valleys**. The former was inclined to think ground water preferable from a hygienic and a dietetic point of view, and since the water in the other case was really a surface water with all its impurities, it would always be necessary to filter it. Professor Intze, from the engineer's standpoint, drew attention to the greater regularity and permanency of such a supply over the ground water. PROFESSOR PRAUSNITZ read a paper on **Infant mortality from diarrhea, and its prevention**. He showed statistically how the mortality fell chiefly on the poor and destitute. He attributed it chiefly to insanitary dwellings and deficient air, and did not think artificial food had much to do with it, nor did he expect much improvement from sterilizing the milk. Although the etiology of the disease was referred to, nobody seemed aware of Ballard's observations on the ground-temperature, nor the fact that municipal sterilization of milk has been successfully tried in both France and England. On the third day there was a discussion on the housing of the working classes. The good work already done in Great Britain was frequently referred to. There was general agreement that where a municipality destroyed dwellings, it should provide fresh ones; but speakers were much divided on the question as to how far the city should otherwise provide dwellings, and apparently the majority were of the opinion that no part of the cost should fall on the rates, nor should the city in any way damp competition.

MISCELLANY.

Obituary.—WILLIAM COPELAND, of Staindrop, County Durham, September 16, aged 54.—RAYMOND COURTEEN, of Gloucester, September 17.—ROBERT S. COCHRANE, of Longford.—PROF. KORSAKOFF, of Moscow, aged 46.—JOHN A. LOTHIAN, of Glasgow, aged 62.—WILLIAM MAW HURTLEY, of Leeds, September 3, aged 44.

Poppy Cultivation in India.—The Secretary of State for India reports that the area of poppy cultivation in India had increased between the years 1890 and 1897, as stated by the Bengal Opium Department, from 770,000 bighas to 890,000 bighas. In 1898 the area was considerably below that of 1897. The Secretary of State further stated that the cultivators were perfectly free to sow food or other crops, and that he was unwilling to interfere with the rules and regulations of the system, which had worked well, and which gave full weight to the importance of controlling the traffic in opium and keeping it within bounds.

Vaccination in India.—During the prevalence of small-pox in India recently, measures have been taken to introduce vaccination among the natives, but this has met with opposition because of their strange superstition as to the occult powers of the color white. Dr. Anna Fullerton, formerly connected with the Women's Medical College of Philadelphia, and now occupying a professor's chair in an Indian medical school, writing of the attitude of the natives toward vaccination, says: "They have a belief that India is to be delivered some day (from British rule) by a native who has white blood flowing in his veins; and they think that the English (and they always class English with Americans) are trying to find the person with white blood in order to kill him and thus prevent India being rescued from English possession." They regard with suspicion every step taken to make vaccination compulsory during the present epidemic.

The Latest Literature.

British Medical Journal.

September 15, 1900. [No. 2072]

1. A Discussion on Puerperal Fever in Relation to Notification. D. BERRY HART, W. J. SMYLY, JOHN CAMPBELL, ROBERT BOXALL, A. V. MACAN, JOHN WILLIAM BYERS, JAMES GREEN, R. BRUMMITT, J. H. TARGETT, MICHAEL BEVERLEY, THOMAS A. HELME, HENRY BRIGGS, and WALTER S. A. GRIFFITH.
2. Cephalotripsy for the Aftercoming Head. J. H. TARGETT.
3. Observations on Human Placentation in its Second Stage. CATHARINE VON TUSSENBROEK.
4. A Discussion on the Natural History of Fibroids and Recent Improvements in their Treatment. ALBAN DORAN, DAVID BERRY HART, W. J. SMYLY, HARRISON CRIPPS, A. V. MACAN, IRVING H. CAMERON, W. ROGER WILLIAMS, E. STANMORE BISHOP, JOHN CAMPBELL, H. MACNAUGHTON JONES, STANLEY BOYD, M. A. D. SCHARLIEB, A. E. GILES, HENRY BRIGGS, SKENE KEITH, and WALTER S. A. GRIFFITH.
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10. On Dilation of the Pupil from Stimulation of the Cortex Cerebri. J. H. PARSONS.
11. Changes in the Cell of the Newt's Stomach During and After Secretion. E. W. CARLIER.
12. Fatigue of the Cerebral Motor Cortex. A. G. LEVY.
13. On the Usefulness of the Term "Functional Inertia of Protoplasm." D. F. HARRIS.
14. Tuberculous Lesions from a Clinical Point of View. EDMUND OWEN.

1.—Hart opened the discussion of **puerperal fever** in relation to **notification**. The objections to notification are: (1) The difficulty of defining what one means by puerperal fever; (2) the risk of the statistics being misleading from errors, unavoidable or otherwise, in diagnosis; and (3) the supposed unwillingness of practitioners to notify unless in cases likely to end fatally. He recognizes 3 forms of puerperal fever: (1) The acute rapid form due to a large amount of poison and usually associated either with severe laceration or ruptures of the genital tract, or with the retention of much placental debris as in greatly adherent placenta or membranes; (2) the ordinary lymphatic form; and (3) the rarer venous form. It is this form which taxes the practitioner's skill in diagnosis the most; for there is here an absence at first of local lesions and the passage of the mischief insidiously through a blood channel. The supposed unwillingness of a physician to give notification of cases of puerperal septicemia is because in certain instances the onus of actually causing the condition rests on his shoulders. Our improved knowledge of antiseptics, however, and the greater care exercised in the management of labor, should eliminate this. Notification should, in the author's opinion, be a privileged communication; but it may become the duty of the medical officer to advise the practitioner who has repeated cases of septicemia, to cease obstetric practice for a time, to make sure that he is not, by some error in practice, actually causing the trouble. The advantages of notification are obvious: (1) We get statistical information as to whether puerperal fever is increasing or diminishing, or some factor causing the condition may be discovered; (2) it would aid in prevention by putting the medical officer upon the track of careless medical attendants or nurses. Enforced notification virtu-

ally compels the municipality to provide hospital accommodations for suitable cases. [W.K.]

2.—Targett reports a case of **cephalotripsy for the after-coming head**, notable for the complete absence of labor-pains in the ordinary sense of the term, the uterus being in a state of primary inertia from first to last. Of the sites recommended for perforation, the suboccipital was chosen as less difficult to reach. When crushing is necessary, in using the cephalotribe, insert one blade in the suboccipital perforation, while the opposite blade is applied over the face; for thus the best grip is obtained. The advantage in crushing the head is the prevention of laceration in its delivery. [W.K.]

3.—**Human placentation** in the first stage has proved to be almost a perfect copy of the process which Hubrecht studied in *Erinaceus*. The primitive blood lacunas give origin to the intervillous spaces; out of the trophoblastic septa between the lacunas the first villi will develop, sprouts of mesoblastic tissue penetrating within them. After the intervillous spaces have become wider and the villi longer, the connection with the maternal tissue is loosened and absorbed, and the tips of the villi are free. Von Tussenbroek, as the result of her studies upon the second stage in human placentation, gives the following conclusions: (1) The macroscopic form of the human placenta is accomplished about the sixth month of pregnancy; (2) at that period the decidua reflexa has almost totally disappeared; (3) the reduction of the decidua reflexa is the effect of mechanical pressure; and (4) the reduction of the villi of chorion is chiefly effected by the obliteration of the intervillous spaces between chorion and reflexa. [W.K.]

4.—Doran, in discussing **fibroids**, admits that their physiologic and pathologic relations to the ovaries are not yet certainly known and the prognosis of their growth is uncertain; but they usually tend to get smaller about the menopause. Most fibroids require no operative treatment whatever, but some should be removed by surgical procedure. A fibroid of the broad ligament always tends to grow large and press upon important organs and should in every case be removed. Retroperitoneal hysterectomy is the best of recent improvements in the radical treatment of uterine fibroids. Panhysterectomy, claimed by some as a greater improvement, entails more dangers at time of operation; besides, as in the more conservative procedure, ligatures cannot be dispensed with. In Doran's experience removal of both ovaries does not entail very formidable results. In over 100 double ovariectomies in his own practice he has traced only 2 cases of severe neurosis, and in one of these the patient was neurotic before operation. [W.K.]

5.—The fact which does most to discredit **vaginal hysterectomy for cancer** is its use in unsuitable cases. Scharlieb claims that this procedure should not be attempted on cases in which the disease has spread beyond the uterus locally; or has already infected the lumbar, iliac and other glands, or distant organs; or lastly, cases in which some other grave constitutional state exists, such as diabetes or Bright's disease. If such cases are not avoided the death-rate will rise. The lessons to be learned from 46 cases reported by her are: (1) It is well worth while to operate for cancer of the uterus while that organ is still freely movable, and there is no obvious extension beyond it; (2) it is not worth while to operate unless the whole disease can be removed; and (3) that the responsibility in this matter lies between the general practitioner and the specialist. The family doctor to whom the patient usually complains should not be content with ordering ergot, rest, and change of air, but should insist on examining every patient who has profuse or irregular uterine hemorrhage. [W.K.]

6.—Byers divides the causes of **postpartum hemorrhage** into 2 groups: 1. Uterine atony, the bleeding in these cases arising from the uncompressed vessels in the placental area. 2. Wounds of any part of the parturient canal, without necessary uterine inertia. By far the most numerous cases belong to the first group. In the majority of cases, postpartum hemorrhage sets in without warning, though some things may put the physician on his guard, as hemorrhage at previous confinement, rapidly succeeding pregnancies, the combination of want of exercise, and the consumption of too much food and stimulant, elderly primipara, etc. Chloroform does not promote postpartum hemorrhage if care is taken not to deliver too rapidly. The 2 measures

for the prevention of postpartum hemorrhage are the proper management of the third stage of labor, and the important principle, never to deliver in the absence of pains. Two factors in the third stage of labor are the separation of the placenta and its expulsion with the membranes. Nature should be allowed to separate the placenta, and then if she is not equal to thesecond task, the accoucheur may assist her in expelling the already separated placenta. In cases of secondary uterine inertia in which labor comes to a standstill, the proper line of action is, not to slip on the forceps and deliver, but to give a dose of opium; the woman will then fall asleep, after a time pains will come on again, and she will probably be delivered without any instrumental assistance. In instances of placenta previa after bimanual version, the delivery must not be hurried, but time must be allowed for the uterine pains to come on again. When from the history or the symptoms postpartum hemorrhage may be anticipated, precautionary measures are recommended, such as slow delivery of the fetus, its birth being followed down by the hand on the fundus; the puncture of the membranes when the os is nearly dilated; and after it is fully dilated, the giving of 2 teaspoonfuls of liquid extract of ergot. If hemorrhage does occur from an inert uterus the first measure to be adopted is external uterine massage; second, the use of hot water, 118° F., in large quantities. The intrauterine tube should be so placed that the whole inner surface of the cavity is bathed. Salt, a teaspoonful to a pint, is preferable to creolin in the water as an antiseptic measure. Other measures are bimanual compression, packing the uterus with gauze and drawing downwards the uterus with a tenaculum, thus compressing the uterine arteries. When the hemorrhage has ceased, the patient should be kept quiet, her head low, the lower part of the bed being raised to facilitate the weak circulation. Subcutaneous injections of ether and strychnin are most useful, but our main dependence is in saline transfusion. [W.K.]

7.—Boyd presents a tabular analysis of 30 cases of **conservative surgery of the tubes and ovaries**. The results were distinctly good in $\frac{1}{3}$ of the cases, with 2 subsequent pregnancies. But in $\frac{1}{3}$ there were recurrent inflammation and in a few cases secondary operations. In others the relief was slight or none and there were 2 deaths. From all published statistics it appears that better results are obtained from conservative operations on the ovary than from those on the tubes, and the 2 sets of cases should be reported separately as in the present report. [W.K.]

8.—Purslow reports a case of **complete inversion of the uterus** of 3 years' duration. The patient was brought to the hospital 3 years after her last confinement, suffering from anemia and pain in the right iliac region. Examination showed that inversion of the uterus was the cause of the trouble. The inverted fundus was split from front to back, the broad ligament ligated from the inside and the uterus removed in sections. The ovaries were not seen during the operation. The patient made a satisfactory recovery and is now in good health. [W.K.]

9.—Horbaczewski's theory that the increase in uric acid excretion which occurs a few hours after a meal is due to a digestive leukocytosis and the consequent increased liberation of nuclein within the organism is epoch-making. The details of the theory have possibly not stood the test of 10 years experimental criticism, but this work has formed the basis of all subsequent work on the subject, and if it does not express the whole truth, it contains the essential germ of truth, namely, that we are to seek the origin of uric acid, in mammals at any rate, in the destructive changes that occur in nuclein. Further researches have shown that a well-marked digestive leukocytosis may occur after a diet of egg-white or even after a nonnitrogenous meal which is not accompanied by a rise in the amount of uric acid secreted. The theory has, therefore, been modified by supposing that the acid arises from the breakdown of the nuclein of the food, independently of any intermediate leukocytosis. According to Halliburton, the **origin of uric acid** from the nuclein of the food may be one factor; at the same time the origin of uric acid from the nuclein of the leukocytes is another; the 2 probably act together, and in one case the one, in another case the other factor may be more predominant. There is a third factor, which never yet has seemed to receive any attention; this is that the katabolism of the nuclein of other animal cells, such as those of secreting glands, may con-

tribute to the formation of the acid. Investigators hitherto seem to have got into the way of supposing that the leukocytes are the only cells whose nuclei need be given attention. They are the cells which lend themselves best to investigation, but after all they constitute a mere fraction of the total cells of the body. Another fallacy which appears to underlie a good deal of the work on the uric acid question is the habit of regarding the amount of uric acid in the urine as synonymous with the amount produced in the body. Recent experimental work points the other way. The uric acid produced in metabolism doubtless in great measure leaves the body by the urine, but all of it certainly does not; some may be retained within the body for a time; an exaggeration of this is seen in gouty concretions; some may be further oxidized and converted into urea and simpler products; some may enter into combination with other organic substances, lose its identity, and the nitrogen ultimately leave the organism, not only as uric acid but in other forms also. Another factor which is often neglected is the amount of purine substances that leaves the body in the feces. The work of Burian and Schur shows that every healthy adult excretes a certain amount of purine substances which is independent of his diet; this is the result of tissue-metabolism and may be termed "endogenous urinary purine." But when a man takes his ordinary diet, which contains articles containing nuclein, or purine compounds, the amount of urinary purine is increased by a part of the purine derived from his diet, and this increase may be termed "exogenous urinary purine." The "nutrition purine" does not pass wholly into the urine; a certain fraction remains in the organism, the purine double ring being broken down. The amount of the remainder (exogenous urinary purine) differs for different forms of food, and is but little affected by the individuality of the subject of the experiment. In the discussion that followed Hopkins quoted, as evidence that uric acid arises from channels other than nuclear breakdown, some additional experiments with meat extracts. He had prepared extracts which had produced more uric acid than could be accounted for by the alloxuric bodies present in them. Smith Jerome regards the following propositions in relation to uric acid formation as proven: 1. That the quantity of uric acid excreted may by starvation be reduced to a fairly constant minimum; and hence that a part of the daily output is independent of food taken; (2) that the quantity of uric acid excreted may be increased by the use of certain foods, and, therefore, that a portion of the normal output is under control and directly dependent on the quantity and quality of ingested food; and (3) that food which increases the output of uric acid contains alloxuric nitrogen. He regards as not proved the following: (1) That we know the source of the uric acid produced in inanition; (2) that we can explain the want of fixed proportion between ingested alloxuric material and excreted nitrogen; (3) that the daily output represents production only, or the balance of production and destruction; (4) that uric acid is retained in the system; (5) that uric-acid formation necessarily depends on leukocytosis; (6) that we understand the precipitation of uric acid from urine, of which neither the acidity nor the percentage of uric acid is above the normal; (7) that the cause of deposition of sodium biurate in the tissues under pathologic conditions is at present known; and (8) that in pathologic states in which there are inflammatory conditions of certain tissues, together with deposition of uric acid in urine, and of sodium biurate in tissues, there is a causal relationship between the phenomena in question. Haig is of the opinion that by influencing solubility on the one hand, and introduction on the other, almost any relation of uric acid to urea in excretion may be met with, or produced; but this is no proof that formation is altered, and, taken over a long period, it would be found quite unaltered. [J.M.S.]

10.—Parsons sums the results of his experiments on **dilation of the pupil from stimulation of the cortex cerebri** as follows: Dilation of the pupil, like other effects of cortical excitation, is best obtained with slight anesthesia, and it is only obtained from those parts of the brain which are concerned in eye-movements. When well marked the dilation of the pupil is accompanied by all the usual effects of stimulating the cervical sympathetic. The effect is usually more marked on the opposite eye. The effect is diminished, but by no means abolished, by section of both sympathetic nerves

in the neck. The effect is abolished by section of the oculomotor nerves intracranially, subsequent to section of the cervical sympathetics, and under these conditions the pupils are immobile. The effect is not abolished on either side by section of the corpus callosum, but stimulation of its cut surface results in the usual bilateral pupillary reaction. Stimulation of the central end of a cut afferent or mixed nerve, for example the sciatic, still causes dilation of both pupils after section of both cervical sympathetics; i. e., through a reflex inhibition of the third nerves. Unequal constriction of the pupils from stimulation of the cortex has not yet been obtained. [G.B.W.]

11.—Carlier read a paper before the Section on Physiology before the British Medical Association, on the **changes in the cell of the newt's stomach before and after secretion**. As soon as the cell begins to part with the stored-up zymogen the nucleus commences to produce at the expense of its chromatin a new antecedent substance, viz., prozymogen. The production of this substance is facilitated by the movement toward and the spreading out of the chromatin immediately beneath the nuclear envelope. This prozymogen must pass into the cytoplasm in a liquid form, as there is no evidence of it within the nucleus, and when poured out into the protoplasm it remains in the neighborhood of the nucleus without being at once converted into zymogen, but remains as a compound of considerable stability, increasing in amount until the first complement has been produced. This stage is marked by the change in the reaction of the remaining chromatin, and no more prozymogen can be manufactured until a new supply of chromatin has been reproduced in the nucleus from some constituent of the cytoplasm. As soon as the zymogen granules have become exhausted, the cytoplasm begins to take up material from the lymph, probably of an albuminous nature, as its appearance in the cell is marked by a change in reaction. This ingestion from the lymph of proteid material permits the rapid conversion of prozymogen to zymogen, which is retained in the cell until such a time as the nuclear chromatin shall have been completely restored. The renewal of the chromatin is brought about by the entrance into the nuclear juice of an easily coagulable substance (probably a proteid material among other things) which is the meaning to the great increase in the number of the lanthanin granules at this time. Chemically, chromatin contains nucleic acid and an albuminous substance. It is very stable and acts as an acid to bodies less acid than itself. In order that this stable body shall pass into the cytoplasm, it is necessary that it should be rendered soluble; in this process some of the albumin is removed and goes to form the nucleolus. Being now useless in the nucleus the nucleolus is extruded into the protoplasm, there to be disposed of. The more acid part of the chromatin passes into the cytoplasm, where it remains in an invisible state unless the phosphorus and the iron that it contains are unmasked and revealed by dyes. The repair of the nucleus can only be brought about by the passage into it of substances from the cytoplasm which probably unite with the nucleic acid in the nuclear juice to form a material analogous to chromatin, that is, the blue staining lanthanin. One must look to the nuclear juice to find the earliest indication of the synthesis by which chromatin is built up from the simpler compounds. The nucleolus is in part, if not in entirety, composed of effete material which is tolerated in the nucleus for a time, but expelled either entire or after fragmentation as soon as its bulk renders it detrimental to the wellbeing of that body. [J.M.S.]

12.—Levy describes some of the more striking evidences of **fatigue of the cerebral motor cortex** which may be elicited by application of a faradic current of medium strength to a cortical motor center, the contractions of the correlated muscle being recorded on a moving surface. [J.M.S.]

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1. Tuberculous Lesions from a Clinical Point of View.
EDMUND OWEN.
2. Prevention and Treatment of Postpartum Hemorrhage.
JOHN W. BYERS.

3. The Chemical Examination of Gastric Contents. FRANK SHUFFLEBOTHAM.
4. A Case of Total Gastrectomy. VIEIRA DE CARVALHO.
5. Hysteric Somnolence and States of Double Consciousness. ETHEL M. N. WILLIAMS.
6. A Note on Thrombosis in the Veins of the Pelvis and Lower Extremities after Operation. K. G. LENNANDER.
7. Heatstroke in India; an Examination of Some Statistics Relating Thereto. W. J. BUCHANAN.
8. Poison by Carbon Monoxid. C. R. ELGOOD.
9. General Nervous Shock, Immediate and Remote, after Gun-Shot and Shell Injuries in the South African Campaign. MORGAN I. FINUCANE.
10. Case of Plastic Bronchitis with Its Postmortem Appearances. A. VINTRAS.
11. Case of Hydatid Disease of the Liver Discovered by the Presence of Daughter Cysts in the Motions. F. H. A. CLAYTON.
12. Two Cases of Cranial Meningocele Treated by Excision; Recovery. LEONARD GAMGEE.

1.—Owen devotes most of his paper to a criticism of the modern **treatment of tuberculous lesions** without suggesting very much that is new as a substitute. He believes that the surgeons have of late been too much under the influence of the experimental pathologists and bacteriologists. He fails to discover that iodoform is of any particular value in the treatment of tuberculous lesions and has discarded its use. He decries the present furor for the treatment of deformity from caries of the spine by forcible straightening and believes in a short time we shall hear very little about the method. In the treatment of vertebral caries absolute uninterrupted rest in a recumbent position he considers the only suitable method of dealing with these cases. He decries the use of all schemes, corsets, apparatus, and braces which he classes as American and finds them all wrong both in theory and practice. Prophylaxis of tuberculosis is most important and he suggests the desirability of preventing the marriage of tuberculous subjects. [M.B.T.]

2.—See abstract No. 6 from *British Medical Journal* in this issue.

3.—Shufflebotham prefers for the **chemical examination of the gastric contents** a test-meal composed of 8 ounces of bread cut in thick slices and covered with a little butter together with $\frac{1}{2}$ pint of weak tea containing sugar, but no milk. The stomach-contents should be withdrawn in 2 hours. After the gastric contents are filtered an alkaline reaction of the filtrate is only found when the patient has been taking alkaline drugs or when a pancreatic fistula opens into the stomach. The most common cause of acid reaction is hydrochloric acid in combination with proteids. The author prefers Gunzberg's test for determining the presence of free hydrochloric acid. [J.M.S.]

4.—Carvalho reports another successful case of **total gastrectomy** which he performed on a woman of 46, a native of Sao Paulo, Brazil. The patient was a weak, cachectic mulatto, who had suffered from stomach trouble for years and had become much worse during 6 months. After swallowing nourishment she was seized with acute gastric pains, followed after some hours by vomiting not infrequently mixed with dark blood. Her condition was becoming worse daily. On palpation a tumor the size of a turkey's egg was found in the epigastric region on the right side close to the costal margin. It was movable and painless and a diagnosis of probable malignant tumor of the pylorus was made. The patient had a weak, slow, regular pulse, and was not in particularly good general condition. Under chloroform-anesthesia a median incision was made between the ensiform cartilage and the umbilicus. A malignant tumor was found at the pylorus which was slightly adherent to neighboring organs, but affected most of the lymphatics of the stomach. The omentum was cut between ligatures, adhesions to the duodenum and the head of the pancreas were broken up. The duodenum was divided between two clamps and the stomach was isolated from below upwards, the lymphatic glands being extirpated at the same time. The stomach was clamped close to the diaphragm and removed. After careful disinfection of the cut surfaces the two extremities of the intestinal canal were united with a double row of fine silk sutures. The peritoneal cavity was cleansed and the abdomen closed with a triple row of sutures. The operation

lasted an hour and twenty minutes and the patient was in a state of profound shock at the end of it. She was freely stimulated and infused with $1\frac{1}{2}$ liters of artificial serum. After injection of the serum the patient improved rapidly. She was nourished by nutrient enemata and small doses of alcohol were administered. Her recovery was comparatively uneventful and on the eighth day the sutures were removed, primary union having resulted. At the last report the patient was in very good condition. [M.B.T.]

6.—Lennander suggests that after every abdominal operation and every herniotomy the patient's bed should be raised at the lower end in order to assist the venous blood flowing from the lower extremities toward the heart. This measure tends to **prevent thrombosis**. The author had a number of cases of thrombosis following such operations, but since adopting this procedure he has had no trouble of this kind. [M.B.T.]

7.—Buchanan admits that Europeans newly arrived in India are more liable to be attacked by **heatstroke** than the natives of the country; this liability decreases for a few years following the first, and then more or less steadily increases in proportion to the length of residence in India. Dr. Sambon states that siriasis is not always to be found in the warmest regions. Buchanan shows that for downright fierceness of the summer heat, night and day, no part of India is less tolerable than the North-West frontier, the Punjab, and Sindh, and here it is that there is the greatest mortality from heatstroke. Again, Sambon claims that siriasis only prevails in the lowest regions and coast districts; on the other hand, Buchanan holds the lowest regions are the Burmah coast, the Bay Islands, and the West Coast, and it is exactly here that the very lowest ratios for heatstroke are obtained. The statement about the restricted altitudinal range of heatstroke, which the other writers have arbitrarily fixed at 600 feet, is not borne out, since the worst two stations are Peshawur and Nowshera, with the heights above sea level of 1165 and 1100 feet, respectively. In fact, the influence of height has little effect *per se* till we reach levels where elevation is combined with coolness of the atmosphere, as in the hill stations, the majority of which are well over 5,000 feet above sea-level. It can also be shown that the disease is by far the most prevalent in the months when the heat is greatest. While looking upon heat as the most important factor in heatstroke, we must also bear in mind the great influence of the usually predisposing causes, as age, length of residence in the tropics, occupation, exposure, unsuitable clothing (as the tight-buttoned and belted uniform of soldiers), intemperance (perhaps especially beer-drinking), overfatigue and overcrowding, want of ventilation, and previous illnesses. [J.M.S.]

8.—Two women, aged 58 years and 31 years respectively, inmates of a workhouse, were at work in a large laundry provided with a stove and a good-sized hot-air chamber for drying clothes. At 6.45 in the evening, another woman, on entering the room, found them both lying on the floor near one end of the room about 4 feet from a closed door leading into an airy wash-house. In both cases the bowels had acted involuntarily. The women were lying close to each other at the foot of a form in front of a long table. The elder woman had her feet on the form on which it appeared she had been sitting and she was covered with vomit. A nurse who was summoned found her completely stiff all over. Her arms were drawn up and her eyes were fixed and looked strange; but after she was removed she became very sick and apparently revived. At 7.45 Elgood found the patient dead, although there was good color in her lips and face. The younger woman was also in bed; she was groaning and crying and at the same time opening her eyes widely and staring wildly around. The pupils were fully dilated and insensible to light, though they reacted in a quarter of an hour after. The breathing was noisy and rapid, and panting in character; 10 or 12 respirations following each other quickly in succession and then ceasing for a few seconds, but there was no regular cycle. No pulse could be felt at the wrist and no cardiac impulse was perceptible. There was present a rapid semiflexion and pronations of both forearms by which means the hands were brought together as if for the purpose of rubbing them. It was quite a coordinated movement and one apparently accompanying the return to consciousness. In a quarter of an hour the patient became much more conscious. She was very excited and seemed frightened and complained of pain in the head. In another

quarter of an hour a faint pulse was perceptible at the wrist. As far as she remembered, she said, the first thing she noticed to be wrong was a "swimmy" feeling in the head, and she sat down on the form with her companion. The women had closed the windows of the wash-house in order that the fire which had been augmented for the purpose of cooking some potatoes on the lid of the stove might not be discovered. The body of the elder woman, at autopsy, showed no gross lesions. On looking into the stove when it was empty it was seen that the exit pipe was placed rather nearer the bottom than the top, so that there was plenty of room to pile up fuel above its level, thus blocking up the flue and sending the fumes into the room instead of up the pipe. The author is of the opinion that **carbonic oxid or carbonic acid** or both were accountable for the **poisoning**. [J.M.S.]

9.—Finucane finds the most noticeable features in large English military hospitals among the South African invalids sent him for gunshot injuries, are the almost total want of surgical intervention required or any marked deformity and the trivial nature of the wounds produced by the Mauser rifle bullet. The history of most of these patients is that of rapid healing by first intention, with little or no suppuration. This is the result, he believes, of antiseptic occlusion by the first and final field-dressings. Nearly all of the wounds are subcutaneous flesh-wounds, escaping bones and joints in a marvelous way, though traversing tissues and cavities in close proximity. The lodgment of bullets in soft or bony parts or in cavities necessitating removal is an extremely rare occurrence. This is due, Finucane believes, to the velocity and shape of the projectile. The clinical fact of most interest is the large number of cases of functional impairment of nerve-sense and motor-power associated with psychical symptoms akin to nervous shock or those observed after railway accidents. These nerve-symptoms do not bear any ratio to the extent or size of the wounds inflicted, but have been noted as being more common in injuries of the lower extremities and the head in cases that look originally to be not severe. The implication of nerves or their sheaths is not a marked feature, and in most instances there is no local evidence of the bullet or its course having been near the track of the nerve. The prognosis in such cases is extremely unsatisfactory and no definite one can properly be given in less than a year. Modern **gunshot wounds** have apparently lost much of the seriousness formerly attributed to such injuries, and it appears that the resulting **nerve-shock** and injury to the nervous system are the most frequent sequels, and at the same time the most difficult to prevent and treat. The absence of local nerve-lesion or injury producing nerve-change is significant, and a number of cases observed would not support the theory of these symptoms occurring in nervous persons only. Nine cases are reported out of a total of 60 seen during $2\frac{1}{2}$ months with symptoms of this character affecting the nervous system. [M.B.T.]

10.—Vintras reports the case of a man, aged 68 years. He had been for 7 years a soldier in the French army and had served all his time in Africa. Since then he had had no regular employment. The patient complained of cough, shortness of breath, hemoptysis, and pains across the chest, both in front and behind, between the shoulder-blades. His illness began 3 months previously after allowing his clothes, which had been soaked through with the rain, to dry on him. A week before admission he spat about 3 ounces of dark coagulated blood. The chest was tympanitic in front. The right base behind was somewhat dull. On auscultation rhonchi and sonorous and sibilant rales were present over the whole chest, both in front and behind. At the right base, behind, there was a very indistinct respiratory murmur and the vocal fremitus here was slightly impaired. Four days after the patient's admission he suffered from intense dyspnea and seemed to be on the verge of suffocation. His face was livid and covered with cold perspiration. His eyes were bloodshot and looked as if they would come out of their sockets. The muscles of forced inspiration were acting powerfully and both hypochondriac regions receded during inspiration. His breathing was about 60 per minute. His voice could scarcely be heard and the patient complained of pain and of a sense of pressure in the epigastrium and between the shoulder-blades. He had an incessant and harassing cough, and this would at times be relieved by the expectoration of a thick sanguinolent fluid. Suddenly his face became quite black and he gasped for breath;

his body was shaken with a severe fit of coughing; and tracheotomy appeared to be inevitable. But with considerable effort he succeeded in expectorating a dark mass of the size of a cherry stone, and this was followed by about two ounces of dark, semiclotting blood. He felt instantly relieved and sank back exhausted. On floating the little black mass in water it turned out to be a perfect cast of a middle-sized bronchus with its ramifications. It was yellowish in color and $3\frac{1}{2}$ inches in length. For the next 2 or 3 days he spat some mucopurulent fluid and felt much easier. Four days later he had another attack of dyspnea, not so severe as the previous one, but he complained of the same severe pain in the epigastrium and between the shoulder-blades. On this occasion he expectorated about 15 casts. They were this time very soft and friable and much whiter than the first one. On September 2 the patient had a third attack and died suddenly. At autopsy a soft, rapidly-growing epithelioma of the esophagus was detected. A cast was found projecting from the right bronchus into the trachea and blocking the already strictured lumen of the latter. It measured 2 inches in length and was milk-white in color. There was no trace of tuberculosis. The casts were composed of concentric layers of a lamellar fibrillated structure and leukocytes, pus-corpuscles, and some cylindrical epithelium, but very few blood-corpuscles were enclosed between the layers. They were made up of fibrin and not of mucus or of a coagulation necrosis of the bronchial epithelium, as was once thought. The condition was one of **plastic bronchitis**. [J.M.S.]

11.—A case of **hydatid disease** of the liver is reported which was discovered by the presence of daughter cysts in the stools. The patient was a strong, healthy man of 38, who possibly contracted his malady when engaged in caring for greyhounds 12 or more years previously. The patient suffered from pain resembling biliary colic, and followed by jaundice. It is suggested that the cyst probably discharged through the biliary passages, and that at times portions became impacted, producing colic, and that by spasm and irritation, or by rupture and discharge of the irritating contents of the cyst into these ducts, the jaundice was caused. No surgical treatment was undertaken, as the patient's condition steadily improved. [M.B.T.]

12.—Gamgee reports 2 operations for an **excision** of cranial **meningocele**. A girl, 6 weeks old, had a tumor the size of a large Tangeline orange on the back of the head. This tumor had a narrow pedicle which was situated in the mid line of the occiput, half way between it and the posterior fontanel. The tumor became tense when the child cried, and was increasing in size. A longitudinal incision was made over the tumor, the skin easily peeled off, and on incision the sac was found to contain clear fluid only. The pedicle was ligated and the skin wound closed. Four months after the operation the child's condition is perfectly satisfactory. A boy, 11 weeks old, had a tumor of the same general characteristics. Its greatest circumference was $10\frac{1}{2}$ inches. A similar operation was performed, and the child was discharged perfectly well at the end of 2 weeks. [M.B.T.]

New York Medical Journal.

September 29, 1900. [Vol. lxxii, No. 13.]

1. Hypertrophy of the Turbinate Bodies, and their Relation to Inflammation of the Middle Ear, with a Report of 1,500 Operations. CHRISTIAN R. HOLMES.
2. A Case of Ozena of Probably Sphenoidal Origin. JOHN W. FARLOW.
3. The Treatment of Umbilical Hernia in Children and Adults; Some Points in Technic; A New Method of Radical Cure. J. COPLIN STINSON.
4. A Chinese Physician. WILLIAM E. S. FALES.
5. The Use of Piperazin in Nephrolithiasis. CHARLES J. ALDRICH.
6. Some Observations upon Syphilitic Manifestations in the Optic Nerve and Retina; Inflammatory Manifestations. PAUL TURNER VAUGHAN.

1.—Holmes says that chronic inflammation of the nose should be divided into 2 stages: rhinitis chronica simplex and **rhinitis chronica hypertrophica**. These 2 stages, though resembling each other quite closely, can be readily

distinguished by the application of cocain, as in the simpler variety the turbinate contracts easily from the use of this drug, because there is as yet little increase in the connective tissue, but in the second the application has little effect in relieving the stenosis. In children and in the milder forms of hypertrophic rhinitis in adults treatment with astringent acids and the cautery will generally accomplish all that is desired, but when the second stage has developed there is only one successful way and that is by surgical interference. In order to destroy as little of the mucous membrane as possible, thereby avoiding the after-evils of crustation and dryness, Holmes suggests the formation of a bone scar. This he accomplishes by sawing off the lower edge of the enlarged turbinate with a narrow saw which will allow itself to be placed under the lower turbinal body and then turned horizontally toward the septum. In all cases it is the aim to remove as little of the edge of the inferior as is consistent with the restoration of sufficient breathing space. The cut should be so directed as to remove more of the posterior end than of the anterior. After the bone has been sawed through the remaining tissues should be divided with nasal scissors. It is advisable to avoid packing the nose after the operation except in cases of severe hemorrhage and the patient should be kept at rest and under observation for the 2 days following. [G.B.W.]

2.—Farlo reports a case of **ozena** which was apparently cured after treatment had been directed toward the sphenoidal sinus. [G.B.W.]

3.—Stinson says that the prognosis of congenital **hernia** of the umbilical cord is very grave, no matter what treatment is adopted, but far better results can be obtained by operating than by an expectant plan of treatment. In the ordinary umbilical hernia of infants and children, mechanical appliances will generally suffice to effect a cure, but when this fails a radical operation is indicated. Stinson proposes the following method as a radical operation for the cure of umbilical hernia in adults: An oval incision is made around the umbilicus and the sac opened laterally. The steps then consist in the removal of the excess skin, the umbilicus, the sac and the excess of serosa extending from the sac to the parietal peritoneum, the separation of all adhesions of the parietal peritoneum, the excision of protruding omentum and all omentum that can be withdrawn from the abdominal cavity by moderate traction. The hernial rings are cleared of all fat, glands and adhesions, but the layers forming the abdominal walls must not be excised too freely, only the edges should be trimmed away. The peritoneum and the transversalis are united with 2 continuous sutures of chromicized catgut. The edges of the lines alba and linea semilunaris and the sheaths of the recti muscles are united in 2 layers with continuous sutures of heavy chromicized catgut. If much tension is required to bring the edges together one or both recti muscles may be slid over to fill in the gap. The skin is closed with a subcuticular suture. [G.B.W.]

5.—Aldrich reports two cases in which **piperazin** had been used in the treatment of **nephrolithiasis** with signal benefit. The first patient was a man, aged 36 years, who drank more liquor than was good for him. He was attacked by a severe pain during the night. After the use of morphin he had some rest, but in the morning he had retention of urine. This was the first severe attack of renal calculus, but the patient had noticed uric-acid sand in the urine and had had pains in the loin. Twenty grains of piperazin dissolved in a quart of water was given daily for 16 days when the pain in the loin disappeared and he began to have vesical symptoms which were due to the presence of a calculus. The continued use of piperazin resulted in the passage of the stone. The second patient was a woman, aged 30 years, who had had symptoms of renal calculus, including cells from the kidney and ureter, free blood, albumin, and large quantities of uric-acid sand in the urine. She suddenly had hemorrhages from the urinary tract, which were repeated, often 4 or 5 per week. After 6 months' treatment by potassium and lithium salts, the patient was given 25 grains of piperazin in 5 pints of water daily for 7 months. The drug had to be temporarily stopped 4 or 5 times on account of vesical irritation. But the condition was much benefited in 8 weeks. [J.M.S.]

6.—Vaughan gives the following diseased conditions occurring in 31 cases of **syphilitic optic-nerve and**

retinal disease, coming under his observation: Primary optic neuritis, 1 case; rétrobulbar neuritis, 1 case; papillitis, 2 cases; neuroretinitis, 3 cases; retinitis, 3 cases; chorio-retinitis, 2 cases; neuritic atrophy, 3 cases; genuine atrophy, 5 cases; tabetic atrophy, 11 cases. He also goes over considerable of the literature on the subject. [G.B.W.]

Medical Record.

September 29, 1900. [Vol. 58, No. 13.]

1. Some Personal Observations on the Effects of Intrapleural Injections of Nitrogen Gas in Tuberculosis. HENRY P. LOOMIS.
2. Electricity in Gynecology and the Present Reluctance of Gynecologists to use Electricity. ROBERT NEWMAN.
3. A Cure of a Case of Hypertrophic Alcoholic Cirrhosis of the Liver, with Remarks. M. LUZZATTO.
4. The Cooperation of the Medical Profession of the United States with the National Confederation of State Medical Examining and Licensing Boards, in Establishing Interstate Reciprocity for the License to Practise Medicine. EMIL AMBERG.
5. Treatment of Fractured Patella. WILLIAM B. TRIMBLE.

1.—Loomis considers injection of **nitrogen** extremely valuable as a **treatment for pulmonary hemorrhage**, and has never seen it fail in the 8 cases so treated. Ten other cases were treated for the effects on the lungs. The physical signs showed practically no change excepting that pleurisy was controlled at once, but there was a decided improvement in the general condition in nearly all, and the cough usually improved. Loomis has seen no bad results and believes that the treatment should be tested further and that it has come to stay. Injections failed in 8 cases owing to adhesions. [D.L.E.]

2.—Newman makes a strong plea for the increased use of **electricity in gynecology**, and for a more thorough study of electrotherapeutics. He has used electric treatment with great success in many uterine and pelvic troubles, such as amenorrhea, dysmenorrhea, and other menstrual disorders; in procidentia and subinvolution of the uterus, and in many forms of inflammation of uterus and appendages; stricture of urethra, bladder, and rectum, etc. In some cases of complete prolapse, a high-tension current caused contraction and diminished the size of the organ so that it was pulled back to its normal position without even the use of the hand, solely by the action of a continuous current. In many instances electrolysis has been used, thereby absorbing pathologic formations and even causing the reabsorption of fibroids; but it should never be used for peritoneal fibroids. Electrolysis applied with a mild current will cause absorption only, while a strong current will burn, cauterize, and even destroy tissues. Hence the writer always advocates a mild current, by which is understood a strength which is tolerated by the patient without being painful. The art in applying electrolysis successfully in gynecology consists in: (1) Using the correct strength of the galvanic current; (2) applying the poles at the right place; (3) selecting the size and material of the electrodes; and (4) timing the duration and intervals of the seances. Applying the correct pole in the right place means particularly using the positive pole for stopping hemorrhages, while the negative pole will absorb the fibroid tissues. Basing his conclusions on his own experiences and reports in literature, he thinks better results are obtained from treatment by electricity than by other means, and the reluctance of gynecologists to use or recommend it has not been explained. [W.K.]

3.—Luzzatto records the case of a man of 55, who had **cirrhosis of the liver**, with marked ascites, the origin being in alcoholism and malaria. The use of large amounts of milk with a short course of **potassium iodid** and diuretics caused free flow of urine, the ascites and other symptoms improved and the man gradually became apparently quite well, and now, 5 years later, seems in good health and is able to do a normal amount of work. [D.L.E.]

5.—Trimble discusses the various methods of treatment which have been practised for **fractured patella**. Fibrous or ligamentous union is the best we can expect from non-operative treatment, and this will in time stretch to such a degree that stumbling is produced, thereby frequently re-

sulting in accident. In most cases, when rigid asepsis can be observed, the wire-suture method is decidedly the best form of treatment. Trimble reports 3 cases in which he did the operation. [M.B.T.]

Medical News.

September 29, 1900. [Vol. lxxvii, No. 13.]

1. Medicine and Superstition. G. W. GUTHRIE.
2. Some Studies in Metabolism in Chronic Nutritional Disease. G. W. McCASKEY.
3. The Art of Keeping Cool, with Special Reference to the Proper Use of Water. RALPH WAIT PARSONS.
4. The Dose of Potassium Iodid, with Reference to its Untoward Effects upon the Upper Respiratory Tract. LEWIS S. SOMERS.

1.—Guthrie describes some of the **famous quacks** of antiquity and modern days. Among these are Mesmer, Perkins, Cagliostro, Thomson, Schlatter, Dowie, and finally, Mrs. Eddy, to whose subject, Christian Science, both from the religious and medical standpoint, he devotes considerable space. He claims that many of the sects would be abolished if their professors were obliged to take the regular State examinations before being allowed to practise. [J.B.]

2.—McCaskey believes that the urine furnishes a convenient, accessible, and faithful index of the chemic processes going on within the body that we designate by the common term "**metabolism**." He takes up the principal constituents in detail. He believes that when there is an excess of urea, we should consider metabolism as excessive; in cases deficient of urea or hypoazoturia, it is necessary to employ forced feeding. Uric acid varies very considerably. He does not believe that it bears any close relation to the number of leukocytes, as he has observed independent variations between it and a number of leukocytes in a case of myelogenous leukemia. The xanthin bases and other of the rarer substances are not sufficiently understood to render them available for clinical purposes. [J.S.]

3.—Parsons believes that water is of great value for the purpose of keeping cool in warm weather. It should be used internally and in the form of baths, the latter being more efficient if the water is dashed upon the skin. Cold baths render people less susceptible to atmospheric changes. [J.S.]

5.—Summers calls attention to the fact that in some cases small doses of **iodin** produce **iodism**, while in others, large doses may be taken without effect. He reports a case in which a man took 240 grains of iodine 3 times a day for 3 days for the purpose of curing rheumatism, and developed no unpleasant symptoms. He does not believe that tolerance of large doses indicates specific infection. In general the amount of the drug administered in any case should be determined by the effect produced upon the diseased process. Many patients appear to have a maximum iodine point, and if more than this is given, iodism occurs. The simultaneous administration of arsenic and belladonna often prevents the appearance of iodism. [J.S.]

Boston Medical and Surgical Journal.

September 27, 1900. [Vol. cxliii, No. 13.]

1. A Study of the X-Ray Plates of 140 Cases of Fracture of the Lower End of the Radius. E. A. CODMAN.
2. Traumatic Joints. HOMER GAGE.
3. A Critical Review of 30 Cases of Pyosalpinx. G. S. WHITESIDE and W. J. WALTON.
4. Post-Operative Hematemesis. KENELM WINSLOW.

1.—Codman reports a study of skiagrams of 140 **fractures of lower end of the radius**, treated at the Massachusetts General Hospital in the last 4 years. It was found that these cases could be separated into 10 or more distinct types according to the lines of cleavage and the directions of the displacements. He emphasizes the fact that true Colles' fracture formed but 46% of 140 cases, and that a knowledge of the position of the fragments is necessary for intelligent treatment. The application of padding and splints should vary according to the displacement shown in the skiagram and if the x-ray shows that marked deformity is still present

after the splints have been applied, ether should be given, and another energetic attempt at reduction made. Concomitant fracture of the ulnar styloid occurred in at least 62% of 140 cases, and if 39 cases in which this process was obscure in the skiagram are deducted, fracture occurred in 86%. In true Colles' fracture pressure over the anterior edge of the upper fragment should be avoided and cross traction should be used to correct the radial displacement of the lower fragment. Statistics of the result of Colles' fracture are not of value unless the pathology of each case is determined by a skiagram. [M.B.T.]

2.—Gage believes that all injuries to joints accompanied by loss of function are always attended by more or less laceration of the tissues in or about the joint. Delays in restoration of function are due in most instances not to any complicating diathesis, but to changes incident to repair of these lacerations and their effects. Such delays are best avoided by an early resort to massage and active or passive motions, and are favored by too long a continuance of rest and fixation. He makes the distinction between carefully applied massage and indiscriminate rubbing. When delays in restoration of function have occurred they are best overcome by more vigorous and persistent manipulation, supplemented by the application of heat or such other agents as may best stimulate the local circulation and favor the elasticity of the tissues. [M.B.T.]

3.—Whiteside presents a review of 30 cases of pyosalpinx in which the mortality was 1 death from fecal fistula, 1 from general tuberculous infection 1½ years subsequent to operation, and 2 from general streptococcus peritonitis. It seems clear from a review of these cases that the gonococcus cannot be proved to be the cause directly or remotely in as large a number of instances as is generally supposed. Other organisms, not found recorded as being responsible for such a condition, have been demonstrated to be the only living organisms present in a considerable number of cases. Among these may be mentioned Bacillus mesentericus, Pneumococcus lanceolatus, Bacillus tetragenus, and 2 organisms more commonly demonstrated by observers—Bacillus coli communis and Streptococcus pyogenes. It cannot be proved that through the action of the gonococcus the normal integrity of these tissues has been impaired, and so made a suitable soil for the development of these other bacteria. Neither can this theory be disproved by such purely negative results as obtained by the writer. Seventy-five per cent. of these patients were married or widows. In 50% the urine was normal, and 50% showed pus, blood, and casts. Leukocytosis was present in all cases in which a blood-count was made, the lowest count being 8,800, and the highest, 32,000. Apparently the amount of leukocytosis was without regard to the organism present, or the amount of pus found at the operation. The temperature was elevated in all cases. In 17, it ranged from 99° to 101°. In the remaining cases an almost equal number were above and below these figures. The temperature apparently bears no constant relation to the leukocytosis present. Of the pulse, it may be said in general that it was not far from 100 in the majority of cases, and that no direct or definite relation can be established between the rate of the pulse and the leukocytosis. Sixty per cent. of the 30 cases showed acute symptoms referable to the pelvis for more than a year. The remaining 40% were all cases of less than 1 month's standing; of these, 4 were mixed pyogenic infections. The exact morphology of the bacteria in these could not be determined. One contained the pneumococcus in pure culture; 1, Micrococcus tetragenus; 2, the gonococcus; and 2 were bacteriologically negative. One other case of virulent streptococcus infection was probably acute, but no record of the duration of the attack was obtained before her death. From this series of cases the following conclusions are drawn: The mortality of the operation, taken as a whole, is 16%. The greatest dangers to be apprehended are in streptococcus infections from peritonitis, in all drained cases of fecal fistula; in tuberculous cases, from extension of the disease to other organs. [W.K.]

4.—Winslow reports a case of postoperative hematemesis occurring in a woman of 65 who was operated upon for umbilical hernia. The hernia had existed for about 20 years; it had been incarcerated at times, but reduction had spontaneously occurred. The reduction was probably only partial. The patient was first seen after a history of colic and vomiting for the previous 6 hours, with unsuccessful

attempts at reduction of the hernia by taxis, ice-bag, etc. An endeavor under ether did not prove any more satisfactory, and the operation for radical cure was performed. The patient did well for 3 days but then began to vomit blood in small quantities and died soon after. At the necropsy considerable dark, clotted blood was found in the stomach and small intestines, but no lesion of the mucous membrane or other cause for the hematemesis was discovered on careful search. [M.B.T.]

Journal of the American Medical Association.

September 29, 1900. [Vol. xxxv, No. 13.]

1. Technic of Vaginal Extirpation for Cancer of the Cervix by Ligature Only. RUFUS B. HALL.
2. Abdominal vs. Vaginal Hysterectomy for Uterine Carcinoma. JOHN B. DEEVER.
3. Importance of Early Recognition of Cancer of the Uterus. WM. H. HUMISTON.
4. Operative Treatment of Cancer of the Uterus. WILLIAM R. PRYOR.
5. Etiology of Scarlatina. WILLIAM J. CLASS.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1279.

2.—“ “ “ “ “ “ “ “ “

3.—“ “ “ “ “ “ “ “ “

4.—“ “ “ “ “ “ “ “ “ 1230.

5.—Class states that Baginsky and Sommerfield have recently reported the discovery of a **microorganism** which is the **probable cause of scarlet fever** and which is the same germ discovered by him and described some time ago in American journals. He brings forth evidence to show that the germ named by him Diplococcus scarlatinae was not described before his description of it; that it is constantly present in scarlet fever; that it is a pathogenic organism, producing fever in animals; and that the pathologic changes produced by it resemble those of scarlet fever, etc. It must be admitted that the diplococcus of scarlatina fulfills all of Koch's laws, and is therefore entitled to some consideration at the hands of those engaged in a search for the solution of the etiology of scarlatina. [M.B.T.]

American Gynecological and Obstetrical Journal.

June, 1900. [Vol. 16, No. 6.]

1. The Management of Pregnancy Occurring in Connection with Myofibromas of the Uterus. ALEX. J. C. SKENE.
2. Intestinal Anastomosis: Clamp and Enterotome; A Modification of Grant's Enterotome; An Aid in Suturing. ALEXANDER HUGH FERGUSON.
3. Cancer of the Uterus. WILLIS E. FORD.
4. Placental Transmission. W. A. NEWMAN DORLAND.
5. The Principles and the Most Rational, Innocent, and Effective Methods in the Treatment of Pathologic Retroversions and Retroversio-flexions of the Uterus. A. GOLDSPOHN.
6. Personal Reminiscences Associated with the Progress of Gynecology. THOMAS ADDIS EMMET.

1.—Skene, after a careful study of a number of cases reported and coming under his own observation, **classifies myofibromas** of the uterus in relation to childbearing as follows: 1. Submucous tumors, large or small, cause sterility as a rule (he has seen only one exception). 2. Small subperitoneal myofibromas which do not always cause sterility nor complicate childbearing to a very dangerous degree. 3. Interstitial tumors, unless so small that they cannot be detected, and large subperitoneal tumors closely connected with the muscular tissue of the uterus, do not cause sterility in all cases, but they are most dangerous complications of gestation, because they predispose to miscarriage and render delivery always difficult, often impossible, and always exceedingly dangerous. Therefore, in considering treatment, the first class may be left out of account; the second class requires attention in the first months of gestation in order to keep the uterus in position and aid in its escape from the pelvis up to the abdominal cavity, and finally they may require help in delivery and special protection from postpartum hemorrhage. The third class demand hysterectomy as the surest means of saving them. The hysterectomy

should be performed as soon as the first indication of miscarriage occurs, which is almost invariably after the death of the fetus. [W.K.]

2.—Ferguson divides the methods of **intestinal anastomosis** into three classes: Intraintestinal, in which the severed bowels are coapted and held together by means of plates, buttons, bobbins, couplers, rings, cones, or sutures; extra-intestinal, in which the continuity of the bowel is restored or a new passage for alimentary contents is obtained by the aid of continuing, interrupting or interlocking sutures, which are applied from the peritoneal surface of the bowel; combination method, in which both intraintestinal and extra-intestinal means are utilized. Any inaccuracy in the intestinal suture is followed by leakage, septic peritonitis and death. Too stout a needle, too coarse a thread, or too much space between the sutures may all be causes of failure. It has been established by Halsted that for the stitches to be always safe, the firm fibrous submucosa must be properly grasped by the needle, and then the threads can be tightly tied without the danger of tearing. For successful enterorrhaphy special attention should be paid to rapidity and accuracy, to soiling the peritoneum, and to leakage. In order to insert stitches rapidly, accurately, and so efficiently as to prevent leakage, the bowel must be firmly and evenly held. For this purpose many instruments have been devised. Grant has invented an enterotome for lateral anastomosis which has high merit. Laplace uses forceps with rings at the end to grasp the intestine while stitching, and Halsted uses inflatable rubber cylinders. Ferguson presents bowel clamps, the blades covered with rubber, devised to be applied to the bowel to prevent the escape of the contents while operating, the pressure being controlled by screws at each end; also a combined enterotome clamp which is employed in the extraintestinal method of suturing. It is easily and rapidly placed and holds the parts to be sutured firmly and securely together while the sutures are applied except to the small hole where the blades enter; the stitches are inserted first and the intestinal walls are cut afterward. The pressure of the clamp on the bloodvessels of the mucous membrane for several minutes while sewing is being done, lessens the tendency to hemorrhage, and the new passage made between the bowels may be of any size necessary, thus preventing the possibility of stricture formation. [W.K.]

3.—As statistics apparently indicate that **cancer** is on the increase and is more characteristic of the highly civilized classes, Ford believes this should revive our interest in the study of this dread disease. The uterus comes next to the breast and stomach as the favorite seat of cancer, and the first 5 years after the menopause is the time it is most frequently encountered. Sarcoma is much more commonly met with in young women. When it is once proved that a growth, however small, is cancerous, a total extirpation of the organ in which it is lodged is the only safe rule to follow. Small fibroid tumors in the wall of the uterus that begin to bleed badly also demand a hysterectomy. The hope of the future undoubtedly lies in the investigations which are being carried on in laboratories all over the world where experiments may ultimately bring forward some lymph that shall cure without the use of the knife. At present, however, the use of the knife is so much more humane than any other management that it must be the only resource in operable cases. At least one-half of the cases which are seen early and are submitted to radical operation recover and remain well for an indefinite number of years. Of the remainder, half, perhaps, live from 2 to 4 years, while all the rest are saved infinite suffering, and life is prolonged from months to years. The recurrence of cancer after a total hysterectomy is very frequently found in the lungs or liver, a comparatively short and painless illness following. [W.K.]

4.—Dorland reviews the literature of **placental transmission** of drugs and specific diseases, and derives therefrom some very suggestive if not conclusive, arguments. 1. While many drugs may be administered to the mother without any noticeable effect upon the fetus, there are certain substances which show a special tendency to traverse the placenta, and, entering the fetoplacental circulation, exert a positive influence for good or evil according to the condition which may be present in the given instance. 2. Maternal medication, therefore, is indicated in certain conditions, either in order to prevent the development of a simi-

lar condition in the fetus, or to counteract the effect of germs and their toxin already introduced into the fetal economy. 3. The drugs which have been found to affect the fetus in utero are notably opium, mercury, copper, lead, arsenic, and the iodids. In appropriate doses they may be administered to the mothers in suitable pathologic conditions with beneficial results to both mother and child. 4. Any morbid influence acting upon the mother either acutely, as in the case of the exanthems, or more slowly, as in tuberculous and specific infection, will react deleteriously upon the product of conception, and either destroy it through its overwhelming toxic action, or render it feeble and less resistant to subsequent and postnatal invasion, or the disease will run an atypical course in utero with or without apparent vestiges at birth. 5. The entrance into the fetal structure is accomplished through the agency of the fetoplacental circulation. It is probable that access is gained through bacterial action, the germs rendering the placental villi less resistant to invasion, whereby both the microbes and their toxins pass the natural barrier at the choriodecidual junction. 6. As a rule, the infectious diseases do not manifest their characteristic visceral lesions in the fetus, probably because of the passivity of these organs during antenatal existence. The germs, however, may be detected in large numbers by bacteriologic and microscopic examination. [W.K.]

5.—Goldspohn believes that though **retroversions and retroversio-flexions** invite disorders of a more serious nature, they do not cause death; and while they do embarrass conception and gestation, they do not interfere with labor itself. Therefore, all surgical or other measures that are chosen for their correction must not have any pronounced rate of mortality, must not create conditions which may disturb normal gestation or obstruct natural labor, and they must not disarrange the normal anatomy or disturb the functions of other equally important organs. In the surgical treatment of these displacements it is of prime importance to make a clear distinction between females who retain no probable capacity for conception and those who do. And surgical procedures, such as a firm and direct fixation of the fundus to the vagina or to the abdominal wall, may be very suitable in the former class, but should be totally avoided in the latter. The objection to the use of the simple Alexander operation as a remedy for uterine displacements in women capable of reproduction, is that it is not a durable remedy, that recurrence of the displacement so often takes place, especially after parturition. Goldspohn thinks that in such cases the only satisfactory operation is a bilateral inguinal celiotomy and shortening of the round ligaments via the dilated inguinal rings, and he gives a brief description of the technic. From September, 1893, to March, 1900, he has performed this operation in 106 cases, always in connection with some auxiliary operation and there has been no death due to the operation. Nine months ago he made a careful review of the present status of 49 of these and was personally informed of the condition of 25 others, and in no case was there a recurrence of the displacement nor a fully developed hernia. Thus his own experience, as well as the testimony of Edebohls, Burrage and others confirms his postulate that shortening the round ligaments via the inguinal canals, if thoroughly done, is so far the only operation that has been proved not only not to hinder gestation and labor, but also not to permit a recurrence of the displacement afterwards; because such comparatively good ultimate results have not been shown nor can they be shown by the advocates of any other operation. [W.K.]

July, 1900. [Vol. 16, No. 7.]

1. The Personal Factor in the Work of the American Gynecological Society. ELY VAN DE WARKER.
2. Intraabdominal Amputation of the Uterus; A Modification of Hysterectomy. F. H. DAVENPORT.
3. The Relationship Between Dysmenorrhea and Appendicitis. ARCHIBALD McLAREN.
4. The Examination of the Sigmoid Colon. A. W. ABBOTT.
5. Ectopic Pregnancies Operated Upon Before Rupture; the Significance of Intervillous Hemorrhages in the Interruption of Ectopic Gestation. C. E. MANIERRE and MAXIMILIAN HERZOG.
6. Two Cases of Genital Malformations: (1) Retrohymeneal Atresia; Hematocolpos et Hematometra. (2) Vagina Duplex et Uterus Septus. JOHN M. FISHER.

intestine was pushed into the abdominal cavity there was a gush of blood as thick as a little finger, which was checked by freely flushing the uterus with sterile hot water, which was at hand. The woman was now so pulseless that no further operation was performed, but she was removed to a hospital, having a temperature below 96° on her arrival there. The treatment in the hospital was simply sustaining and stimulating, with hot bichlorid vaginal douches. She was discharged well about a month after her admission. She menstruated normally a month later and regularly subsequently for 3 months, when she again became pregnant. The special points of interest are: The want of evidence of rupture at time of labor; the length of time intervening between the occurrence of the rupture and the manifest evidence of sepsis; and the rapidity with which she recovered after the removal of the offending cause, the gut. [W.K.]

5.—Kolischer discusses those **traumatizations of the bladder and urethra** occurring during labor which are least known, because they do not produce any external wounds. The urethra gets injured during labor by being directly bruised or by being bent through the descent of the fetal skull. All the urethral lesions caused by squeezing are most likely to occur in cases of simple flat pelvis. Inasmuch as the anterior fornix postpartum does not appreciably retreat, ischuria sets in, which has to be relieved by inserting a catheter, which procedure has to be controlled by placing one finger in the vagina. The urethra is straightened out and the free passage of urine becomes secured by repeated catheterism. Another variety of urethral incontinence occurs if the lower urethral wall only is carried downward; this happens most likely in forcible forceps operations, whereby the vaginal fornix is very rapidly dragged down; whereby the urethra becomes funnel-shaped, the larger aperture looking toward the bladder. The posterior part of the urethra being thus distracted, gives rise to absolute incontinence. The recognition of this condition is particularly important, because prompt intervention soon restores normal functions, while overlooking it and indifference renders the incontinence permanent. The urethral sphincter very rapidly loses its functional power definitely and does not regain it, having been inactive for a certain time. After having established the diagnosis by ascertaining the lowering of the anterior fornix and by the absence of any resistance at the internal orifice when introducing a sound, one has to replace the fornix and has to support the posterior urethra by inserting a hard annular pessary into the vagina. The sphincter muscle recovers now rapidly, and the pessary is removed after the involution of the genitals has made sufficient progress. [W.K.]

6.—Atlee reviews several cases of **chronic inversion of uterus** and its treatment by Harris who says, "The condition of the uterus must have much to do with the final success or failure of operative measures for replacement. It is evident that there are favorable and impossible periods for the effort of reposition. The favorable time would appear to be: (1) Immediately after the accident, and before the cervix has become contracted; (2) at the end of 7 or 8 weeks, when involution has altered the density of the organ; and (3) when a succession of hemorrhages has rendered the patient thin, pale and anemic, and her tissues soft and yielding. The diagnosis of uncomplicated version is not difficult, but the problem is far different when the inversion is attended with a polypus or there is a large polypus filling the vagina from an inverted womb. Is it impossible to pass the treatment of chronic inversion of the uterus without mentioning the use of the colpeurynter in these cases, and though it has been accused of being unbearable in many cases, and of having caused sepsis, there always remains the possibility of its having been used in ill-advised cases and in an improper manner. Most failures to reduce the inverted uterus by elastic pressure are attributable to the want of judicious adaptation of the force, and lack of perseverance in its use. The attempt should not be to reduce the organ in a short time, but to overcome its rigidity by long-continued and gentle pressure. Atlee in this paper on chronic inversion of the uterus, endeavors to show: (1) That there are times more favorable than others for its replacement; (2) that for each individual case some one particular method will be most likely to be successful; and (3) to demonstrate the great difficulties which may be encountered in certain conditions, to the establishment of a satisfactory diagnosis,

and to bring into review some of the procedures which, in the hands of the most experienced men, have overcome them. [W.K.]

7.—Gordon from his experience in **treatment of gallstones** has reached the following conclusions: 1. Operations should be performed after it is well established, by repeated attacks, that gallstones are present. 2. Gallstones may be present in the bladder for years without giving colic, but they are a cause of more or less digestive disturbance and impairment of the general health. 3. From his experience in 1 or 2 cases, and from reports from the Maine General and other hospitals, he is satisfied that many cases are better treated at the time of operation, by closing the bladder, dropping it back into the cavity, and closing the abdominal wound. 4. Cases treated by drainage are, in many instances, slow to recover, and liable to be left with biliary fistula for a long time. 5. Great care should be used to cleanse the bladder before closing it, rendering it as nearly aseptic as possible. 6. While cases of recurrence of gallstones may follow operation, he believes they are no more liable to return after closing than after drainage. [W.K.]

The Journal of Mental and Nervous Diseases.

August, 1900. [Vol. xxvii, No. 8.]

1. Autopsy in a Case of Adiposis Dolorosa, with Microscopic Examination. F. X. DERCUM.
2. Imperative Ideas in the Sane and their Management. EDWARD B. ANGELL.
3. Christian Pseudo-Science and Psychiatry. SMITH BAKER.
4. A Case of Monocular Hysterical Amaurosis in a Girl, 11 Years of Age. C. A. VEASEY.
5. On the Use of a New and Efficient Hypnotic in the Treatment of the Insane; Chloretone. J. PERCY WADE.

1.—Dercum reports the results of a necropsy upon the case of **adiposis dolorosa**, originally reported by him in 1888. Briefly, the patient, at the time of death, a woman of 63, had noticed, at about the age of 49, some enlargement of the arms, which became deformed by the development of huge, subcutaneous, nodular masses. There was slight diminution of cutaneous sensibility in various regions. Subsequently, the swelling became more extensive, although even at the time of death the hands, feet, and face remained uninvolved. There was considerable tenderness and occasionally subcutaneous pain. The skin was dry, and occasionally the temperature was subnormal. At necropsy, the subcutaneous masses were found to be ordinary fat, and nerves passing through this tissue showed diminution in fibers and slight sclerosis. There was slight degeneration in the column of Goll, in the upper thoracic and cervical regions of the spinal cord; otherwise, the nervous system, with the exception of slight increase of pigment in the nerve-cells, was normal. The pituitary body was normal, the thyroid glands were small, but upon examination showed signs of active proliferation, and excess of secretion. Dercum admits that it is very difficult to explain the nature of this case. He notes that in 2 previous cases the thyroid glands macroscopically showed evidence of change. [J.S.]

2.—Angell believes that we should sharply distinguish between **imperative ideas** which are morbid suggestions that the patient wishes to resist but cannot, and **fixed ideas** with which psychological reaction is in harmony. An imperative idea requires a center that suddenly and isolatedly enters into function, its action being not required by the mental needs of the moment, while at the same time there is temporary impotence of the will to remove an obsession. The treatment of these conditions involves of course the removal of any underlying physical condition, either in the form of exhaustion or functional perversion. This, however, does not always relieve the mind. In order to secure the latter it is necessary to occupy the patient, to give him an abundant diversity of activity and interest, and in some cases to use hypnotism. This should not be regarded as having a tendency to produce miraculous effects, but rather should be continued for a long time at decreasing intervals even when apparent cure has been obtained. In addition, mental gymnastics may be employed with advantage. [J.S.]

3.—Baker has observed that the parents of many children subject to nervous derangements have suffered from some

form of stress or privation before the child was born. In the treatment of these conditions, he prefers **intellectual development to hypnotism**. In discussion of this paper, Mitchell reported an interesting case in which a patient, with an imperative concept for repeating certain actions, was practically cured by being pinched on each occasion by a relative. Mitchell expresses himself as convinced that hypnotism is practically useless in the treatment of nervous disease. Sachs mentioned that in his own case when a boy he had a dread of the number 2 or multiples of it. [J.S.]

4.—Veasey reports a case of **hysteric amaurosis** occurring in the left eye of a girl of 11. When first examined there was no perception in this eye even to concentrated light, but subsequently it was found that she could see normally. The color fields were contracted and inverted, and there was anesthesia over the conjunctiva of the left eye. Vision was restored so soon as the child was convinced that she could see with the eye. [J.S.]

5.—Wade is enthusiastic over the value of **chloretone in the treatment of the insane**. He finds that it has no bad effect upon respiration or circulation. It is a moderate general anesthetic, a local anesthetic, and does not disturb the digestive system. The dose required is considerably greater than has been ordinarily recommended, at least 15 grains, and the average dose that he administered was 35 grains. It seems to have some curative effect in cases of mania and of agitated melancholia. He reports 18 cases of various conditions in which it was used with advantage. [J.S.]

September, 1900. [Vol. xxvii, No. 9.]

1. The Anatomic-Cytologic Relationship of the Neuron to Disease of the Nervous System. LEVELLYS F. BARKER.
2. The Pathologic Changes in the Neuron in Nervous Disease. WILLIAM G. SPILLER.
3. How Does the Neuron Doctrine Affect the Conception of Nervous Disease? B. SACHS.

1.—Barker discusses the **histology of the nervous system**, particularly in regard to the "nerve unit" or neuron. He prefers to apply the term perikaryon to the "nerve-cell" proper, as this latter is so often applied wrongly to the whole neuron by many textbooks. Nerve-cells differ from other tissue-cells in their variability of appearance in different parts of the system, making their positions easily recognized. Like other tissue-cells, there is a questionable connection between the elements of the nervous system in 3 ways: The terminal expansion of an axon around a perikaryon; close apposition and a possible fusion of the terminal fibrils of axones with dendrites and perikaryons; and the passage of fine fibrils from one neuron to another. A history is given of the development of our present knowledge of the neuron and its 3 divisions—the perikaryon, axons, and dendrites, and the important part played in these discoveries by neuropathology by the study of degenerative changes. After the establishment of the neuron doctrine came accessory theories, important among which are: The complete independence of each nerve-unit, except by contiguity; the theory of ameboid movements of the processes; and various theories concerning the structure of the conducting portion of the neuron. Most of the objections raised against the neuron doctrine have been urged really more against one of these accessory theories. Three methods of communication between the elements have been established: Occasional anastomoses between dendrites; intimate protoplasmic relations between terminals and collaterals of one axon with perikaryons and dendrites of other elements; and fibrillary communications from one neuron to another. The author mentions the investigations of several men, showing that the conducting substance of the neuron is the fibrillary structure which is seen in the perikaryon, dendrites, and axons, and the penetration of these fibrils into muscle, glandular, and other cells. Bethe has announced that the fibrils entering the cell-body by dendrites may be traced to pass out through other dendrites as well as the axon. In conclusion, the author does not state an opinion as to the contact theories, but advises precision in the use of names applied to the 3 parts of the neuron. [J.S.]

2.—Spiller says that if an axon is cut or affected by disease, the cell-body undergoes alterations, the intensity of

which depends probably in the nearness to it of the seat of injury. These changes may consist in chromatolysis, deformity or displacement of the nucleus, or complete disappearance of the cell-body. They are probably not rapid, especially if the injury is near the distal end of the axon. In chronic diseases affecting the axis cylinder, no changes may be seen in the cell-body, particularly if the lesion is far distant from it. In such cases the cell-body may have recovered. **Chromatolysis** is, therefore, of doubtful value to show degeneration. A case of hip-joint amputation is cited with death 5 days after the operation; the cells in the anterior horn in that side stained badly and showed chromatolysis, while those on the other side were normal. All parts of the neuron are not affected promptly in disease of the cell-body, showing that while it lives and is not too much altered, it still has some effect on the life of the axon. The latter is dependent on the cell body to appropriate nourishment brought to it by its blood-supply at its distal parts, but if this blood-supply be cut off, that portion of it will die. It is possible for certain poisons to affect entire neurons. These remarks apply to the peripheral motor neurons, but the same changes may be observed in the central ones. In the peripheral sensory neurons, if the peripheral process of the axon be destroyed, degenerative changes are seen in the cell-bodies of the spinal ganglia, but if the injury be to the central process, no such changes will be found. This has been noted in cases of tabes. When focal lesions occur in one set of neurons causing secondary degenerations, it is not frequent to have tertiary degenerative changes in another set, although cases are reported, as in some of hemiplegia with secondary degeneration of the pyramidal tract, the cells of the anterior horns were found to show alterations. The author prefers the term "tertiary atrophy" in such cases. There is no evidence that disease of a sensory neuron results from that of a motor neuron. Degenerations may extend from one neuron to another, but not frequently enough to disprove the neuron theory. [J.S.]

3.—Sachs does not think the **neuron doctrine** has been of as much assistance in the study of the causation of nervous diseases as was expected of it at first, although it has assisted in a better classification of such disorders, and in clearing up many doubtful facts. It is of assistance in the investigation of toxic diseases. In tabes the disease is in the sensory neuron and the axon is first affected. The ganglion cell could not be altered without this primary change, bringing about alterations in the stimuli carried to the cell-body. Syphilitic poisons affect chiefly the sensory neurons, while other poisons usually pick out the motor ones. The doctrine has given us a "better understanding of the spinal form of progressive muscular atrophy and its relations to progressive bulbar palsy and to amyotrophic lateral sclerosis." In the first 2 we have primary degeneration in the direct motor neuron, while in the latter there is the same degeneration in the direct motor neuron as well. Conflicting views on the causes of the changes in progressive muscular atrophies and dystrophies may be reconciled somewhat by the neuron theory. If the view is accepted that disease of one neuron may affect the neighboring part of another—"that disease affects parts functionally if not structurally related"—the combined scleroses of the cord are more readily understood. The neuron theory cannot be applied to the interpretation of mental or functional disease. [J.S.]

Archives of Pediatrics.

August, 1900. [Vol. xvii, No. 8.]

1. Three Cases of Head-Nodding and Head-Rotation in Rachitic Infants. D. J. MILTON MILLER.
2. Nasopharyngeal Disease in Pediatric Practice. FRANCIS HUBER.
3. Perforation of a Tuberculous Lymph-Node Into the Trachea. Sudden Death. A. CAILLE.
4. Intussusception in an Infant Four Months Old, Relieved by Injection. ALFRED HAND, JR.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1000.

2.—" " " " " p. 1171.

3.—" " " " " p. 999.

4.—Hand reports the case of a 4-months-old, breastfed

infant, that was taken ill with symptoms of intestinal colic. When first seen the temperature was 101° F., pulse 150, and there was a tumor in the line of the descending colon. Floating spleen and kidney were excluded and a diagnosis of **intussusception** was made. Five drops of paregoric were at once given by mouth, a wet flaxseed poultice was applied, and in an hour an **injection** was given. While the left hand manipulated the tumor, during the injection, it suddenly disappeared. The bowels moved 5 hours after the injection. Six days after the beginning of the illness and just after nursing the patient began to vomit, had diarrhea, a temperature of 102°, and presented an indistinct, tender mass in the location of the tumor. Under paregoric and poultices, followed by lime water and cinnamon water, and, later, by bismuth subnitrate, the condition subsided. The case shows that intussusception is by no means cured when reduction is accomplished; but that the **secondary enteritis** may cause many anxious moments. [J.M.S.]

September, 1900. [Vol. xvii, No. 9.]

1. Enteric Fever in Childhood. A. D. BLACKADER.
2. Exclusive Soup Diet and Rectal Irrigation in Typhoid Fever. A. SEIBERT.
3. Two Cases of Fatal Lead Poisoning. ALLEN BAINES.
4. General Subcutaneous Emphysema. A. C. COTTON.
5. A Case of Hysteria with Laryngeal Manifestations in a Boy of Eleven Years. C. HERMAN.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 999.

2.—Seibert claims that patients fed on milk during an attack of typhoid fever (a specific form of enteritis) are but little better off at present than former patients were during an attack of summer-complaint, with milk and opium-mixtures in their intestines. If the majority of typhoid-fever patients fed on milk were not adults, but children, the percentage of typhoid-fever mortality at present would equal that of gastroenteritis of former years. He tried **feeding typhoid-fever patients** on a fluid diet, not including milk; at first strained soups made of meat-broths, containing oatmeal, barley, rice, and peas, well spiced with salt and pepper; and later lentil soup and the yolk of a fresh egg added to the oatmeal; rice, and barley soups were given so as to allow an adult $\frac{1}{2}$ pint of 2 kinds of soup alternately every 3 hours, and smaller quantities to children according to age. Five meals in all were given during the day. In addition, every typhoid patient was given from 2 to 4 **rectal enemas** of plain, warm water daily. As a result of this treatment, delirium, headache, insomnia, nausea, vomiting, and tympanites usually disappeared within 48 hours. Tympanites, nausea, and vomiting did not develop in any patient, even when pneumonia was present. The fur on the tongue disappeared within a few days. The appetite came frequently on the fourth day of treatment, even when the thermometer registered 102° to 103° F. Excessive diarrhea (15 to 25 stools daily) invariably disappeared within the first week of treatment. In all uncomplicated cases the temperature began to decline within 24 to 48 hours after the beginning of treatment, and invariably reached the normal within 10 to 12 days. In cases complicated by pneumonia, nephritis, or phlebitis, when treatment began the temperature usually remained in accord with the inflammatory conditions found until these also disappeared, while the cerebral, gastric, and intestinal disturbances, excepting anorexia, usually subsided as rapidly as in the uncomplicated cases. Complications, when not present at the start, were very rare, and then usually developed within the first 2 days. Intestinal hemorrhage was noticed in 3 cases, none of which ended fatally, while perforation did not occur. [J.M.S.]

3.—Baines reports the case of a boy aged 2 years and 8 months, who died from **lead-poisoning**. The mother of the patient suffered 3 weeks before he was taken ill from a sharp attack of lead colic, and a brother, aged 5 years and 9 months, died from the same cause. The manner of absorption of the lead was unusual; for a week previous to the illness of the first child the meals had been cooked with firewood procured from staves of old barrels which had contained white lead, so that the fumes of lead not only entered into the food, but permeated the atmosphere of the house. The patient had never been ill until November 6, when he had a well-marked convulsion, lasting about 5 minutes. He recovered completely from this attack and was quite well until the

evening of the 19th, when he had 4 convulsions within a few hours. Each convulsion lasted from 3 to 6 minutes. The child was practically unconscious from the first convulsion, rousing slightly at intervals for a few moments; he had frequent attacks of vomiting, and his bowels for a few days were somewhat constipated. During the convulsions the face would first become flushed, the eyes would open wide, then become fixed and staring, the pupils were widely dilated. Then the eyes would roll about, the eyelids and the lips begin to twitch, and soon whole sets of muscles, of the face, the arms, the legs, and the body would become involved; every convulsion beginning above and extending downwards. During these attacks the patient gave vent to a peculiar grunting moan; there was no opisthotonus. A brother of the patient, aged 5 years and 9 months, for 3 or 4 days had severe pain in abdomen; the bowels were obstinately constipated, and these symptoms terminated in a convulsion of the entire body. Whilst awaiting admission to the hospital he had a series of 7 or 8 convulsions in 20 minutes. These attacks differed, some being general, some unilateral, mostly right side, and, as in the case of the first patient, resulted in semicoma. The 2 children lived for nearly the same time to an hour, about 3 days. Four ounces of urine from the second patient contained 4 mg. of lead. The convulsions were many, 95 on the first day and 18 during the night. Towards morning the convulsions ceased, but the patient gradually became weaker and died. Necropsy revealed nothing markedly abnormal. Bacteriologic examination resulted in the isolation from the brain and lung of a diplococcus that was fatal to mice. [J.M.S.]

4.—Cotton reports the case of a girl, aged 7½ years, who had been active and apparently in good health until July 4, 1899, when she had an attack of measles, followed by bronchitis. She had never been well and strong since this illness. The cough persisted and she "seemed to take cold easily." In February, 1900, she had a severe attack of bronchitis and during this illness there was a daily afternoon rise of temperature, with profuse night-sweats. This latter symptom had been present for some weeks, but to a less marked degree. On March 16, after a very hard coughing spell, a ridge appeared over the right clavicle. The cough continued paroxysmal and frequent, and the gradual extension of this cushiony ridge in all directions occurred. There was no history of convulsions or edema. The urine had been scanty and turbid. The patient was held by her grandmother in a sitting posture, slightly bending forwards. The face presented a swollen appearance; the lower lids particularly were enormously distended. The skin had a peculiar, waxy color, the lips were somewhat cyanotic and the expression was anxious. Examination of the surface showed great distention about the neck and chest, completely obliterating the clavicular depressions, and extending downward over the trunk, especially in the dorsolumbar region along each side of the spine. Pressure elicited distinct crepitation and left no pitting. The child resisted all efforts to assume any other position than the one mentioned. Her attention was wholly bent upon securing air and repressing the frequently recurring cough. The respirations were shallow and rapid (50 per minute); the pulse was rapid and barely perceptible; the temperature was 102° F. Physical examination by percussion was difficult on account of hyperesthesia. It was possible, however, to make out hyperresonance over the greater portion of the chest. From the symptoms the diagnosis of **generalized subcutaneous emphysema** was made. During the 6 days of life, infiltration of the subcutaneous tissue extended, involving both upper and lower extremities with the exception of the palms of the hands and the soles of the feet; the skin became tense and shiny. The urine showed considerable amount of albumin. [J.M.S.]

5.—Herman reports the case of a boy, 11 years old, the oldest of 4 children. The child's mother is easily excited and is subject to attacks of unconsciousness. One other child is, according to the mother, "peculiar." When the patient was 4 years old he had an attack of scarlet fever; he has had no convulsions, but has had frequent headaches. The present illness began 8 weeks ago with eructations. This was followed in a few days by the **laryngeal attacks** that consist of a long deep inspiration, with a simultaneous spasm of the glottis, causing a sound similar to that of laryngismus stridulus, but much louder and shriller; they recur at intervals of from 10 to 15 minutes, and cease during sleep.

The frequency of the attacks is affected by surroundings; at home they are much more frequent than in other places. This is principally due to the familiarity of his surrounding, and possibly partly also to the impurity of the air in small, ill-ventilated rooms. In the presence of a number of strangers the attacks are much less frequent. For example, when riding in the cars, he is able to control the attacks, because the attention attracted by so peculiar a sound causes him to feel ashamed. The condition is considered by Herman to be **hysteric**. [J.M.S.]

Edinburgh Medical Journal.

July, 1900. [Vol. viii, No. 1.]

1. Clinical Lectures on Circulatory Affections. Lecture I. Persistence of the Arterial Duct and its Diagnosis. G. A. GIBSON.
2. Would it not be a Gain to both Pathology and Practice if a Direct Interaction between the Morbific Agent (Noxa) and the Reparative Effort were Recognized, and the Conception of an Intermediate so-called Inflammatory Process Abandoned? ANDREW H. SMITH.
3. Points of Practical Interest in Surgical Gynecology. III. The Therapeutics of Disorders of Menstruation. H. MACNAUGHTON JONES.
4. Clinical Notes on Cases of Beriberi. J. O. AFFLECK.
5. Acute Infantile Intussusception, with Special Reference to Treatment by Primary Laparotomy. W. BLAIR BELL.
6. Some Results of Antistreptococcus Serum. F. J. HARVEY BATEMAN.
7. Two Cases of Agoraphobia Cured by Hypnotic Suggestion. CHARLES LLOYD TUCKEY.
8. A Case of Retroverted Gravid Uterus, with Remarks. G. R. FRASER.

1.—Gibson contributes a clinical lecture on the **persistence of the arterial duct and its diagnosis**. In consequence of the higher pressure of the blood in the aorta as compared with the pressure in the pulmonary artery, there must be a current from the former to the latter, in case the ductus arteriosus is patulous, and this stream will be almost continuous. The blood will flow with greatest velocity during and immediately after the ventricular systole, when the pressure in the aorta is at its highest. It must, therefore, be expected that the condition will be evidenced by a long murmur, beginning a little after the commencement of the first sound, filling up the short pause and continuing beyond the second sound. The murmur is almost invariably accompanied by a thrill. Both murmur and thrill are heard with maximum intensity in the second or third left interspace, just outside of or below the pulmonary area. The clinical and pathologic history of a fatal case is given. The condition may give rise to no symptoms and the diagnosis is based upon the physical signs alone. [J.M.S.]

2.—Smith makes a plea for the abandonment of the idea of **inflammation** being a **definite pathologic process** and lays stress instead upon the fact that it is a method by which nature rids the body of foreign matter and by which she replaces lost tissue. By abandoning the old idea the medical nomenclature would necessarily be changed—by the dropping of the affix "itis." He suggests in its place "osis," streptocosis then meaning an infection by the streptococcus; staphylocosis, an infection by the staphylococcus, etc. Pericardosis would indicate an infection of the pericardium and pericardial pneumocosis an infection of the pericardium by the pneumococcus. [J.M.S.]

3.—In considering the subject of the **therapeutics of disorders of the menstruation**, Jones subdivides it into three heads,—hygienic, medicinal, and operative. Under the first we include, in the treatment of suppression or absence of the catamenia, suitable gymnastic exercises, embracing a course of Swedish movements and massage. With this may be combined the external and internal use of galvanism or faradization. Cycling and other outdoor sports, when not overdone, are decidedly advantageous. Suitable hydropathic treatment at the various spas occupies a prominent place in menstrual therapeutics. In regard to internal medication, senecin in 2 to 6 gr. doses is very valuable. It may be used alone or with hydrastis or with hydrastinine. The latter drug is useful in congestive and spasmodic dysmenorrhea, the more so if combined in the administration

with the bromids. An admirable combination that may be given in pill, while the dioxid is given in palatinoid, is that of dried iron sulphate, quinin, extract of nux vomica, and arsenic acid. Of the coaltar products for the pain of dysmenorrhea he believes antipyrin or phenalgin in combination to be the best. The vascular tonics, strophanthus and digitalis, are indispensable in those cases where there is cardiac irregularities, enfeebled action, mitral stenosis, etc. In regard to the third head, or surgical treatment, he believes that obvious or gross changes should, in the female genitalia, as elsewhere in the body, be dealt with on broad general principles. Useless and diseased parts should be removed, useful and healthy portions of organs preserved, and, with the comparatively slight risks involved in the modern operations of colpotomy and laparotomy, especially the former, there is no surgical excuse for procrastination in dealing with conditions that may sooner or later destroy not only an organ but a life. [W.K.]

4.—Affleck reports 5 cases of **beriberi** that occurred in adults and 1 case that occurred in a child. The adults were all seafaring men and in each case they had come from a tropical or a subtropical region. Each case presented the characteristic features of a peripheral neuritis and, in addition, the majority had more or less edema of the legs. In the case of the child there had been recurring attacks of vomiting, widespread paresis of the legs and arms, together with some edema. When the patient was seen there was evidence of a peripheral neuritis in the lower limb which gave rise to the steppage gait as well as to various sensory abnormalities. The patients rapidly improved by very simple treatment. Bacteriologic examination of the blood of 3 of the cases was negative. [J.M.S.]

5.—Bell considers **acute infantile intussusception**, giving a concise yet full review of the etiology and symptomatology. He condemns the use of the injection method in treatment and advocates laparotomy at the earliest possible moment after diagnosis as the best and only treatment, claiming that with judicious after-treatment there would be but a small percentage of deaths. He thinks that manipulation may usually be effective in reducing the intussusception and commends Maunsell's method of enterorrhaphy as having the great advantage of rapidity; he also recommends, when ordinary reduction is impossible, the making of quite a short incision through the 2 layers of the intussusciens down to the intussusceptum, freeing the adhesions with a probe, and by pressure from below reducing the intussusception, when the long incision into the bowel may be closed by Lembert sutures. This should only be employed when there is nothing to point to excision, *i. e.*, when moderate adhesions only are the cause of irreducibility. After-treatment, in his opinion, should include full nourishment of the child, since many cases of death are due to starvation and consequent exhaustion. He thinks that surgeons often overlook the fact that in this condition the child has taken little food for 24 hours or more before operation. [M.B.T.]

6.—Bateman reports 3 cases in which **antistreptococcus serum** was used. The first patient was a woman of 39, who suffered from septic pneumonia, following the puerperium. Exploratory puncture of the right pleura was negative, and, although bacteriologic evidence was wanting, the serum was given in small doses, first 1 cc., then 2 cc., and finally 3 cc., daily. The patient recovered. The second patient was a woman of 27, who also had septic pneumonia following the puerperium. There was a right-sided purulent pleural effusion of 22 ounces, which was withdrawn and found to contain streptococci. The empyema was tapped twice more, and then developed a pneumothorax in addition, for which a portion of the eighth rib was resected. Antistreptococcus serum, in daily doses of 1 cc., was given after the operation, and, with the exception of a labial abscess, recovery was uncomplicated. The third patient was a woman of 26, who had vague signs of puerperal sepsis, for which she was given 10 cc. antistreptococcus serum, with some temporary benefit. Six other injections seemed to have no effect. The patient had pericarditis, was restless, and presented an erythematous rash, which desquamated. She died suddenly from heart-failure. For 6 days she received a daily dose of 1 cc. of antistreptococcus serum. There was no autopsy.

7.—Tuckey reports two cases of **agoraphobia** that were cured by hypnotic suggestion. The first patient was a young woman, aged 26, and the second was a man of 37. [J.M.S.]

8.—Fraser reports a case of retroverted uterus which had become incarcerated, the patient was about 3 months pregnant and suffering very much from distention of the bladder. After failing to pass the female catheter, a fine, flexible, male catheter was inserted and a large quantity of urine drawn off. After allowing the patient some time to rest after this relief, she was placed on knees and elbows and the first two fingers of the left hand, suitably prepared, were now gradually worked up the rectum. After 8 or 10 minutes' firm, steady upward pressure, and when he was beginning to despair of any result, complete reposition took place suddenly and the patient was completely relieved. No vesical or other trouble followed. [W.K.]

August, 1900. [Vol. viii, No. 2.]

1. The Feeding of Phthisical Patients in Relation to the Wasting of the Body. V. DORMER HARRIS.
2. The Treatment of Simple Goiter in Young Adults. GEORGE R. MURRAY.
3. Points of Practical Interest in Surgical Gynecology. H. MACNAUGHTON JONES.
4. The Action of the Heart in Mitral Stenosis. C. C. GIBBS.
5. Remarks on the Treatment of Dacryocystitis and Lachrymal Obstruction. W. ERNEST THOMSON.
6. Suppression of Urine Following Cystitis. J. LAMOND LACKIE.
7. Uterovaginal Fistula, with Notes of a Case for which Ureterocystostomy was Performed. E. ARTHUR GIBSON.
8. A Case of Adolescent General Paralysis. AGNES L. BENNETT.
9. Notes from Fever Wards. J. G. McNAUGHTON.

1.—Harris's experience in **pulmonary tuberculosis** has been that at the beginning of definite illness the weight of the patient has begun to diminish, and that this diminution in weight has gone steadily on until the patient put himself under treatment. The two chief means that we have at our disposal for the **treatment of wasting in phthisis**, even when there is marked fever present, are (1) rest and (2) regulated feeding. The object that we should aim at is not to increase the weight of the patient by a mere disposition of fat; but rather to set up a more healthy metabolism in the tissues, and especially in the muscles, in which so much of the active metabolism takes place. It is unwise to increase any one of the 3 varieties of foodstuffs to any large extent at the expense of the others. Even at the risk of retarding the marked increase in weight, if any one of the 3 kinds of foodstuffs is to be increased, it should be the proteid. The following methods may be employed to combat anorexia: (1) Give the food in the most appetizing form possible; (2) give frequent small meals; (3) direct the patient to eat the amount of food given him, even if he has no appetite; and (4) forced feeding. Various proteid productions are to be obtained that consist almost entirely of albumoses, and when the digestion is markedly below normal recourse might well be had to some of these. [J.M.S.]

2.—The most favorable cases of **goiter for medical treatment** are undoubtedly those of simple parenchymatous enlargement of the thyroid gland, occurring in **adolescents and young adults**. In these cases, treatment by thyroid extract, so as to supply for a time the excess of secretion which is required from an external source, is of great service. Liquid extract or dry thyroid may be given. The former may be given in doses of 15 minims 2 or 3 times a day, while the latter may be given in doses of 3 or more grains, at the same intervals. Murray reports the case of a girl, aged 13 years, in whom both lobes, as well as the isthmus of the thyroid gland, were greatly enlarged. Treatment was commenced on March 21, and in 5 days the goiter had distinctly diminished in size. Between March 21 and April 12 the circumference of the neck had diminished from 16½ inches to 13¾ inches. A second case was that of a boy, aged 16, who had a considerable uniform enlargement of both lobes and the isthmus of the thyroid body. Dry thyroid in 3-grain doses, twice a day, and red iodid of mercury ointment by inunction nightly, caused steady reduction in the size of the goiter until it appeared only half as large as it had been. A third case was that of a girl, aged 13, who had a considerable uniform enlargement of the thyroid body that caused dyspnea. Similar treatment caused relief of the dyspnea, and

the circumference of the neck was reduced about 3 inches. The author is of the opinion that in all case of goiter which are to be subjected to operation, the patient should be treated by thyroid extract for 2 or 3 weeks before the operation, so as to reduce the size of the goiter, and so that the superficial veins may be reduced in size, and the operation, in consequence, be more easily performed. [J.M.S.]

3.—Jones in the fourth of a series of articles on **surgical gynecology**, speaking of the influence of conservatism upon operative technic, says there is nothing in the teaching of present-day leaders in gynecology that justifies the removal of unhealthy parts, which experience has proved may in time be restored to health and the discharge of their normal functions; and certainly nothing to warrant any mutilation of the genitalia, on the assumption of the probability that such removal may be called for in the future. Touching the question of carcinoma, he holds that malignant disease of the uterus of any type demands early and complete removal of that organ and its appendages. Conservative measures should be used only when operation is contraindicated. The presence of lacerations of the cervix is a predisposing cause to cancer. Neither should there be long delay in case of tumors of uterus or adnexa. The policy of delay works badly every way. Women continue to be invalids, many die from intercurrent attacks of peritonitis, and those who live do so with lessened chances of recovery when they submit to operation, and greatly increased risks of but partial restoration to health. [W.K.]

4.—Gibbs is of the opinion that the **presystolic murmur of mitral stenosis** is composed of 3 parts: (1) The audible right ventricular vibrations. In consequence of the lack of synchronous action of the two ventricles a portion of the systole of the right ventricle takes place and its muscular vibrations are heard while the left ventricle is in diastole. (2) A murmur caused by the flow of blood from the left auricle into the left ventricle. (3) The slapping first sound. The author's experience leads him to believe that in pure mitral stenosis the apex beat is always formed by the right ventricle and that the left ventricle is not in contact with the chest-wall. He considers that the predominant feature of mitral stenosis is the want of synchronism in the action of the 2 ventricles, the right assuming in part the function as well as the rhythm of the left auricle. [J.M.S.]

6.—Lackie reports a case of **suppression of urine** following cystitis. The patient, aged 43, enjoyed perfect health until about 9 years ago, when she began to suffer from distressingly frequent and painful micturition, followed by the passage of a few drops of blood. Examination of the urine showed the presence of pus, blood, mucus, and phosphates, but no renal casts were found. The usual general management failed to bring any relief, and as she seemed to be growing worse, the urethra was dilated and the bladder thoroughly explored. This brought relief from the distressing symptoms, but resulted in incontinence of urine. She however felt so well that she returned home, and supplying herself with a portable urinal was able to live quite comfortably. Eight years later Lackie was called to see the same patient, who had been pretty well until a fortnight before she began to suffer from nausea and vomiting, and for 8 days had passed no urine. After 2 days' treatment, the urine, which was found to contain albumin, pus, and tube-casts, but no blood, began to flow freely. She continued to improve for 8 days, when somewhat suddenly all her former symptoms returned. She had intense sickness and vomiting, complicate suppression of urine again, and she gradually lapsed into a comatose state and died 4 days later. A postmortem showed that the substance of the left kidney had been entirely replaced by tuberculous caseous material, and the ureter was greatly atrophied and absolutely occluded near the bladder, and the right had been the seat of a recent very acute catarrhal nephritis. This, then, was a case of nonobstructive suppression of urine in which the patient died without any marked symptoms of uremia whatever. This supports the modern view that the symptoms from obstructive and nonobstructive anuria may be exactly similar. [W.K.]

7.—Gibson reports a case of **ureterovaginal fistula** cured by ureterocystotomy. He has no doubt the cause of the fistula was a silk ligature used to control the hemorrhage from adhesions at the time of a former vaginal hysterectomy. Had the suture been of less persistent material the ureter would undoubtedly have resumed its function after the

absorption of the ligature. He considers ureterocystotomy preferable to any plastic operation, to either partial or total colpocleisis, or to nephrectomy; indeed, the last is not to be thought of unless the kidney is badly diseased. [W.K.]

8.—Agnes Bennett reports a case of **adolescent general paralysis** in a young man of 19. The patient walked in a heavy, slow, clumsy, and unsteady manner, with a wide base, rolling from side to side. The awkwardness was increased by a moderate degree of flat-foot. The tongue was protruded in an incoordinate manner. The speech was nasal, slow, blurred, and jerky, and there were often pauses in the effort to articulate. The speech rapidly became more unintelligible. At one moment the patient was laughing and bright; again he would behave like a spoiled child. He was incapable of any prolonged mental exertion. The father of the patient was phthisical, suffered from kidney disease, and had had a paralytic shock. At the age of 9 months the patient developed hydrocephalus. He began to walk at 12 months, but very soon discontinued, and did not again attempt it until he was 4 years old. He went to work in the coal-pits, where he worked till about 2 years ago, when he was dismissed on account of increasing incapacity for work and weak-mindedness. [J.M.S.]

9.—Out of 2,600 cases of **scarlet fever** under W. Naughton's observation in 1 year, there occurred 62 cases of **arthritis**; 45 females and 17 males. The wrists, the knees, the phalanges, and the elbows were most frequently involved in the order given. Occasionally one found a functional bruit over the heart, but in no case was endocarditis or its results present. Pyemic joints were found once in 4,000 cases. The 62 cases mentioned are believed to be septicemic and due either to the germ of scarlet fever or to cocci which have followed them, so that they are analogous to the rheumatism one finds in the course of gonorrhea. Six cases with affected joints had some form of heart-lesion. The author reported also a case of **scarlet fever and chorea**. Another patient was a male, aged 10 years, who had **malignant scarlet fever**. The patient was quite delirious, passed urine and feces in bed; and picked the clothing. He became cold, collapsed and cyanosed, but recovered. Then double otorrhea developed, followed by double cellulitis in the neck. The patient eventually made a good recovery. The author also reports a case of **scarlet fever and psoriasis**, and one of **scarlet fever and meningitis** in a female child aged 3 years. [J.M.S.]

Münchener medicinische Wochenschrift.

July 24, 1900. [47. Jahrg., No. 30]

1. The Normal Respiratory Liver Flexion and the Cause of the So-called Expiration Grooves of the Liver. KARL WALZ.
2. Butyric-Acid Bacilli and Their Relation to the Gas Phlegmon. SCHATTENFROH and GRASSBERGEN.
3. Nutrition Physiology of Infants. BERNHARD BENDIX.
4. The Knowledge and Treatment of Diseases which are Dependent on Autointoxication. F. BLUM.
5. Observation Stations for Lung Diseases. E. RUMPF.
6. A Case of Instruments for Stomach-Examination. D. SCHILLING.
7. Experimental Examinations Concerning Hand-Disinfection. TH. PAUL and O. SARWEY.
8. Similar Experiments Concerning the Value of Mechanical and Alcohol Disinfection of the Hands as Opposed to Disinfection with Mercurial Salts. B. KRÖNIG and M. BLUMBERG.
9. Some Remarks Upon the Work of Dr. Deckart. RUDOLF BIERMER.

1.—Various theories have been advanced to explain the peculiar **furrows** frequently seen **on the upper surface of the liver**. Walz reviews them critically and comes to the conclusion that the bending of the liver occurring normally during respiration has a good deal to do with their production. In physiologic conditions, the flattening of the diaphragm in inspiration brings about a bending of the liver in such a way that the lateral portions are forced upward by the air-pressure, while the middle portion is forced downward. This causes a compression of the upper and a stretching of the lower half. The bending is most marked in the

sagittal direction along the weakest part of the liver, *i. e.*, the line of the fissures. During expiration the opposite conditions are produced. All conditions which induce a flattening of the dome of the diaphragm or of isolated parts of the latter are capable of producing flattening, and eventually a furrowing of the liver. In typical cases these furrows run in the sagittal direction, corresponding to the direction of the furrows on the lower surface. The sagittal furrows are, therefore, a consequence of an abnormally increased bending of the liver. They cannot be called either inspiration or expiration or diaphragmatic furrows, as has been done, but only flexion furrows. [D.R.]

3.—**Pregnancy occurring during lactation** can bring about a marked reduction in the quantity of milk with eventual cessation of flow. Particularly healthy women may, however, be capable of nursing their children during pregnancy. As a rule, it is well to wait until there are indications that the child is not thriving before taking it from the breast. [D.R.]

4.—The following are the theses enunciated by Blum: 1. Poisons constantly arise in the organism which under normal conditions are neutralized by the thyroid gland. 2. These poisons originate in the intestinal tract (enterotoxins), most probably as the result of decomposition of albumins. 3. If the activity of the thyroid gland is suspended and the enterotoxins are enabled to act, they produce grave disturbances associated with demonstrable anatomic changes. In acute cases only the central nervous system is altered; in more chronic cases the kidneys suffer. 4. Those animals which either spontaneously or after treatment remain healthy after extirpation of the thyroid gland, or recover from its effects, possess in their blood protective substances against the enterotoxins. 5. In the transit through the thyroid gland the enterotoxins are deposited as highly molecular compounds (thyrotoxalbumins) and are gradually rendered harmless. The iodine-substance of the gland formerly considered as specific, is only an intermediate specific in the transformation process. 6. To this thyrotoxalbumin, which in normal conditions of the gland never enters the circulation, there exists a natural, as well as an acquired immunity. 7. Immunity to the enterotoxins does not involve immunity to the thyrotoxalbumins, and vice versa. 8. Animal experiments render it highly probable that even in man several diseases occur which are connected with intestinal changes and insufficiency of the thyroid gland. The experiments also modify the existing concepts regarding the nature of certain diseases of the thyroid, particularly myxedema and Graves' disease. 9. Therapeutic measures also follow from the experiments. [D.R.]

5.—Rumpf complains that too many cases of advanced tuberculosis are sent into the sanatoria, and considers the erection of stations for observation of cases a necessity. [D.R.]

6.—A description of a portable case containing the necessary utensils for making an examination of the stomach and its contents. [D.R.]

8.—Krönig and Blumberg sum up the results of their researches over the value of the different methods of **hand-disinfection** as follows: 1. The purely mechanical method of disinfecting the hands with just water, soft soap, and brush gives very unsatisfactory results. 2. Ahlfeld's hot water and alcohol method of disinfection will not cleanse hands which have been infected so that all danger of carrying germs to the wound is removed. This method consists in washing the hands for 5 minutes with soap and water, then for 5 minutes more with 96% alcohol. 3. A much better result is obtained when the mechanical method is combined with a solution of one of the salts of mercury. 4. A 3% solution of citrate of mercury and ethylendiamin (10% solution is made as follows: ethylendiamin 4 parts, citrate of mercury 10 parts, and water 86 parts) is much better as a disinfectant for the hands than a 1% sublimate solution. The former does not irritate the surface of the skin, does not form other salts with albumin or the blood, and possesses a more intense and more penetrating bactericidal action. [G.B.W.]

July 31, 1900. [47. Jahrg., No. 31.]

1. Plague Disease Observed in Oporto in 1899. F. REICHE.
2. The Therapeutic Results with the Silver Ointment of Credé. WILHELM STROHMAYER.
3. A Case of Congenital Brain Hernia. BEHM.

4. The Treatment of Infected Perforating Wounds of the Eye-Ball. E. GLAUNING.
5. A Case of Spontaneous Intraocular Hemorrhage which Led to Rupture of the Eye-Ball. WILHELM HAUSENSCHILD.
6. Experimental Researches in Hand Disinfection. TH. PAUL and O. SARWEY.
7. Butyric Acid Bacilli and their Relation to the Gas Phlegmon. SCHATTENFROH and GRASSBERGER.
8. Medico-Botanical Expedition. A. MODEL.
9. The Seventieth Birthday of August v. Rothmund. O. EVERBUSCH.

1.—A clinical description of the **plague at Oporto** in 1899. Regarding the treatment the author does not feel that the small number of cases subjected to the serum-therapy permits a conclusion. [D.R.]

2.—Strohmayer has not seen the vaunted effects of Credé's silver ointment in septic diseases. [D.R.]

3.—Behm reports a case of **congenital cerebral hernia** situated between the smaller fontanel and the occipital protuberance. The tumor was about the size of an egg and was attached by a broad base; it did not increase when the child cried nor decrease in size when pressure was exerted. As continued pressure did not tend to reduce the size of the growth, an operation was determined upon. The tumor was ligated in three portions and removed. There was considerable parenchymatous bleeding, but this was easily controlled by suturing together the overlying structures. There were no unusual symptoms following the operation, and the wound healed readily. The subsequent history of the case was most satisfactory except that at the seat of the operation, a small fluctuating projection developed. Examination of the specimen showed it to be what Bergmann terms an encephalocystocele. A quantity of fibrous tissue separated the tumor from the brain proper. [G.B.W.]

4.—Glauning reports 3 cases of **infected wounds of the eyeball** showing the excellent results which may sometimes be obtained by a paracentesis of the anterior chamber, made with the galvanocautery. This small operation is carried out as follows: After proper instillation of cocaine, a fine platinum electrode heated to a red heat is carried slowly through the various layers of the cornea until the fluid of the anterior chamber flows out through the minute opening. In case a hypopyon exists the pus will readily be expelled. The conjunctiva is then washed out with warm normal salt-solution and both eyes bandaged. Pain developing subsequent to the operation may be controlled by cold applications. If the single puncture does not suffice and the inflammatory symptoms reappear, the procedure should be repeated, but not before 4 or 5 days have elapsed. [G.B.W.]

5.—In this apparently unique case of **rupture of the eyeball** from spontaneous internal hemorrhage, no cause for the bleeding could be discovered, though the patient had suffered from previous attacks of nosebleed. The tear began 1 mm. from the upper border of the cornea, running concentrically for 6 mm., then bending at a right angle went backwards for 4 mm. [G.B.W.]

6.—Paul and Sarwey, as the results of their experiments over hand-disinfection, give the following conclusions: 1. It is not possible to make the hands free from germs by either of the following methods; washing with soft soap, brush and hot water, or washing in running sterile water with either Schleich's marble soap or Sanger's sand soap. 2. It is not possible by any purely mechanical means to remove all the germs from the hands. 3. It is not possible to reach the same amount of disinfection of the hands with mechanical means as it is with chemical, and to obtain the nearest approach to sterility the chemical applications should always follow the mechanical washings. 4. Soft-soap because it contains free alkali should not be used for washing the hands. 5. Schleich's marble soap is very good for cleansing the hands from ordinary dirt, but as it does not thoroughly remove the wax is not so appropriate as a forerunner for the disinfectants. 6. Sanger's sand soap, because it contains ammonia and soda, is an excellent preparation for getting the hands ready for the action of the various disinfecting chemicals. [G.B.W.]

7.—The authors show that the organism producing gaseous phlegmons in human beings belongs to the great group of

butyric acid bacilli. Of these bacilli there are 2 kinds—a motile and a nonmotile. The gas-phlegmon bacillus belongs to the nonmotile variety. [D.R.]

Centralblatt für Gynäkologie.

February, 24, 1900. [24. Jahrg., No. 8.]

1. Remarks on Pressure Therapy for Retroflexion of the Gravid Uterus. A. FUNKE.
2. Upon Laceration of Vaginal Tissues Upon Coitus and Other Rare Cohabitation Injuries. O. SCHAEFFER.
3. Lying-in-Hospitals and Reform of the Hygiene of Delivery and the Puerperium. MAX SPERLING.

1.—Funke considers that the importance and excellence of the **pressure therapy** has been shown in publications by Halbahn, Freund, and himself. The use of the shot-pouch belongs to daily practice in chronic affections of the genitalia and in uterine displacements, being especially adapted to retroflexion of the gravid uterus. He has found pressure therapy very efficacious in 4 such cases, one of which he reports in detail. The bimanual examination of the patient, a woman aged 34, led to a diagnosis of retroflexion of the gravid uterus, the portio vaginalis being above the symphysis and the uterus lying in the pelvis. Into a colpeurynter placed in the vagina, 1,000 grains of quicksilver were introduced and almost immediately withdrawn, when the uterus was found already raised above the symphysis and a much smaller part of it in the small pelvis. The quicksilver colpeurynter was again applied and allowed to remain half an hour, when an examination showed the uterus in an erect position with the fundus 4 to 5 fingers' breadth above the symphysis, a prompt result reached by trifling means. The advantages of this method are its certainty; harmlessness, and freedom from the use of any anesthetic. In using either the shot pouch or the quicksilver colpeurynter for retroflexio uteri gravidi, the application should not continue more than $\frac{1}{2}$ to 1 hour at most. One advantage of the shot pouch is that the direction of the pressure can be changed and corrected, and another is its plastic adaptability to the mechanical conditions of the pelvis (best secured by fine shot), while the quicksilver maintains the roundness of the pouch. This treatment is of value in a large contingent of cases of adnexa tumors, and inflammatory adnexa. The advantage of the quicksilver colpeurynter is that it is tractable and comfortable and is especially adapted to the use of the busy physician who cannot make long or frequent visits, since the patient can herself remove it while she cannot remove the shotpouch. As the introduction of the colpeurynter is often very painful, to obviate this difficulty Funke has contrived an apparatus with 2 pouches of different sizes connected by a glass tube about 30 cm. in length, the larger rubber sac contains the quicksilver while the smaller one by compression can be emptied of air. In this empty condition it is introduced into the vagina, then the other being held above by a slight pressure its contents pass into the smaller one. After the lapse of sufficient time the patient is raised up on a cushion, the larger pouch put in a lower position, and thus the quicksilver with a slight pressure is withdrawn. [W.K.]

3.—Sperling refers to the establishment of **lying-in hospitals** in different states throughout Germany during the last 20 years, and their value as places for the instruction and training of midwives in the asepsis and antisepsis of obstetrics. As the midwives are the chief obstetricians for the masses of Germany, this training is very essential in order that the benefits of modern methods may reach all classes. [W.K.]

March 3, 1900. [24. Jahrg., No. 9.]

1. Cesarean Section on the Dying Living Child. A. PARKES.
2. Further Remarks on the Use of Reindeer Sinew as Suture and Ligature Material. W. F. SNEGUIREFF.
3. Complications of Myoma and Pregnancy. F. WALZER.
4. Once More upon Narcosis. KOBCLAUCK.

1.—It being known that **postmortem cesarean section** results unfavorably, experience having proved that fetal life becomes extinct through asphyxiation before the death of the mother, physicians began to consider the wisdom of

not awaiting the death of the mother, but to operate at once, hoping to save the child's life. Roser was the first to perform this operation successfully, Fischer, Fehling, and others following him. Parkess reports a case in which, in the interest of the child, he performed cesarean section on a woman aged 25, who, 8 hours after the operation, died of edema of the lungs. The child, a boy, 45 cm. in length, lived and grew vigorously. [W.K.]

2.—Sneguireff recommends **reindeer sinew** very highly as suture and ligature material because of its firmness, its capacity of being absorbed, and also being perfectly sterilized. For these reasons he thinks it especially adapted to surgery in abdominal and all other cavities. A valuable peculiarity of this sinew for ligature is its primary and secondary firmness, the knots do not loosen in the course of the operation nor afterwards, hence a secondary hemorrhage need not be apprehended, at least none had occurred in his experience. Sneguireff concludes with the remark, based on 20 years' experience in abdominal and pelvic surgery, that antisepsis and asepsis had had as a result the most extraordinary progress in abdominal surgery; but the ideal of aseptic principles had been reached in the last years of the nineteenth century in the introduction of sinew thread as suture and ligature material. [W.K.]

3.—Walzer believes that a **myoma complicating pregnancy** indicates an artificial abortion, when the conditions existing render delivery by the natural way impossible, without great danger to both mother and child, and when the mother has abandoned the hope of a living child, and only her own welfare is to be considered. He reports a case in which the mother refused to permit interference with pregnancy, although suffering extremely, but spontaneous abortion occurred, from which she recovered sufficiently to leave the hospital, returning after 4 weeks, when supravaginal amputation was performed. This case is an illustration of Hofmeier's assertion that a myoma gives no ground for sterility. Another point worthy of mention is the symptomless retention of the entire placenta in a myomatous uterus for 4 weeks, during which the woman worked, and took care of her sick father. [W.K.]

Centralblatt für innere Medicin.

July 21, 1900.

1. On the Position Assumed by Acute Pericardial Exudates. F. APARTI and P. FIGAROLI.

1.—The authors have repeated the experiments of Damsch (previously abstracted from *Zeitschrift f. klin. Med.*), excepting that instead of removing portions of the ribs they introduced a canula directly into the pericardium and injected agar solutions through this. Their conclusions are that **pericardial effusions** can be determined to be present by percussion only when they have reached 150 to 200 cc. in amount. The maximum amount "which can collect" in the pericardium is 600 to 700 cc. In the horizontal position the cardiac dulness is widened in all directions proportionately to the amount of the effusion. In the vertical position the increase is chiefly in the region of the apex beat and in the heart-liver angle. In the horizontal position even small exudates surround the great vessels to some extent. In the vertical position the base remains free even with large exudates. [Certainly the statement as to the amount that can collect in the pericardium is an error—either in wording or in fact—700 cc. may be the largest amount that can be forced into a normal pericardium in a dead subject, but that it is not the largest amount that may collect in disease is sufficiently clear to the reviewer, since he has removed as much as 2,300 cc. from the pericardium at necropsy. D.L.E.]

August 25, 1900.

1. Remarks Upon Percussion of Acute Effusions Into the Pericardium. SCHÜLE.

1.—Schüle refers to his work on this subject (*Münch. med. Woch.*, 1898, No. 51), in which he reached the same conclusions as Aparti and Figaroli (*Centralbl.*, No. 29, 1900). He also found 700 cc. to be the minimum amount that he could inject, but thinks that the conditions are different in disease, and that in order to be conclusive the experiments should be conducted on the cadavers of those who have had an acute hydropericardium. [D.L.E.]

September 8, 1900.

1. A New Volumetric Method for the Quantitative Estimation of the Purin Bases in the Urine. ADOLF JOLLES.

1.—The urine is boiled with a little dilute acetic acid if it contains albumin and then filtered. If free from albumin this is omitted. The phosphates are precipitated out with magnesia mixture, then ammoniated silver solution added as in the Ludwig-Salkowski uric-acid method, the precipitate washed into 80 or 100 ccm. of water, magnesia added and the mixture heated until the ammonia is driven off, and then the nitrogen of the alloxin bodies estimated directly in the silver precipitate. After breaking up with a sulphate of an alkali, 20 to 30 cc. of sulphuric acid is added, the mixture warmed, potassium permanganate added until the color remains. After 15 minutes boiling, the fluid is cooled, made slightly alkaline with NaOH, and the nitrogen estimated with bromin, according to the author's method. Jolles claims that after oxidation in the above manner practically all of the nitrogen of the **purin bodies** is liberated, and presents tables comparing his method with those of Camene and Haycroft, and uric-acid estimations made in a similar volumetric way are compared with results by the Ludwig-Salkowski method. He considers that his method is more nearly free of error than any other (a statement that must as yet, considering the disrepute into which the bromin method has justly fallen, be taken *cum grano salis*). [D.L.E.]

Archiv für klinische Chirurgie.

[Band 61, Heft 3.]

26. Traumatic Separation of the Head of the Femur and its Sequels. CONRAD RAMMSTEDT.
27. Operation in Cases of Renal Ureteral Calculus. JAMES ISRAEL.
28. Plastic Surgery of the Thumb and Restoration of the Finger Tip. C. NICOLADONI.
29. The Topography and Etiology of Retropharyngeal Abscess Involving the Lymph Glands. A. MOST.
30. A Simple Method of Performing Gastrotomy and Enterostomy. CREDÉ.
31. Changes in the Surgical Technic of Joint-Operations. FRANZ KÖNIG.
32. Teratoid Tumors of the Abdomen and Operations Therefor. E. LEXER.
33. The Ascertaining of the Functional Activity of the Kidney Before Operating. HERMANN KUEMMELL.
34. Diverticulums of the Sigmoid Flexure. KONOSUKE SUDSUKI.
35. Chondromatosis of the Capsule of the Knee-Joint. P. REICHEL.
36. Treatment of Extreme Torticollis by Partial Resection of the Sternomastoid Muscles after Mikulicz. A. HOFFA.
37. A New Instrument for the Opening of the Cavity. P. SUDECK.
38. Amputation of the Lower Leg with Serviceable Stump and New Prosthesis. HUGO H. HIRSCH.
39. Fracture of the Greater Tubercle of the Humerus. HEINZ WOHLGEMUTH.
40. The Technic of Extensive Resection of the Upper Jaw. FRITZ KÖNIG.
41. Smaller Communications.

26.—Rammstedt says that experience shows that when the **neck of the femur is injured** during the age of puberty the position of the lesion as a rule is situated at the epiphyseal line. This has been demonstrated by cases reported by Hoffa, Kocher, Sprengel, and v. Bramann. These separations of the epiphysis show more or less marked variations. They vary from a total separation to a partial downward displacement of the fragment, or possibly only a loosening of the femur head. The less the degree of actual separation the more closely does this injury resemble the true coxa vara of adolescence, for in those cases in which there is great displacement of the fragment, such deformities as result from contractures appear, also marked functional disturbances, ankylosis and possibly arthritis deformans are apt to appear. He reports 8 cases from his own experience. [G.B.W.]

27.—Israel says that among the absolute indications for

operative relief in cases of **renal calculi**, the following stand as most important: Anuria, acute pyelonephritic infection, severe hematuria, and the supposed presence of a malignant tumor. In all of these the condition present threatens life so that operation is positively demanded, but in the large majority of cases which come under the care of the surgeon there is no immediate danger so far as life is concerned, and then the question of operation is more difficult to decide. Israel says that the danger which accompanies nephrolithotomy is so slight when compared with the ultimate result of leaving the stone in place that it practically counts for little so far as indications for operations are concerned, so that even in cases where the presence of the stone is not absolutely proved, but where there is a distinct history of renal colic, one should proceed to operate rather than wait for a stone to be passed spontaneously. If a stone can be felt in the ureter through the rectum or vagina operation is, of course, indicated. As to the operation itself nephrolithotomy is much to be preferred to pyelolithotomy, the former allowing more room for searching for the stone, and the kidney is much more easily sutured than is the pelvis of that organ. Also in cases where a pyelonephritis exists in conjunction with the stone, incision through the parenchyma possesses obvious advantages over incision through the wall of the pelvis. Nephrolithotomy should be done as early as possible in order to avoid operating when the patient is already suffering from beginning uremia. [G.B.W.]

28.—Nicoladoni has successfully transplanted the second toe of the right foot on to the stump of the right thumb. The method was as follows: A large 2-cornered flap was raised from the region over the back of the second metatarsophalangeal joint, the extensor tendons cut and the joint opened. The end of the first phalangeal bone was then removed and the flexor tendons divided. The toe was then approximated to the stump of the thumb, which had already been prepared, and the flexor tendons of the toe united with the flexor tendons of the thumb and extensor tendons with extensor tendons. The bone was held in place by catgut sutures and the dorsal skin-flap of the toe stitched to the skin on the dorsum of the thumb. The parts were held in place by a plaster-of-paris bandage until circulation between the toe and hand had been established, and then the toe was freed from the foot by a v-shaped incision through the plantar tissues. [G.B.W.]

29.—In considering the etiology of **retropharyngeal abscess**, a knowledge of the topography of the lymphatic glands and vessels of this part of the neck is most important. In children there exist 2 sets of glands, a small chain situated near the middle line, which is not constant in either its existence or position, and a second and more important group which, being placed more laterally, is called the glandulae pharyngeales laterales. These lateral glands may persist into late adult life, but the smaller and more central chain atrophies and disappears as the child grows older. The lymphatic vessels which run to these glands arise from the posterior wall of the oropharynx and nasopharynx, from the interior of the nose and the accessory sinuses, and possibly also from the internal ear. The faucial tonsils are not in direct communication with these glands. [G.B.W.]

30.—The method of **gastroenterostomy**, proposed by Credé, is briefly as follows: Three oblong and flat plates are used, each containing 2 small holes for the passage of the fastening threads. The posterior wall of the stomach is reached through an opening made in the mesocolon. A high loop of the intestine is selected and opened for from 1 to 1½ cm. Two of the plates are threaded together with a bit of rubber tubing between them, and inserted into the intestine. A small, olive-shaped piece of silver is fastened to the innermost plate by a strand of thick catgut, and placed in the efferent limb of the gut; this silver facilitates the passing of the plates in the proper direction, after necrosis of the intestinal wall has set them free in the lumen of the gut. The intestinal wound is sutured, the ends of the thread sticking out. An opening is then made in the anterior wall of the stomach, through which the remaining plate is inserted. The threads from the intestinal plates are passed through the posterior wall of the stomach by means of needles, and carried through the holes in the plate in the stomach. The threads are firmly knotted, and the incision in the gastric wall closed. The rubber-tube between the 2 intestinal plates keeps up

a steady pressure until in the course of a few days the intervening walls necrose and the opening between stomach and intestine is established. The plates are readily passed in the course of 10 to 20 days. Another form of these plates have large central fenestra, which afford immediate communication between the approximated viscera. Enteroanastomosis is done in a similar manner, the 2 plates being placed in the efferent limb. [G.B.W.]

31.—As an improvement in the **technic of joint-operations** König suggests that in cases which are aseptic at the time of operation, the manipulations as far as possible should be carried out with instruments so that the finger or hand does not come in contact with the inside of the joint. Also in those joints which are still free from the invasion of microorganisms, asepsis should be practised rather than antisepsis and all irritating disinfectants should be rigorously avoided. In joints already invaded by bacteria, the old-time method of draining with tubes should be discarded and free incisions with wide opening of the joint should be done so soon as the presence of pus is detected. Especially in the gonorrheal joint-inflammations will an early and free opening of the joint not only afford relief from pain, but will hasten and improve the ultimate result. [G.B.W.]

33.—If there is a decrease in the quantity of urea secreted, so that the daily amount falls below one-half, *i. e.*, about 16 grams, it should be taken as pretty good evidence that there exists an insufficient **functional activity of the kidneys**, and the removal of one of the kidneys should not be undertaken. Regarding the determination of the activity of the kidneys the following data is of much interest. When the kidneys are normally active the freezing point of the blood is 0.56° C. If the freezing-point rises so that it reaches 0.58° to 0.60° a disturbance in the functional activity of the kidneys is indicated, and one should refrain from operating until the freezing-point has returned to its normal, 0.56°. If the freezing-point of the urine falls below 0.9°, an insufficiency of the kidneys is likewise indicated. A still more positive indication regarding the functional activity of the individual organ is afforded by the examination of urine which has been obtained by catheterizing the ureter. The urine thus obtained should be examined as to the amount of urea present but by far the most satisfactory results will be secured by the estimation of its freezing point. [G.B.W.]

34.—Sudzuki, in speaking of the **diverticulums of the sigmoid flexure**, says that there are 3 causes for the formation of the so-called false diverticulums: 1. Lessened resistance at the exits of the bloodvessels due to the loose connective tissue and the presence of fat. 2. Pressure exerted by the feces and gas. 3. Muscular action. For the development of the true diverticulums the pressure of the feces and gas holds, as in the cases of the false, a very important place. The muscular action also helps greatly in their formation. [G.B.W.]

35.—In this case of **chondromatosis of the capsule of the knee-joint**, the condition had been gradually developing for 5 years. At the operation the whole capsule, which was considerably larger than normal, was found to contain numbers of cartilaginous plates, some the size of the palm of a woman's hand and as thick as a finger; there were numbers of smaller nodes covering the internal surface of the capsule and many free bodies were present in the joint. An arthrectomy was performed and the wound packed for 4 days with iodoform gauze. At the end of this time the packing was removed, the resected surfaces fastened together by a couple of sutures and the skin-wound closed. The patient made a good recovery and was able to return to his work with a useful but stiff limb. [G.B.W.]

36.—Hoffa reports 4 cases of **torticollis** on whom he operated after the manner of Mikulicz, by resecting the sternomastoid muscle from its sternal attachment to the exit of the spinal accessory nerve. The result was most satisfactory in all the cases, the patients being able to hold the head erect not only without tiring but without effort; the head could be moved easily towards either side, and the spinal column once more assumed its normal posture. The cosmetic result was also satisfactory. [G.B.W.]

39.—Wohlgemuth, in speaking of **fracture of the greater tubercle of the humerus**, says that this injury is very uncommon when existing by itself, but as a complication to fracture of the upper end of the humerus or to dis-

location of the shoulder joint, it is much more frequent than is generally supposed. The diagnosis of this injury, when existing as a complication, is generally accompanied with the utmost difficulty, so that when an injury of the shoulder is accompanied with an unusual amount of functional disturbance resort should be had to the x-rays in order to clear up the diagnosis. The treatment of this fracture consists in strong abduction of the arm when the fragment is found to be displaced upwards, and in both outward rotation and abduction when the fragment has been drawn backward. Fastening the fragment in place by operation is not commended. [G.B.W.]

40.—König says that in order to avoid as much as possible the hemorrhage which occurs during **resection of the upper maxilla**, it is best to ligate the external carotid between the superior thyroid and lingual branches. One of the worst features of the extensive removal of the upper jaw, when it has been necessary to remove the floor of the orbit, is the disturbance of the position of the eye, so that double vision or atrophy of the optic nerve develop. In order to furnish a firm floor for the eye König purposes that a flap be taken from the anterior border of the temporal muscle, including a portion of its insertion on the coronoid process of the lower jaw and swung under the eye and attached to the periosteum of the stump of the frontal process of the upper jaw. The 2 cases are reported on whom this procedure had been carried out. In one the result was, in spite of marked suppuration, a success, and the eye on the diseased side was held to an equal height with the normal organ. In the other case the patient died before a final result could be noted. [G.B.W.]

Deutsches Archiv für klinische Medicin.

[Band 67, Heft 5 and 6.]

18. Zenker's Pulsion Diverticulum. (Pharyngoesophageal Pulsion Diverticulum.) STARCK.
19. Contribution to the Physiology and Pathology of Blood Pressure. HENSEN.
20. Experimental and Clinical Investigations upon the Testing of the Functions of the Intestines. Fifth Communication. Further Investigation upon the Fragmentation of the Feces with General Remarks Concerning the Diastatic Ferment in Human Evacuations. STRASBURGER.
21. Experimentation upon the Pressure of Corsets. THIERSCH.
22. The Supraclavicular Glands in the Diagnosis of Abdominal Carcinoma. TARCHETTI.
23. The Bronchial Muscles and Asthma. AUFRECHT.

18.—Starck describes the clinical symptoms of a typical but probably imaginary case of **Zenker's pulsion diverticulum**, and then describes in order the various symptoms. The prodromes consist of the symptoms of irritation; that is, expectoration of mucus, the secretion of an abnormal quantity of saliva, slight symptoms of stenosis, as an uncomfortable feeling in the throat and anxiety lest the solid particles of food become impacted. The direct symptoms are those of stenosis, that is, a sense of pressure in the throat with occasional inability to swallow food; the obstruction being apparently situated about the middle of the neck. Then from time to time there may be regurgitation, sometimes followed by renewed chewing. The regurgitated material is characterized by the fact that there is no trace of digestion. The quantity varies considerably according to the size of the diverticulum. A stenosis is brought about apparently in 2 ways: either by pressure of the sac filled with food upon the esophagus and by the stretching of the esophagus at the point of the opening so that its lumen becomes a narrow slit. Finally, there may be actual contraction of the esophagus or a stenosis due to paralysis. Among the objective symptoms is the tumor in the neck, whose size and location of course depend upon the seat of the diverticulum. Curious sounds may be heard in the throat and occur usually during eating but may occur at other times; there is an extremely offensive breath which has a peculiar odor of fermentation; and sometimes the patients suffer from pain. Some indirect symptoms are disturbances in respiration, congestion of the head, both due to pressure, neuralgia, hoarseness, and finally interference with

the general nutrition. In fact, a considerable proportion of all cases die of starvation. The diagnosis of course is to be made from the symptoms. Among the aids are the esophagoscope, which does not appear to be of great value; the esophageal bougie, which under favorable conditions may be extremely useful; and finally the electric sound, which appears to pass the opening of the diverticulum much more readily than the simple bougie. The size of the diverticulum may be tested either by filling it with water and then measuring the quantity that flows out, or by filling it with a solution of bismuth and observing directly with the x-rays. Einhorn's stomach lamp may also be employed. The prognosis is gradually improving of late years, as a result of surgical interference. The treatment may be divided into the internal and the surgical. The stenosis may be treated by bougies which rarely, however, give much relief. Hollow bougies may be employed for the purpose in patients who have great difficulty in swallowing. In many cases it is only possible to pass the instrument after the tip has been bent slightly and directed forward. The patients sometimes are obliged to eat in an unusual position, that is, with the head bent to one side; to consume only liquid food, and to empty the diverticulum either by external pressure or by washing. If there are symptoms of starvation, rectal enemas should be employed. The operative treatment consists either in the direct removal of the diverticulum, its invagination into the lumen of the esophagus, or in gastrostomy for the purpose of feeding the patient. The latter appears to have been fatal in all cases. Starck describes the different operations and mentions the more important complications. [J.S.]

19.—Hensen has performed a series of experiments with the sphygmomanometer of Riva Rocci with the object of determining the normal blood-pressure and the modifications that are produced by various diseased states. The apparatus consists essentially of a flat rubber tube which is laid around the upper arm, the ends made fast, and then distended by means of an ordinary pump. Between the pump and the tube a mercurial manometer is placed so that the amount of pressure can always be readily determined. In using this instrument, it is placed in position, then distended, while the radial pulse is carefully watched. At the moment the pulse disappears the manometer is read, then the pressure is gradually released, and the moment the pulse reappears a second reading is taken. This usually represents the pressure necessary to occlude the artery, that is to say the pressure corresponds to that in the bloodvessel itself. Hensen gives an elaborate analysis of the use and advantages of the instrument, and makes a number of technical suggestions regarding its employment which cannot here be discussed. In normal persons he obtained the following results: in 25 workmen between 17 and 30 years the blood-pressure varied between 105 mm. and 158 mm.; in 30 women of the same age, between 105 mm. and 160 mm., the average being slightly less; in 25 healthy children, from 3 to 15 years of age, the limits were from 80 mm. to 135 mm., and the average 116 mm. Pressure seems to increase slightly with advancing age. In old persons the pressure increases and the upper limit reaches 170 mm. The mean varies from 140 mm. to 150 mm. Moderate variations in pressure constantly occur, in extreme cases reaching 40 mm. to 80 mm. per day. In the evening pressure is usually 5 mm. to 15 mm. more than in the morning. Other arteries in the body were tested, and it was found that the more remote they are from the heart the greater the pressure. The blood-pressure in the arteries above the diaphragm was increased from 8 mm. to 15 mm. by pressure upon the abdominal aorta. In pathologic conditions, 2 types of changes are recognized: the functional and the organic. Hensen includes in the functional all those conditions in which the activity of the heart and bloodvessels is altered, and the quantity of blood is changed, such as fever, anemia, pleural exudates, uremia, etc. The organic or essential conditions are those of which there are pathologic defects of the bloodvessels, such as arteriosclerosis, valvular heart-disease, nephritis, aneurysm, etc. Practically the only change is increase in the blood-pressure. Diminution of blood pressure occurs only in the agony with the exception of a few rare cases. A number of investigations have been made upon this point, and it was found that when the pressure reached 70 mm. death was inevitable. If it even reached 95 mm. and the general condition of the patient was bad, prognosis was unfavorable.

In cases with pathologic increase in the blood-pressure, the limit at which life can persist is much higher. Usually, just before the agony develops, the blood-pressure is normal or even slightly increased as the result of the dyspnea. Hensen then discusses certain peculiarities of the blood-pressure in meningitis, the alterations that can be observed in cases of inequality of the pulse as in myocarditis; changes that occur during respiration which are particularly pronounced in cases of pleural exudate, the variation reaching as much as 40 mm. In dyspnea probably the highest pressure occurs in cachexia, and in marasmus pressure apparently does not fall below the lower normal limit. In febrile conditions, such as typhoid, in which the pulse feels soft and relaxed, the fact that the pressure is not abnormally diminished indicates that the splanchnic vessels, which chiefly govern blood-pressure, do not take part in the relaxation. Usually in acute fevers, there is increase in the blood-pressure corresponding to the height of the fever. Sudden increase in the blood-pressure during fever is usually an indication that the case is becoming critical. After the disappearance of fever, the pressure usually diminishes. Curiously enough neither in collapse nor after profuse hemorrhages was there any marked decrease in blood-pressure. It is probable that in the latter instance there was some compensation brought about by the increased activity of the heart. In arteriosclerosis, as was to be expected, the blood-pressure is greatly increased and the same is true of the different forms of contracted kidney. In compensated mitral lesions the blood-pressure is not altered. In aortic insufficiency there is a very extraordinary alteration between the maximum and the minimum pressure which may amount to 100 mm. This is sometimes masked by arteriosclerosis. In general it may be said that diminished blood-pressure is not by any means invariably present in heart disease. In a few concluding remarks, Hensen states that the mean blood-pressure is probably the most favorable condition for the circulation of the blood. He believes that the blood-pressure is produced partly by the necessity of overcoming the resistance of the general vasomotor system, and partly by the necessity of meeting the various resistance of the small arteries and capillaries whose caliber is constantly changing. The former probably amounts to from 55 mm. to 70 mm., and the latter constitutes the remainder of the blood-pressure. As a result, the blood-pressure cannot be regarded as a measure for the activity of the heart, but is dependent upon a variety of conditions. [J.S.]

20.—Strasburger continues his article upon the **fermentation of feces** and gives the records of a number of experiments. He believes that an enormous liberation of gas in the form of early fermentation indicates the existence of a large quantity of carbohydrates in an easily fermentable form. When fermentation does not occur under these conditions, there is probably some deficiency in the diastase; therefore, no quantitative conclusions can be drawn in the presence of a negative result. He recognized the various types of fermentation as follows: Fermentation with much gas and the formation of acid; fermentation with gas without the formation of acid (this occurs particularly in the alcoholic stools); putrefaction with the formation of an alkaline reaction, probably due to an excess of albumin; possibly the presence of abnormal bacteria. The first form probably indicates disturbance of motility and secretion; the second, the deficient absorption of fat; the third, the deficient absorption or excessive excretion of albumin. Regarding the chemistry of the feces, he concludes that the quality of the nourishment has no influence on the quantity of amylose contained in them. The diastase is increased. In constipation it is decreased. In fever amylose is diminished. Among the other interesting results may be mentioned the remarkable action of itrol, which, in a dilution of 1 to 190,000, completely checks the amylolytic action, and inhibits it when the dilution is 1 to nearly 4,000,000. [J.S.]

21.—Thiersch has made a series of experiments in order to determine the amount of **pressure that the corset, as ordinarily worn, exerts upon the thorax.** He first estimated the amount of pressure caused by the respiratory movements at the waist, above the lower border of the ribs, and over the breast by placing a firm strap about these, to which a dynamometer was attached. He instructed the patient to take deep and shallow breaths. With an initial pressure of 1,700 grams, he found that shallow breathing

gave rise to a pressure of 2,400 and deep breathing to a pressure of 3,500 grams. When the strap was placed around the thorax the figures increased enormously, reaching 6,100 grams per deep inspiration at the upper level. The second series of experiments was made with 6 varieties of corsets that he obtained from a dealer. These were suspended vertically and the amount of distention produced by various weights carefully measured. There was considerable difference, some extending readily to light weights, but soon reaching the maximum; others only extending after considerable weights had been employed, and still others being relatively stiff. It was found further that the flexibility of the corset corresponded inversely with the amount of pressure exerted. By insertion of a dynamometer between the corset and the body of the subject, it was found that with a moderate tension, 300 grams, a pressure of 700 grams during deep inspiration could be obtained. Thiersch believes that the pressure of the skirts at the waist is far more serious than even the pressure of the corset, but he admits that women have accustomed themselves to the pressure of both, and can even lead a fairly active existence, although constantly subjected to a pressure of 1.5 to 2 kilograms around the waist. Nevertheless, permanent injury is frequently produced upon the thorax and abdomen, and therefore reform in costume is urgently required. [J.S.]

22.—Tarchetti reports the case of a man of 69, who was brought to the hospital in a state of profound cachexia, icteroid, with distention of the abdomen. As a positive diagnosis was not otherwise possible, Mariani excised one of the swollen supraclavicular glands, which contained nests of epithelial cells. As a result, a diagnosis of **cancer of the liver and pancreas** was made. In order to determine how frequently the supraclavicular glands are involved in carcinoma of the abdominal organs, Tarchetti has collected 38 cases from the records of the clinic. In 7 of these the supraclavicular glands were enlarged. In 16, none of the glands were enlarged. Two cases were not carefully recorded. He does not believe, as do most authors, that the involvement of these glands is chiefly an indication of carcinoma of the stomach, but it may occur in carcinoma of the duodenum, of the liver, and perhaps of other abdominal organs. The symptom appears to occur somewhat late in the course of disease. In 6 cases noted by Tarchetti, it appeared from 19 to 75 days before death. He calls attention to the fact that frequently the inguinal glands are enlarged in cases of carcinoma, without containing any trace of metastasis. He concludes, as a result of these facts, that the presence of swelling of the left supraclavicular glands is sufficiently frequent in abdominal carcinoma to be of symptomatic value. It is not restricted to carcinoma of the stomach, may occur at varying periods before death, presents a characteristic clinical appearance that often renders histologic examination unnecessary, whereas moderate swelling of the cervical and inguinal glands may occur without carcinoma. [J.S.]

23.—Aufrecht, having observed that even in the finer **bronchioles** of the lower animals there exists a powerful layer of **circular fibers** and a weak layer of **longitudinal fibers**, was able to demonstrate the same condition in the bronchioles of human beings, particularly in portions of the lung adjacent to the inflammatory foci. He believes that this observation enables him to supply a more satisfactory explanation of asthma than has hitherto been given. As the 2 sets of muscle fibers have an opposed action in cases of inflammatory infiltration, such as may occur in emphysema, the weaker longitudinal fibers are more affected than the horizontal fibers are, and therefore unable to oppose their contraction, and, as a result, the muscle-cramp occurs. [J.S.]

Deutsche Zeitschrift für Nervenheilkunde.

[Band 17, Heft 1 u. 2.]

1. Contribution to the Knowledge of Progressive Muscular Atrophy. PICK.
2. Investigations on the Normal and Pathologic History of the Striated Muscles. HAUCK.
3. A New Form of Hereditary Nervous Disease. GIESE.
4. Infantile Familiar Spastic Spinal Paralysis. v. KRAFFT-EBING.
5. A Case of Disturbance of Sensibility in the Region of the External Cutaneous Femoral Nerve, with Pathologic Anatomic Changes. NAWRATZKI.

6. The Diagnostic Value of von Grafe's Symptom, and its Explanation. FLATAU.
7. A Case of Cerebral Sensory and Sensorial Hemiplegia. HOFMANN.
8. A Contribution to the Anatomy and Physiology of Experimental Injury of the Mid-Brain. PROBST.
9. Brief Communications: (1) Paroxysmal Mydrasis. RIEGEL. (2) Remarks upon the Articles of Brodmann and Steinhausen, concerning Paralysis of the Serratus in the previous Heft of this Journal. BRUNS.

1.—Pick calls attention to the growing tendency among myologists to approximate the types of **progressive muscular atrophy**, and to ascribe them all to some disturbance of nervous influence. He believes that we should observe with particular care the following points in the study of cases: (1) The various symptoms, with the special object of determining transitional forms between the primary myopathic types and the myelopathic and neuropathic types; (2) the careful investigation of the nervous system, particularly the cells of the anterior cornua by Nissl's method; (3) when changes in the central nervous system are discovered, an effort to determine whether they are primary or secondary; (4) careful investigation of the motor nerve terminals in the muscles. He reports the case of a man 52, previously healthy, who, 2 years before admission, had developed pains in the knees. There was atrophy of some of the muscles of the neck, arms, and legs. There were no fibrillary contractions and the electric reactions were normal. He finally died as a result of abscess. Examination of the tissues showed normal spinal cord and normal peripheral nerves with the exception of slight changes in the axillary and spinal accessory nerves. The atrophic muscles showed fatty degeneration with formation of vacuoles. The neuromuscular spindles were normal. Pick gives an interesting discussion of many of the features of this case. Some of the muscle-fibers were so greatly increased in size that they cannot be regarded as due to compensatory hypertrophy. In some of the muscles which were only slightly affected, fat drops could be detected by Marchi's stain. In others the fat was very prominent. The fact that the muscle fibers in the muscular spindles were intact indicates that they have a different function from the other muscles. Pick is inclined to regard the whole spindle as a sensory organ. The slight changes in the nerves he regards as secondary to the alterations in the muscles, and the case, therefore, is to be included among the primary muscular atrophies. It is interesting on account of the age of the patient in which it developed, although he was of the juvenile type. He reports 4 other cases in which portions of the muscle were obtained by harpooning. Specimens obtained from some of these revealed some interesting pathologic changes that cannot here be described. In general the characteristics were so similar to those of the first case that all were regarded as primary dystrophies. Pick is of opinion that the general belief regarding the extraordinary trophic influence of the nervous system over the muscles does not represent a true condition, and he believes that the muscles are more independent than we suppose, and that his cases directly favor the old opinion of complete separation of the myopathic and myelopathic and neuropathic types. [J.S.]

2.—Hauck has investigated the transverse diameter of various muscles, most of them being removed during rigor mortis. In a new-born child it was found that they were practically all of the same size. As life progressed, the size of the muscle-fibers varied very greatly in different muscles, thus in the gemellus, it was at birth 7.1μ ; at the age of $2\frac{3}{4}$ years 18μ , and in adult life, 61.3μ . In other muscles similar changes could be observed. The size of the muscle-fibers also depends to a certain extent upon the condition of the nutrition of the individual. In a very muscular man, the average in one particular muscle was 70.2μ , while in an old man of 78, senile and marasmic, the fibers of the same muscle were 29.7μ . The period after death also seemed to have considerable influence. Several cases were tested and it was found that the fibers before rigor mortis were larger than during rigor mortis, and that after it was diminished they gradually increased in size again. Moreover, the hardening fluid seemed to have considerable influence, causing a variation of from 33.6μ to 71.6μ , in the average diameter of

the fibers in the same muscle. In fragments taken from different portions of the same muscle, the average diameter of the fibers was practically the same. Seven dogs were also used for experimental purposes. In one the right gastrocnemius was excised, in the second the sciatic nerve cut, in the third the right leg fastened in a plaster bandage, the fourth was placed in a small cage, the fifth suffered hemisection through the dorsal spinal cord, the sixth animal was encouraged to live an active life, and in the seventh the knee and ankle-joints were destroyed by injections. In the first animal the muscle-fibers of the gastrocnemius were found to average 6.7μ , in the second comparison of the 2 sides showed a considerable diminution in the average size of the fibers in the affected muscles. In the seventh dog in which experimental ankylosis was produced there was again some atrophy in the fibers of the muscle. In the animal that had been kept in a cage it was noticed that the transverse striations were more pronounced than the longitudinal. [J.S.]

3.—Giese reports an interesting condition that occurred in 2 children of the same family, a brother and a sister. There was apparently no tendency to neuropathic heredity and the other 4 children still living are perfectly healthy. In the boy the first symptoms occurred at the age of 15, and consisted of a tremor of the hands and some impairment in the development of intelligence. Later the speech became somewhat drawling and indistinct. There was some uncertainty in the gait and the patient complained of rigidity in the limbs. At the age of 25 he was a vigorous, well-developed man, apparently perfectly healthy, without stigmata of degeneration. His intelligence was greatly impaired. Memory was feeble. There was some melancholia. There was distinct tremor of the hands and in the muscles of the face. All the reflexes were considerably increased. A sister developed some similar symptoms at the age of 16. These were practically the same, the reflexes were greatly increased, there was slight pes equinus, and also considerable resistance to passive movement. Giese then analyzes the literature of this subject and reaches the conclusion that although somewhat similar cases have been previously reported, there are none that present a similar symptom-group. He regards this disease as belonging to the **congenital** and probably the **hereditary affections**, although he admits that the etiology is exceedingly obscure. [J.S.]

4.—Krafft-Ebing reports 3 cases from the same family occurring among 7 children. Two of the children died very early; 2 are living and healthy, one of whom is only 18 months of age; and the others—the second, fifth and sixth—present the symptoms of the disease. The first case exhibited clumsiness of the legs in the fifth month, did not walk until 2 years of age, and then badly. There was evidently retarded mental development, there was exaggeration of the patellar reflex, and marked spasticity of the limbs. The electric reactions were normal. The second case, 8 years of age, exhibited the first symptoms at the end of the second year, after convalescence from diphtheria. Speech was somewhat slow. There was spasticity in the muscles and the reflexes were exaggerated. The third case, 4 years of age, first walked at the age of 2, and exhibited a peculiar alteration of gait. There was spasticity of the muscles, contractures in some, and exaggeration of the patellar reflexes. These 3 cases all present, in addition to the typical symptoms of **spastic spinal paralysis**, slight diminution of intelligence, strabismus, and disturbances of speech. In 2 cases the speech was drawling and the pronunciation was bad. Krafft-Ebing believes that there is a slowly **progressive degeneration** in the spinal portions of the pyramidal tracts, and possibly involvement of the supraspinal portions of the neurons. He excludes the possibility of chronic hydrocephalus. He reports a number of interesting cases of various conditions whose symptoms somewhat resembled those here presented, but differed in some essential particulars, particularly a case of chronic hydrocephalus with spastic spinal paralysis, and the cases of 3 children in a family of 10, all of whom had spastic rigidity of the limbs. In conclusion, he reports an interesting series of cases occurring in 2 generations and presenting the symptoms of spastic spinal paralysis. In the 3 preceding generations there had been consanguinity between the parents. [J.S.]

5.—Nawratzki reports the case of a man, 80 years of age, who presented symptoms of insanity and an **area of anesthesia** to touch and temperature on both thighs. The

patient died, and the external cutaneous femoral nerves were removed. Both were swollen to a distance of about 2 cm., both showed considerable **loss of nerve-fibers**, particularly at the point where they passed out of the abdominal cavity, and both contained numerous budlike structures, either homogeneous or irregularly laminated, which lay between the nerve-fibers. There were no changes in the lumbar cord. The author calls attention to the various papers which have been written upon neuralgia paresthetica, and concludes with a very interesting series of observations upon the anomalies in position of this nerve as it passes the anterior superior spine of the ilium. He found that in 11 men the distance of the nerve from the spine varied from 0 to 52 mm., and in 10 women from 0 to 58 mm. These alterations in position may account for the development of the symptoms only in certain cases and for the fact that they are often unilateral. [J.S.]

6.—Fleateau reports a number of cases in which **von Gräfe's symptom** was present, although they were not suffering from exophthalmic goiter. This included paralyses of the arm, neurasthenia, alcoholic neuritis, bulbar paralysis, cerebral tumor, apoplexy, Thomsen's disease, etc. He gives a long discussion of the literature and of the nature of the symptom, which goes to show that this symptom occurs in a great variety of conditions. He therefore concludes that it is not of essential diagnostic significance. [J.S.]

7.—Hofmann reports an exceedingly interesting case. A man at the age of 21 suddenly fell unconscious without any premonitory symptoms. When he arose the left extremities were weak and the following day severe pains developed in them. Four years later after severe work, these pains became so severe that he fell to the ground and thereafter the weakness in the left extremities was increased. When brought to the hospital, it was found that there was total anesthesia of the left side and diminution in the functional activity of the eye and ear, loss of smell, loss of taste on that side, paresis or atrophy of the left extremities. The fields of vision were carefully taken and showed on the left side a universal concentric narrowing. On the right side they were practically normal. The muscles of the eye functioned normally, there was slight difference in the temperature of the 2 sides, the right being somewhat higher. Later the field of vision became practically normal on both eyes. The symptoms corresponded to those that Charcot asserted could be produced by the destruction of the carrefour sensation. Hofmann gives a long criticism of the literature on this subject and believes that his own case, the changes in the visual fields showed that disturbance of vision is really due to diminished volition and not to hysteria nor to simulation. It is of course impossible that destruction of the posterior portion of the posterior limb of the internal capsule should alter the functions of smell or taste, and it therefore seems likely that these as well as the disturbance of hearing are due to the same cause. He therefore believes that the symptoms described by Charcot as associated with cerebral hemianesthesia are really due to **impaired volition**, and not to destructive lesions. [J.S.]

8.—Probst, as, in a way, a complement to the work of Monakow upon the relation of the thalamus to the cortex of the brain, has devised an instrument with which he is able to **produce extensive lesions in the thalamus** without any corresponding destruction in cortex. He studied the brains by making uninterrupted series of sections stained by the Marchi method. A number of animals were made the subjects of the experiments, and some interesting side results were obtained. For instance, the ascending degeneration of the fibers of the fillet after injury to the cervical cord stopped invariably at the optic thalamus. Fibers were also found passing from the thalamus to the cortex and other fibers passing from the cortex to the thalamus. The former group finally disappeared in the lower layers where they appeared to separate. Probably the cells or their neurons are found in the ventral nucleus of the thalamus. Other interesting points are that Meynert's band degenerates both upwards and downwards; the bundle of Vicq d'Azyr degenerates as far as the anterior nucleus; Forel's commissure degenerates toward a subthalamic region; Meynert's commissure, instead of passing to the lenticular nucleus enters the reticulated substance of the optic thalamus; the tegmental tract of the corpora mammalaria degenerates downward and terminates in the reticular substance of the

posterior corpora quadrigemina; after injuries to the **cerebellum**, a group of fibers degenerates toward the red nucleus and some of them terminate there, the majority, however, continue as far as the thalami. Probst, therefore, concludes that the **optic thalami** receive all forms of irritation from the periphery, from the spinal cord, and from the cerebellum, modify them or transfer them in some way, and then transfer them either to the cortex of the cerebrum, to the corpora quadrigemina, and perhaps to the red nucleus. He, therefore, regards the optic thalami as the chief modifying area between the periphery and the cerebral cortex. In conclusion he calls attention to some interesting observations made upon the crossed pyramidal fibers of the porcupine. These apparently split up as soon as they reach the spinal cord. The tegmental pyramidal group pass as far as the sacrum. [J.S.]

9.—(1) Riegel reports a case of **neurasthenia** in which transitory mydriasis occurred once or twice a year for the period of 12 years. As no organic change developed in this time he regards it as a symptom of functional disorder. (2) Bruns repels with energy the insinuation of Brodman that in his discussion of paralysis of the serratus muscle, he had made **serious errors** in his study of the cases reported in the literature. [J.S.]

[Band 17, Heft 3 u. 4.]

11. A Case of Pure Transitory Word-Deafness. VERAGUTH.
12. Hysteric Aural Vertigo; Changes in the Urine after Attacks of Grand Hysteria. RYBALKIN.
13. Multiple Independent Neuritis of the Cranial Nerves. (A Case of Diplegia Facialis Combined with External Ophthalmic Diplegia.) v. RAD.
14. An Affection of the Pons, with Bilateral Paralysis of the Voluntary Movements of the Eyes, Imperative Laughing and Weeping, and Early Atrophy of the Muscles of the Right Leg. v. BECHTEREW.
15. The Pathologic Histology of Multiple Sclerosis. THOMA.
16. Mechanical Irritability and the Tendon Reflexes in Tabes Dorsalis. FRENKEL.
17. Periodic Paralysis of the Oculomotor Nerve. MÖBIUS.
18. The Absence of the Achilles Tendon Reflex and Its Diagnostic Significance. STRASBURGER.
19. Intermittent Claudication and the Neuropathic Diathesis. OPPENHEIM.

11.—The patient, a man of 42, received a severe injury to the head. This resulted in more or less continuous headache, and there was a tender spot over the left ear. There was also a severe valvular lesion of the heart and some dyspnea. Six months after this injury, he suddenly developed a curious symptom, he became completely **word-deaf**, although his perception of sounds was perfect or even, as he claimed, slightly increased; his ability to speak or to read writing aloud was unimpaired. He described the condition as if persons spoke to him in a foreign language. There was no paraphasia. Five days later he had a severe attack of epistaxis and immediately was able to understand everything. Upon careful questioning, it was found that similar attacks of a still more transitory nature had previously occurred on one or two occasions. The heart-condition grew worse, the patient developed pneumonia and died. At the autopsy the interesting feature was the pronounced atrophy of the posterior portion of the third frontal convolution in the region of the pars opercularis. The first temporal convolution was small and there was a defect about its center on the under side filled with serous fluid. The sulci were much deeper than normal and on the right side a slight atrophy of the first temporal convolution could also be observed. Microscopically, there was found a general reduction in the elements in the atrophic gyri, but no focal lesion in the cortex or in the white substance. In analyzing this case, Veraguth calls attention to the following points: 1. The aphasia was secondary. 2. It must be regarded as subcortical on account of the nonimpairment of voluntary speech. 3. It was absolutely pure, no other disturbances of expression or of the perception of expression being present. The patient was able to understand gestures during the attack as well as ever. Finally, its transitory nature is particularly striking. Veraguth, after consideration of the cases already published, calls attention to the fact that a patient may have pure word-deafness without a subcortical lesion of

the left temporal lobe. In fact, there is some reason to believe that in order to produce this the lesion must be bilateral. The fact that during the attack the patient was able to recognize several sounds, such as the noise made by an induction coil, is sufficient proof that the hearing apparatus was intact, and it was found to be so at the autopsy. No method of staining in this case gave satisfactory explanation of the reason for the symptoms. Veraguth is therefore compelled to fall back upon hypothetic explanations and he supposes that there were some disturbance of circulation in the branch of the Sylvian artery going to the first temporal convolution. He concludes, however, that the primary substratum of pure word-deafness is not an interruption of the subcortical auditory tract in the white substance of the left temporal lobe, but a simple atrophy of the first temporal convolution, probably bilateral, associated with a secondary element either circulatory, toxic, or functional. [J.S.]

12.—Rybalkin reports the case of a man of 24, who had had convulsive attacks in youth in which he had bitten his tongue. When brought to the hospital in the last of these, it was found that he had a left hemiparesis, almost total anesthesia of the left side of the body, with hysteric stigmata—*i. e.*, painful points over the left nipple and left hypochondrium and a hysterogenic zone back of the left ear. He occasionally manifested clownism. The diagnosis of **hysteric convulsions** was therefore made, and the biting of the tongue was ascribed to the clonic spasm of the lower jaw. Careful quantitative analysis of the urine showed that immediately after the attack there was great reduction in the solids and particularly in the phosphates. An inversion of the phosphate formula did not occur, so it may be concluded that only the first portion of the urine passed after the attack is characteristic for the hysteric attack, and that this consists of diminution of the phosphates and of their relation to the total nitrogen. [J.S.]

13.—von Rad reports the case of a boy of 14, who suddenly felt severe pain in both ears, which radiated into the face. In the course of 2 weeks complete paralysis of both facial nerves and a rightsided paralysis of the abducens appeared. In the course of a few days more there was paralysis of all the external muscles of the eye, with the exception of the levator palpebrae. The pupils reacted to accommodation and light. The muscles of the face gave the electric reactions of degeneration. The nerves, however, were not swollen, but the branches of the fifth were quite tender. The patient, 6 years previously, had an attack of what was diagnosed as tuberculous meningitis, which had left a slight paresis of the left orbicularis. Rapid recovery ensued and all the symptoms disappeared. It appears, therefore, to have been a **multiple neuritis** affecting only the cranial nerves. [J.S.]

14.—v. Bechterew reports a case of **disease of the pons** that presented a great number of interesting and unusual symptoms. The man was 28 years of age, an alcoholic, and had had luetic infection. He had an attack of vertigo with paresis of the right leg and arm, associated with difficulty in speech. There was exaggeration of the reflexes, otherwise no pronounced symptoms. There was rapid recovery and then subsequently another attack somewhat similar in character. Ultimately, however, there was persistent weakness in the right side and disturbance of speech. About a month after the first, there was a second attack in which there was almost complete **paresis** of the third nerve, of the muscles of the face, complete right hemiplegia, and left hemiparesis. There was frequent weeping. There was retention of urine and feces. The reflexes were enormously exaggerated. Later there was slight movement of the eye and gradual restoration of movement in the limbs. From time to time there was imperative laughing, and there was distinct **atrophy of the muscles** in the right leg. v. Bechterew discusses these symptoms at some length. The hemiplegia with crossed paralysis of the abducens locates the lesion in the posterior portion of the under surface of the pons. As in the early stages of disease there was some difficulty in swallowing, it is probable that the centers of the medulla were also involved. Later the lesion extended from the left to the right half of the pons. It is possible that the basilar artery was occluded by a thrombus giving rise to softening in this portion of the brain, although the rapidity with which the symptoms developed is rather in

favor of hemorrhage. It is impossible to mention all the points to which reference is made. The imperative weeping and laughing probably depended upon the situation of the lesion above the medulla, although we know very little about the portions of the brain that are associated with this symptom. It seems likely that the thalami have something to do with it. If we assume that the tract of fibers passing through the pons to the thalamus was involved, we can arrive at an explanation, not altogether satisfactory, not only of emotional disturbance but of a peculiar expiratory groan or cry that was a very constant symptom. The disturbance of speech he concludes is due to the involvement of a vocal center situated in the pons corresponding to the vocal centers found by Anodi in dogs, a slight distance back of the quadrigemina. The muscular atrophy is in all likelihood secondary to the cerebral lesion. There was no disturbance of the joint and apparently no other adequate explanation. von Bechterew is inclined to believe that in all likelihood this atrophy is brought about by some vasomotor disturbance. Why it should have affected only a circumscribed locality is to be explained by assuming a different degree of reaction in different tissues. [J.S.]

15.—Thoma reports a case of typical **multiple sclerosis** in which an autopsy was obtained. The tissue was stained by a variety of methods, in particular by the most recent neuroglia method of Weigert. No satisfactory method, however, exists for staining the axis cylinders. He mentions the theories of the different authors, that is, primary degeneration of the myelin sheaths, some inflammatory process, a primary disease of the true nervous substance, primary disease of the neuroglia, and, finally, the view that considers the whole thing secondary to vascular disturbance. As a result of the study of these sections, he reaches the conclusion that the whole nervous system may be involved. There is no proof of primary disease of the myelin sheaths or of true nerve tissue, but there is apparently in all the foci of disease proliferation of the neuroglia. Moreover, the foci of disease appear to commence in those situations in which the neuroglia is normally excessive. For this reason, the blood-vessels around which the neuroglia is usually in considerable quantity, appear to play an important part. Therefore he regards the entire process as due to a proliferation of the neuroglia. [J.S.]

16.—Frenkel has studied 23 cases of **locomotor ataxia**, all in the preatactic stage, and found that the patellar reflex was present in 11, the triceps reflex only in 8, and in 3 of these was unilateral. He therefore regards failure of the triceps reflex as even more characteristic of the disease than the failure of the patellar reflex. In a considerable number of these cases there was also marked exaltation of the mechanical irritability of the muscles, and he gives clinical reports of several cases in which this was the case. In general, it was tested by striking the muscular substance with a percussion hammer, causing a pronounced sharp contraction. In several instances this was sharply localized, thus in one case it was limited to the outer sides of the forearms. This increased mechanical muscular irritability appears to be due to the destruction of some reflex arc whose position is at present unknown. He also mentions among the other muscular conditions of locomotor ataxia, fibrillary twitchings, clonic contractions, muscular atrophies, and paresis of various groups of muscles, particularly the perineal group. All these muscular disturbances are probably secondary in nature. [J.S.]

17.—Möbius reports the case of a woman of 31, who at the age of 22 had an attack of **paralysis of the left eye** that was repeated thereafter at intervals for 2 years. This always commenced with severe headache in the region of the left eye, repeated vomiting, and then paresis of the head, followed, in the course of 24 hours, by total closure. The attack usually lasted about 2 weeks. When examined in the fifth attack, the eye was completely closed and the orbicularis palpebrarum appeared to be slightly spastic. The eye was directed downward and out. The pupil was widely dilated. There were no pupillary reactions and some hypesthesia of the conjunctivas and the surrounding skin. Nine days after the commencement of the attack there was slight elevation of the lid, and in 14 days the condition was very much improved. It was more than 2 months, however, before all the symptoms had disappeared. Möbius collected all the cases of this condition that have been reported and

notes the following clinical points: the attacks always commence with headache, which disappears as soon as the paralysis takes place; flimmer scotomas are never observed. Abortive attacks not infrequently occur. The duration of the attacks and their frequency vary considerably. The paralysis is always unilateral and is always total. Usually in the interval some slight symptoms of the paralysis are present. Möbius is of the opinion that some organic condition underlies the disease and that the recurrent attacks are due to a sort of an explosion, *i. e.*, the discharge of the accumulation produced by slight persistent irritation. The attacks may sometimes be confused with those due to true migraine, to tuberculous meningitis, and perhaps to aneurysms and other neoplasms. [J.S.]

18.—The patients were usually examined when lying on the back. The foot was grasped by the toes, elevated, and pressed upward. The point of election on the tendon varies slightly in different cases, but care must be taken not to strike the muscle-substance itself. There were 365 cases examined. The **Achilles tendon-reflex** was present in 356; it was absent on both sides in 3, and on one side in 6 cases,—more frequently in women than in men. The chief condition in which it was absent was apparently alcoholism; all the bilateral cases being of this nature and 2 of the unilateral cases. The other cases in which it was absent were phthisis, psoas abscess, and leukemia. Records from old cases of leukemia observed in the clinic failed to show that this condition existed in them. In 37 cases of sciatica, it was present in 22, weak in 5, and absent in 10. Those cases in which it was present appeared to have a more favorable prognosis. In 34 cases of tabes dorsalis it was completely absent in 30, absent on one side, and weak on the other in 3, and present in one case with loss of kneejerks. [J.S.]

19.—Oppenheim calls attention to the great importance of neuropathic diathesis in **intermittent claudication**. He believes that in some cases this may be the cause of the disease and therefore thinks the prognosis should not be regarded as hopeless. [J.S.]

Sundry French Journals.

1. Intrahepatic Suppurations and Perihepatic Suppurations Originating from the Appendix. ED. LOISON. (*Revue de Chirurgie*, April 10, 1900. 20me Année, No. 5.)
2. Hematomyelia. JEAN LÉPINE. (*Gaz. Heb. de Méd. et de Chirur.*, June 24, 1900. 47me Année, No. 50. Lyons Thesis, 1899-1900.)
3. The Functions of the Kidney in Chronic Nephritis. LEON BERNARD. (*Gaz. Heb. de Méd. et de Chirur.*, July 8, 1900, 47me Année, No. 54. Paris Thesis, 1899-1900, No. 227.)
4. The Use of Raw Meat in the Treatment of Tuberculosis. CHARLES RICHET. (*Sem. Méd.*, July 18, 1900. 20me Année, No. 30.)

1.—A soldier, 23 years old, was taken with symptoms of appendicitis. On opening the abdomen a large quantity of pus escaped, and as the appendix could not be easily removed it was not resected. After the operation there was escape of fecal matter, indicating perforation of the appendix; there was also intense jaundice. About 6 days after the operation the patient had a severe chill, his temperature rose and he perspired freely. The chills and the fever did not return, but the patient's general condition left much to be desired; 3 days later another collection of pus was located, and about a liter was evacuated through an excision under cocaine. The 2 wounds closed completely in a little over a month, but pain developed in the side of the chest. An abscess was located about the region of the ninth and tenth intercostal space and a large quantity of greenish pus was evacuated; at the bottom of the pus-cavity liver-tissue was found. Recovery followed and the patient left the hospital in excellent condition. A thorough discussion of the question of **suppurative processes of the liver** originating with the **appendix** follows. [M.B.T.]

2.—**Hematomyelia** may be primary or secondary. Secondary hematomyelia may be due to acute or chronic myelitis, syringomyelia, or tumors. Primary hematomyelia may be traumatic or spontaneous. The traumatic cases accompany fracture or dislocation of the vertebral column, or

the destruction of the vertebrae in Pott's disease; they may be due to indirect violence; they may be due to extension of the spinal cord, as seen in some patient's affected with tabes who have been treated by suspension, or to the elongation of the roots of the spinal nerves; or they may be the result of a medullary commotion or concussion of the spinal cord, as seen in violent electric discharges. Spontaneous hematomyelias are usually congestive and follow violent efforts, such as the spasms of whooping-cough or convulsive states; they may be seen in general hemorrhagic conditions such as hemophilia, infectious purpura, scorbutus, hemorrhagic smallpox, and pernicious anemia; and they may be due to vascular changes. Hematomyelia is sometimes due to the sudden relief from increased atmospheric pressure. In the latter class of cases Lépine thinks that gaseous embolus, producing a secondary hemorrhagic infarct, and gas, suddenly developing in the smallest vessels of the cord and producing rupture by its tension are both active in the pathogenesis of the lesion. The hemorrhage may be capillary or it may occur in larger or smaller areas. The area of hemorrhage is made up of several small clots that join areas of nervous tissue, more or less normal in character. The lesions are found most often and most numerous in the cervical enlargement; while in the thoracic portion of the cord the hemorrhage has a tendency to extend in length or in surface. As attending lesions, parenchymatous inflammation with or without vascular changes, meningeal effusion, and hemorrhage of the pia mater may be mentioned. The secondary hemorrhages are usually capillary. The hematomyelias produced by elongation and exaggerated flexion of the vertebral column are due to rupture of the vessels of the central substance. Those following medullary commotion present areas of congestive and small areas of extravasated blood. The personal studies of the author show that in the hematomyelia of sudden relief from atmospheric pressure there are hemorrhagic infarcts, and hemorrhages that follow the rupture of the small vessels under the influence of the sudden passage of gas from the blood. The immediate phenomena of hematomyelia are the formation of a clot of medium consistency which becomes dry and retracted. At the same time the axis-cylinders become swollen with corresponding changes in the myelin sheath. Then, if the clot becomes converted into fibrous tissue, the neighboring nervous tissue may not be greatly modified. In the majority of cases, however, the stage following hemorrhage is softening; later, the softened tissue is partly eliminated and lacunas are formed. There is ascending, descending, and peripheral degeneration, and the meninges may present reactional phenomena. In traumatic hematomyelia the beginning is usually instantaneous and paraplegia and anesthesia are complete. In the spontaneous hematomyelias the beginning is less sudden and the paraplegia and anesthesia develop slowly until they become complete and involve the rectum and the bladder. There is a tendency to collapse, and the temperature is below the normal. The gravity of the symptoms is more apparent than real. The paralysis and loss of sensation gradually improve until about the third or tenth week, when the symptoms become fixed. Then there is a more or less marked paralysis of both legs to which the descending degeneration of the pyramidal tracts adds a spasmodic character; atrophies occur; and the sensory symptoms may disappear altogether or they may be present in varied degree. In some cases death occurs soon after the hemorrhage. The clinical forms of the disease are (1) the cervical hematomyelias; (2) the syndrome of Brown-Sequard; (3) the cervical hematomyelias, and (4) hematomyelia of the conus medullaris. [J.M.S.]

3.—Bernard says that the **renal functions** are not uniformly disturbed in all cases of **chronic nephritis**. There are cases of nephritis in which the kidney is permeable or indeed in which it may present an increased permeability; there are other cases in which the permeability of the kidney is diminished. In the parenchymatous and the interstitial forms of nephritis the renal functions are differently disordered. Interstitial nephritis is a disease of slow evolution, characterized by a certain number of symptoms that are directly or indirectly dependent upon the disordered renal excretory function; in other words, the renal permeability is decreased from the first. From this diminished permeability we note 2 classes of phenomena: (1) Phenomena of intoxication by the retention of nonelimi-

nated poisons and (2) mechanic phenomena. The mechanic phenomena are: (1) Cardioarterial hypertension, which is indicated by *bruit de galop* and modifications of the pulse; (2) histologic compensatory hypertrophy of the kidney, which, added to the hypertension in the arterial system and to the humoral conditions created by the renal permeability, determines polyuria. This fundamental symptom of interstitial nephritis has its origin in the renal impermeability, and, at the same time, it struggles against it avoiding the toxic effects. But the evolution of cases of interstitial nephritis presents some periods during which there is cardioarterial hypotension comparable to the paroxysms of asystole in the periods of compensation of cardiopathies. From this condition of hypotension we find: (1) Oliguria with augmentation of the intoxication by retention; (2) other modifications of symptomatology, such as more abundant albuminuria and edema. The pathogenesis of the edema seems to be the same as the pathogenesis of edema in chronic heart disease and its appearance may lend confusion by upsetting the table of chematic symptoms of interstitial nephritis, while in reality it is only one phase of the disease. Parenchymatous nephritis presents a less insidious evolution and a symptomatology that is more indicative of the origin of the disease. The latter is dominated by edema and albuminuria and at this period the renal permeability is normal or even exaggerated. Then, when the disease is of a certain duration, the renal permeability diminishes; then to the preceding clinical picture phenomena are substituted or added, that, in interstitial nephritis, depend immediately or indirectly on the renal impermeability. This second stage corresponds to that which the English authors have called the period of secondary atrophy. The pathogenesis of uremic phenomena is, then, more complex than has hitherto been taught. It is not possible to establish an equation between renal impermeability and uremia, since the latter may exist without renal impermeability and *vice versa*. One should understand in the term autointoxication by retention only the series of phenomena that the author unites as the syndrome of renal impermeability. To this syndrome of impermeability he opposes a syndrome that we have thought a manifestation of insufficiency of the internal functions of the kidney, the existence of which, if not the mechanism, seems to be thoroughly demonstrated today. In this syndrome edema and albuminuria are placed and the union of the 2 syndromes constitutes renal insufficiency; but renal insufficiency is not able alone to provoke uremia; it is dependent upon secondary affections of the heart, the lungs, or the liver, so that the functions of these organs become insufficient. From the diagnostic viewpoint the 2 methods of investigation of the excretory function of the kidney that are of certain semiologic value are the proof by methyl-blue and the study of the toxicity of the urine. The toxicity of the serum, which is not in proportional relation with the toxicity of the urine, does not give exact evidence of the functional state of the kidneys nor of the humoral condition of the organism; finally the urinary elimination depending partly upon the humoral state, the chemic analysis of the urine gives only incomplete results. [J.M.S.]

4.—By experiments on tuberculosis in dogs Richet has established the following points: 1. Raw meat will prevent the development of tuberculous infection and will induce cure. 2. The quantity of raw meat necessary and sufficient is about 12 gm. per kilogram of bodyweight. 3. Muscle plasma extracted from the meat contains the active principles of the substance. 4. Cooked meat does not act as raw meat and the effect of treatment by the latter substance is not due to superalimentation. The meat must be prepared according to the method advanced by Fuster in 1865. The meat is made into a pulp by pounding it in a mortar; this pulp is then passed through a fine sieve and is made into boluses and rolled in sugar. Fuster combined with the raw meat thus prepared an alcoholic drink composed of 100 gm. of alcohol, 250 gm. of water, and 60 gm. of syrup. Richet believes that experiments on dogs show that **raw meat** is not a food but a medicine and that it acts by virtue of the enzymes, ferments, and unknown diastases that it contains. The author recommends that raw meat be used in the **treatment of tuberculosis** in the human subject as a deduction from his animal experiments. He does not claim that the results will be certain. Raw meat should be given in doses of 600 to 750 gm. daily; and, if only the muscle plasma is given,

this should represent 1,000 gm. of raw meat. It is not necessary to reserve this treatment for those patients that suffer from gastrointestinal disturbance; but it should be used as a **remedy on account of its antitoxic action**. [J.M.S.]

The Effects of X-Rays on Cultures of Microorganisms.—Wolfenden and Forbes-Ross (*Archives of the Röntgen-Ray*, August, 1900) report the results of two years' study of this subject. They find it impossible by any ordinary long exposure to high vacuum tubes to kill growths of bacilli or cocci by x-rays. The x-rays stimulate the germination of seeds and fermentative processes and these effects are also produced in cultures of bacilli, the vegetative properties of which are stimulated to excessive growth, while they are profoundly altered in their biologic and physiologic characters. An apparent death in cultures so treated is only due to exhaustion of vitality from excessive proliferation since only rest is required to enable the organisms to again take an active growth. [M.B.T.]

Stricture of the Esophagus.—Bunts (*Cleveland Journal of Medicine*, September, 1900) describes a series of graded, olive-shaped bougies he had devised to overcome esophageal strictures following upon the accidental swallowing of lye. On each staff there are two bulbs, the first being one size of the French scale smaller than the second bulb. This serves to permit following up the advantage gained by passing one bulb by the immediate passage of one a size larger. Sometimes it will be impossible to increase these sizes more rapidly than one or two of the French scale in every three or four days, at other times we may succeed in dilating it a number each day. Much depends upon the degree of stricture and the depth of the original injury. Great gentleness and care are required, and if one meets with repeated lack of success in one day it is better to allow the patient to rest for a day or two, if his state permits it, and then try again. It is best to have the patient sit upright in a straight-backed chair, the head thrown back somewhat, in order to straighten the line of introduction of the bougie. Instead of passing it directly back in the median line it is probably better to pass it into the pyriform sinus at the side of the larynx, which affords a funnel-like aperture that will allow the bougie to slide into the esophagus without encountering the bodies of the cervical vertebrae or the cricoid cartilage. Force should never be exerted. [G.C.C.H.]

Hemorrhage Occurring After the Menopause.—E. C. Davis (*Obstetrics*, September, 1900) thinks that as the menopause is a physiologic condition, it should be entered upon by a woman with normal generative organs without pathologic disturbances. It is at this time that atheromatous changes are likely to take place in the bloodvessels, malignant diseases make their appearance, and the atrophic changes of the tissues become observable. When the menstruation has ceased and the menopause been reached, any hemorrhage from the uterus is always pathologic, and should be carefully investigated to determine its cause, while the prospects of relief are favorable, even though it originates from a grave condition. The causes of hemorrhage at this time are: (1) Granular endometritis; (2) atheroma of uterine bloodvessels; (3) vasomotor relaxation; (4) uterine polypus; (5) uterine myofibromas; at the menopause, fibromas are said often to disappear through some retrograde change, and no doubt they occasionally decrease in size, but more often they continue to increase in size, and to threaten the life and health of the patient by the continuation of the hemorrhage, in addition to the possibilities of sloughing, and infection of the tissues, through the putrefactive changes taking place in them while breaking down, and affecting the contiguous tissues; (6) carcinoma of the uterus. The cervix is the most frequent seat of the disease, and epithelioma is the most common form of malignant tumor. An epithelioma, as is well known, when completely removed before the invasion of the surrounding tissues, is less likely to return than any other form of malignant tumor. Malignant disease rarely attacks the nulliparous uterus, or one in which there has not been one or more decided tears, and in which there is not much indurated cicatricial tissue. Hence the importance of repairing promptly these tears, and of the complete removal of this weak scar-tissue formed in the cervix. [W.K.]

Practical Therapeutics.

Under the charge of

A. A. STEVENS, A.M., M.D.

Treatment of Dyspepsia.—The *Medical Review*, London, July, 1900, quotes T. Lauder Brunton (*Clinical Journal*, April 25, 1900) as stating that the first rule for the patient who suffers from indigestion is, eat slowly, masticate thoroughly, insalivate completely. Many patients will say that they eat slowly, yet they do not masticate thoroughly. If the patient will not, of his own accord, follow the rule, he must, if necessary, follow Sir Andrew Clarke's rule—count the bites. For every mouthful of meat he must allow 32 bites, or one bite to every tooth. If the meat is tough he must allow 64 bites, and if very tough, 96 bites.

The next rule is, Let the patient take his solids and liquids separately. The reason for this is that if a patient with a weak digestion swallows much liquid—whether it be soup, plain water, mineral water, whisky and water, or beer—he dilutes his gastric juice, and thus lessens its digestive power. So it is better for a patient, who has weak digestion, to take his food without liquid. One meal, however, may be made an exception, and that is breakfast, because the food is generally of a soft and chiefly farinaceous character, and therefore a little more latitude may be allowed. But there is another reason for making the patient take food and liquid separately, and that is that unmasticated food cannot be swallowed without liquid. So that, even at breakfast, tell the patient that he can, if he likes, take a breakfast cupful of tea, not strong, but towards the end of the meal. Of course the gastric juice is diluted by the tea, but this does not matter so much in the case of farinaceous food as in the case of luncheon and dinner, into which proteids enter largely.

In many cases those rules are sufficient to remove dyspepsia. But in cases where they are insufficient, the third ones comes into play: Let the patient take his farinaceous foods at different meals. That is to say, he may take bread and butter for breakfast, but he must take neither fish, eggs, nor meat. In the middle of the day he must take fish, eggs, or meat, but no farinaceous food whatever. At about 5 o'clock he should again have a farinaceous meal, such as he had a luncheon. Only food of the same kind is put into the stomach at each meal, and so there is no delay from the different digestibility of the different kinds of food, the whole contents of the stomach become comminuted and digested and passed on into the intestine about the same time. Under those three rules a great number of dyspeptic patients can be cured.

But patients must have some fluid. The best liquid they can drink is hot water, and the best times to drink it are on rising in the morning, again between 11 and 12 in the forenoon, again about 4 or 5 in the afternoon, and, lastly, at night before going to bed. Thus the patient is given all the fluid he requires, not when it will dilute the gastric juice, but when it will assist in washing out of the stomach the remnants of the previous meal. Given at 12 o'clock, it tends to wash the breakfast out of the stomach, at 4 it washes out the remains of the luncheon, and so on.

In cases where the stomach is weak it may be an advantage to supplement the normal gastric juice by giving some acid and pepsin; and, apparently, there is sometimes an advantage in giving mixed enzymes—not pepsin alone, but pepsin containing rennin. Just before meals it is often advisable to give a little alkali, which tends to stimulate the secretion of gastric juice. The common way of giving this stimulant is with some bitter, containing no tannin, such as calumba; and this seems useful when the stomach is not irritable, and when there does not seem to be much catarrh. But if there is much catarrh in the stomach better results are often got from substances containing tannin, such as the infusion of gentian; and in patients with a flabby tongue perchlorid of iron combined with quassia is often useful. When the tongue is large, pale, flabby, and marked by the teeth at the edges, better results are sometimes got from quassia and iron than from pepsin and other remedies.

In some cases, when the habit of taking large meals or drinking large quantities of water has led to dilation of the stomach, the plan of taking fluids and solids at separate

times very often aids greatly in restoring the normal condition. But when it does not, then the use of a soft rubber tube to wash out the stomach either every morning on rising, or every night before going to bed, will often help very greatly. In cases of permanent dilation of the stomach due to pyloric contraction, the only remedy is gastroenterostomy.

Vomiting of Acute Gastritis.—

R.—Wine of ipecac..... } of each.....½ ounce.
Tincture of nux vomica, }

Sig.—Two drops in water every 2 hours.

Heroin in Coughs.—McGee (*Cleveland Journal of Medicine*, June, 1900) states that while heroin possesses hypnotic and analgesic powers it especially excels in controlling cough without the coincident disadvantages of morphin. Heroin resembles codein in effect and range of action, but excels it in the smaller dose required, and perhaps, too, in being better borne. The author prefer the soluble chlorid in doses of $\frac{1}{24}$ to $\frac{1}{12}$ of a grain. This amount every 2 or 3 hours has generally proved sufficient to relieve nervous and irritating cough without exciting unpleasant symptoms. In these doses it seems a safe and satisfactory remedy. One-sixth of a grain probably represents the safe adult dose, and for children, to whom it has been mainly given in pertussis, the average doses are from $\frac{1}{160}$ to $\frac{1}{30}$ of a grain. Like other opium preparations, however, children are quite susceptible to its action, and with them its action should be closely watched. Heroin seems especially adapted to quiet coughs of a nervous and asthmatic character, as well as those of reflex origin, and expectoration is probably easier under its influence. It is more certain than codein, safer and less disagreeable than morphin, and, unlike the latter, it is said to stimulate rather than depress the respiratory center.

An Antiseptic Varnish for Replacing Collodion.—

According to the *Journal des Praticiens* for August 18, 1900, the following combination makes a useful substitute for collodion:

R.—Thymol.....24 grains.
Balsam of tolu 80 grains.
Pulverized gum lac.....15 drams.
Alcohol (90%)..... 6½ drams.
Ether.....13 drams.

Fersan.—According to Silberstein (*Therapeutische Monatshefte*, July, 1900), this new ferruginous preparation is prepared by the action of concentrated hydrochloric acid on red blood-cells, the latter being separated by centrifugalizing blood. It appears as a brown powder with a slightly salty taste, and it does not coagulate on heating. The author has administered it in various forms of anemia with good results. The dose is about 3 to 6 teaspoonfuls daily, although much larger amounts have been given without bad effects. The new preparation is said to be free from the untoward effects of other ferruginous compounds. As fersan is not affected by artificial gastric juice it is surmised that it is absorbed only from the intestine, and the fact that the stools are not blackened as by other iron salts is offered as proof of its complete absorption.

Acute Diarrhea:

R.—Tannalbin..... 1½ drams.
Pulv. opii 2 grains.
Bismuth beta-naphtholate 1 dram.
Make into 12 powders. One every 2 hours.

Substances Which Should Not Be Prescribed in Cachets.—According to Bricemoret (*Bulletin of Pharmacy*, September, 1900), there are three groups of substances which should not be prescribed in cachets: The first of these includes substances readily absorbing the moisture of the air—sodium bromid and iodid, crystallized calcium chlorid, strontium bromid, iron ammonia-citrate, piperazin, chloral, dry vegetable extracts prepared by evaporation *in vacuo*, and extracts of animal organs desiccated *in vacuo*; the second group includes mixtures which form fluids—mixture of antipyrin and sodium salicylate; the third group consists of substances which are decomposed by the oxygen of the air and the products of the decomposition of which stain the cachet—alkaline and ferroalkaline iodids and the aristols.

The Medicinal Treatment of Menstrual Disorders.—H. Macnaughton Jones (*Edinburgh Medical Journal*, July, 1900) states that he has found senecin very useful in both amenorrhea and dysmenorrhea, the dose being from 2 to 6 grains. It may be given alone or in combination with hydrastis or hydrastin, which latter drug has proved beneficial in congestion and spasmodic dysmenorrhea, especially when administered in combination with bromids. Piscidia erythrina (1 to 2 grains) has been found useful in combination with hydrastis and viburnum in dysmenorrhea and menorrhagia. Hydrastin hydrochlorate is one of the most valuable hemostatics in hemorrhage, especially in the following combination:

R.—Hydrastin hydrochlorate $\frac{1}{8}$ grain.
Ergotin $\frac{3}{4}$ grain.
Cannabin tannate..... $\frac{1}{2}$ grain.
Stypticin $\frac{1}{4}$ grain.

Cornutin hydrochlorate ($\frac{1}{12}$ to $\frac{1}{6}$ of a grain hypodermically) has been used alone or in combination with ergot in menorrhagia and other forms of uterine hemorrhage. Cimicifuga has been efficient in hemorrhage dependent upon uterine subinvolution. In anemic conditions maganese is esteemed as an emmenagog, especially in combination with iron, quinin, arsenic, and nux vomica. Of the coaltar preparations, antipyrin has been most successful in dysmenorrhea. In those cases of amenorrhea or dysmenorrhea dependent upon mitral stenosis, strophanthus and digitalis are indispensable. In menorrhagia they can be given with hydrastis and ergotin. Morphin in dysmenorrhea is considered dangerous; codein, exalgin, butyl-chloral, and bromids are recommended as substitutes. The following sedative application over the ovarian region is highly spoken of:

R.—Extract of belladonna..... 2 drams.
Camphor..... 2 drams.
Mastic 3 drams.
Chloroform } of each..... 2 ounces.
Tincture of aconite }

In ovarian congestion the following counterirritant is recommended:

R.—Iodin... 1 dram.
Mastic 1 dram.
Rectified spirit..... 1 ounce.

Acute Cystitis:

R.—Tincture of hyoscyamus..... 6 drams.
Fluid extract of lupulin..... 6 drams.
Fluid extract of uva ursi..... $1\frac{1}{2}$ ounces.
Solution of potassa 2 drams.
Sirup to make..... 6 ounces.

A tablespoonful every 4 hours.

Acute Rheumatism.—Nestor Tirard (*Medical Treatment of Diseases and Symptoms*) speaks favorably of the following application:

R.—Salicylic acid } of each..... 3 drams.
Oil of turpentine }
Lanolin }
Lard sufficient to make..... 3 ounces.

Apply to the painful parts, cover lightly with cotton-wool, and renew night and morning.

Quinate of Piperazine.—Blumenthal (*Bulletin Général de Therapeutique*, May 15, 1900) states that favorable results have been obtained in Leyden's clinic with this new uric-acid solvent in various gouty disorders. The daily administration of from 75 to 120 grains of quinate of piperazine caused a decrease of from 40 to 50% in the amount of uric acid in the urine, hippuric acid appearing instead. The persistent diminution of uric acid and the presence of hippuric acid indicate that that drug does not merely retard the elimination of the uric acid, but in part inhibits its formation and so affects metabolism that a soluble product is made to replace an insoluble one. Meyer has employed quinate of piperazine in 10 cases of gout—5 arthritic, and 5 associated with renal gravel. No other remedies were administered, and in all cases a favorable influence was observed. In the cases of uric-acid gravel there was a marked diminution in the quantity of uric acid excreted in 3 cases, and complete disappearance in two. Ewald has employed this drug in 3 cases of renal gravel associated with

considerable irritation of the kidneys. The daily dose was 75 grains. In all of the cases the urine rapidly became clear and remained so for some time after the remedy was discontinued. Goldscheider and Fraenkel also report successes with the drug in gout.

Urticaria.—The *Journal des Praticiens* recommends the following lotion:

R.—Ethyl alcohol } of each..... 1 ounce.
Sulphuric ether }
Chloroform }
Menthol..... 10 grains.

The Treatment of Cystitis.—Foster (*St. Paul Medical Journal*, No. 2, 1900) states that in acute cystitis rest in bed should be insisted upon, and the diet should be liquid or semisolid, all stimulating articles of food and drink being forbidden. Large quantities of bland liquids, as soup, milk, koumyss, and alkaline liquids are usually grateful to the patient, and are to be advised. The bowels should be freely opened, by blue mass or calomel, at the beginning of treatment, and should be kept active during the continuance of the disease. This is important for the purpose of keeping the alimentary canal as free as possible from microorganisms and their products, and also because constipation and straining at stool increase the congestion about the bladder. When the urine is highly acid, alkalies are indicated, and the most useful is the solution of potassa. It may be administered well diluted and mixed with a little mucilage. A convenient formula is:

R.—Solution of potassa 2 drams.
Mucilage of acacia..... 1 ounce.
Tincture of hyoscyamus to make..... 4 ounces.

Sig.—One teaspoonful every 4 hours.

If the urine is already alkaline, and particularly if it is ammoniacal, we should prescribe urinary antiseptics, as salol, boric acid, or sodium benzoate. Perhaps the most reliable antiseptic is urotropin.

Washing out the bladder with various antiseptic solutions is useful. When the patient cannot completely empty the bladder this washing must be done through a catheter in order that the fluid may be entirely withdrawn; but when there is no obstruction this washing had best be done by means of hydrostatic pressure. The solutions which the author has found most serviceable are silver nitrate, corrosive sublimate, salicylic acid, and potassium permanganate. The solutions should be hot, and enough should be introduced at a time to thoroughly distend the bladder, so that all parts of the mucous membrane may be reached by the fluid. In very acute cystitis, where tension of the mucous membrane is contraindicated, washing out of the bladder cannot be practised, and it is in these cases that we derive great benefit from the method of instillation first adopted by Guyon. This consists of injecting a few drops, 25 to 50, of a stronger solution than is used where the bladder is washed out. Silver nitrate is universally admitted to be the best for this purpose, and may be used as strong as a 5% solution. It is best to begin with a 1% solution and gradually increase the strength. I usually employ for this purpose a solid silver catheter with a very fine bore, attached to a graduated glass syringe. The bladder should be completely emptied and the fluid introduced drop by drop, the tip of the catheter being just at the neck of the bladder. Rovsing, in his recent work, speaks highly of a modification of this method, which consists of washing out the bladder with sterile water and then introducing about 2 ounces of a 2% solution of silver nitrate, and, after a couple of minutes, introducing the same amount of sterile water. This leaves in the bladder a 1% solution of silver, which, after a time, the patient passes himself.

When the bladder cannot be completely emptied by the patient, particularly in chronic cystitis, the bladder must be drained either through the urethra or by means of an artificial opening. Drainage by means of a catheter through the urethra often gives great relief to the patient, and sometimes brings about rapid improvement. It is especially indicated in cases in which the shape of the bladder has not been altered, and in which there has not been much loss of tone in the muscular coat, and in which unusual sensitiveness of the urethra does not immediately resent the presence of a foreign body.



PANCREAS AND SPLEEN. CASE III.

Original Articles.

HEMORRHAGIC PANCREATITIS AND FAT-NECROSIS
FOLLOWING AN OPERATION ON THE GALL-
BLADDER.

By CHARLES G. STOCKTON, M.D., AND HERBERT U.
WILLIAMS, M.D.,
of Buffalo, N. Y.

IN the history of this unusual case some interest attaches to the repeated attacks of cholecystitis and to the accompanying gallstones, but in the following considerations only so much of the history of the diseased bile-passages will be given as relates to the subsequent hemorrhagic pancreatitis.

The patient, Mrs. R., a widow, 66 years old, had cholecystitis 6 years ago and again 4 years ago, this time with severe hepatic colic and jaundice. She made slow improvement and sustained a relapse six months later. There was no vomiting or nausea following this and she slowly improved in most respects until late last autumn. She had been a stout woman and now regained most of the weight that she had previously lost. There was no recurrence of jaundice nor was there evidence of troubled digestion, but during these years she suffered from frequent attacks of pain in the hepatic region. The pain was never severe enough to require anodyne, although hot applications were often made and she felt that she was not entirely well. About the middle of October, 1899, she fell and sustained a slight strain of the body, after which the pains became worse. About the first of December, although the pain had recently somewhat diminished, she became slowly jaundiced, suffered from much gastric distress with stools at times clay-colored, at other times showing some bile-staining; the urine became beer-colored and there was progressive loss of weight.

She was examined by Dr. Stockton on January 20, 1900, at which time she complained of dull pain in the small of the back and occasionally in the hepatic region. She had moderate jaundice, clay-colored stools and fair gastric digestion. There was total acidity of 30, combined chlorids 10, acid salts 5, and free hydrochloric acid .05. There was no gastric catarrh and the food showed good digestion. The urine was acid, dark reddish color, specific gravity 1.023, showing a trace of albumin, bile coloring-matter, no sugar, a trace of indican, the total amount in 24 hours 480 cc. with 7.84 grams of urea. Microscopically there were found a few bile-stained, finely granular casts, squamous epithelium, leukocytes and cylindrical. The liver was palpable, about one inch below the free costal border and was smooth and lightly tender. The gallbladder could not be felt.

The diagnosis of cholecystitis and cholelithiasis was made. She was judged not to be in a condition suitable for operation and was therefore sent to the Buffalo General Hospital to be treated by vapor baths, limited diet, hot fomentations and large draughts of water. Under this treatment she made moderate improvement in most respects and more especially in the condition of the urine. The casts disappeared, as did the biliary coloring-matter, with the subsidence of the jaundice.

On February 14 she was allowed to sit up and walk a little about the room. Immediately afterwards her temperature rose to 101° F., the pulse to 100 and at the same time there was an increase of pain and a return of the jaundice. An operation was now resolved upon. This was performed on the 21st of February by Dr. Roswell Park, and is kindly described by him as follows:

"After opening the abdomen by an S-shaped incision, the gallbladder was found extremely contracted and drawn up beneath and behind the anterior border of the liver. In it could be felt at least one calculus, while along the duct others could be felt. The operation was made extremely

difficult by the fleshiness of the patient and by adhesions as well as by the deep situation of the gallbladder and the duct. During the manipulation required for making access to these, especially to the latter, I was perfectly conscious that more or less of damage was being done to adjacent structures, but was absolutely unable to estimate it. One calculus was removed entire from the gallbladder, while most of the material in the duct had to be crushed before it could be removed with a spoon. The impacted stone, which seemed to be producing complete obstruction of the duct, was at least half an inch in diameter. Several small calculi were also removed. The material thus obtained weighed 4 grams. Sutures were applied as carefully and as accurately as was possible under the difficulties, and a small drain inserted into the gallbladder."

The patient bore the operation well, but soon afterwards required stimulants. During the afternoon and evening she suffered severe pain, requiring anodyne. Early in the morning there suddenly developed a condition of shock, the pulse being 140 and thready, temperature being 102. The patient was given an intravenous injection of normal salt-solution, hot enemas and hypodermic stimulation, after which there was temporary improvement, but death ensued about 3 P.M., 28 hours after the operation.

A clinical diagnosis of septic peritonitis was made, but this did not seem sufficiently extensive to account for the sudden development of the shock and the early, fatal termination of the case.

Autopsy by Dr. Williams, February 22, 1900, two hours after death. The subject was a somewhat stout, middle-aged woman. There was an incision 12 cm. long in the right hypochondriac region, approximately parallel with the costal margin. The end of a rubber drainage-tube projected between the edges of the incision, which was closed with silkwormgut sutures. The whole was covered with a bandage and dressing. The subcutaneous adipose tissue was 1½ cm. in thickness over the thorax, and 3 cm. over the abdomen. There was some arteriosclerosis and calcification of both coronary arteries; otherwise the heart and pericardium as well as the pleural cavities and lungs were not remarkable. The omental and mesenteric adipose tissue was well developed. The peritoneal cavity contained a quantity of dark, serous fluid. The peritoneal surfaces of the intestine and liver were covered with a thin layer of fibrin. The coils of intestines were congested. The spleen was more than twice its normal size, dark and soft. The kidneys, ureters, and suprarenal bodies were not remarkable. The mucous surfaces of the stomach, the duodenum, and the remainder of the intestines, with the vermiform appendix, presented nothing noteworthy, except a small, clean-cut round ulcer on the posterior wall of the duodenum, just below the pylorus. There was a firm fibrous adhesion between the lower anterior margin of the liver and the anterior abdominal wall above the umbilicus. The liver was of about the normal size and was hard, its capsule thickened, its surface coarsely granular, in color pale and yellowish; the lobules distinct on section. The drainage-tube above mentioned entered the gallbladder, which was contracted, and passed through the cystic into the common bile duct, ending 2 cm. from the bile-papilla. The lower end of the tube was secured to the wall of the duct by a purse-string silkwormgut-suture. The bile-papilla was prominent. The submucous layer of the duodenum in this region was thickened and red from infiltration with blood.

The pancreas was large and showed well-marked fatty infiltration. The pancreatic duct was easily found, opening inside the bile-papilla, and was large and patulous. The head of the pancreas was enlarged; it was firm and dark reddish-brown in color. On section it showed irregular, chalky-white areas, alternating with dark areas, apparently of hemorrhagic infiltration. Incision into the body of the pancreas near its middle showed some small hemorrhages in this vicinity. On both surfaces of the pancreas, but especially the posterior, there appeared numerous round, flat, firm, opaque, white areas, 1 to 5 mm. in diameter, plainly seen in contrast with the normal adipose tissue. They

were regarded as fat-necroses, which they proved to be on examination with the microscope,

The lymph-nodes in the neighborhood of the pancreas were slightly enlarged, firm, and pink in color. It was unfortunately not possible to examine the solar plexus, as the time allowed for autopsy was limited.

Histological Examination.—The fat-necrosis presented the usual characters of these lesions. There was no marked accumulation of leukocytes or other cells around them, and no increase of connective tissue. They were identical in appearance with those seen in the hog and those produced by operations on the cat. Large amounts of calcium salts were present in them, which is interesting taken in connection with the clinical history.

The mucous membrane of the duodenum showed nothing remarkable. The capillaries of the submucous layer close to the pancreas were distended with blood. The lymph-spaces of this layer contained numerous red blood-cells, and in some places were crowded with them. There were no large hemorrhages.

The pancreatic duct and its branches possessed an intact epithelial lining. The ducts were usually empty, sometimes they held stringy contents, probably mucus. Sections of the pancreas showed fatty infiltration, and rather more abundant connective tissue than is usual, in which "mast-cells" and a few plasma cells (Unna) were seen. In osmic acid specimens slight fatty degeneration of the glandular epithelia became evident. Areas of fat-necrosis were numerous in the interlobular adipose tissue. Leukocytes occurred in the stroma of the pancreas, between the groups of acini, in moderate numbers, both in the body and the head of the pancreas. There were points on the surface of the head where masses of leukocytes and fibrin with much granular detritus were seen. Numerous hemorrhagic areas appeared in and about the head of the pancreas. Small hemorrhages occurred both in the body and head of the pancreas. Rarely small veins containing recent thrombi were observed. The dark color of the head of the pancreas was partly due to necrotic fat-cells, whose contents were stained orange-red, apparently from the imbibition of blood-coloring matter. Masses of decolorized blood-corpuscles were also noted. Occasionally the necrotic fat-cells contained granules and rod-shaped crystals of brown pigment, and a similar pigment occurred between the fat-cells.

In the head of the pancreas numerous ill-defined areas occurred, in which the epithelial cells were shrunken, their nuclei staining badly. There were other areas in which the outlines of the epithelial cells were indistinct, and the nuclei took no stain at all. These changes were not marked. They were often seen in close contact with necrotic fat-cells.

The histological examination of the other organs of the body yielded no results appearing to have any relation with the condition in the pancreas.

Bacteriological Examination.—The bacteriological examination gave the following results: The peritoneal fluid, the liver and the pancreas contained an organism in pure culture, which in regard to motility, staining by Gram's method, growth in gelatin and agar plates and tubes, growth on potato, coagulation of milk, fermentation of glucose, and development of indol, corresponded with *Bacillus coli communis*. A tube made from the pancreas and kept in the incubator under anaerobic conditions, showed no growth. A tube made from the spleen showed no growth. In sections of the pancreas, a few short bacilli with round ends, staining with methylene-blue, were seen, but they did not appear to have any relation with the fat-necrosis. Considering the circumstances of this case, the presence of *Bacilli coli communis* appears to have no special significance.

Conclusions.—There was no evidence of any obstruction in the pancreatic duct or any of its branches. Acute interstitial inflammation of the pancreas with hemorrhage was present. The other lesions in the pancreas were fat-necrosis in the surrounding and interlobular adipose tissue, and necrosis of some parenchymatous cells. In the opinion of the writers the pathological conditions are best explained as having resulted from traumatism to the pancreas sustained at the operation and unavoidable on account of its diffi-

culties. (See Dr. Park's description of the operation.) That such traumatism occurred is indicated by the hemorrhages in the head of the pancreas and in the adjacent submucous layer of the duodenum. The lower end of the drainage-tube in the common duct was only 2 cm. distant. A disturbance of the tissues of the head of the pancreas would account for the necrosis of the parenchymatous cells, and would make escape of the pancreatic ferments possible. Fritz has reported a case (*Boston Medical and Surgical Journal*, 1892, Vol. cxxvii, p. 571) in which pancreatitis and fat-necrosis resulted from an injury, and a case resulting from a crushing injury, received in a railroad accident in which the pancreas was ruptured, is reported by Schmidt, *Münchener medicinische Wochenschrift*, May 8, 1900. The significance of the pigment crystals in the head of the pancreas, and partly inside of necrotic fat-cells, is not clear. They must have been due to imbibition of blood or bile coloring matter, possibly though not probably from an earlier lesion; chemical tests gave indecisive results. It is possible that the beginning of the affection coincided with the rise of temperature and pulse noted in the clinical history as occurring shortly before the operation. That is unlikely, however, as none of the classical symptoms of pancreatitis were present at that time.

Explanation of Plate.—Pancreas showing numerous small fat-necroses in the adipose tissue about it; the head of the pancreas is somewhat enlarged and is dark brown in color from hemorrhage; part of the stomach, just entering the duodenum, appears above and behind the head of the pancreas; the spleen and body of the pancreas have been given one-half turn, so that their posterior surfaces are shown, and the upper border of the spleen appears in the sketch as the lower.

OBSTRUCTION OF THE COMMON BILE-DUCT.

By JOHN B. DEEVER, M.D.,

of Philadelphia.

WHILE the subject of this paper—obstruction of the common duct—deals with but a portion of the numerous conditions met with as a result of interference with the channels for the outflow of the bile, yet obstruction of the common duct is comparatively of such frequent occurrence that a consideration of the etiology, pathology, symptoms, diagnosis, and treatment must interest all of us.

The etiologic factors in the production of obstruction of the common duct may be divided into two varieties, those occurring from causes within the duct and those from external causes. The most common intrinsic cause of obstruction is gallstone. Stenosis and occlusion secondary to the passage of gallstones are rarely met with. Round worms have been found so closely packed in the common duct that they have completely closed its lumen. Two specimens of this character are in existence—one in a Paris museum and a second in the Wister-Horner Museum at the University of Pennsylvania.

The extrinsic causes of obstruction of the common duct are carcinoma of the head of the pancreas, duodenum or pylorus, an aneurysm of one of the branches of the celiac axis, a floating kidney, a retroperitoneal growth in this particular region, or enlargement of the lymphatic glands situated in the gastrohepatic omentum.

The pathologic causes of obstruction of the common duct, whether due to inflammatory invasion or from malignant disease of the duct or adjacent viscera, do not present features dissimilar to the same condition elsewhere.

The inflammatory process excited by the presence of a stone in the duct is shown at first by the outpouring of mucus, hypersecretion, with congestion of the mucosa; acute thickening of the lining of the duct follows, and later the entire coats of the duct become infiltrated and a purulent exudation occurs, which is followed by ulceration.

In chronic disease of the duct, stricture occurs as a result of contraction of the inflammatory deposit in the walls of the duct. The lower portion of the duct is the part most commonly attacked by the inflammatory process, on account of the close proximity of the duct to the bowel and its communication therewith, and the presence of the multitude of bacterial inhabitants in the bowel. The bacteria most commonly found present in inflammatory disease of the duct are the *Communis coli* and the streptococci. Primary carcinoma of the common duct is not common. The duct is usually involved secondarily to disease in the head of the pancreas, duodenum, or of the stomach.

The symptoms vary according to the character and cause of the obstruction to the duct. The symptoms of an acute obstruction are marked by sudden onset of colic, nausea or vomiting or both, pain, tenderness, in some instances, collapse, and jaundice.

The colic in obstruction is due to the effort of the duct to expel its contents, and is analogous to the colic in appendicitis. If the foreign body is fixed at the duodenal end of the duct, the colicky pains may become continuous and only cease after the stone has become expelled into the bowel, or when it drops back into the duct, as in the ball-valve action of a stone, as described by Fenger. Coincident with the acute seizure of biliary colic there is associated therewith violent and agonizing pain in the region of the liver, which may radiate to the right shoulder. The pain may as likely be referred to the epigastrium or to the umbilicus. A line drawn from the tip of the ninth rib to the umbilicus and bisected at its midpoint by another line drawn at a right angle would approximately represent the position of the common duct. The rigidity and tenderness early in the disease would be confined to this line. The pain is sometimes referred to the lower chest-wall.

The tenderness in obstruction of the common duct is marked upon slight and superficial palpation, and if the obstruction is associated with cholecystitis, the tenderness is so pronounced that the merest contact with the abdomen will reveal it.

Rigidity of the right rectus muscle early in inflammatory and obstructive disease of the common duct is pronounced and can be elicited by barely bringing the finger-tips in contact with the abdominal wall. Very much more can be learned in the examination of the abdominal wall by gentle manipulation than by any other means. Rigidity of the flat muscles in the upper right quadrant of the abdomen occurs as a later manifestation. Nausea and vomiting are of reflex origin.

The temperature is of considerable importance in certain cases of obstruction of the common duct. In recent or acute cases of obstruction, an increase of temperature indicates the onset of the inflammatory stage; in chronic cases an irregular intermittent temperature is pathognomonic of the presence of gallstones.

The collapse which at times occurs at the onset of acute obstruction of the common duct is principally of reflex origin, although it may presage rupture of the duct.

Jaundice is not a constant symptom of obstruction. If the obstruction is of short duration, then jaundice will be absent, as in acute inflammatory edema of the mucosa, or in temporary but complete obstruction.

Permanent obstruction, whether from the presence of a stone or from malignant disease, is always accompanied by jaundice; in the latter instance it is progressive.

The importance of being able to differentiate between the causes of obstruction in making the diagnosis cannot be too strongly urged. Upon the recognition of the condition will depend the advisability of instituting surgical interference. The essential points to observe in making a differential diagnosis of the various obstructive conditions found in the common duct are,—if there has been previous attacks of bilious colic associated with tenderness in the region of the liver, with or without jaundice; if there has been vomiting coincident with the colic, or prior to it; if the initial colic had been followed by an attack of jaundice occurring shortly after the onset of pain; if there has been vomiting coincident with colic, or prior to it; if the patient has suffered with recurrent attacks of colic and jaundice with an irregular fever occurring some time after the paroxysmal seizures. To differentiate between stenosis and other nonmalignant obstructions of the duct without an exploratory laparotomy would be an absolute impossibility.

The most common malignant condition resulting in obstruction of the duct is cancer of the head of the pancreas. The symptoms in malignant disease of the pancreas are marked by progressive loss of weight and strength, digestive disturbances, pain, the absence of characteristic colic, without disturbance of the temperature, and the presence of a tumor in the epigastric region.

The treatment of obstruction of the common bile-duct is divided into two classes, the medical and the surgical; the medical treatment is subdivided into the expectant and the preventive. The surgical treatment offers the most positive means of removing the obstruction, providing it is not of malignant origin.

The best that can be expected from medical treatment is that the symptoms may be allowed to subside, and the jaundice, if present, disappear, so as to afford the surgeon the most favorable opportunity to remove the cause of the obstruction.

The dangers in delaying operation are many; infection, ulceration or perforation of the duct, cholecystitis or cholangitis, localized peritonitis, rupture of the duct with a subsequent general peritonitis, or if walled off by adhesion, subdiaphragmatic abscess, pyelophlebitis, abscess of the liver, and thrombosis of the portal vein.

The treatment for obstruction of the common duct other than surgical is directed first to control pain by the administrations of opiates, the application of hot poultices to the right hypochondrium, prolonged hot baths, stimulants to control the shock and the administration of alkalines, and alkaline mineral waters.

There are certain cases in which an operation would be attended by a fatal outcome, the chief causes being old age, shock, and extreme jaundice which has been present for a long period. In the latter instance, the danger arises from the liability to uncontrollable fatal hemorrhage consequent to the jaundice.

The incision to expose the common duct is a vertical one, carried through the right rectus muscle; in making the incision include the rectus muscle it affords a better safeguard against ventral hernia than does that going through the semilunar line.

In no intraabdominal operation is it more important to thoroughly wall off the field of operation than in opening the common duct. The gauze is so arranged that it will keep the site of the operation free from loose coils of bowels or omentum, thus affording an opportunity to thoroughly expose the field of vision uninterruptedly, and permit the necessary freedom for manipulation. After thoroughly walling off, the gallbladder is inspected, and if found to contain stones, is emptied; the finger is then introduced into the foramen of Winslow, and brought directly in contact with the common duct. If a stone is present it is usually found occupying the duodenal end of the duct. The duct is incised and the stone extracted; a rubber drainage tube is introduced into the duct, around which sterile gauze is packed, the walling-off gauze is removed, and if the gallbladder has not been opened, the wound is closed, except at a point to permit the rubber drainage-tube and protecting gauze to protrude.

If the stone occupies the extreme lower portion of the common duct, and is fixed there, an operation devised by Dr. McBurney will offer an excellent means of delivering the stone without incising the duct in its continuity; this makes it possible to close the abdomen without the fear of subsequent leakage from the duct.

The operation devised by Dr. McBurney consists in carrying an incision through the right rectus muscle from the tip of the cartilage of the ninth rib parallel to the fibers of the muscle, 2 inches from the median line. An incision is made into the middle of the descending portion of the duodenum, the opening of the common duct exposed, and a probe is introduced into the duct to explore it. The opening of the duct is easily found, enlarged by incision and dilated, the stone grasped and extracted, the wound in the duodenum stitched and the abdominal wound closed. This certainly offers a very fair avenue for attacking a stone in the duct, and permits quite as free manipulation as does an incision into the duct.

The common duct is readily palpated with the finger introduced into the foramen of Winslow; the location, size of the stone, and possibility of removal or of incision into the duct may be determined by the examining finger. It is possible to attack the common duct by the extraperitoneal route. The second or descending portion of the duodenum is but partially covered by the peritoneum; the reflection of the post-parietal peritoneum is divided at the second portion of the duodenum to the outer side, exposing the common bile-duct and the pancreatic duct which perforates the inner side of the duodenum somewhat obliquely just below its middle portion. The common duct is opened, the stone removed, and drainage introduced or the duct sutured.

In any operation on the common duct which involves opening the duct it is safest not to trust to stitching alone, but to reinforce the line of suture with gauze packing, so that in the event of leakage from the duct or failure of the sutures to hold, the peritoneal cavity will not be infected from the escaping contents of the duct. If the gallbladder is found to be contracted at the time of operation, it is not necessary to open it unless stones are found contained therein. In a certain

percentage of cases of obstruction of the common duct, I open and drain the gallbladder, whether the latter is diseased or not.

In carcinoma of the common duct, when seen early without adhesion, or if not too much involved, resection of the duct and transplantation into the duodenum will overcome the obstruction. Where the area involved is too great to accomplish transplantation of the duct, a cholecystoenterostomy will suffice to establish the biliary circulation.

A cholecystoenterostomy is also called for when the obstruction is due to cancer of the pancreas or of the pylorus, and it may be advisable in certain cases of obstruction from stone as a preliminary to the operation upon the duct.

THE RELATION BETWEEN GALLSTONES AND APPENDICITIS.

By A. J. OCHSNER, M.D.,

of Chicago, Ill.

Surgeon-in-Chief to Augustana Hospital and St. Mary's Hospital; Professor of Clinical Surgery in the College of Physicians and Surgeons.

THAT it is frequently difficult to make a differential diagnosis between gallstones and appendicitis has been pointed out by many of the most experienced authors,—Deaver, Fowler, Mynter, Murphy, Lennander, Kehr, and others. A few surgeons,—Maurice Richardson, Sonnenburg, and Kölliker—have reported cases in which both conditions existed in the same patient, but, so far as my study of both subjects has extended, I have been unable to find any author who has considered a relation between the two conditions.

During the past few years I have operated upon a number of patients suffering from acute or chronic appendicitis, in whom I discovered, incidentally, stones in the gallbladder, and vice versa I have operated upon patients for the relief of gallstones and have found this condition complicated with chronic appendicitis. In these cases the appendix was usually extensively adherent; the cecal end was partly or wholly obliterated; the distal end was club-shaped and contained septic material in the form of fecal concretions, pus or mucus. The frequency with which these two conditions coexisted in the same patient seemed to indicate some relation between these two pathologic conditions. As a result of these observations I began on February 1, 1900, to examine the appendix in all patients upon whom I operated for the relief of gallstones, and I have arranged a table of all the gallstone patients upon whom I operated at the Augustana Hospital during the four months of February, March, April, and May of the present year. I have also added the histories of all cases in whom both gallstones and appendicitis were present. I had intended to include a longer period of time, but find that this would carry me beyond the limits of this paper. Moreover, I believe that the number of cases tabulated is sufficient to warrant my conclusions.

During these four months I operated upon 18 patients suffering from gallstones, and of these 6, or one-third of the entire number, suffered at the same time from appendicitis. In each one the extensive adhesions, or the cicatricial contractions, showed that the patient must have suffered from a violent, acute attack of appendicitis at some time, and in each case the appendix contained septic material in the form of fecal concre-

tions or pus. It seems clear, then, that during the acute attack an infection of the gallbladder with the colon-bacillus could have been easily accomplished, and this also would have been possible during the long-continued chronic appendicitis following.

Cushing and others have pointed out the fact that a considerable proportion of all patients suffering from gallstones have previously had typhoid fever. Mignot and others have shown experimentally that the colon-bacillus is capable of causing the formation of gallstones. Gilbert and Fournier seem to have proved beyond a doubt that microorganisms actually are the exciting cause in the formation of gallstones.

These facts are borne out by many other observers, both in the field of experimental and clinical surgery, so that there can scarcely be any doubt concerning the correctness of the theory that infection is the essential cause in the formation of gallstones, although there are undoubtedly many predisposing causes, such as faulty diet, constipation, tight lacing, sedentary habits, etc. It is plain that infection can readily occur either through the lymphatics or through the venous system; or, during the acute attack of appendicitis, when the entire alimentary tract, above the ileocecal valve, is filled with infectious material, infection through the common duct is quite possible.

The experiments of Nasse have shown that the contents of the gallbladder become septic upon closure of the common duct; direct infection is not at all necessary.

With one exception, all of these patients suffered from the acute attack of appendicitis at a time when a diagnosis of this disease was rarely made, hence the histories fail to bring out the fact that the patient has suffered from appendicitis, notwithstanding the pathologic conditions found at the time of operation demonstrate this fact beyond a doubt. It is to be expected that in the future this will be different because at the present time all competent physicians recognize this disease. I will say that in but one of these cases a positive diagnosis of gallstones complicated with appendicitis was made, although I have come to suspect the presence of chronic appendicitis in cases suffering from gallstones, and, consequently, always make a possible diagnosis of the former condition.

During the four months covered by these cases I operated in all upon 61 patients suffering from appendicitis, counting the 6 in whom this condition was incidentally found in connection with gallstones, so that apparently, according to this series of cases, 33% of all gallstone cases had appendicitis and only 10% of all appendicitis cases had gallstones. It should be borne in mind, however, that the latter proportion may not be correct, because it seemed unwise in many cases operated upon for acute appendicitis to examine the gallbladder, while the appendix was examined in all cases operated upon primarily for the relief of gallstones.

From a clinical standpoint these observations are undoubtedly of value, because they show the importance of examining the appendix when operating for the relief of gallstones. Of these 18 cases 6 would undoubtedly have continued to suffer after the gallstones were removed, had not the diseased appendix been excised. If a vertical incision is made through the edge of the right rectus abdominis muscle, the cecum and appendix can be brought up for inspection, and in case of extensive adhesions this incision can safely be extended downwards sufficiently to make the removal of the diseased appendix possible.

On the other hand, in case one suspects the complication of appendicitis with gallstones, one can readily remove the diseased appendix through an incision made through the right rectus abdominis muscle in a position opposite McBurney's point, and from this incision one can readily examine the gallbladder.

CASE No. 7372.—A married woman, 63 years of age, came under my care March 18, 1900.

History.—Her family history was negative. She had sustained the ordinary diseases of childhood. Menstruation appeared at the age of 18 and was always regular and painless. She was married at the age of 25; had 7 normal labors and one miscarriage at three months. The menopause appeared at the age of 40. During the past 23 years she has had repeated attacks of pain in the epigastrium, usually accompanied by vomiting, lasting from 2 to 14 days, and occurring from 1 to 6 times a year. She was never jaundiced. Nine weeks ago she had a severe attack of pain in the right hypochondrium, accompanied by vomiting and chills. The pain was excruciating for about two hours, and the patient remained in bed for about one week. The urine was very dark in color; the stools were not observed. She has had three similar attacks since. Three weeks ago she had an attack accompanied by jaundice and lasting about a week. The last attack began one week ago and has been continuous.

Present Condition.—The patient is fairly well-nourished but considerably under her usual weight; tongue is clean and dry; complexion good; appetite fair; bowels move regularly, except during attack, when she is constipated; temperature normal, pulse regular; arteries tortuous and walls firm; heart, lungs, and kidneys normal; abdomen somewhat distended; considerable tenderness is felt in both hypochondriac regions upon pressure; entire abdomen is somewhat tender; there are no friction-sounds over gallbladder, and no abnormal dulness in abdomen.

Diagnosis.—Gallstones.

Operation.—An incision was made through the edge of the right rectus abdominis muscle, reaching from a point even with the umbilicus 3 inches upwards. It was necessary to lengthen this incision slightly in a downward direction in order to bring up the cecum and appendix. There was a strong adhesion $\frac{3}{4}$ of an inch wide from the cecal end of the appendix, extending from the appendix to the peritoneal covering of the iliacus muscle, making a short bend of the appendix. The end of the appendix was club-shaped and contained gas, which could not be expelled by pressure. The appendix contained soft fecal matter. The appendix was removed and the stump buried in the cecum.

The gallbladder was as large as a hen's egg and contained 35 strongly faceted stones varying from $\frac{1}{16}$ to $\frac{1}{2}$ inch in diameter. They had evidently been exposed to friction for a long time. One stone, $\frac{1}{4}$ inch in diameter, was in the common duct. By inserting small dressing forceps and dilating the biliary duct, pressing the common duct between finger and thumb, it was possible to shove the stone back into the gallbladder and remove it. The gallbladder was attached to the peritoneum and drained. The patient made a normal recovery, leaving the hospital 5½ weeks from the date of operation.

CASE No. 7386.—This patient came under my care at the Augustana Hospital, March 20, 1900, and is a married woman of 34 with a good family history.

History.—Was always well as a child. Menstruation commenced at the age of 15 and was regular and painless. She was married at the age of 22; had one pregnancy at the age of 24, but miscarried at 5½ months. Her health was impaired for 6 months following this experience. Eight years ago she began to be troubled with slight attacks of colicky pain in the region of the epigastrium. These pains continued for about one half hour and were frequently repeated during the period following, at intervals of from one week to a month. These attacks were supposed to be due to gastric disturbances. She was then well for a year and a half when the attacks returned with greater severity. They have persisted ever since. When the patient has been confined to liquid diet she has felt fairly well, but on attempting to eat solids she has invariably suffered. During all this time she has been under treatment for gastric disturbances.

One year ago she examined her stools after one of her attacks and found several gallstones. Since this time she has taken olive oil at intervals and has always felt better for it. During the past six months she has noticed some pain in the right inguinal region. Previously, her pain had always been confined to the region of the epigastrium.

Present Condition.—The patient is obese; pulse and temperature are normal; tongue somewhat coated; appetite fair; bowels regular while she takes olive oil; heart, lungs and kidneys are normal. The abdominal walls are exceedingly thick and there is a considerable amount of tenderness, especially in the right inguinal region.

Diagnosis.—Gallstones, complicated with appendicitis.

Operation.—An incision, 6 inches in length, was made in the right linea semilunaris. The layer of fat being unusu-

bladder was universally adherent to the liver, the stomach and the omentum. Its walls were much thickened and it was impossible to bring its lower end up to the parietal peritoneum. The upper end was sutured to the parietal peritoneum; to the lower end a piece of iodoform gauze was sutured with catgut, and this was passed out through the upper angle of the wound. The gallbladder was drained and the abdominal walls closed up to the point of drainage. The gallbladder besides the stones contained a quantity of mucus which was evidently septic. As a result of this a marked suppuration of the wound occurred, and the patient was not able to leave the hospital until nine weeks after the time of the operation. But she recovered fully.

CASE No. 7414 came under my care at the Augustana Hospital on the 26th of March, 1900. The patient is a

NAME AND OCCUPATION.	NO.	AGE.	DATE OF ADMISSION AND DISCHARGE. 1900.	DIAGNOSIS.	TREATMENT.
1. Mrs. S. A. Housewife.	7209	64	February 7. March 15.	Gallstones.	Laparotomy. Removal of 50 stones.
2. Mrs. W. B. Housewife.	7237	46	February 13. March 17.	Gallstones in gallbladder and common duct.	Laparotomy. Cholecystotomy and choledochotomy.
3. Miss B. Nurse.	7256	Not given.	February 18. June 4.	Gallstones in gallbladder and cystic duct.	Laparotomy. Loosening of adhesions and removal of stones.
4. Mrs. C. W. Housewife.	7372	63	March 18. April 29.	Gallstones; chronic appendicitis; appendix containing gas and fecal matter; extensive adhesions.	Laparotomy. Cholecystotomy and excision of appendix.
5. Mrs. F. J. Housewife.	7384	29	March 20. May 2.	Gallstones.	Laparotomy. Cholecystotomy.
6. Mrs. F. S. Housewife.	7386	34	March 20. May 15.	Gallstones in gallbladder; chronic recurrent appendicitis; appendix containing fecal concretions.	Laparotomy. Cholecystotomy. Excision of appendix.
7. Mrs. J. M. M. Housewife.	7414	36	March 26. April 30.	Gallstones in gallbladder; recurrent appendicitis; fecal concretions.	Laparotomy. Removal of gallstones. Cholecystotomy. Excision of appendix.
8. Mrs. L. H. Housewife.	7461	51	April 8. May 6.	Gallstones in gallbladder.	Laparotomy. Cholecystotomy. Removal of 42 gallstones.
9. Mrs. M. H. Housewife.	7474	34	April 10. May 18.	Gallstones in gallbladder.	Laparotomy. Cholecystotomy. Removal of 6780 stones.
10. Miss J. J. At Home.	7475	26	April 10. May 30.	Gallstones in gallbladder.	Laparotomy. Cholecystotomy. Removal of 3 stones.
11. Miss C. P. Nurse.	7492	38	April 16. May 10.	Gallstones in gallbladder and common duct.	Laparotomy. Cholecystotomy. Removal of stones.
12. Mrs. S. S. Dressmaker.	7501	40	April 17. May 26.	Gallstones in gallbladder; chronic appendicitis with enterolith.	Laparotomy. Cholecystotomy. Removal of stones. Excision of appendix.
13. Mrs. C. G. Housewife.	7508	33	April 19. May 15.	Gallstones in gallbladder.	Laparotomy. Cholecystotomy. Removal of stones.
14. Mrs. J. K. Housewife.	7509	58	April 19. May 3.	Gallstones in common duct.	Laparotomy. Removal of stones. Choledochotomy.
15. Mrs. C. W. Housewife.	7527	39	April 24. June 14.	Gallstones in gallbladder.	Laparotomy. Cholecystotomy.
16. Mrs. Dr. B. Housewife.	7529	42	April 24. May 29.	Gallstones and chronic appendicitis; appendix extensively adherent; contains enterolith.	Laparotomy. Cholecystotomy. Excision of appendix.
17. Mr. C. E. Fence Building.	7553	48	April 29. June 14.	Gallstones and appendicitis.	Laparotomy. Excision of appendix. Cholecystotomy.
18. Mr. C. W. N. Farmer.	7695	24	May 28. May 30.	Gallstones in gallbladder.	Examination.

NOTE.—The large number opposite each name corresponds with the number in the Hospital records, and is used for purposes of identification.

ally thick the incision, down to the fascia, was extended above and below for a distance of 4 inches, making the entire incision through the fat 14 inches, in order to make it possible to manipulate the intraabdominal structures. The appendix was surrounded by a mass of omentum which extended below and behind the cecum; it was found universally adherent. In order to facilitate its removal two hemostatic forceps were applied to it, one at its junction with the cecum, the other $\frac{1}{2}$ inch beyond this point. It was then severed between these two forceps; the omentum and adhesions were then ligated and the appendix removed with the mass of omentum surrounding it. Its cecal end was almost completely obliterated, and it contained four fecal concretions the size of a lemon seed, and a small quantity of pus and mucus.

The gallbladder was the size of a hen's egg and contained 36 gallstones varying in size from that of a filbert to that of a pea. The stones were all strongly faceted. The gall-

married woman, 36 years of age, and gives the following history:

History.—Her family history is good. She had always been in good health, with the exception of having suffered from typhoid fever ten years ago. She had suffered for many years from a feeling of soreness in the right hypochondrium, and during her convalescence from typhoid fever she had severe colicky pains in the region of the gallbladder. During the following year she had repeated attacks at short intervals. These became less frequent, but more severe. Six years ago she gave birth to a child normally. After this she was free from the attacks for two years; then she had sudden attacks almost daily for a year, when she became pregnant again, remaining free from attacks until the birth of her child, since which time the attacks have been nearly constant. She has never been severely jaundiced, but the sclera has been slightly yellow. Occasionally minute gallstones have been found in the feces. The pain has been so severe that

the patient has acquired the morphia habit, taking as high as 2 grains, in divided doses, during one hour, but rarely taking more than 6 grains during the 24 hours.

Present Condition.—Patient is well nourished; pulse and temperature normal; tongue clean; appetite good; bowels regular; heart, lungs, and kidneys normal. Slight tenderness under right costal arch; liver is not perceptibly enlarged; tenderness in right inguinal region.

Diagnosis.—Gallstones.

Operation.—An incision 3 inches long was made through right rectus abdominis muscle, from a point opposite the umbilicus upwards. The cecum and appendix are brought into the wound; the latter is 4 inches long, and has an exceedingly thick mesentery, extending beyond the distal end. The appendix contains 4 fecal concretions which cannot be forced into the cecum through a contracted cecal end. The appendix was removed and the stump inverted into the cecum. The gallbladder was found universally adherent to the liver, the omentum and the transverse colon. It was shrunk to the size of a walnut, and could be located only with difficulty after separating some of the adhesions. It contained 2 small cubical gallstones the size of a kernel of corn; a third one of the same size and form was found tightly wedged into the biliary duct, and could be removed only after being crushed by means of a small curet, which was inserted along its border.

A gauze drain was attached to the gallbladder by means of catgut stitches, the gallbladder tamponed with iodoform gauze and a glass drainage tube passed down through the abdominal wound to a point behind the gallbladder. The remaining portion of the abdominal wound was closed by means of stitches.

The patient made a normal recovery, leaving the hospital in a little less than 5 weeks from the time of the operation.

CASE No. 7501.—A married woman, 34 years of age, came under my care April 17, 1900.

History.—Her mother died at the age of 62, of tuberculosis of the lungs; one sister died of the same disease at the age of 47; otherwise family history is good. She suffered from children's diseases; menstruation began at the age of 14 and has always been regular and painful; was married at the age of 25 and has experienced two normal pregnancies. During the past two years menstruation has been slightly irregular, being from two to five days late. Two years ago she noticed a swelling in the right hypochondriac region which has become more and more prominent; four months ago this became tender; the size of this mass has changed from day to day. The patient has never been jaundiced, but the color of her skin is not clear; she has never had biliary colic.

Present Condition.—Patient is well nourished; tongue slightly coated; appetite fair; at times has feeling of pressure in epigastrium and eructations of gas; bowels regular; pulse and temperature normal; heart, lungs, and kidneys normal. There is a slight enlargement of the left, and considerable enlargement of right lobe of thyroid.

Abdominal.—The abdomen is slightly resistant and there is tenderness in the right inguinal region. Under the right costal arch a smooth mass can be felt and palpated between two examining hands; it moves downward upon deep inspiration and can be held down after expiration.

Diagnosis.—Cyst of gallbladder.

Operation.—An incision 6 inches long was made through the right rectus abdominis muscle, with its middle portion opposite the umbilicus. The cecum was brought up into the wound exposing an appendix $3\frac{1}{2}$ inches in length, constricted at the cecal end and containing a fecal concretion the size of a date stone; the appendix was removed.

The gallbladder formed a cyst the size of a large fist, containing clear viscid fluid; it also contained 3 gallstones, conical in shape and $\frac{3}{4}$ inch in diameter; one of these stones was tightly wedged into the neck of the gallbladder with its sharp end projecting into the biliary duct; it required a considerable amount of force to press this stone back into the gallbladder; the gallbladder was tamponed and drained and attached to the parietal peritoneum, and the abdominal wound was closed up to this point.

The patient made a perfect recovery, leaving the hospital $5\frac{1}{2}$ weeks from the time of the operation.

CASE No. 7529.—This patient, a married woman 42 years of age, came under my care April 24, 1900.

History.—Family history good. She was well as a child; menstruation began at the age of 15; was regular and painless; the menopause occurred at the age of 41. She was married at 27 and had one normal pregnancy. Until one year ago her health was good with the exception of suffering from sick-headache accompanied by vomiting bile, but this has become less frequent during the last few years. During the past year she has had occasional slight pains in the abdomen, especially under the right costal arch; considerable eructation of gas; bowels have been constipated.

Present Condition.—Patient is fairly well nourished, but weighs 30 pounds less than a year ago; complexion is fair; tongue clean; appetite good; three or four hours after eating she has an empty, gnawing feeling in the epigastrium, from which she also suffers in the morning, and at these times she often vomits bile which relieves her distress; temperature 99° , pulse 84; no jaundice; heart, lungs and kidneys normal; abdomen slightly scaphoid; appendix palpable at McBurney's point; slightly enlarged. There is some gurgling in the abdomen, and almost directly under the right costal arch there is a smooth, somewhat movable mass which passes down with deep inspiration so that the lower pole is below the umbilicus; it can be held there after the liver recedes.

Diagnosis.—Chronic appendicitis; cholecystitis; floating kidney.

Operation.—Incision made through right rectus abdominis muscle, at its upper third, $3\frac{1}{2}$ inches in length. The cecum and appendix were brought into the wound, the latter being $4\frac{1}{2}$ inches long and containing an enterolith $\frac{1}{2}$ inch in its smaller and $\frac{3}{4}$ inch in its greater diameter.

There is a constriction about the middle of the appendix, due to the twist caused by the adhesions formed by a portion of the appendix opposite the mesentery to the peritoneal covering of the iliocostalis muscle. The mesentery is very narrow, but extends to the end of the appendix; the appendix was excised.

The gallbladder was strongly adherent to the omentum, and distended to the size of a hen's egg; no biliary calculi felt within it. The contents of the gallbladder were aspirated, consisting of a viscid fluid containing fine, black sand; it was sutured to the parietal peritoneum, tamponed, and drained, and the abdominal wound closed up to this point.

Nephrorrhaphy was performed for relief of the floating kidney. The patient recovered, leaving the hospital $4\frac{1}{2}$ weeks from date of the operation.

CASE No. 7553.—A married man, 48 years of age, who came under my care at the Augustana Hospital, April 29, 1900, giving the following history:

History.—He had always been in fairly good health until about 12 years ago, when he began to suffer from what was supposed to be gastric disturbance. At this time he suffered from acute indigestion, his attacks coming on suddenly and being accompanied by severe pain and nausea. He received internal treatment at intervals during this time, but was never entirely free from the sense of discomfort. Two years ago these attacks became so frequent that he was practically unable to work at his trade in the wire mills. The patient has never been distinctly jaundiced, but the color of his skin has not been clear for a number of years.

One year ago the patient consulted me and I then made a diagnosis of gallstones and advised an operation. This was refused and the patient returned to his home and continued the internal treatment until the date of his admission to the hospital.

Present Condition.—The patient is well nourished; tongue coated; appetite fair; constantly suffers from feeling of fullness in region of stomach; bowels constipated; pulse and temperature normal; heart, lungs, and kidneys normal. There is a slight enlargement of the liver, and a tenderness in the region of the gallbladder upon deep pressure. The skin has a slight yellowish tinge, but there is no jaundice present.

Diagnosis.—Gallstones in gallbladder. Appendicitis.

Operation.—An incision was made through the edge of the right rectus abdominis muscle at a point 1 inch below the umbilicus, for a distance of 4 inches in an upward direction. The cecum and appendix were brought up into the wound. The appendix was constricted at the cecal end so that a fine probe could scarcely be passed through its lumen. The distal end was enlarged to the size of a little finger, and con-

tained a hard fecal concretion. The whole appendix was attached to the lower end of the cecum and had the outlines of an interrogation point. The appendix was removed.

The gallbladder was contracted closely down upon a number of gallstones. No note was made of the exact number, but there were at least one dozen stones, varying from the size of a pea to that of a filbert. All of these stones were strongly faceted, showing that they had remained in the gallbladder for a considerable length of time.

The patient left the hospital on the 14th of June, 6 weeks from the date of entrance.

THE ETIOLOGY OF GALLSTONES.

By FREDERICK C. SHATTUCK, M.D.,

of Boston, Mass.

OUR knowledge of this subject leaves much to be desired. The presence of gallstones can often be diagnosed, and the knife frequently brings about a radical cure when the stones prove troublesome. But we must know much more than we know now, before we can hope to do much to prevent gallstone-formation or to dissolve or expel them by medical, prophylactic, and remedial measures.

There is a large variation in the statistics of different observers as to the prevalence of gallstones. Poulsen finds them in 3.8%, Riedel in 18% of all cases coming to autopsy. Brockbank finds them in 7.3%, Schröder in 12.5%.

On these points we have accurate knowledge:

1. Gallstones are composed mainly of cholesterin; often partly of bilirubin calcium precipitated by changed reaction of the bile. Bacteria of one kind or another are, to say the least, very common. A nucleus may be formed of bilirubin calcium, bacteria, a foreign body, or of a combination of these. Cholesterin is normally held in solution by the bile. Frerichs and Naunyn agree in considering stasis, catarrh, and a reaction-change of the bile as factors. They differ practically only in their explanation of cholesterin-formation. Frerichs thought it formed from the bile itself; Naunyn believes it to be derived from degenerated cells.

2. Age has a distinct influence. Gallstones are not unknown even in childhood, but are rare under 30; from 30 to 60 they are more, and, broadly speaking, about equally common for each decade; after 60 they show a marked increase in frequency. According to Thoma they are found in 25% of all persons of 60, or over, coming to autopsy.

3. They are from 2 to 4 times as common in females as in males.

Anything which causes stasis of bile is thought to predispose to gallstone-formation. With this idea, age and sex incidence are both consistent.

As age advances, physiology merges into pathology, in a sense, and retrograde processes are no more remarkable in the gallbladder and biliary, than in the urinary bladder and urinary passages, in the arterial coats, or in the organs and tissues generally. In addition to this, people become less active and are apt to put on fat as age advances.

The influence of sex may be reasonably explained by the more sedentary lives led by females, and also by their dress, which too often impedes respiratory and general motility and, with the addition of pregnancy and relaxed abdominal wall, would seem to partly account for the formation of gallstones in women, just as it does for floating kidney, gastroptosis, and the like.

Gallstones are said to be more common in the insane than in the mentally sound, perhaps as a result of diminished bodily activity.

More interesting is Brockbank's statement that they are unduly common in the subjects of chronic heart-disease, especially of mitral stenosis. Here again comes an inactive life in addition to a tendency to chronic passive congestion. The well-known incidence of mitral stenosis to the female sex is also noteworthy.

Let us now consider catarrh and its mode of origin.

Modern bacteriology throws much light on this question. For the sake of brevity I will formulate the conclusions which seem to be justified by a careful study of the literature of the subject to date, making no references and mentioning few names.

1. A sterile foreign body does not lead to gallstone-formation, though a sterilized gallstone may be penetrated by, at least, the colon-bacillus.

2. The contents of the hepatic and cystic ducts, and also of the gallbladder are usually sterile.

3. The common duct not infrequently contains bacteria, a fact readily explicable by the relation of the duct to the intestines.

4. Gallstones have been produced experimentally by a number of observers, with a number of organisms. Mignot failed with virulent cultures, while he succeeded with attenuated cultures, alone, or in connection with a foreign body.

5. The presence of bacteria has been demonstrated in connection with a considerable proportion of cases of gallstones.

6. The clumping of the typhoid-bacillus led Dr. M. W. Richardson to think this peculiarity might play an important role, and he produced gallstones in a rabbit by the introduction of a small amount of a clumped bouillon-culture into the gallbladder.

7. The colon-bacillus and the typhoid bacillus are the most common bacterial agents in gallstone formation.

Thus it would seem that stasis of the bile is a very important factor. This once established permits a change in the reaction of the bile contained in the gallbladder, favors precipitation of bilirubin calcium, increases cell-desquamation from the gallbladder-wall, and affords a nidus for the growth of bacteria, possibly derived from the blood, probably usually from the common duct and intestines. The broad therapeutic deductions are, hence, to forestall in all ways in our power causes of stasis, and to annihilate typhoid fever. The combat is with fashion and with disease, and the former is less hopeful.

INDICATIONS FOR THE DRAINAGE IN DISEASES OF THE BILIARY PASSAGES AND THE TECHNIC OF OPERATION.

By J. E. SUMMERS, JR., M.D.,

of Omaha, Neb.

Surgeon-in-Chief to Clarkson Hospital; Attending Surgeon Douglas County Hospital.

AFTER any operation upon the gallbladder or gall-ducts temporary drainage is required. The drainage may be either *direct* from wounds made into the gallbladder or gall-ducts, or *indirect* from the area of the operation field after suture of such wounds. Whether the drainage will be direct or indirect depends upon the indication for

which an operation is performed. The rule is that drainage should be direct.

The chief indications for operating in affections of the gallbladder or bile-ducts being the same as those for drainage may be briefly summarized as follows:

1. In acute or chronic inflammations of the gallbladder or ducts which are not amenable to medical treatment and which occur independently or as complications or sequels of infectious diseases.

2. In gallstones in the bladder or ducts producing frequent attacks of biliary colic with or without mild jaundice.

3. In palpable enlargement of the gallbladder, especially if the constitutional and local symptoms point towards the presence of pus.

4. Whenever the history combined with the local and constitutional symptoms indicate phlegmonous or ulcerative cystitis, and more urgently still if commencing gangrene of the gallbladder is suspected.

5. In puncture, perforation or rupture of the gallbladder.

6. In suppurative inflammation of the ducts of the liver.

7. In all cases symptomatically pointing towards connective tissue (stricture) or gallstone obstruction in the gall-ducts.

8. Whenever inflammatory adhesions or new growths interfere with the normal outflow of bile into the duodenum.

9. In addition it might be mentioned that as sometimes it is impracticable to drain infected or obstructed bile-ducts externally, methods are available by which continuous drainage may be established into the intestinal tract.

The technic of cholecystostomy varies according to the object for which the operation is performed and the condition of the gallbladder walls. Any one of the several incisions through the abdominal wall may be employed. Whichever one is selected must be of sufficient length to allow the introduction of the hand in order to permit careful palpation of the bile-ducts.

If an oblique incision is selected it will often be found that the peritoneum on the outer upper side tends to be drawn away from the incision. In closing the peritoneum some annoyance is occasioned by this retraction. This is easily overcome if the operator will take the trouble to introduce two "guy rope" sutures through the peritoneum; one at the lower angle, and the other on the right side of the incision at about the point where it is expected to fasten the lower part of the gallbladder fundus. Two pair of short tenaculum "bullet" forceps are useful and time-saving for this purpose—one point is introduced through the peritoneum and the other into the edge of the skin incision or aponeurosis and then the blades are clamped. These forceps are very useful in the "gridiron" or muscle-splitting operation for recurrent appendicitis. They are in such a case fastened opposite one another, drawing the peritoneum towards the surface, thus allowing easier and safer manipulations of the operator's fingers.

It is generally wise to aspirate the gallbladder, especially if its contents are septic, *before* sewing it to the parietal peritoneum or incising its walls. By doing so the danger of contaminating the peritoneum is lessened, likewise the technic of cholecystostomy simplified. If the gallbladder is distended the ability of the operator to palpate the bile-ducts is much facilitated by a preliminary aspiration.

When the object of drainage is temporary and the gallbladder walls not much thickened, a special technic is essential to the early closing of the opening. The cut edge of the gallbladder should project little if any above the peritoneum and the mucous membrane should be inverted in order that the opening into the gallbladder, through which the drain passes, shall be lined by peritoneum. When the opening into the gallbladder is arranged in this fashion there is no delay in adhesion with closure of the lips of the cyst after the withdrawal of the drainage-tube. In doing the operation of cystostomy for temporary drainage the writer has for some years followed a technic which is simple but ideal in carrying out the suggestions just made. A practically identical method was published several years ago by a former Nebraska physician, Dr. W. D. Jones.¹ The operation is done as follows: The gallbladder is sutured in the usual way to the parietal peritoneum so that the distance between this line of suture and the edge of the

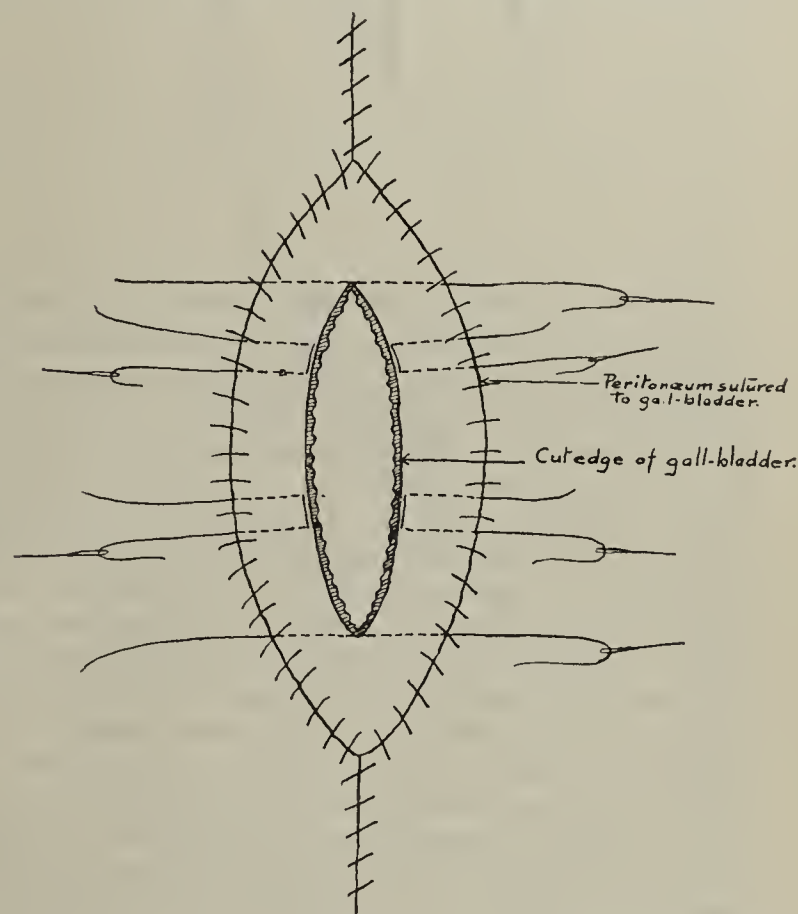


FIG. 1.—Diagram illustrating method of introducing sutures to invert edge of gallbladder.

incision into the cyst is about 1 cm. to 1.5 cm. In order to invert the edge of the gallbladder wound, mattress stitches of chromic catgut are introduced at suitable intervals. Enter the needle near the lips of the abdominal incision so that it will pass in a circular fashion through the muscle and aponeurosis, or the aponeurosis alone, emerging just above the peritoneum, near the line of suture to the gallbladder. The needle then pierces the cyst-wall (all coats) just within the line of suture and is brought out again close to the edge of the incision into the gallbladder. It is then reintroduced near this wound edge and brought out again at a point on a line with the first point of entrance. The aponeurosis and muscle are then pierced in a direction parallel to the line of entrance from within and the needle brought out near its original point of entry. The distance between the basic and edge punctures being about $\frac{3}{4}$ the

¹ Dr. Jones is entitled to much credit for his experiments upon dogs. His work has improved former methods of inverting the edge of the gallbladder in cholecystostomy.

distance between the peritoneal line of suture to the gallbladder and the edge of the incision into the gallbladder. A sufficient number of these sutures are introduced together with single sutures through the same structures across the upper and lower angles of the wound. When all these stitches are tied a button-hole opening is formed, having a round peritoneal edge. In

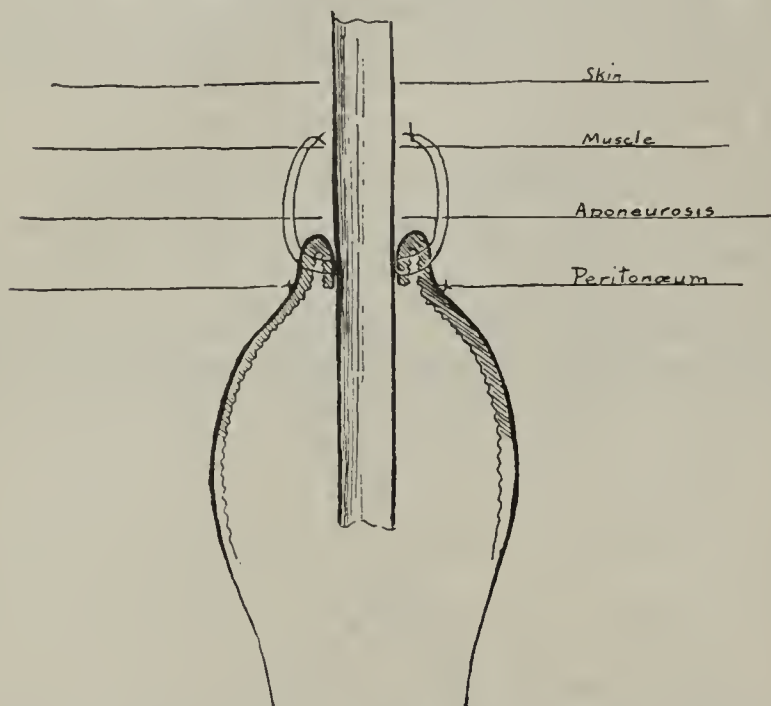


FIG. 2.—Section showing inversion of gallbladder-edge after tying sutures.

absence of pronounced cholemia this method ought to be varied by removing a strip of mucous membrane from the edge of the gallbladder-wound. The width of this strip should be slightly less than the distance from the cut edge of the gallbladder to what is to be the basic line of inverting stitches. This technic controls bleeding from the trimmed edge of the mucous membrane and admits of adhesions of the inverted flap; it prevents any possible pouting of the gallbladder incision, which might occur if the wound were a long one and the drainage-tube too small to make sufficient pressure against the inverted edge until firm adhesion of the peritoneal surfaces at the angles had taken place.

Whether the drainage is kept up a few days or as many weeks, the opening into the gallbladder will close with the withdrawing of the drainage tube. If a little pressure is applied to the sides of the abdominal wall on either side of the incision, the peritoneal surfaces of the inverted gallbladder would adhere almost immediately; little or no bile will discolor the dressings after 24 hours. Of course, one must know that the ducts are clear for the natural discharge of bile into the bowel before any attempt at closure of the external drainage. A more or less rapidly-forming tumor in the area under and below the closing wound will indicate obstruction and necessitate a reopening of the gallbladder. Whenever it is intended that a permanent fistula be formed the mucous membrane of the gallbladder must be everted by sewing the edge of the gallbladder-wound to the skin. Before putting in these stitches it is safer to sew the parietal peritoneum to the gallbladder. The distance between these rows of suture should be such as not to put too great strain upon the outer row and thus invite sloughing of the edges of the gallbladder. This should also be the method of fixation whenever it is intended to do any operative work on the cystic duct through the gallbladder, because such fixation brings the area of attack nearer the surface, besides it affords better protection to the peritoneal cavity.

In order to close an opening into the gallbladder when the mucous membrane is everted and reaches towards the skin-edge the plan we have followed with greatest satisfaction is to free the projecting neck of gallbladder and then after loosening the peritoneum, in the area of the wound, from its superlying structures, the edge of the gallbladder is inverted and closed by means of catgut stitches. This operation is entirely extraperitoneal. Sometimes we have carried the work a step further by breaking up the adhesions of the gallbladder to the cut edge of the peritoneum, introducing a small drain to the gallbladder and then closing the peritoneum with the muscle and skin, leaving a small opening for the drain.

If the gallbladder is contracted or displaced far under the edge of the liver, especially if the abdominal wall is very thick, it may be impracticable to carry out the technic just given. Under such circumstances two lines of practice are available, each having special indications. One method of draining these deep-lying gallbladders is to free the peritoneum of the abdominal incision from its superlying structures so as to form a circular flap of peritoneum. This flap is then depressed to reach the gallbladder and is sewed to it with chromic catgut or silk. If silk is used each stitch must be anchored by a piece of silver wire so that the silk can be removed by traction on the wire or by cutting the stitch and withdrawing it by means of its anchoring wire. Mechanical devices such as the button and tube of Murphy may be successfully used but have no practical advantage.

If the operator is certain that there is no obstruction in the bile-ducts the simplest and easiest practice is to arrange the omentum, using possibly a few catgut stitches, to form the floor of the route from the base of the gallbladder to the lower angle of the abdominal incision. A temporary gauze pad is placed so as to catch the contents of the gallbladder which escape the sponges when it is incised. If it is evident that drainage will be required for only a very short time a drainage tube is introduced into the gallbladder and snugly tacked to the edge of the cyst by a few catgut stitches. If the drainage is to be of somewhat long duration and it is necessary to form a well isolated route for that purpose, it will be wise to employ silk to hold the tube in place, taking care to secure a sound fastening through the tube wall, in order to prevent the falling of stitches into the gallbladder to be the nuclei of future gallstones. Another aid in this direction is to pass the silk stitches through the muscular and peritoneal coats *only*, of the cyst as tending towards a lessening of the danger of a knot falling into the bladder should a stitch cut out of the drainage-tube.

The drainage-tube must be reinforced by the arrangement of from four to six thicknesses of sterile gauze in place of the provisional gauze pad, the lower end of this gauze-drain is brought out of the incision. The gauze forms a bed for the tube to lie on. In 72 hours sufficient adhesions will have formed to shut off the drainage route from the peritoneal cavity and the gauze can be safely withdrawn. If silk has been employed and it is desired to remove the tube before the stitches have cut out by pressure necrosis, traction of the tube will bring away all the stitches if they have been introduced as described. Such wounds heal rapidly without the formation of fistulas, provided there is no obstruction in the ducts.

An abscess of the gallbladder, whether due to the

irritation of gallstones or occurring during the course of an infectious disease (typhoid), requires an immediate cholecystostomy. In such cases it will be safer to fasten the gallbladder to the skin. If perforation has occurred *after* the formation of protective adhesions the case must be treated upon the same general principles applicable to any other circumscribed peritoneal abscess. If any doubt exists as to the safety of the anterior drainage we must not lose sight of the value of dependent drainage, so easily obtained by a counter opening in the right flank and the introduction from behind of tubular and gauze drains.

Out of 7 cases of empyema which I have operated upon, perforation has occurred in 4. Only 1 case died and this death, a perforation with frail limiting adhesions, was probably the result of carelessness in not providing for dependent drainage through a posterior opening in the right loin. In 2 cases perforation had occurred into the liver. They were opened by incisions through liver-tissue. One case took a not uncommon route and pointed at the umbilicus.

In gangrene of the gallbladder the offending organ must be removed. A separate ligature to the artery accompanying the cystic duct should be added to the one surrounding the duct. Neglect of this precaution has been known to result in fatal hemorrhage. Posterior dependent drainage in addition to direct anterior drainage ought to be arranged. In absence of infection within the common or cystic ducts after incision of these ducts for the removal of stones, practically an identical technic should be employed as in cholecystostomy when it is impossible to sew the gallbladder to the parietal incision. The drainage-tube is not introduced into the ducts, but its end is fastened opposite the opening into the duct by means of one or two readily absorbable catgut stitches. These sutures hold the drain in place long enough for it to fulfil its purpose. It is usually unnecessary, and often inadvisable, to suture the incision in a bile-duct, as the opening closes within a few days. If it does not, then the operator has not removed all of the cause of obstruction for which the operation was done, and the drain is a guide and a protection. The writer has extracted a large stone from the common duct, sutured the duct and closed the abdominal wound *without* drainage, but this is bad surgery. Whether or not the wounded duct is sutured, the area of such a wound ought to have the benefit of temporary drainage to protect the patient against some mistake upon the part of the operator. I have at the present time two patients in the Clarkson Hospital; from one a stone was removed from the common duct; no stitches were placed in the duct; tubular and gauze drainage was provided. From the other a stone was taken out of the cystic duct through an incision which was carefully sewed up; tubular and gauze drainage was again provided. Both patients are making smooth recoveries, the common duct case doing a little the better. When the gall-ducts are infected and it is impossible to establish satisfactory drainage through the gallbladder by means of a cholecystostomy the cystic or common duct, one or both, should be incised and tubular and gauze drainage provided. The tube should enter the lumen of the duct and be sewed in place with chromic catgut. In such cases lateral dependent drainage through the pouch of peritoneum in front of the right kidney is a wise precaution against peritonitis.

Whenever an irremovable obstruction exists in the lower end of the common duct, complicated by a very

contracted gallbladder, both the cystic duct (when free) and the common duct become markedly dilated, likewise does the hepatic duct. It is a well-recognized fact that experience to date has shown that protracted external drainage through an incision into the common duct has a high mortality, therefore any means by which this external unnatural drainage can be converted into an internal natural drainage, is valuable. Several foreign cases have been reported in which the bile-ducts have been anastomosed to the intestine, but the writer believes that his own case (already reported) is the only one in this country. The technic is so important that it may be well to briefly describe it:

There was an impermeable stricture of the lower end of the common duct complicated by the same kind of a stricture in the cystic duct. It was found after the introduction of the respective halves of a Murphy button into the common duct and duodenum, that the only method by which the two halves of the button could be pushed home was by passing the left index finger into the foramen of Winslow so as to get its palmar surface behind the common duct and push upon the end of the half of the button introduced into this duct. The thumb and middle finger of the same hand were opposite one another and grasped the circumference of this half of the button through the duct walls. With this half of the button thus supported the anastomosis was readily accomplished by the usual manipulations. Possibly if an anastomosis were attempted between the cystic duct and the duodenum the procedure could be carried out quite as readily as when the gallbladder is joined to the bowel, but when necessity compels the operator to select the common duct the manipulations just outlined are practical and ideal.

Whenever adhesions are found around the area of a gallbladder or bile-duct operation field, they should be broken up and any mechanical interference with the function of the parts involved, corrected. But if adhesions serve a useful purpose against infection, either at the time of operation or subsequently, great care should be taken not to disturb them. Incised, punctured, and gunshot wounds of the bladder and bile-ducts demand the same surgical care as other intraabdominal traumas with the exception that sutures may be dispensed with in injuries of the bile-ducts and the same drainage-technic employed as when the injury is inflicted by the surgeon.

A CASE OF GALLSTONE OBSTRUCTION OF THE CYSTIC DUCT, ILLUSTRATING THE DIFFERENCE IN PATHOLOGY, SYMPTOMS, AND TREATMENT BETWEEN THIS AND GALLSTONE OBSTRUCTION OF THE COMMON DUCT.¹

By FREDERICK A. MCGREW, A.B., M.D.,
of Davis, Ill.

THE following case of dropsy of the gallbladder presents that interesting condition so typically as to be worth relating. It will also serve to illustrate the difference between gallstone obstruction of the cystic duct and gallstone obstruction of the common duct,—a difference which extends to the pathology, symptoms, and treatment.

Mrs —, 36 years of age, is a farmer's wife, very industrious, and the mother of five robust children. My first

¹ Read before the Stephenson County Society of Physicians and Surgeons, April 12, 1900.

visit to her was in June, 1899, five months before the attack which led to operation. At that time she was vomiting, and complained of pain in the umbilical region and epigastrium. Her pain and vomiting were so easily and promptly relieved by chlorodyne that I attached little importance to the attack, and considered it to be what she herself had called it, "a bilious attack."

November 21, I was again called to see her, and found her sitting up, complaining of pain in the abdomen as before, and vomiting. On account of the pain she maintained a stooping or bent posture when sitting or walking, getting some relief from her pain in that position. On inquiry I found that she had never been free from soreness and dragging pain in the right side and epigastrium since the previous attack, and that she had continued to experience, during the interval, repeated slight attacks similar to the one in which I now saw her, but not of sufficient severity to demand medical relief.

She gave a history of similar attacks extended over a period of fifteen years, occurring at irregular intervals of a few to several months, all more or less painful, but apparently increasing in severity. She had never experienced pain in the right shoulder in connection with the pain of an attack, nor did it radiate in that direction. She had never been jaundiced. Her bowels had maintained a constant regularity, and the evacuations were of a normal brownish-yellow color equally before, during, and after an attack. The seat of the pain was referred by the patient to the umbilical region and epigastrium. The pain was colicky in character. Attacks came on gradually and passed away deliberately, and left her with a soreness in the epigastrium more or less quickened at times. She vomited during the severe attacks a greenish vomitus. She had never passed anything like gallstones to her knowledge.

Her tongue was coated with a grayish-white fur; her appetite moderately good; she had no headache; and was not constipated. Examination of urine taken at this time showed it to be normal. She had been losing in weight gradually and failing in strength, but more noticeably since her previous attack in June.

Examination disclosed a rounded, oblong or pear-shaped swelling, extending along the right side of the abdomen from McBurney's point upward. The lower well-rounded blunt extremity was easily defined bimanually, and was not attached. The swelling followed, upward, could be traced to the lower border of the liver, which extended two inches below the costal arch. It moved freely down and up with the respiratory movements of the diaphragm; seemed to be close to the anterior abdominal wall; did not bulge the right flank; was tender to bimanual palpation; and the fingers could not be closed together above it, nor did it slide between them as does a loose kidney.

There was no percussion-resonance above, between it and the liver. Over it the percussion-sound was one of dulness rather than flatness. Auscultation detected peculiar grating sounds which were attributed, in the greatest probability, to the grind of gallstones against one another. A diagnosis of gallstone obstruction of the cystic duct was made and operation advised. November 24, three days later, I was hurriedly summoned at night, and found the patient in a state of collapse,—pale, almost pulseless, feet cold, extremities covered with a clammy perspiration, and a numbness of the lower limbs which made the patient believe herself to be dying. She was not in more pain than usual when I saw her, but before I reached her bedside she had had very severe pain in the right hypogastrium, accompanied by a rigor of several minutes' duration. Her pulse registered 160, and mouth temperature 101°. Vomiting had occurred, but was not prominent.

She rallied slowly under the use of whisky, digitalis, and artificial heat. Operation without delay was now urged, and undertaken the following day, with the assistance of Drs. Connell and Saucerman. After the usual preparation, an incision 3½ inches long was made along the outer border of the rectus muscle over the most prominent part of the swelling. On opening into the peritoneal cavity, the distended brownish-red gallbladder came into view, partly covered by intestinal folds. The dilated sac was packed round by sponges, aspirated, and two or three ounces of turbid, gluey mucus drawn off. There was no bile tinge to it. The last which came through the needle had a purulent appearance.

It is scarcely worth while discussing whether an empyema of the gallbladder had been secondarily implanted upon the chronic condition of retention-cyst. I am inclined to believe that the impacted stone had stirred up an acute inflammation in its neighborhood, of which the purulent matter coming from the sac at the time of operation and for three days thereafter is the supporting evidence. It is well known that an impacted gallstone is quite likely to excite an acute inflammation sooner or later. And to guard against any uncertainties the largely dilated sac was sewed to the abdominal incision and drained, as will hereafter appear.

While the sac was pushed from underneath into the abdominal wound, it was incised, and the thickness of the wall found to be from one-half to five-eighths of an inch. The wall throughout was firm, and the inner lining of the bladder was thickened, and fibrous almost to hardness. More mucus and mucopurulent matter escaped, and about seventy gallstones, half of them of large size, were removed. Most of them had crowded down into the neck of the gallbladder, and one large stone had become impacted in the cystic duct near its junction with the gallbladder. It was squeezed from its bed back into the gallbladder, and so removed, by the forefinger pressing against the duct from the outside.

The edges of the gallbladder-incision were stitched to the peritoneal margins of the upper angle of the abdominal incision. A rubber drainage-tube was pushed to the bottom of the sac, with a strip of gauze above and below. The abdominal walls were united below the drain opening. Time of operation, 20 minutes. The patient was put to bed in excellent condition. Bile began to stain the dressings almost at once, though in such quantity as indicated a patent common duct. There was no purulent discharge after the first three days. The drain-tube was removed at the end of one week. The sac was irrigated once, the second day, in order to wash out any remaining gall-sand. The wound closed in three weeks, and the patient is to all appearances in perfect health at present.

The case has been detailed at some length because it beautifully illustrates the pathology, symptoms, and treatment of a condition less frequently brought to operation than obstruction of the ductus choledochus communis. So different are the two conditions that, except for their similarity of cause in impacted gallstones, they have little in common. It is this difference I wish to emphasize. Gallstone obstruction of the common duct usually has the signs of the condition so clearly evidenced that "he who runs may read." On the other hand, gallstone obstruction of the cystic duct may be beyond the diagnostic skill of the elect. And yet it may occasion long, miserable years of suffering, and relief from it come as a God-sent gift from heaven.

Gallstone impaction of the cystic duct, even if temporary, demands operative relief if the attacks recur. The classic signs of gallstones are the signs of obstruction of the common duct. Classic signs may never occur, and meanwhile our patient may be suffering from temporary, recurrent, or permanent impaction of the cystic duct. The patient whose case is herewith presented had been consulting physicians for fifteen years and had been treated for sundry and divers ailments, but gallstones had never been suggested to her as a cause of her distress. A brief comparison of the clinical and pathologic consequences of gallstone-impaction of the cystic duct and of the common duct will bring out this difference more clearly.

PATHOLOGY OF GALLSTONE OBSTRUCTION OF THE CYSTIC DUCT.

I. At the site of the obstruction a series of pathologic consequences may be entailed, beginning with sec-

ondary inflammation due to the irritating presence of the foreign body. Frequently nothing further than a mild degree of inflammation of the mucous membrane occurs, but this is doubtless constantly present. After inflammation, the possible events in the series are pressure-necrosis, ulceration, gradual invasion of the deeper tissues by the ulcerative process, perforation, abscess, inflammatory adhesions, fistula, and other sequels. Adhesions usually are formed in advance of the ulcerating process, thus preventing the disastrous results sure to follow perforation into a free serous cavity. The tissues contiguous to the inflamed territory may be successively involved until the entire mucous membrane of the ducts and gallbladder, the peritoneal covering, and the intermediate tissues become the seat of inflammation. More or less extensive adhesions may be formed binding the duct, or the gall-cyst and duct, and neighboring tissues into one mass. Suppuration may occur and the gallbladder become the seat of empyema.

II. Besides these results, there is another series which is the consequence of the pent-up secretion. The escape of the bile held in the bladder when obstruction occurs is prevented. It is gradually absorbed, so that eventually no bile taint can be discovered in the contents of the cholecyst. The mucous secretion of the gallbladder is retained, a simple retention-cyst being formed. At first stained by the bile-pigment accidentally present, gradually the contents become a translucent, turbid, thick, gluey mucus, as in the case detailed. The gall-cyst gradually is dilated by the retained secretion, and this dilation may reach remarkable proportions, even filling the right half of the abdominal cavity. The walls may be thinned as the sac dilates, or, as in the case recited, become firm, non-collapsible, and greatly thickened. Likewise the mucous lining may thin out, or on the other hand become fibrous, thick, and unyielding. Doubtless the irritating presence of gallstones and the rapidity of the dilation have an influence in determining the thickness of walls and membrane.

PATHOLOGY OF GALLSTONE OBSTRUCTION OF THE COMMON DUCT.

I. At the site of the obstruction, the pathologic possibilities are the same as in obstruction of the cystic duct.

II. Consequences of the presence of the pent-up bile: *a.* It distends the gallbladder moderately, so that it may occasionally be palpated below the edge of the liver, but the dilation never attains that extreme degree it does in cystic-duct obstruction. *b.* The gallbladder constantly contains bile. (If the hepatic duct is occluded the gallbladder will, of course, be empty of bile.) *c.* The bile-ducts dilate, even in their minutest ramifications within the liver. *d.* The liver as a whole enlarges, the parenchyma cells undergo pressure atrophy, the connective tissue increases, and cirrhosis is the final result. *e.* The pressure of the accumulated bile within the ducts becomes higher than that in the lymph-channels, the bile passes over, and is carried into the blood. *f.* The tissues throughout the body are discolored (jaundiced) greenish-yellow by the biliary coloring-matter. Externally, it appears first in the mucous membranes, and later in the skin. This pigment shows a tendency to collect more thickly in spots. *g.* The bile appears also in the urine. *h.* The presence of the bile-salts affects the nutrition of all cells un-

favorably, but more especially has a profoundly irritant effect upon the nervous elements. *i.* The bile, being partly excrementitious, contains poisonous products and toxins, which are reabsorbed, causing general toxemia.

III. Consequences of absence of bile in the intestine: *a.* Fats and oils are not assimilated, but appear in the stools, giving them a whitish, oily, glistening, pasty character. *b.* Intestinal digestion is further disturbed by reason of the want of the acid-neutralizing and antiseptic properties of the bile. *c.* The stools are very offensive and gas-formation troublesome. *d.* Constipation is the rule, due to the absence of the peristaltic stimulating qualities of the bile. *e.* Nutrition suffers and the temperature of the body falls.

SYMPTOMS OF CYSTIC DUCT AND COMMON DUCT OBSTRUCTION CONTRASTED.

Cystic Duct Syndrome.

a. Attacks of gallstone colic, exhibited by pain, rigor, vomiting, rise in temperature, symptoms of collapse,—the pain being excruciating, and referred to the right hypochondriac and umbilical or epigastric regions.

b. If the gallstone impaction is permanent: Tenderness in the right hypogastrium to pressure. Soreness and dragging pain in the right side. Retention cyst (dropsy) of the gallbladder, causing a slowly increasing distention of the organ which may reach enormous size, filling the right side of the abdominal cavity.

c. If the gallstone impaction is temporary: The offending body may slip back into the gall-cyst, and only a slight hypogastric tenderness mark the presence of gallstones until another attack of colic occurs. Ordinarily, dyspeptic disturbances and fleeting attacks of gall-cyst tenderness mark the interval between attacks. Occasionally a bladder filled with gallstones may be palpated below the border of the liver, and the stones thus detected, or grating sounds may be auscultated.

The offending body may pass onward into the common duct, when its history belongs in the opposite column.

Common Duct Syndrome.

a. Attacks of gallstone colic, paralleling the contrasted condition, except that the pain is referred to the right hypochondriac and right subscapular or right shoulder regions.

b. If the gallstone impaction is permanent: Tenderness and discomfort in the right hypogastrium. Jaundice. Bile in the urine. Absence of bile in the stools. Stools fatty, white, offensive. Constipation. Enlargement of the liver. Slight distention of the gallbladder. Pulse slowed to 60, 50, or even 40. Nervous symptoms of cholera.

c. If the gallstone impaction is temporary: The offending body passes onward into the duodenum and may be washed from the stools. It leaves a lingering tenderness in the hypogastrium. The liver shows temporary enlargement; there may be temporary jaundice, and distention of the gallbladder. Constipation is common, and the stools and urine show more or less change, temporary in character. The symptoms due to the stones remaining behind are similar to those of the opposite condition.

TREATMENT.

Gall-stone colic with temporary impaction never demands operative interference, though one is sometimes seriously tempted to resort to this radical means of

relieving the intense suffering. The treatment is necessarily symptomatic, and is identical whether the impaction be of the cystic or of the common duct. Frequently recurring attacks, even if temporary, will justify removal of the stones remaining in the gallbladder, thus bringing a surcease of the attacks by cutting off the source of supply.

Permanent impaction of either the cystic or the common duct almost always demands surgical relief. When the cystic duct is the seat of the obstruction, a vertical incision along the outer border of the right rectus, beginning just below the costal arch, or, in case of great enlargement of the gallbladder, somewhat lower, exposes the gallbladder. After walling it off with sponges, while it is held in the abdominal wound, a trocar is plunged into it and the fluid contents withdrawn. A vertical incision enters its cavity, and the gallstones present are scooped out or expressed. The stones forced into the neck of the sac and the obstructing one in the duct are squeezed back into the cavity by external digital manipulation, and so removed. If there remains no doubt as to the removal of all the stones, the incision into the gall-cyst may be closed with chromicized catgut, and the abdominal incision closed with or without drainage. Otherwise, as is commonly the case, the edges of the gallbladder-incision are stitched to the peritoneal edge of the abdominal wound in its upper angle, drainage inserted into the cyst, and the abdominal incision closed below. Of course, should there be any suspicion that the retention cyst had become empyematous, drainage would be unfailingly indicated.

When the common duct is the seat of the obstruction the course pursued differs in the method of dealing with the impacted stone. If soft it may be crushed between the thumb and fingers or the properly cushioned blades of compression forceps. But usually an incision through the wall of the duct over the impediment must be made, and the stone extracted, after which the opening into the duct may be closed with fine sutures or be allowed to close spontaneously. Whether sutured or not, a strip of gauze, and a glass or rubber drainage-tube should be led down to it for 48 hours as drainage and excitant of protective adhesions. Some difficulty is likely to be experienced in locating the obstructing body, especially if inflammatory adhesions have obscured the anatomical field. If the stone cannot be found and removed, or the condition of the patient makes haste necessary, a cholecyst-enterostomy is the procedure of choice. Cholecystostomy is a palliative measure which conditions may force upon the operator, but it must always be looked upon as a surgical misfortune, the lesser of two evils.

DIAGNOSIS OF MEDICAL AND SURGICAL DISEASES OF THE LIVER AND BILIARY PASSAGES.

By JOHN HERR MUSSER, M.D.,

of Philadelphia.

THE time has come when the practitioner who devotes himself to internal medicine must share the responsibility of the treatment of many diseases of the liver and biliary passages with the surgeon. As the therapeutics of the latter is decisive, terminating in the cure or the death of the patient, a corollary to the above axiom should read that both should share in the diag-

nosis. I may be permitted with pardonable pride to refer to the share it was my lot to contribute in the development of the mutual labors of the physician and surgeon. The occurrence of many cases of death from affections of the biliary passages had demonstrated to the writer the woful lack of means at his command to relieve the patient. As early as 1884 I asked for the joint attendance and the operative skill of the surgeon. After 2 cases had been treated, Dr. Keen and myself published the result of our experiences and presented an analytical study of all the cases of surgery of the biliary passages then recorded. We collected 35 cases by 15 operators, upon which to base our conclusions. The paper was the first general and systematic discussion of the subject. What its influence was upon the development of hepatic surgery, it is not within the province of this paper to relate. Feeble though the effort may have been, in the light of the stupendous results since accomplished, it is a source of no little gratification that the writers¹ were instrumental in contributing this mite to the therapy of hepatic disease.

Medical and Surgical Diseases of the Liver.—A review of the province of each in the domain of hepatic therapy is not without interest. To the physician belongs, for complete relief or alleviation the congestions, the inflammations, including syphilis, and excluding single abscess of the liver, the degenerations and multiple morbid growths. To the surgeon, abscess of the liver, hydatid disease and single tumors. Of the cases belonging to the first class the physician may well say "hands off," while to the second class the sooner the surgeon's hands are on the better for the patient.

Diagnosis: The distinction of the two classes can generally be made with ease. Usually general principles of diagnosis go the longer way towards the distinction. Liver diseases are usually secondary to some causal morbid process elsewhere; as the congestions, to heart disease; or as amyloid disease, to some chronic infection; or they are secondary to a similar process elsewhere, as carcinoma or as abscess in the portal area. Other affections, as the chronic inflammations, follow a cause, which often can be definitely ascertained. No diagnosis of a particular hepatic disorder can be safely made without definite knowledge of the etiology of the disease in question. Moreover, the lesion of the liver is associated with allied lesions of other organs; hence their presence is sought for in the diagnosis, as amyloid disease, syphilis, or the congestions. Then the age, the sex, and the habits, and the previous medical history tally in the various affections. The differentiation of hepatic disease in the black is more difficult than in the white race.

To illustrate the foregoing: Knowledge that the patient had had dysentery, with the only other suggestive symptoms of pain in the lower thoracic region and enlargement of the liver led to the diagnosis and successful treatment of a case of abscess of the liver.²

The surgeon must see to it that the supposed abscess of the liver is not really due to syphilis,—that the solitary tumor (adenoma usually) is not syphilitic or a deformity of the liver (Reidel's), or amyloid degeneration in a deformed liver.³ Abscess of the liver is simulated by syphilis in those cases, not unusual, in which the liver enlarges rapidly and the temperature is of the hectic

¹ Musser and Keen, Cholecystotomy, *American Journal Medical Sciences*, 1884.

² Musser and Willard, Abscess of the Liver, etc., *Trans. Phila. County Medical Society*, 1893.

³ Musser, Amyloid Disease of the Liver, with an Abnormally Enlarged Left Lobe, *Pennsylvania Medical Journal*, 1899.

type.⁴ Much more difficult is the diagnosis when syphilitic proctitis happens to be present at the same time.

Hydatid disease of the liver may be suspected by the surgeon if the patient is resident in the region in which this affection prevails, if the disease is of long duration and the symptoms are negative, enlargement of the organ not usually uniform being the only physical one. Suppuration of the cyst presents a new picture of the hydatid affection and brings it into the class with abscess.

In the consideration of the diagnosis, the possibility of the symptoms being due to disease outside of the liver must not go unchallenged. In the classical work of Murchison are named the many affections which simulate enlargement of the liver including pulmonic, pleural and pericardial diseases, diseases of the intestines, of the kidney, of the aorta, of the ovary, and of the omentum. Of greatest importance is the recognition of abscess beneath the diaphragm. The fever, the pain, the physical signs closely simulate the hepatic infections, but, as Mason, Osler, and others point out, the history, and the mode of onset are far different. Then the dislocation of organs and the frequent phenomena of combined air and fluid in a cavity are strong corroborative evidences of the pus being in the subdiaphragmatic space.

Finally, we must not deary as aids to the differential diagnosis, the exploratory puncture and the results of the examination of the blood.

Medical and Surgical Diseases of the Biliary Passages.—To the former belong acute and chronic catarrhal inflammations, suppurative angiocholitis and the inoperable forms of cancer and mild forms of cholecystitis (catarrhal). As chronic catarrhal inflammation is usually due to gallstones it may be classed with the second group, to which also belong obstruction and stenosis of the biliary passages, cholecystitis, rare forms of localized carcinoma, and cholelithiasis.

Diagnosis: *Acute catarrhal inflammation* of the biliary passages is usually recognized with ease. Its occurrence somewhat suddenly in young, previously healthy subjects, following exposure to cold and wet or indiscretions in diet, with symptoms of catarrh of the stomach and intestines, without emaciation, with moderate icterus and lasting but a short time, renders the diagnosis one of little difficulty.

Chronic catarrhal inflammation is due to obstruction either by gallstones, carcinoma, or external pressure, and is attended by the symptoms of obstruction, especially chronic jaundice. Pain is present if gallstones is the cause.

If the obstruction is incomplete, hepatic intermitting fever may be present; if complete, fever is usually absent. As an example of complete obstruction we have the group of cases resembling the clinical picture of cancer of the pancreas. In complete obstruction, the gallbladder is enlarged. The following case (abstract) illustrates well the phenomena of incomplete obstruction and shows very well the resemblance to obstruction by gallstones. It was a cholangitis secondary to carcinoma.

McM., a woman, aged 37, married, had been ill for many years with hepatic pain, nausea and vomiting, intermitting fever and occasional jaundice. The last illness, which terminated fatally, was of six months' duration. Pain in the region of the gallbladder, intermitting fever, jaundice, and vomiting, were present. The pain and jaundice were inter-

mitting. Death took place from exhaustion. At the autopsy there was found cholangitis and carcinoma of the gallbladder.

General suppurative cholangitis is attended by the symptoms of local infection, by tenderness of the liver with enlargement of that organ and of the gallbladder, by jaundice with the occurrence of leukocytosis. The duration is not long and the formation of multiple small abscesses is likely to follow. The patient rapidly loses flesh and strength. Such cases may be classed as surgical, only with the vain hope that the inflammation is due to gallstones.

Inoperable cancer of the biliary passages is that which involves the gallbladder alone or the gallbladder and the gall-ducts. It occurs in women in three out of four cases, usually between the ages of 40 and 70, and in association with gallstones in 90%. The general symptoms of cancer are present, sometimes symptoms of catarrhal cholangitis, while jaundice (69%), pain, severe, often paroxysmal, and tumor, are frequent accompaniments. The tumor is hard and firm and with it may be recognized an enlarged gallbladder.⁵

Of the surgical diseases of the biliary passages, we have considered *chronic catarrhal inflammation*. This affection may, when there is satisfactory evidence to do so, be dealt with by the surgeon. The presence of gallstones as causal factors will permit of exploratory measures at least. After gallstones, chronic catarrhal inflammation is the most frequent cause of chronic jaundice.

Stenosis and Obstruction of the Gall-ducts.—The cases are very puzzling. Disease of the ducts, as cancer or cholangitis, external pressure or internal obstruction by stones or worms. They are often classified as cases of chronic jaundice. If they have been preceded by a definite attack of gallstones, the occurrence of ulceration followed by stenosis may be surmised. Cholecystitis with pericholecystitis forming adhesions about the ducts may cause these symptoms. On the other hand, symptoms of pancreatic disease, of disease of the lymphatic glands, as cancer secondary to cancer elsewhere in the abdomen, of renal or omental disease, or of an aneurysm, may indicate the true cause of the external pressure.

General considerations must guide in the diagnosis. Evidence of enlarged lymphatic glands elsewhere or cancer in other parts must be sought for. To exclude cancer of the liver it must be borne in mind, the liver is usually enlarged at first, but later may atrophy in chronic obstruction of the duct, while in cancer of the liver it continues to enlarge; that in chronic obstruction the gallbladder is enlarged, except in cases of gallstones. To this interesting group of cases belongs that symptom group caused by a ball-valve-acting gallstone, with which chronic catarrhal cholangitis is associated.

Cholecystitis.—Catarrhal, suppurative, and phlegmonous forms are seen. The varieties may be associated with gallstones and a possible infection, or they may be due to bacterial invasion primarily. The local symptoms are severe at first. Paroxysmal pain in the right side resembling that of gallstones, although not so severe or prolonged, and later localized to the region of the gallbladder, is first complained of. There is muscular rigidity in this region; tenderness at first diffused, then localized; some abdominal distention. The gallbladder may be felt in some cases, or marked out by percussion. In the suppurative form Robson lays stress upon the tender spot "at the junction of the upper two-

⁴ Musser, Fever in Late Syphilis, *University Medical Magazine*, 1892.

⁵ Cancer of Gallbladder and Gall-ducts, Musser, *Trans. Assoc. Physicians*, 1889.

thirds with the lower third of a line drawn from the umbilicus to the ninth rib." Nausea and vomiting occur and at times there are symptoms of intestinal obstruction. The history of gallstones or of an infection within reasonable time, as the typhoid or pneumococcus infection, or a more localized one from the colon-bacillus or the streptococcus, as indicated by infection somewhere in the abdominal cavity, may explain the symptoms. If the inflammation is simply catarrhal the general symptoms are not marked; if suppuration is present there is high fever, rapid pulse, and much prostration. Often, however, the diagnosis of the varieties is impossible. The variety due to gallstones is more likely to have jaundice than that due to bacterial invasion. Regarding the distinction of the catarrhal and suppurative forms we are in the same position as to operative interference as in cases of catarrhal and suppurative appendicitis. Cases of acute infectious cholangitis with suppuration get well without operative interference. Thus, in 1889, Mrs. D. had typhoid fever. Two days after the temperature was normal she had a rigor followed by fever. Thereafter for two weeks rigors occurred daily with fever of several hours' duration. Pain and tenderness were extreme in the hepatic region. Jaundice ensued. Rigidity of the abdominal muscles, swelling and edema of the walls took place. Fever became continuous and the tympany extreme. Recovery followed at the end of four weeks' illness, after a number of evacuations of pus per anum. On the other hand, death occurred in a man of 70, with intermitting fever, jaundice, and tumor. At autopsy, gallstones with ulceration were shown to have caused the cholecystitis and peritonitis.

Carcinoma of the Gall-duct.—Not as frequent as similar disease of the gallbladder, the course is more rapid. Three cases have come under my observation. The duration of symptoms ranged from 3 to 8 months. They were in females. In two the course was rapid, attended by jaundice, enlarged gallbladder and by cachexia. Death in both was due to gastrointestinal hemorrhage. The diagnosis was based upon the age, the absence of history of gallstones, the emaciation and prostration, the intense jaundice, the absence of fever, the enlarged gallbladder, the normal size of liver, and the absence of malignant disease elsewhere.

Gallstones. Cholelithiasis.—A volume could be written on the clinical course of these marauders, for such they become when they wander. (a) They may be present and not cause symptoms. (b) They may cause pain, (biliary colic). (c) They may cause obstruction of the cystic duct followed by: (1) Hydrops of the gallbladder; (2) cholecystitis, simple and suppurative (empyema of gallbladder); (3) atrophy of gallbladder. (d) They may cause complete obstruction of the common duct (1) without pain; (2) with pain. The symptoms of obstructive jaundice previously described, follow—jaundice with its train of symptoms being the chief phenomena, without pain, or with recurring attacks of pain. There is no infection. (e) They may cause: (1) Incomplete obstruction with symptoms due to ball-valve action of the stone or (2) to suppurative cholangitis. An infective cholangitis is present in both instances, but in the latter it is diffused and death occurs early. In the former the duration is from 2 to 5 years. In two of my cases ascites was present, and in one an enlarged gallbladder, contrary to the general rule. In other respects they conformed to the types portrayed by Osler: Hepatic intermittent fever, jaundice intermittent in intensity but persistent, pains of a paroxysmal

character. In one instance there was severe hematuria at various times and almost constantly subcutaneous hemorrhages for 8 months.

CASE 1.—Mrs. K., aged 77, had repeated attacks of biliary colic. After one, there was jaundice, which persisted and increased at each subsequent attack, with which nausea and vomiting also occurred. Some emaciation took place. The duration of the jaundice was two years, when ascites developed. The gallbladder was palpable. At the end of six months or two-and-one-half years after jaundice, death occurred from exhaustion. Hepatic intermitting fever occurred irregularly. Itching was intense. Operation was refused, and there was no autopsy.

CASE 2.—Mrs. V., aged 57, married, has children, leads a sedentary life, and her habits are good. Her father died suddenly; her mother died of heart-trouble, but was always bilious and had liver-trouble. The patient was always delicate and seemed to have weak circulation. In 1891 she had jaundice, epigastric pain, some vomiting (two weeks), extreme with hemorrhages, with a tumor easily felt above the navel in the middle line about the size of a lemon. She has lost much flesh. The diagnosis was cancer of stomach. Since then recovery has taken place until in 1897 when she had an attack of catarrhal jaundice which lasted seven weeks. In 1870 she had pulmonary hemorrhage. She has had mitral valvulitis, so her physician reports. Her present illness began in September, 1899. Jaundice continued and was very extreme. She was relieved by December, to be followed in October by purpura. In February there was a recurrence, which has not been relieved. In February there was general purpura; there was no fever and no chills at any time, and no vomiting. There were clayey stools and the urine was high-colored. At present (April 12, 1900) there exists chronic jaundice of the conjunctiva and skin, and pruritus is extreme, with scratch marks. The skin is dry. A few purpuric spots exist. She has lost flesh, 17 pounds, which is below normal. Lately there has been less jaundice. Appetite is fair. The bowels are constipated (always so for years); and there is flatulence. Liver is not enlarged. There is an obscure small lemon-sized hard mass deep in the gallbladder region. The abdomen is pendulous, the spleen is not enlarged, and no ascites exists. There are some hemorrhoids, but no edema. Hemoglobin 75%; red blood-corpuscles, 3,728,000; white blood-corpuscles, 7,200; urine shows trace of albumin, bile and hyalin casts.

There was general jaundice and purpura with recurrent paroxysms of jaundice attended by renal hemorrhage. There was a tumor in the right hypochondriac region. Renal hemorrhage lasted nine days. At first she had pain in the region of the left kidney. There was one paroxysm of hepatic colic followed by a sensation of giving away, and then followed a diminution of mass on the right side. She has lost eight pounds. There was no fever until after improvement, when the temperature rose not higher than 99.2°. There was marked anemia. Hemoglobin, 65%; red blood-corpuscles, 3,392,000; white blood-corpuscles, 6,000. The urine contained albumin and no bile. There were a few hyalin and granular casts.

On July 7 she was still losing flesh, and was darker in color. The pruritus was very severe most of the time, and at times caused her to be very nervous. The bowels were loose and the stools of clay color. There was some edema of the lower limbs. The mind was not so clear. The liver was enlarged, especially the left lobe. The gallbladder was enlarged and tender, ascites was marked. Hemoglobin, 45%; red blood-corpuscles, 2,670,000; white blood-corpuscles, 6,000; urine as previously reported.

At the autopsy a ball-valve gallstone was found with biliary cirrhosis of the liver.

Before dismissing the subject of gallstones, we may be permitted to call attention to one or two facts in variance with the commonly accepted notion of their clinical concomitants.

1. Gallstones may occur at an earlier age than we usually suppose. A man, aged 23, was operated on by Dr. Martin for me, and 200 calculi removed. He had hepatic colic from his fifteenth year.

2. Pain may be the only symptom. It may be in various localities. In a case I saw with Dr. Sprenkel (operated on by him) the pain was seated at the xiphoid cartilage.

3. Jaundice may never be present.

4. Rigors and fever may be the most pronounced symptoms, pain complained of very slightly.

5. Of great importance, as an indication of their presence, is the occurrence of persistent localized tenderness in the gallbladder region, often elicited only on deep palpation when the patient takes a full breath. Gallstone crepitus may be felt, and Dr. Anders reports cases in which he heard it.

As with hepatic disorders so with surgical affections of the biliary passages; they must be excluded from affections outside of the bile-ducts which they simulate. Of these, subdiaphragmatic abscess, appendicitis, intestinal obstruction and acute pancreatitis are the most common.

The first is frequently, due to the biliary infection or arises from perforation of other hollow viscera and has a group of physical signs of its own, of which displacement of the liver is one, not present in simple biliary channel infections. It can usually be distinguished. Appendicitis is not so easy to differentiate, and in fact is impossible to exclude in some cases. Intestinal obstruction likewise is simulated by the biliary disorder, but may, although not easily, be excluded by the efforts to move the bowels and by the absence of the extreme shock and peristaltic intestinal waves and of the symptoms peculiar to each variety of obstruction. Pancreatitis presents similar symptoms to those of cholecystitis. Febrile symptoms are not as marked, however, while collapse symptoms are more dominant in pancreatitis. The circumscribed epigastric swelling which is usually tympanitic is suggestive of pancreatic disease. In a case operated upon for me by Dr. Morton the symptoms were those of cholecystitis and hepatic colic. The pancreas was found enlarged and hard, the gallbladder normal. No symptoms have ensued since the operation three years ago, when the attacks were due to pancreatitis, no doubt, although closely resembling biliary colic. Gallstones, on the other hand, may be simulated by hysteria, acute flatulent dyspepsia, appendicular colic, renal colic, liver colic, pain in the intercostal nerves from osteitis of the spine, malignant disease of the liver and pyloric obstruction. We cannot enter into a discussion of the differential points of the various affections. Pyloric obstruction is the one more commonly seen to present symptoms of biliary colic, especially if the stenosis is due to adhesions about the gallbladder. The characteristic vomitus and the physical signs of dilation of the stomach make the diagnosis of the former almost positive.

A few more clinical data are suggestive in the diagnosis. The surgeon must be chary concerning the diagnosis of cholecystitis and its operative interference in all cases in which the liver is enlarged, even though jaundice, pain, and symptoms of infection may be present. Such enlargement is likely to be due to diffused suppurative cholangitis and multiple small abscesses, or to subdiaphragmatic abscess, or to cancer of the liver, or in rare instances to forms of cirrhosis, or to syphilis of the organ.

Enlargement of the gallbladder is seen in obstruction of the cystic duct, in complete obstruction of the common duct, in suppurative cholangitis, and in cancer of the bile-ducts. It is not enlarged in incomplete obstruction

of the common duct, in gallstones, and, though distended, not necessarily enlarged in any form of cholecystitis.

Fever is absent in complete obstruction of the common duct and in carcinoma of the bile-duct. It is present in incomplete obstruction, in the infections and in gallstones.

The spleen is enlarged in biliary colic and in incomplete obstruction of the ducts with cholangitis.

Jaundice is more frequently absent than present in cholecystitis. It is often absent in gallstones. It is not present in cystic obstruction. It varies in degree in incomplete obstruction and is very intense in cancer of the bile-ducts.

Pain is indicative of gallstones, of suppurative cholangitis and cholecystitis. It is absent in complete obstruction from external pressure or from cancer of the bile-ducts.

Indications for Operation.—In the paper previously referred to (Musser and Keen) the indications for operation suggested were pain, tumor, jaundice due to obstruction of the common duct, and symptoms of suppuration. Such indications obtain at the present day. Concerning pain it may be said now as then, an operation for its relief is justifiable when life is threatened by its continuance. The various conditions possible which may give rise to tumors were discussed and they tally with those which Robson points out must be distinguished from tumors of the gallbladder. They were movable right kidney, tumor of the right kidney or suprarenal capsule, of the intestine, of the liver itself, or of the stomach and deformed liver. The preceding remarks will indicate largely the lines of differentiation. To go further into detail will exceed the limits of the paper. But a word, the history of the case must be insisted upon and the customary means of exploring the stomach and intestine employed. More could be said about a floating kidney, but reference must suffice.

At this stage of surgical procedures it is not necessary to urge operation in local infections.

Contraindications.—The surgeon must watch the blood. The time clotting must be carefully inquired into. The corpuscles must be counted. A lessening of two and one-half millions makes an operation dangerous. The hemorrhages which occur in chronic jaundice are serious contraindications, yielding only to the necessity to save life.

ON LESIONS OF THE PANCREAS SIMULATING GALLSTONE-IMPACTIONS OF THE COMMON DUCT.

By MAURICE H. RICHARDSON, M.D.,

of Boston.

In collecting my gallbladder cases I have been struck by the frequent occurrence of pancreatic tumors discovered during explorations for suspected gallstones. In most of these cases the nature of the tumor has been sufficiently obvious; the history has strongly suggested cancer of the pancreas, and the exploration has removed the last doubt. But in some a doubt has always remained whether after all the tumor, which certainly caused the symptoms, was really malignant or not; whether the exploration had accomplished all that it might; and whether in future cases I should make more extensive dissections, in the hope of accomplishing better results.

The chief objection in doubtful cases to an explora-

tion deep enough to demonstrate beyond question the nature of the tumor has been that there is little prospect of benefit to offset the great dangers of the procedure. An exact knowledge of the tumor would not often justify further procedures, for malignant tumors of this region from their nature and environment seldom if ever permit extirpation, and others only occasionally demand it. Moreover, dissections carried into the tumor cannot but add greatly to the dangers of exploration. Hence, it has seemed as a rule unjustifiable to do more than to explore as thoroughly as possible by digital manipulation of the suspected mass, the operation being continued or abandoned in accordance with the knowledge gained by such manipulations. But the results of digital examination of the pancreas are not always convincing, though they may be very suggestive, for the normal firmness and irregular outline of an unusually large pancreas may lead to the erroneous conclusion that it is the seat of a new growth. Such faulty deductions remove the only hope of radical cure, small though that hope may be. The recent cases of Robson (*Lancet*, July 28, 1900) show that tumors of the head of the pancreas are by no means so discouraging as we have thought; and that in all probability many patients have been left to die under the impression that there was cancer of the pancreas when in reality the tumor was a chronic inflammatory enlargement that would have quickly subsided under drainage. Renewed investigation suggests, too, that some of the rarer cases of biliary obstruction may not be beyond the possibility of surgical relief.

The commonest lesion of the pancreas, in my experience, has been carcinoma of the head pressing upon or surrounding the common duct sufficiently to cause complete stenosis and permanent jaundice. In some of the cases autopsy has confirmed the diagnosis of cancer made at the time of operation; in others the diagnosis has depended upon the results of digital exploration alone. The mortality in these cases has been large, for the patients have been, as a rule, reduced to an extreme degree of weakness and emaciation. These fatal operations have consisted in simple digital exploration, sometimes through a very small incision. In a few cases the gallbladder has been opened for temporary relief. The mortality has been out of all proportion to the severity of the operation. Whether the lesion was such as to stop the flow of pancreatic juice as well as of bile cannot be said in any of these cases. It is reasonable to conclude, however, that this occlusion occurred in some at least of them.

My interest in this subject was first excited by the following case:

CASE 1.—Mr. A. O. B., aged 43, a patient of Dr. C. P. Hooker, of Springfield, had typhoid fever in 1891. He did not return to his work for three months. In the following year (1892) in April he was seized in the night with severe pain in the pit of the stomach. He could neither lie down nor stand. This pain lasted three or four hours. There was no jaundice. From this time till March, 1895, he had several attacks similar to the first. These were called neuralgia and indigestion. In March, 1895, he had an attack of severe pain which was followed by jaundice. In August there was another severe attack. Between March and August there were several slight ones. The weight had diminished from 170 pounds in 1891 to 145 in 1895.

At the time of my first visit and operation, December 5, 1895, I found that he had been suffering for two weeks with an attack beginning as before with pain in the pit of the stomach, followed by jaundice. There were no physical signs in this case beyond jaundice, loss of weight, and cachexia.

The diagnosis was gallstones, with a strong probability of cancer of the pancreas associated with them.

The exploration showed a tumor of the head of the pancreas. This was carefully and repeatedly examined. It seemed so evidently a case of malignant disease that the operation was abandoned. The gallbladder was not opened. The patient recovered well from the exploration and put himself into the hands of a cancer doctor. He not only began to improve, but continued to improve until he had recovered his health perfectly. He has remained well ever since, and is now at work in a town in Connecticut. I have since thought that the digital manipulations of the pancreas made during my repeated examinations may have dislodged a stone and forced it into the duodenum, as in Case III. Under this supposition it seems not unreasonable to suggest that the stone was beyond the junction of the pancreas with the common duct, and that the enlargement of the pancreas may have been due to obstruction of the canal of Wirsung with engorgement and possibly other changes in the gland.

In this case the previous history pointed to gallstones,—the sudden seizures of pain; its sudden cessation; the frequently repeated attacks, similar in character but of varying severity; the onset of jaundice with the later seizures. In the history nothing suggested acute or sub-acute pancreatic disease. The symptoms, if dependent upon some mild lesion of the pancreas, did not permit a diagnosis. The loss of weight, with the jaundice, the cachexia, did suggest the possibility of malignant disease of the pancreas,—these symptoms always do,—but not the possibility of any curable lesion of that organ.

The unexpected recovery of this patient has increased the feeling of uncertainty whenever I have discovered in the course of operation for gallstones an enlargement of the pancreas along the course of the common duct. As a rule, when the diagnosis of cancer has been made at the time of exploration I have closed the abdominal incision without opening the gallbladder, because of the discomfort of the biliary fistula, which cannot but persist when the common duct is completely and permanently obstructed. When, however, gallstones have been detected in the gallbladder, I have removed them unless the patient has been too feeble to justify an operation which, from the nature of things, could be only palliative.

The number of cases in which I have found an enlargement of the pancreas supposed to be malignant has been considerable,—the number in which it was suspected before operation, even greater. The mortality has been excessive in these operations,—so great, in fact, that exploration has seemed at times hardly justifiable when the symptoms have advanced to that extreme degree so often seen after prolonged jaundice and progressive emaciation. But not a few patients have made complete recoveries after operations undertaken under quite as unfavorable conditions, due not to cancer but to gallstones; hence exploration has seemed imperative in every doubtful case.

The uncertainty entertained after digital examination of an enlarged pancreas has led in one or two instances to the hope that after all the disease was benign,—an unusually large and hard gland, a simple hyperplasia, a chronic inflammation, a cyst with tense walls, a subsiding hematoma, an atrophying gland, a mild and transitory infection through the canal of Wirsung. Such lesions of the pancreas are by no means unknown. Though tumors of the pancreas are unusual upon the autopsy table, enlargements of the gland are not infrequently found in the course of abdominal explorations upon the living. Doubtless many of these enlargements are temporary; many may come and go without even

being suspected, their symptoms being referred to indigestion and their presence being beyond detection. The commonest form of jaundice—the painless gastrointestinal catarrh which checks temporarily the flow of bile—may be but a mild form of that lesion which in extreme development may cause a temporary infective engorgement of the pancreatic duct and tissues. Such a possibility is largely theoretical, yet it is not unreasonable to suppose that infection may take place through the canal of Wirsung, and that that infection may be a mild one, giving rise to those indefinite pains and discomforts in the upper abdomen which so often accompany complete obstruction of the biliary stream. A pancreas affected enough to compress the common duct may be impossible of detection by palpation—it may even be difficult of detection with the fingers during an exploration. A pancreas as large as one's fist may not be perceptible before exploration, especially in stout and muscular patients. An organ so deeply situated may be, for all that we know, especially liable to mild affections attended by actual changes in size and consistency which we may never even suspect.

Such a possibility has seemed not unreasonable, in view of the frequent observations made upon the living during exploratory operations for obscure conditions in the region of the biliary tract. From the evidence of postmortem examinations only it must be concluded that changes in the pancreas causing stenosis of the common duct are usually malignant and beyond aid. Assuming the frequent occurrence of the mild and temporary changes in the pancreas, however, and remarking the absence of such changes upon the autopsy table, it must be concluded that these mild changes are usually self-limited and curable, and that they have little importance in the discussion of surgical questions connected with the pancreas, except as a possible explanation of those attacks of transitory jaundice upon which a mistaken diagnosis of gallstones is occasionally based.

It is, however, with those chronic pancreatic enlargements, which threaten life by encroaching upon and closing the common duct, that surgeons are chiefly interested. Are there lesions which closely simulate cancer and which, unrelieved, will cause death, but which by so simple an operation as cholecystotomy may be cured? May we hope by surgical measures to effect a cure either by removing the disease itself or by counteracting its effects? It must be admitted that the pancreas is the seat of lesions which resemble cancer so closely that discrimination is impossible, even when the gland is palpated between the fingers. Pathologists have long warned observers against mistaking such a pancreas for malignant disease.

Friedreich, in Ziemssen (Vol. VIII, p. 564) says:

Even in 1713 Holdefreund believed that the pancreas was more often the seat of cancerous induration than any other organ in the body, and this leads to the suggestion that the gland, on account of its compact, granular appearance, has often been considered indurated, while it was really normal. In the presence of such views, it behooves us to use the greatest care before utilizing any data furnished by older writers bearing on the pathology of diseases of the pancreas. Later physicians have come to an opposite opinion as to the relative frequency of these diseases, and Baillie assures us that during many years of active practice he had only seen one single case in which pancreas disease was verified by postmortem examination.

Though cancer of the pancreas is a rare disease, yet the frequency with which the question of its presence

arises in gallbladder surgery is in striking contrast with the percentage of this disease in autopsy records. "At the General Hospital in Vienna in 18,069 autopsies were 22 cases of cancer of the pancreas (Biach.) At Milan Segrè found 127 in 11,472 autopsies. At the Johns Hopkins Hospital, 5 adenocarcinomas were found in 1,000 autopsies. At Guy's Hospital, 20 cases of primary malignant disease of the pancreas were found in 6,000 autopsies." These figures are taken from Osler's *Practice of Medicine*, page 594.

Of 23 fatal gallbladder operations of my own, cancer of the pancreas was found in 5. The total number of cases in which cancer was suspected but not demonstrated was considerable. The percentage of cases would seem large in comparison with the figures taken from Osler, but it must be remembered that in all the cases, whether explored or not, the symptoms pointed strongly to cancer of the pancreas,—all the cases were either biliary or pancreatic. The percentage of cases in comparison with the total number of abdominal operations is small, and small in comparison with the total number of operations for malignant disease generally. From the standpoint of comparative rarity, then, it may be argued that in a certain percentage, at least of suspected cases—or even of apparently demonstrated cases of pancreatic cancer—the diagnosis may have been wrong, and that surgical intervention was not as hopeless as it seemed.

The following cases illustrate a combination of symptoms strongly indicating gallstones, but also suggesting malignant disease. Gallstones were found at the autopsy, with a cyst of the pancreas and doubtful malignancy.

CASE 2.—W. A. R., a gentleman of 64, I saw on November 3, 1897, at Worcester, in consultation with Drs. Robinson, Homer Gage and Fay, of Worcester, and Dr. Stevens, of Cambridge. The patient had suffered many years with cardiac disease—mitral insufficiency with hypertrophy. For two years he had been subject to "bilious attacks" with jaundice—evidently gallstone colic. Each attack was attended by a jaundice which lasted about three weeks. Between the attacks he would regain his usual health and attend to business. No gallstones had ever been found in the stools. At no time were the physicians able to detect the gallbladder. There was a fulness in the region of the right hypochondrium that extended toward the epigastrium. There had been a loss of 60 pounds in weight, 5 of which had been regained previous to his last illness. The present attack began on the 15th of September, 1897, with intense pain in the right side. This was shortly followed by jaundice. A week later the patient suddenly became collapsed. He was livid and unconscious. As soon as he became conscious he complained of intense pain. Operation had been considered during previous attack, for the physicians had no doubt that the symptoms were caused by gallstones. On account of his heart, however, it was decided best not to operate.

I found this gentleman deeply jaundiced. It was not the common color of jaundice; the skin was very dark—almost black—a combination of cyanosis and jaundice. Nothing could be detected in the region of the gallbladder or in the abdomen. The heart-sounds were very weak, the pulse was irregular; there was no fever. He was extremely emaciated. There was no ascites. The history in this case pointed definitely to a gallstone impacted in the common duct. The absence of stones in the stools indicated probably a transitory impaction of a permanently lodged stone, the stone acting as a ball-valve, occasionally receding and occasionally advancing. The great loss of flesh, however, suggested the possibility of a malignant disease. The urine showed a combination of chronic passive congestion and biliary irritation. No operation was undertaken because of the patient's great weakness and because of the serious cardiac complication. The disease was evidently a fatal one, and no benefit could reasonably be expected from operation.

At the autopsy a large stone was found in the gallbladder;

another was found impacted at the common duct, $3\frac{1}{2}$ cm. from the duodenal papilla. The pancreas itself contained a small cyst filled with a reddish jelly-like material, surrounded by disintegrated pancreatic tissues. Malignancy could not be definitely established, either by gross appearances or by the microscope. It was a cyst of the pancreas with other changes in that organ of doubtful character, associated with gallstone impacted in the common duct, the whole complicated with disease of the heart.

The diagnosis between impacted gallstone and carcinoma and other disease of the pancreas is always difficult and usually impossible. In cases like the one just given, recognition of the lesion is of course out of the question. The history of the case pointed clearly to gallstone; the peculiarity of the jaundice and great emaciation, toward malignant disease. A combination of both would not have seemed extraordinary, and a diagnosis would not have been unusual. The real lesion in this case could not have been predicted. A combination of gallstone and cyst of the pancreas, whether malignant disease is present or not, would seem not improbable, especially if the obstruction to the pancreatic duct was prolonged. In 5 large cysts of the pancreas upon which I have operated there were no symptoms referable to the liver, and no stone or other cause of obstruction was found in the pancreatic duct.

Another case illustrates not only the difficulties of diagnosis, but other points in connection with the subject.

CASE 3.—This was a gentleman of 62, of Goffstown, New Hampshire, a patient of Dr. George. I saw him on the 7th of July, 1899. He was a manufacturer, of good habits, subject to sick-headaches. In February of that year he had an attack of what was supposed to be gallstone colic which lasted an hour or two. The second attack occurred in the course of a week, and the pain was very severe. It was described as a "screamer," lasted from six in the morning till six at night, and required ether. From this attack he slowly recovered and got about his business, and was able to go South, where he stayed until June. After his return he developed malaria, chills, fever, and sweating. Five days before my visit he was taken with another attack of gallstones. With all the previous attacks he had had slight jaundice which quickly disappeared. The jaundice this last time appeared soon after the pain and persisted. There was some loss of weight. There was no appetite. There were nausea and vomiting. No gallstones had ever been found in the stools. He never had had any illness except typhoid fever, and he had never had pain in the abdomen before these attacks began; during the previous winter he had been troubled with diarrhea that weakened him a good deal.

I found this patient very much prostrated and despondent. He had been vomiting every day. The temperature during the attacks had been up to 103° ; the pulse from 100 to 110. At my examination I found a tender tumor in the region of the gallbladder. There was no ascites. The pulse was 64.

The history of this case pointed strongly to gallstones. The jaundice, loss of weight, and the general appearance of the man could be ascribed to something more serious. The diagnosis was gallstones with strong probability of cancer. No gallstones were found in the gallbladder, but a stone was detected in the pancreatic portion of the common duct. The head of the pancreas itself was indurated, but it did not suggest malignant disease. The stone in the duct in the pancreas could easily be felt between the thumb and finger. In manipulating the stone it became crushed and the fragments were easily squeezed into the duodenum. This patient made a rapid recovery from the operation, and some months afterwards reported himself in the best of health.

It will be seen that the history of this case was very suggestive of gallstones. In spite of this history I undertook the operation with great reluctance, for the prognosis seemed extremely grave. The written description of this man's condition gives no adequate idea of the real aspect of the case. Many times when the diagnosis

lies between impacted gallstones and malignant disease the indescribable general appearance may incline toward one or the other of the two possibilities. In this case the history of gallstones predominated so strongly that the opinion was correspondingly influenced toward the diagnosis of gallstones. Yet it was almost as surprising to find gallstones alone as it would have been to find malignant disease alone. More probable than either diagnosis seemed a combination of the two.

In the diagnosis between a gallstone impaction and cancer of the pancreas, ascites with jaundice favors cancer. Gradual loss of weight and the absence of pain are strong confirmatory signs.

The absence of pain is significant of simple pressure upon the common duct and therefore favors a new growth in the pancreas. Yet the absence of pain is not incompatible with the presence of a long-impacted stone if there was a distinct attack of sudden pain in the beginning. The element of suddenness in the appearance of the jaundice, too, is important as indicating a stone rather than a neoplasm. A gradually-appearing jaundice is certainly indicative of a neoplasm in the pancreas, if jaundice can ever be called gradually appearing. Jaundice can hardly appear until the duct is almost totally occluded, for sufficient bile can escape through a very small opening to keep the biliary passages effectually drained. This is frequently demonstrated in minute biliary fistula. It is only when the flow is arrested sufficiently to prevent the greater part of the secretion from escaping into the duodenum that jaundice appears. This condition of partial obstruction is capable of demonstration, for moderate jaundice is then attended by a certain amount of color in the stools.

Changes in the stools peculiar to diseases of the pancreas should be noted, for their presence may definitely establish the diagnosis. The value of this evidence must not be overestimated, however, because extensive lesions of the pancreas may exist without perceptible effect upon the processes of digestion. When such effects are perceptible, the conclusion that the pancreas is diseased is fully justified.

In the class of cases under discussion those symptoms which make malignancy unmistakable need no consideration, for in such cases surgery has no concern. Not that the surgical treatment of pancreatic cancer may not be considered in the very earliest stages of that disease, discouraging and unjustifiable though it may seem, but operation cannot be seriously proposed when ascites, tumor, emaciation, and general cachexia make the diagnosis positive. It is rather the early and obscure manifestations of malignancy that simulate gallstones, and it is the symptoms of this stage that require careful study.

Unfortunately, a recognition of the lesion at this stage, clear enough to justify the withholding of a curative operation, cannot be made by any man, skilful and experienced though he may be. Confidence in his diagnosis must indeed be strong when the surgeon refuses his patient the possibilities of successfully removing an impacted stone on the ground that operation in pancreatic tumors is useless or more than useless.

In the diagnosis of chronic pancreatic diseases other than cancer, there can be little more than a guess. When such lesions as chronic pancreatitis, simple hyperplasia, calculi, cysts, hematomata, are suspected, and especially when a tumor is perceptible through the abdominal wall, there can be no certainty that the lesion is benign, even if the signs of malignancy are conspicuously absent. Even in a large pancreatic cyst success-

fully operated upon, I made the diagnosis of malignant disease. On the other hand, whether a tumor is perceptible or not, the existence of ascites, cachexia, and emaciation, is sufficient to establish malignancy and contraindicate operation on the ground of hopelessness.

In the study of suspected pancreatic disease the history plays an important part. Though little is known of the less acute forms of pancreatic disease—of subacute inflammations, of temporary engorgements, of slight hemorrhages, of mild infections, and of other acute and chronic processes—a history of previous attacks of obscure epigastric pains and discomforts, or of lesions in viscera contiguous to the pancreas may with existing symptoms incline the opinion definitely toward disease of the pancreas. Finally, changes in the stools peculiar to pancreatic disease, or a saccharine diabetes, may add the needed evidence in favor of the pancreas. The diagnosis of pancreatic lesions attended by enlargement and induration of the gland—simulating, in fact, carcinoma—must be a matter largely of conjecture, for a tumor which cannot be positively recognized under inspection and manipulation can hardly be diagnosed before exploration.

Of the diagnosis it may be said, then, that in obscure cases it cannot be made; that when the diagnosis of gallstone impacted in the common duct is made it by no means follows that there is not disease in the head of the pancreas; that when the diagnosis of tumor of the pancreas is made it by no means follows that there is no gallstone; that finally, when the signs of cancer of the pancreas are conspicuous there is little probability of error.

With reference to the tumor, if any is detected in the region of the pancreas, it must be admitted that it is not always easy of recognition. A tumor of the head of the pancreas may be mistaken for a deeply seated and adherent gallbladder. When the gallbladder, from the prolonged effects of gallstones, has undergone those changes in shape and direction so often seen, it may cause a tumor which cannot be distinguished from a tumor of the pancreas. Other tumors may exist in the region of the pancreas and cause error, especially tumors of the pylorus, of the colon, of the mesenteric glands; abscesses from mesentery, appendix, intestine, and stomach; extravasations, hemorrhages; examples of all of which I could give from my own records. It must be admitted then, that an exact diagnosis cannot always be made.

The indications for operation when symptoms show that the biliary flow is permanently obstructed along the course of the common duct are to explore unless the diagnosis of hopeless malignancy is clear; to explore in prolonged jaundice when there is a history of gallstones; to explore even without a history of gallstones, provided that the patient shows no cachexia; to explore when there is a tumor in the region of the pancreas without signs of malignancy. The justification for these rules, by which I am more and more inclined to be guided, lies in the prognosis of those cases when left to themselves. Gallstones impacted in the common duct destroy life unless they escape into the intestine. Even then, so slow is the natural process that they may leave permanent contractions even more difficult and dangerous of relief than the removal of the stone itself in the first instance. Moreover, the dangers during the process of ulceration into the intestine are great, and even in the intestine the gallstone may cause obstruction.

The questions arising during exploration of the

common duct undertaken for symptoms of stenosis are, first, those of diagnosis. Palpation under profound anesthesia will sometimes clear up the diagnosis. An indefinite resistance in the right hypochondrium will often be resolved into a tumor with distinct outlines and definite environment. Not infrequently the tumor will show unmistakable features of malignancy; in this case the exploration must be abandoned. Most cases,—and, in fact, all that I have operated upon,—have failed to show under anesthesia any unmistakable evidence of hopelessness. It is especially desirable in the marasmic to avoid an unnecessary incision, because of the great mortality in simple explorations for cancer, even when the incision is small and the exploration brief.

The first incision should be very short,—just large enough to admit the finger. As soon as the abdominal cavity is opened the presence or absence of serum should be noticed. Free fluid in the abdominal cavity almost invariably means malignant disease. It is well, however, if fluid is found, to pass the finger to the gallbladder, foramen of Winslow, duodenum, and pancreas, where undoubtedly cancerous nodules will be felt. In the absence of ascites, digital exploration will probably fail to demonstrate hopelessness, though it is possible even then to find sufficient evidence of hopelessness to require abandonment of further search. If, from the patient's strength or from limitation of the disease or for other reasons it seems justifiable to attempt relief of jaundice by a cholecystenterostomy in cancer of the pancreas, the operator will of course proceed to that operation. In case no contraindication is developed, the incision is next enlarged to admit the hand. Thorough examination is now possible of the whole tract between the gallbladder and the duodenum. If the pancreas seems not abnormal, a stone will probably be detected somewhere along the course of the common duct, where it may be treated as the operator may determine. I have found in two or three instances firm yellowish spots scattered throughout the fatty areas of the abdomen, especially in the omentum and mesentery. These spots have always suggested a previous fat-necrosis, and have been twice associated with changes in the pancreas. In the last case mentioned in this paper these peculiar areas were conspicuous, and, in the light of the unexpected recovery, encouraged the hope that the enlargement of the pancreas was inflammatory rather than malignant. It seems worth while, therefore, to inspect carefully the omentum and mesentery.

To examine the head of the pancreas sufficiently for guidance, it is not necessary to open the lesser omental cavity. With the whole hand in the abdomen, the head of the pancreas may be grasped between the thumb and fingers. The overlying duodenum offers but slight obstacle to thorough palpation. I use the left hand, with the thumb in front of the pancreas and toward the patient's left, the fingers to the patient's right and behind the pancreas, if possible. This position will bring the fingers against the portion of the pancreas enclosing the duct and against the duct itself before it enters the pancreas. It is not, of course, possible to grasp the pancreas anteroposteriorly, for the fingers cannot be passed behind the head of the gland. The grasp will rather be in a plane passing from the right side of the bodies of the lumbar vertebrae to the left and forward. A sufficiently large portion may be thus grasped and manipulated. In cases of doubt, I have enlarged the incision enough to use the fingers of both hands, passing those of the right in front and those of

the left behind. The overlying intestine permits the fingers to glide smoothly over the head and to detect irregularities of outline and surface, by pressing backwards against the lumbar bodies.

At this stage of the investigation it is discovered perhaps that the feel of the head of the pancreas is abnormal: there is an unmistakable enlargement—a tumor even which suggests cancer; no evidence of malignancy is at hand besides the feel of the tumor itself; secondary glands have been sought, but none found; the mass has no definite nodules of unmistakable malignancy, and none are to be detected in contiguous structures; it is simply a hard, rounded mass without irregularity; there is no fluctuation; adjacent structures are not infiltrated by it, though they may be adherent; no stone is perceptible in the common duct. What is to be done? Though no definite and unmistakable evidence of malignancy is present, it is quite possible that in the center of the mass, surrounded by changes in the gland, which, though not themselves a part of the mass, are secondary to it, is a small, hard focus of malignant disease. If a small tumor is felt in the mass, it may be instead of a malignant tumor a gallstone, the definition of which is masked by the enclosing tissues. Abandonment of the operation means absolute hopelessness, which an autopsy may prove mistaken. On the other hand, incision into the mass means a difficult and bloody dissection, and more likely than not a harmful if not a fatal one. Exploration by incising the common duct is a still more dangerous procedure, and may be quite as useless.

The possibilities in cases of this kind have been emphasized many times in my experience, and the questions that these possibilities suggest have always been disquieting. Not the least source of anxiety has been the possibility of leaving the patient to die unrelieved when a little further dissection would have saved him. But, on the other hand, it is no light matter to carry exploration far beyond the limits of safety, and to find at the end that nothing, not even the truth, has been gained by it.

In a recent case these questions arose: The gallbladder contained gallstones, but the head of the pancreas was very much enlarged, presenting a tumor the size of the fist. Nothing in the history had called attention to the pancreas; everything pointed to gallstones. After thorough digital examination of the tumor, the gallbladder was opened and the gallstones removed. To my surprise the case has followed the ordinary course of a simple cholecystotomy. The patient was entirely relieved of his symptoms and has gained in weight. The enlargement of the pancreas was probably a chronic pancreatitis. Drainage through the gallbladder, after removal of the gallstones, permitted the biliary passages to return to their normal condition, and with them the pancreatic.

Robson's article on this subject in the *Lancet* of July 28 is of extreme interest, for his experience in curing 16 out of 17 cases of chronic pancreatitis, with tumor suggesting cancer, encourages the hope that many of the cases pronounced incurable and left unrelieved may under cholecystotomy and drainage be restored to health. It is hard to understand why drainage through the gallbladder should exert so beneficent an influence. In the light of my first case—which was doubtless of this kind—cure may take place without any drainage whatever. It is hard to see, too, how opening the gallbladder can drain the pancreas, when the obstruction is close to the

duodenal papilla. Whatever may be the cause, recovery follows cholecystotomy and drainage. In the light of Robson's cases, and in the two of my own, it would seem advisable in all cases of doubt to drain the gallbladder whether it contained gallstones or not.

In other lesions of the pancreas the dissection may under exceptionally favorable circumstances be carried along the common duct until the exact nature of the stenosis can be determined; but the cases in which such an exploration is indicated must be extremely unusual. In a strong patient there is no reason why the dissection should not be made extensive enough to find the cause, and, if possible, to remove it. In a weak one there is every reason for keeping within the limits of the briefest and safest measures. With a long incision through the abdominal wall, the common duct and pancreas may be freely exposed from the right side, and delicate dissections may be carried out.

A persistent jaundice not owing to gallstones requires a thorough investigation of the course of the common duct through the pancreas. When that exploration shows the cause to be cancer, the operation must be abandoned or limited to palliation.

If the obstruction is in the duodenal papilla, as in Elliot's case, it may be remedied by operation through the duodenum. When the obstruction is probably caused by diffused hypertrophy of the gland, probably a chronic inflammation, drainage of the gallbladder is indicated; when to a benign neoplasm, a calculus, the contraction of cicatricial tissue, the operator must, after exact demonstration of the mechanical cause either attempt its removal or provide a new channel for bile by means of a cholecystenterostomy.

TWO INTERESTING CASES: GALLSTONE OF THE CYSTIC DUCT, WITH SITUS VISCERUM INVERSUS; AND GUMMA OF THE LIVER.

By FRANK BILLINGS, M.D.,
of Chicago, Ill.

THE diagnosis of gallstones of the gallbladder and gall-tracts is not always easy, and the two following cases are reported as examples of the difficulty of diagnosis in certain instances; the first one because of anomaly in the position of the organs; the second proving not to be gallstones, although the symptoms were classical:

CASE 1.—P. H., aged 64, married, a German, was a retired brewer. He enjoyed good health all his life. He received a gunshot wound of the left shoulder during the War of the Rebellion, from which he recovered, and reported for duty within 6 weeks. In 1894, he suffered from pleuropneumonia, from which he made apparently a recovery in 3 weeks. His father died of typhoid fever, and mother of cholera. Of 3 brothers, 1 died of a gunshot wound during the war, and 1 of consumption. One is living, and in good health. All of the sisters are living and well; otherwise, the family history is negative. The patient has used tobacco to excess in the past, but uses it moderately at present. He has always used alcoholics to excess.

His present illness began suddenly in the fall of 1895. He was seized with severe colicky pains in the epigastrium which radiated over the entire abdomen. There was great depression, without nausea or vomiting; a chill followed by fever occurred, and the next day there was slight jaundice. Morphin was required to allay the pain. Two more attacks, similar in nature, occurred within the next two weeks, in all of which there was slight jaundice, chill, and fever, and morphin was required to relieve the pain. Early in 1896, the patient went to Europe, visiting Carlsbad and other re-

sorts. Two similar attacks, with severe pain, lasting about two hours, occurred during the six months he remained in Europe. He returned to America ill. There was now a good deal of indigestion, with fermentation in the digestive tract. He lost in weight and strength. He had occasional attacks of colicky pain, and usually these were associated with chill, fever, sweat, and jaundice. A very severe attack occurred two months after his return from Europe, which lasted three hours.

During the winter of 1896-7, he spent three months in the Kneipp cure of Milwaukee. During his stay there he had two attacks, accompanied with pain and jaundice. Upon leaving the Kneipp cure in the spring of 1897 he was much improved; the jaundice had disappeared; the appetite had improved, and there was a gain in weight. He was now free from attacks and was comparatively well until November, 1898, when he was suddenly seized, after a hearty dinner, with a severe colicky pain without chills. Jaundice occurred. He went to the Kneipp cure again, but received no relief. Attacks of severe pain, colicky in nature, occurred in the epigastrium and radiated in every direction, accompanied with nausea, vomiting, chill, and fever, at irregular periods, and with varying degrees of severity from that time until the present. During this interval of time he gradually lost in weight until he now weighs 125 pounds. Jaundice remained constantly present in varying degrees. He now suffers from flatulent dyspepsia, capricious appetite, constipation, and has but little strength and endurance. Occasional attacks of epigastric pain, colicky in character, occur, usually with chill and fever, followed within 24 hours by an increase of jaundice. The epigastrium is sore to the touch and to the pressure of the clothing.

Examination shows a good deal of emaciation. The skin and visible mucous membranes are deeply stained with bile; the palpable and visible arteries are rigid and tortuous. The lung-resonance on percussion and the sounds on auscultation appear normal, with the exception noted in reference to the liver and heart below. The apex beat of the heart cannot be seen or felt. The heart-dulness begins on the left at the left sternal border and extends across the sternum to the right nipple-line. The base extends along the border of the third rib, from the right mammary line to the third cartilage on the left. The heart-sounds are clear, but are heard loudest to the right of the sternum, and an accented second sound is heard in the second left interspace near the sternum. The abdomen is pendulous and flaccid. A hard, tumor-like mass is plainly felt at the costal margin at the tenth left cartilage. From this mass an organ with a sharp border can be easily felt extending to the right under the costal margin until it is lost in the back. A similar organ, with a sharp border, can be felt from the mass toward the right across the epigastrium, and ends at the ninth right costal cartilage. The whole mass, lying chiefly under the right costal margin, moves downward with inspiration. Above, on the right, percussion-dulness begins at the sixth rib, mammary line, and continues unbroken around the chest behind to the eighth rib, in front to the sternal dulness, and below to the costal margin. At the tenth left cartilage a deep notch can be felt under the edge of the mass. The lower right chest, below the sixth rib and to the right of the parasternal line, gives a tympanitic percussion-note, which extends a considerable distance below the costal margin. Palpation fails to reveal any organ under the right costal arch except the mass described as extending from the left side into the right epigastric zone. With sodium bicarbonate and tartaric acid powders, the stomach, distended with gas, occupied the right hypochondriac and epigastric regions. The colon was not distended with gas, and hence its position was not accurately noted. The urine gave a specific gravity of 1.020; contained no albumin and no sugar. Bile was present in large amount, and a few bile-stained hyalin casts were found.

A diagnosis of gallstones obstructing the gall-ducts with angiocholitis was made. *Situs viscerum inversus* was recognized in the patient for the first time. He had been examined many times by different physicians abroad and at home without this anomaly being discovered, and because of the anomaly the tumor in the left hypochondrium was mistaken for carcinoma, and by one physician acute yellow atrophy of the liver was diagnosed, because the liver could not be palpated on the right side. It was noted that the patient

was righthanded. The desperate nature of the disease was recognized and the friends were informed that surgery alone could possibly afford relief.

Dr. Christian Fenger, to whom the case was referred, concurred in the diagnosis, and on November 22, 1899, he operated at the Passavant Memorial Hospital, Chicago. The operation revealed a large stone in the cystic duct. The cystic, hepatic, and common ducts were much dilated. The anomaly of transposition of the organs was verified. The difficulty of the operation, because of the anomaly of position of the organs, and the contractions and displacements due to the long-standing disease of the gallbladder and gall-tracts will be described by Dr. Fenger in a subsequent report. The patient died of septic angiocholitis on the fourth day after operation. An autopsy was not obtained.

CASE 2.—L. S. S., aged 37, single, was a railroad engineer, whose family history was negative. He has used alcoholics very moderately; tobacco sometimes to excess. In consequence of his occupation his meals had been taken irregularly, and he has sometimes suffered from indigestion. Contracted syphilis in the winter of 1897-98. In June, 1898, he noticed a dull pain at the border of the ribs, about the right mammary line. This pain was constant when he was riding on the engine. When quiet he felt no tenderness or pain. After eating, on several occasions he had severe attacks of colicky pain, radiating from the right hypochondrium, near the tenth cartilage, downward toward the epigastrium. Jaundice accompanied these attacks of severe pain, and it never entirely left him. There was some nausea and vomiting accompanying the severe attacks. The bowels were not constipated. In July, 1898, after a somewhat severe attack of pain, he had a chill, followed by fever and sweat. These chills recurred at irregular intervals for the next two weeks, when they ceased. He was obliged to quit work and came North to Wisconsin for rest. About the 20th of September, 1898, the pains grew worse, and were associated with jaundice, chills and fever. There was slight jaundice of the conjunctiva and of the skin.

He presented himself for examination on September 29, 1899. His weight was 145 pounds, a loss of about twenty pounds from the normal. Tongue was slightly coated with a whitish fur; the lungs and heart were negative. Liver-dulness began at the level of the nipple on the right side and extended downward to the border of the ribs, where it could be felt upon deep inspiration. The edge of the liver felt more rounded, but not resistant, and was tender to the touch. A tender, round, smooth tumor extended one inch below the costal arch at the mammary line, which moved with inspiration, and was apparently attached to the liver. The urine gave a specific gravity of 1.020, contained bile, no albumin, no sugar, no blood, no casts. The blood showed no plasmodia of malaria, and 9,000 leukocytes per c.mm.

A diagnosis of gallstones of the gallbladder and cystic duct was made with cholecystitis. Three days later Dr. Christian Fenger operated at the Mercy Hospital, Chicago. Multiple gumma of the liver was found, the largest one situated in the edge of the liver just above and behind the gallbladder. There was no obstruction of the gall-duct by pressure. The tenderness of the liver, the paroxysmal pain, and the jaundice were due entirely to the inflammation of the liver, as well as to the gumma, and probably also to the pressure upon the biliary radicles. It was noticed in operating upon this patient that his tissues were very friable. The abdominal wall, including the muscle, tore easily under the tension sutures, and it became necessary to insert the sutures far back from the edges of the wound. In spite of this precaution, the sutures tore through a part of the tissues, and a loop of intestine slipped between a couple of stitches producing obstruction of the bowels. This was relieved by opening up the wound on the third day after the operation, and the wound resutured. The patient made an uninterrupted recovery from the operation, and under the use of mercurial inunctions he became rapidly convalescent from the syphilitic lesions, and left the hospital in a good condition one month later. The patient unfortunately disappeared, and no further report of the case could be made.

Comment is unnecessary upon these two cases. In the first a careful examination of the individual enabled one easily to recognize the transposition of the viscera,

and with this anomaly in view the diagnosis of gallstones or of some disease obstructing the gall-tracts was not difficult. Without the recognition of the anomaly a diagnosis was practically impossible.

In the second case, the history of syphilis would perhaps throw some light on the case, or should perhaps awaken one's suspicions of the cause of the mass in the region of the gallbladder, and of the jaundice. However, the patient showed no syphilitic lesions of the skin or mucous membranes, and presented none of the ordinary phenomena usually found in secondary syphilis. The presence of the tumor in the region of the gallbladder, the attacks of pain, the jaundice, the chills and fever made a diagnosis of gallstones reasonable. It would perhaps have been a wise plan, inasmuch as the patient gave a history of syphilis, to have given antisyphilitic treatment before referring him to a surgeon for operation, but it did not seem possible that a mistake in diagnosis could be made in the case. Dr. Fenger, who operated upon this case, has since had a similar one, and he states that it would be practically impossible to differentiate between gumma and gallstones when the former is situated near the gallbladder or gallbladder region.

Penetrating Wounds of the Chest.—Dunn (*St. Paul Medical Journal*, September, 1900) says that the vast majority of chest-wounds, particularly in the Northwest, are those caused by pistol balls. After reviewing the literature on the subject, particularly that relating to wounds of the heart and pericardium, he discusses the treatment of chest-wounds as follows: 1. In all penetrating chest-wounds, avoid exploration, disinfect the parietal wound, and immediately apply an occlusion dressing with partial immobilization of the chest. Calm the circulation by quiet, and if necessary by opiates. Watch closely the possible supervention of internal hemorrhage and infection. 2. Intrapleural effusions of blood, though considerable, if not threatening life should not be evacuated too hastily. Time should be given for definite cessation of the hemorrhage, then it may, during the second and third weeks, be gradually removed by aseptic paracentesis. 3. In case of severe and progressive internal hemorrhage, its source, *i. e.*, whether parietal or pulmonic, should be settled. The former should always be controlled by forceps or ligature without opening the chest, and the latter, if progressive and causing dangerous anemia, dyspnea, and disturbed cardiac action, may demand a large plastic thoracotomy and suture or tamponade of the lung parenchyma. In a certain few stab-wounds of the heart suture is practicable. 4. However, in practice it is chiefly the advent of sepsis which requires surgical interference in these injuries. When either pleura or pericardium becomes distended with infected fluid, it should be promptly opened freely and drained precisely as any other purulent pleurisy or pericarditis. [A.B.C.]

Cold as a Therapeutic Agent.—Rees (*St. Paul Medical Journal*, September, 1900) says the use of cold in the treatment of typhoid fever, appendicitis, endocarditis, pericarditis, cerebral lesions, and acute articular rheumatism is a well-recognized procedure. But its use in pneumonia is not so general. The author has used it in 7 cases of pneumonia, applying an icebag to the affected side, with satisfactory results. He quotes a number of men high in the profession who use this form of treatment for pneumonia. It tends (1) to relieve the pain; (2) to relieve the general restlessness and delirium; (3) to act as a sedative to the heart and respiration; (4) through the vasomotor mechanism to limit and relieve the congestion in the affected lung; (5) to control the general temperature. When the patient is seen early, one or more icebags should be placed over the affected area. During the preliminary stage of congestion the application should be practically continuous, though it is advised to remove the icebags for a few minutes every hour to allow the cutaneous vessels to regain their elasticity. When consolidation has set in the icebags should be continued, though their number may be reduced in most cases and they should also be removed every hour for a few minutes and the

cutaneous surface briskly rubbed with the hand. If there is no pleuritic or pericarditic pain, and there seems to be no tendency to further spread of the pneumonia into adjacent lobes, the icebags may then be transferred to the abdomen to combat a high temperature if present. The cold, if applied over the solar plexus, exerts a powerful influence in controlling temperature in this vascular area. During gray hepatization and resolution the icebag is removed and only the pneumonia jacket is worn. The contraindications to the use of cold in pneumonia are practically the same as in typhoid fever. [A.B.C.]

Varicose Veins of the Lower Extremity.—Mayo (*St. Paul Medical Journal*, September, 1900) in discussing varicose veins calls attention to the small support given the superficial veins of the leg. This deficient support offers an explanation for their frequent varicose condition. The venous coats are less liable to degenerative changes than those of the arteries. He quotes Bennett on the classification of varicose veins: (1) those which are congenital; (2) those caused by obstructed blood-current; (3) those caused by trauma, that is, those caused by strain without thrombosis; and (4) those which result from thrombosis. Varix of the leg following injury requires elastic support. The support is continued for several months and in many cases a cure will result. Elastic support is seldom of benefit extending above the knee. The supporting treatment is used with benefit in many patients who do not lead active lives and are able to give time and attention to prevent an increase of the disease. There are many methods of curing ulcer, the essential features of which are cleansing and rest in bed or support by bandage. The sloughing ulcers with edema and of foul odor may be readily cleansed by applying one or more yeast poultices. Kohler grafts ulcers by the Thiersch method without removing granulations but it is more satisfactory to excise the ulcer and remove the fibrous base which, if left, later impairs the vitality of the graft, then a Thiersch or Wolf graft may be applied with good prospect of success. Schede's operation may prove beneficial, but should the deeper veins be thrombosed and varicosed the operation may cause gangrene by cutting off the return circulation from the foot. [A.B.C.]

Cured Spina Bifida.—John Lindsay (*Glasgow Medical Journal*, September, 1900), after an interval of 5½ years presents a case of spina bifida or sacral teratoma undergoing spontaneous cure. The child was born June 24, 1894. Over the lower lumbar and upper sacral regions, lying chiefly to the right of the middle line, there was a considerable swelling of an oval shape, the skin-covering of which was normal in character, except for a capillary nevus on its left lateral surface. The tumor, to palpation, appeared to consist of fat. From near its lower end there projected a button-like protuberance, with a constricted neck and enlarged cup-shaped head. The hollow of the cup was filled with what looked like granulations, but their surface was dry and glazed; and from the center of this bright-red area there hung down an appendage about 3 inches long, slender at its origin, but widening out to a bulbous extremity. In color and consistence it was exactly like the umbilical cord, and seemed to consist of a gelatinous substance in a thin investment. An elastic sac, tensely filled with fluid, gives much the same impression to the touch, but no fluctuation was detected. The appendage was dressed with a piece of linen in the same manner as the stump of the funis. Next morning it had shrivelled, and eventually it dropped off about the same time as the remains of the cord—that is, about the fourth or fifth day. Lindsay thought there had been a spinal meningocele; the skin over it had ruptured, and, the edges of the tear granulating, had cut off the extruded portion of the sac. Lindsay has no doubt that the infant was a subject of spina bifida, although no deformity of spine could be detected by palpation. The frequency of the condition in the lumbosacral region and the presence of a large nevus made its occurrence probable. He admits the possibility of the tumor showing imperfect development of one of pygopus twins, but says that this is mere speculation. He also thinks from the manner of cure that this may have been another umbilical cord and concludes with the statement that if the decision is to be given on the probabilities he would say it was a case of cured spina bifida, but if upon the evidence of touch and sight he would conclude it was an umbilical cord. [G.C.C.H.]

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Collaborators

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The Control of Tuberculosis.—Evidence is not wanting of increase in popular knowledge of the communicability of tuberculosis and of a more general appreciation of the corollary that restriction of the disease depends in large measure upon control of the disease products. In combating the assertion that tuberculosis is becoming more common at high altitudes, where the air is pure and rare, the *Philadelphia Record* points out that this is to be attributed to the increasing opportunities for communication in consequence of the growing number of patients that congregate in such places. Statistics show that while in 1886 there were in New York City 440 deaths from tuberculosis, in 1890 the number was 397; in 1894, 316; in 1897, 295. In England and Wales the death-rate from tuberculosis has been reduced from 38 per 10,000 of population in 1838 to about 13 per 10,000 at the present day. The *Record*, further, supports the recommendations that tuberculous cattle should be killed and the sputa of tuberculous patients rendered sterile. Although regulations as to cattle exist in 20 States, they are rigidly enforced only in two, namely, New York and Massachusetts, and in these two there has been a steady decrease in the number of tuberculous patients. In the opinion of the *Record* it is necessary for Congress to enact legislation preventing the shipment of tuberculous cattle from one State to another, and laws should be passed requiring the inspection of dairies by competent veterinarians. Tuberculous patients should be instructed to burn their sputa, and the careless, the indifferent, and the ignorant should be subjected to the authority of health officials. Only by such rational measures, radical and arbitrary as they may seem, can further restriction of tuberculosis be hoped for, although personal and civic hygiene of a general character are not to be ignored. One of the noteworthy advances for which the twentieth century promises to be distinguished is the practical suppression of tuberculosis.

The Grand Jury and the Whipping Post.—A Pennsylvania judge recently expressed the opinion that the grand jury should be abolished. In his judgment the grand inquest is antiquated and useless. But now, right in the face of this grave indictment, comes a Philadelphia grand jury recommending that the whipping-post be established in this city. Can anyone say hence-

forth that the grand jury is a useless institution? This particular grand jury has had its ire aroused by the drunken wife-beaters of Philadelphia and would send all these brutes to the whipping-post. An eye for an eye, a tooth for a tooth, and a flogging for a beating, is about the right measure of justice according to the grand jury. This distinguished tribunal, however, does not specify where the town whipping-post should be set up, but we suppose at some point where the greatest crowds could be attracted. There might be a Court, not of Honor, but of Dishonor, erected on Broad Street, with seats for spectators. This would far excel in interest a Roman circus, a Spanish bull-fight, or even an American prize-fight. A few pillories and stocks might be added for the sake of variety, and a few murderers in cages, after the custom observed in China, might be put on exhibition for the benefit of small boys. The grand jury's sympathies for the victims of drunken husbands do it great honor. This city already has too many wife-beaters. But the grand jurymen have allowed their hearts to get the better of their heads. No mere atrocity of crime can justify an atrocity of punishment. Moreover, medievalism is past. Whether in thought, in literature, in architecture, or in the punishment of criminals, we should no longer resort to the customs of the middle ages. Even the grand jury itself is a relic of the past, and, as we have already said, it might as well, in the opinion of a learned judge, be abolished.

Wine, Beer, and Whisky Consumption of the Most Important Countries.—The *Allgemeine Zeitung* of July 19, 1900, publishes the following statistics regarding the per capita consumption of alcoholic beverages in different countries for the years 1898 and 1897:

PER CAPITA CONSUMPTION IN LITERS.

	WINE.		BEER.		WHISKY.	
	1898.	1897.	1898.	1897.	1898.	1897.
Great Britain	1.9	1.8	144.9	142.7	4.7	4.6
Germany	3.5	6.1	123.0	116.0	8.4	8.6
France	112.0	111.0	25.0	24.0	9.4	8.6
Russia			4.1	4.3	4.9	4.9
Austro-Hungary		12.0		45.0		10.0
Switzerland	67.0	71.0	67.0	70.0	6.2	6.2
Netherlands					8.2	8.5
Norway			21.8	17.8	2.6	2.2
Sweden				45.0	8.0	7.5
Denmark			94.5	94.5	15.0	14.5
Belgium			207.0	202.0	8.7	9.1
United States	1.0	2.0	59.1	55.4	4.2	3.8

These figures are only approximate, of course, but they are nevertheless suggestive and in some instances

surprising. For example, one would expect the ratio of beer to whisky consumption to be much larger in Germany (about 15:1) than it actually is. The figures for the United States, when compared with those of other countries, impress one as fairly accurate—the whisky and beer consumption hold a relation of about 1:14.

Life-Insurance Fees.—A correspondent asks us whether a physician should allow the life-insurance companies to force him to accept a fee of less than five dollars for each medical examination, and even to exact from him without additional compensation a second examination of the urine. If this were merely a question of let or hindrance, we should unqualifiedly say that no physician should submit to such terms. Unfortunately it is a private matter between the individual company and the individual physician, and we do not see how a general rule can be made applicable. Each party to the contract is a free agent, and if the terms do not suit them both, one of them may withdraw. No physician is obliged to work for a fee that does not satisfy him, and no corporation is obliged to give more than it can bargain for. In other words, this is simply another phase of the sempiternal question of capital and labor—a question that will not stay down so long as the laborer is worthy of his hire and corporations continue to have no souls. In the coal regions of Pennsylvania at present we see this conflict in its bitterest extreme—but the law of political economy permeates everywhere, and the medical profession is not exempt from its workings. The remedy offered in trades-unionism is not always an effective one, and experience shows that trades-unionism in medicine especially is not popular or successful. Let each physician value his own services at the highest, but he must also see to it that they are worth what he asks for them. The life-insurance companies are, as a rule, shrewd enough to see that it is for their best interests to secure the best medical opinion. If they do not do so, they are likely to suffer eventually for their stinginess, and to pay for more dead men than suits their purse.

Hand Disinfection.—From the time when aseptic surgery began its mission of saving life and quelling pain, the surgeon has striven to accomplish an impossibility, namely, to discover a method of cleansing his hands which will always, and without fail, render them absolutely sterile. As shown by Welch, it is impossible to remove every bacterium from the skin, even by the most severe methods of disinfection, and chiefly because of the presence of the *Staphylococcus epidermidis albus*, which inhabits the deeper portions of the gland-crypts. After the best of antiseptic methods, a bit of skin may be excised, and the presence of this germ proved therein. Recently, the subject of hand-disin-

fection has been revived in Germany, and numbers of articles have been written by different enthusiasts making all sorts of claims for all sorts of methods. Notably among some of the eccentricities may be mentioned the hot-water and alcohol scheme of Ahlfeld, the brush, water and soap of Schleich, and Mikulicz's tincture of soap. In the *Archiv für klinische Chirurgie* (Band 61, p. 554), Vollbrecht suggests the use of a solid mixture of alcohol and soap, for which he claims all the advantages of the fluid-tinctures of Mikulicz and Furbringer, but which, being in a solid form, does not possess many of their disadvantages. In the same number of the *Archiv*, p. 463, Sarwey gives the results of an elaborate series of experiments which he and Th. Paul had carried out, and have published in the late numbers of the *Münchener medizinische Wochenschrift*. In this article is clearly shown the impossibility of rendering the hands sterile by methods in which there is no use made of a strong and vigorous antiseptic, though the germs may be greatly reduced in number by thorough washing. In the *Münchener medizinische Wochenschrift* for July 24 of this year, Krönig and Blumberg publish conclusions, based on a somewhat extensive research, in which they also demonstrate the fallacy of methods in which no strong germicide is used. But most of this literature is largely a mass of contradiction, each man finding and pointing out the errors of somebody else's work, but, with a remarkable amount of the strabismus of conceit, failing to perceive that perhaps his own vision is not perfect. The one thought which may be safely garnered from it, is that there has not yet been discovered any method of disinfecting the hands which is entirely satisfactory. This is further substantiated by the fact that the members of the surgical profession practise so many different methods and modifications of cleansing their hands that these may be truly called legion. And the surgeons of this day are beginning to recognize this fact, and in the sincerity of their endeavor have made a great stride in the advance of aseptic technic, namely, the use of rubber gloves.

Surgical Treatment of Trigeminal Neuralgia.—Although severe cases of facial neuralgia have been successfully treated by removal of the Gasserian ganglion for a number of years, the operation until now has been practised by comparatively few surgeons and some have doubted the advisability of the operation. Probably no one has done more for the advancement of the surgery of the nervous system than Victor Horsley, and an article from his pen in the *Practitioner* for September, 1900, on this subject seems deserving of special notice. Mr. Horsley reports having performed the operation for removal of the Gasserian ganglion 21 times. He advocates the operation only in very severe neuralgias of paroxysmal character limited to one side of the face. These neuralgias very often begin with one branch or division of the fifth nerve, only

later gradually invading other branches. They are frequently accompanied by other evidence of nerve-stimulation, such as secretion of tears, saliva, and vasomotor dilation of the vessels of the conjunctiva, and often also of the vessels of the face. Only in the latest stages is it accompanied by any anesthesia. With regard to the pathology of such neuralgias, he believes that they begin in the peripheral branches of the fifth nerve and then gradually, like all neurites, creep as an inflammatory process up the peripheral branches of the nerve until they arrive at the Gasserian ganglion. He gives a very thorough study of the anatomic conditions concerned, for which we can hardly find space in these columns. Hartley, in America, and Krause, in Germany, are given the credit of having independently devised the operation which Mr. Horsley considers the best, and which he designates as the Krause-Hartley method. In performing the operation Mr. Horsley does not employ Wagner's osteoplastic flap, but removes the bone altogether. The temperosphenoidal lobe is then pulled upward by a strong retractor until the floor of the skull can be seen with the foramina through which the nerve branches escape. He considers hemorrhage the source of the greatest difficulty in these operations. This may arise either from injury of the cavernous sinus emissary veins which cross the ganglion and go out of the skull through the foramen ovale and also to a less degree through the foramen rotundum, or from a rupture of one of the lateral branches of the basilar artery, these branches being sometimes of considerable size. Both of these sources of hemorrhage can be controled by suitable pressure with long probes. After the ganglion has been freed and the divisions cut loose at the foramina through which they escape, it is seized and drawn upon, thus separating it from its attachment to the pons. Another difficulty is that the ophthalmic division which runs on the upper and outer wall of the cavernous sinus may be unseen and left behind. If the usual precautions are taken with regard to asepsis there is little risk to life from the operation itself. Out of 21 operations Mr. Horsley has had two deaths, the first in a man of 62, who died two months after the operation, from staphylococcus infection. This was quite likely contracted from an extensive syphilitic ulceration in the nose which existed at the time of operation. The other fatal case occurred in a woman of 82 years, who recovered from the operation without symptoms of shock, but a few hours after was taken with signs of apoplexy. She lived two days after operation. At the necropsy a small hemorrhage into the pons was the only source of death which could be discovered. This was no doubt caused by separation of the sensory root. Mr. Horsley has operated upon four patients over 80 years of age and does not consider age itself as necessarily a contraindication to the operation. He advises special care as to the preparation for the operation. For two days before operation the

eye of that side is washed out several times a day with boric-acid solution and the ear is cleansed with carbolic solution and boric-acid powder. The side of the head should be shaved and very carefully prepared. He advocates the use of a drainage-tube, which should be removed as far from the ear as possible. Loss of the eye is another possible danger of the operation. This resulted in one of his patients, but since adopting the following treatment Mr. Horsley has not seen trouble with the eye: The eyelids are stitched together temporarily with horse hair, the stitches being taken out at the end of the operation. This prevents the vapor of the anesthetic or any antiseptic solution getting into the eye by accident. After the operation a sheet of guttapercha tissue is fastened in a line above the outer canthus of the eye and covers the dressing so that no antiseptic can get forward to irritate the conjunctiva. In the case of the patient who lost the eye Mr. Horsley attributes the trouble to the contact of the antiseptics with the conjunctiva. As to the permanent results of the operation he has seen no recurrence of pain in any of his patients. This coincides with Krause's experience and that of many others.

These successful results reported by Mr. Horsley and those of many others by other prominent surgeons seem to indicate that the operation has been accorded a recognized place in brain surgery. Up to this date we have noticed reports of 109 operations by various surgeons in America, with very satisfactory results in most cases. The operation offers the only permanent relief in this extremely painful affection, and if properly performed there can be no doubt that the relief will be permanent. While not an operation of very great gravity in the hands of skilful surgeons it should not be undertaken by any one without a thorough knowledge of surgery and the anatomy of the parts involved, and practice on the cadaver should in every case precede operations on the living subject.

The Role of the Mosquito in the Etiology of Malarial Fever.—Those who sneer at science and scientific methods will find little satisfaction in the results of the experiments that have recently been undertaken for the purpose of absolutely confirming current theories as to the role played by mosquitos in the conveyance of the malarial fevers. Too full meed of praise cannot be bestowed upon the English investigators in India and the host of colleagues in other countries who have contributed to this important phase of knowledge. The first great step was made when Laveran discovered the plasmodium malariae, and his observations were at once authenticated and amplified by those of Italian, American, and Russian investigators. Then followed the announcement of Manson that the mosquito served as the intermediate host for the parasite and the medium for its transmission to man, and convincing evidence in support of the validity of this proposition was soon

furnished by Ross and others. For the purpose of making the demonstration complete and conclusive, two members of the staff of the London School of Tropical Medicine, Drs. Sambon and Low, went in the month of June to one of the most intensely malarial localities in Italy, where they have since lived in a wooden hut protected from the invasion of mosquitos only by mosquito-netting and wire screens in doors and windows. No antiperiodic drug whatever was employed, and the experimenters went about by day, but remained scrupulously within doors between sunset and sunrise. None of the party has suffered from malarial fever, despite the fact of their paludal surroundings and the general prevalence of the disease in those all about them. An analogous experience is reported by Dr. Elliott, a member of an expedition sent from Liverpool to West Africa, who relates that despite exposure for four months in intensely malarial localities, without the employment of any other prophylactic measure than the use of mosquito-nets, all of the members of the party remained perfectly well.

In the *British Medical Journal* for September 29, 1900, p. 949, Manson reports the successful inoculation in London with malaria of an uninfected individual by means of infected mosquitos brought from Italy, all of the details of the observation being carried out with scrupulous exactness and control. Dr. Manson's son, a healthy man, 23 years old, who had not resided in a malarial locality since childhood, volunteered as a subject for the experiment and submitted on three occasions to the bites of the imported and infected mosquitos, with the result that within a few days of the third inoculation characteristic symptoms of tertian malarial fever appeared, together with the presence of the corresponding parasites in the blood. Relief was promptly afforded by the administration of quinin. Similar observations are said to have been made in New York on a patient in Bellevue Hospital, who volunteered for the purposes of the experiment.

If any doubts have remained in the minds of informed individuals as to the part played by the mosquito in the conveyance of malaria the observations here recorded must remove the last vestige. It is, of course, not implied that there may not be other media of transmission, as, for instance, the water, but for the present at least it can be considered as demonstrated that the mosquito (*anopheles*) serves as the intermediate host for the malarial parasite. With this knowledge the indications are as clear as the certainty with which night follows day, namely: avoidance of malarial localities, destruction of the breeding-pools of *anopheles*, and protection from mosquito-bites.

Suggestions to Writers, No. 62. Concerning Emphasis, Underscoring, Stress, etc.—In an ordinary English sentence almost any single word may be chosen for emphasis, according to the meaning which

the speaker wishes to convey. As it is almost impossible, except by circumlocution, to give the sentence the exact shade of meaning desired without this emphasis, we see that emphasizing a word is an important and almost a necessary part of the function of language. We smile at the Chinese who convey wholly different ideas by the same sound through utterance in higher or lower keys or pitches—and yet by similar means, rising or falling inflections, intensity, rapidity, emphasis, etc., we ourselves carry out the same purpose. Take the sentence: *I commanded him to go.*

This may be spoken in four ways:

I commanded him to go;

I *commanded* him to go;

I commanded *him* to go;

I commanded him to *go*;

with four distinctly different meanings.

If instead of a period we place an interrogation mark after each we add four meanings, and if instead of an interrogation mark we add an exclamation point we have four other indications. As the unemphasized sentence differs in meaning from all the others, we thus have at least 13 clearly defined significances expressed by emphasis and inflection. This leaves out of the count other shades expressible by stress upon words, and also ignores a hundred nuances obtained by inflection, action, gesture, etc. A good actor can express a dozen or two shades of meaning by differences of enunciation of a monosyllable such as *yes* or *no*, which the printed word cannot indicate. Function, life, physiology, is thus added to the dead printed sentence, giving it a living and ever-varying phase to indicate or to keep up with which the mechanic and uniform printed forms make no attempt. The imagination of the silent reader must supply the thousandfold life-elements of the speaker, actor, elocutionist, singer, etc. To one endowed with imagination his printed form is only the crude suggester of a thought and meaning, just as ether-waves are the brute beginners, or material, which suggest the infinitely rich product of vision. One smiles at the antics and tricks of formalists and the unimaginative to express themselves by signs, accents, diereses, hyphens, italics, and underscorings. Nothing is more ludicrous than a printed page full of words or sentences in italics, small caps, and large caps, whereby the author, in default of training or of ability to make himself understood by words as usually printed and spoken, makes up for his deficiencies by excess of force, and bawls and howls with thwacking gesture and larynx-splitting tones. The less thought a speaker has and the less he is able to express it in ordinary tones of voice, the more is he inclined to scream and roar. So it is in writing. Varying sizes and styles of type, italics, and capitals should not be used for emphasis or to lay stress upon what are deemed matters of prime importance, but solely to indicate quotations, headings, titles, case-histories, foot-notes, references, etc.

An important corollary of the inadequacy of the printed form to express all but the mere rudiments and essentials of thought and feeling, is that it cannot express phonation except in an utterly inadequate way and even then only temporarily. Sounds of letters and syllables are different in different parts of the same country and State, and are never the same anywhere for but a short time. But the uttered sound is the living thing, and will always be the master and leader. Soon or late to some approximate conformity the printed form must change or it must die. The modern printing office is a huge and complex thing with its hundreds of fonts of type, and the complexity is a great tax on education and civilization. Every hyphen, dieresis, accent, or diacritic mark we can spare lessens that expense and saves future expense and labor in dropping it when it is finally recognized as not only useless but misleading. The hyphen or dieresis is no more necessary in *infraabdominal*, *cooperation*, *zoology*, *oophorectomy*, etc., to separate the vowels or sounds, than it is in *innuendo*, *naive*, *diiodoform*, *biannual*, *dielectric*, *abiogenesis*, *coincide*, and hundreds of words in which separately-pronounced vowels follow without a consonant. If a boy is so stupid as to say *koop'-eration* and *zool'-o-je* no hyphens or diereses will help him. Is a dieresis needed to avoid the pronunciation of *reaction* as a two-syllabled word? A pupil must learn without markings that *coin* is a monosyllable, but that *coincident* has four syllables; that *coeliac* is not pronounced *ko-el'-yak* nor coefficient *ke-fis'-i-ent*. Diacritic marks cannot teach pronunciation.

Early Diagnosis of Pulmonary Tuberculosis.—Bell (*St. Paul Medical Journal*, September, 1900) emphasizes the importance of obtaining a complete personal and family history of the patient suspected of having tuberculosis. Anal fistula or ischio-rectal abscess should excite suspicion. Clinically tuberculous patients may be separated into 3 classes: First a class presenting the symptoms of causeless dyspepsia, gradual loss of flesh, inability to bear exertion, accelerated pulse, slight afternoon rise of temperature, pale or sallow skin, slight cough; later positive physical signs and microscopic evidence of infection. Second a class consisting largely of young females presenting at first the symptoms of slight but progressive anemia, loss of flesh and strength, breathlessness on slight exertion, slight elevation of temperature, pulse small, increased in frequency and the arterial tension higher than in cases of primary anemia of the same grade; later cough, free expectoration, night-sweats and all the classic symptoms of pulmonary tuberculosis. Third a not inconsiderable class where the first warning is a hemorrhage or a series of slight hemorrhages without provocation in an individual apparently in perfect health, followed in a large percentage of cases by increased pulse-rate, considerable elevation of temperature and all the other evidences of tuberculous infection. The author says in his experience a dry, harsh, lusterless condition of the hair is of diagnostic value in relation to tuberculosis. Continuous dilation of the pupils, occasionally one more than the other, is a frequent early sign of this disease. A general discussion of the findings on inspection, palpation, percussion, auscultation, thermometry, etc., are discussed. He says of the newer diagnostic methods none give more promise than the **serum method** of diagnosis. Arolin and Courmont claim as high as 100% of reactions in cases known to be tuberculosis. [A.B.C.]

Reviews.

The Transactions of the Medical Society of the State of California. Thirtieth Annual Session. San Francisco, April, 1900. Vol. 30, 8vo, pp. xvii, 619. Published by the Society.

This volume makes a most creditable publication containing about 50 papers on subjects in the various departments of medicine by active practitioners. Not the least commendable feature of the transactions is the promptitude with which it has been published. The mechanical execution and the illustrations of the work are eminently satisfactory.

The Pocket Formulary for the Treatment of Disease in Children. By LUDWIG FREYBERGER, M.D., of London. Second Edition. London: Rebman, Limited, 1900.

On account of the many changes and additions in the new British Pharmacopeia, it has been deemed necessary to practically rewrite this valuable little formulary. We have already spoken favorably of the first edition of the work, and we heartily commend it in its revised form as a concise and handy compend of information relative to the treatment of diseases of children by drugs.

International Clinics. Edited by HENRY W. CATTELL, M.D. Vol. II. Tenth series, 1900. 8vo, pp. x, 300. Philadelphia: J. B. Lippincott Co.

Every practitioner will be sure to find something interesting in the 31 articles contained in the volume before us. A large number of subjects are considered from various aspects, but always in an essentially practical and clinical manner. There is no dearth, as there is no superfluity of illustrations. The colored plate, depicting kromoscopic images, is especially well executed, and the description of the apparatus and the principles that underly its mechanism is most timely.

Beneath Hawaiian Palms and Stars. By E. S. GOODHUE, Government Physician; Medical Superintendent Malulain Government Hospital. Pp. xv, 248. Cincinnati: The Editor Publishing Co., 1900. Price, \$1.50.

This is one of three books written as the result of observations made in the course of a residence of several years in the Hawaiian Islands and describes various conditions and phases of life in these new American possessions. The influences that led to the change in government are briefly considered, and numerous facts with regard to the geographical situation of the islands, their natural resources, the character of their inhabitants, their occupations and their diseases, and the opportunities for strangers, are detailed.

Diseases of the Eye. By EDWARD NETTLESHIP, F.R.C.S. Revised and Edited by Wm. Campbell Posey, A.B., M.D. Sixth American Edition from the Sixth English Edition. With a Supplement on Examinations for Color-Blindness, and Vision and Hearing, by William Thomson, M.D. Philadelphia and New York: Lea Bros. & Co., 1900.

An extensive review of this well-known and valuable manual is unnecessary at this late date. A work that has passed through six editions needs little else to commend its practical value. On account of certain points of divergence in the views and methods of English and American ophthalmologists, the publishers have secured the services of Dr. W. C. Posey, of Philadelphia, to revise the book to conform to the best American practice, and to add descriptions of the new forms of ocular disease and of bacteria recently identified with conjunctival inflammation.

In the main, the editor has performed his task very satisfactorily, but we can hardly agree that an ophthalmic work, in which there is no mention of uncorrected ametropia or muscle-defect in the paragraphs relating to blepharitis and

chronic conjunctivitis, constitutes a "thoroughly up-to-date American text book."

Printed on thick paper, the new book is much more bulky in appearance than the previous edition, although it contains but 32 more pages, some of which are occupied by new illustrations.

Transactions of the Louisiana State Medical Society. Twenty-first Annual Session held at New Orleans, La., April 19, 20, 21, 1900.

This volume does credit to the good scientific ability and workmanship of the members of the Louisiana State Society. Among many noteworthy papers is that of Dr. Matas upon the "Growing Importance and Value of Local and Regional Anesthesia in Minor and Major Surgery." We know of no epitome of this subject that is so complete and trustworthy, and is of that remarkable excellence which the author has taught us to find in his work.

Essentials of Medical and Clinical Chemistry with Laboratory Exercises. By SAMUEL WOODY, M.D. Fourth Edition, Revised and Enlarged. Illustrated. 8vo, pp. 243. Philadelphia: P. Blakiston's Son & Co., 1900. Price, \$1.50 net.

This little manual contains a large amount of information that should render it especially useful to the medical student in his laboratory work. The text is written in a clear and interesting manner and the illustrations suffice to serve their purpose. The work is arranged into three parts, the major portion being devoted to the first, organic chemistry, and the remainder divided about equally between the second and third parts, organic chemistry, and clinical chemistry. The present edition has been carefully revised and much new matter has been added.

A Short Practice of Gynecology. By HENRY JELLETT, B.A., M.D., B.Ch., B.A.O. (Dublin University), F.R.C.P.I., L.M.; University Examiner in Midwifery and Gynecology, Dublin University. With 125 illustrations. London: J. & A. Churchill; Philadelphia: P. Blakiston's Sons & Co.

In a little volume of 400 pages the author gives a concise account of gynecologic diseases and their treatment. No effort has been made to describe all accepted theories, modes of treatment and operations; and only those theories and practices which appear to rest on the surest basis in the present state of gynecologic knowledge have been presented. In its essentials the practice taught in this book is that employed in the Rotunda Hospital, Dublin, with which the author was formerly connected. One hundred and twenty-five illustrations and diagrams so necessary to a manual on this subject are introduced and add much to the value of the book.

A Manual of Clinical Diagnosis by Means of Microscopic and Chemical Methods for Students, Hospital Physicians and Practitioners. By CHARLES E. SIMON, M.D., late Assistant Resident Physician of Johns Hopkins Hospital, Third edition. Thoroughly revised. Illustrated with 136 engravings and 18 plates in colors. 8vo, pp. 558. Philadelphia and New York: Lea Brothers & Co. 1900.

This admirable volume has attained deserved success and the appreciation in which it is held is indicated by the exhaustion of two editions in four years. The last few years have witnessed a marked advance in methods of clinical diagnosis and a powerful impetus has been given to the establishment of laboratories for the pursuit of that subject, so that the book before us fills a need, which, to speak paradoxically, it has contributed to create. Medicine is progressively growing away from the merely empiric and tending toward the exact and the scientific; treatment has in some degree been subordinated to prophylaxis; and diagnosis is receiving constantly increasing attention. Into this vortex all medical men have been swept, undergraduate, postgrad-

uate, generalist, specialist. The apparatus required is, as a rule, not elaborate or expensive, the laboratory's needs not excessively large; but what is absolutely essential is technical knowledge and the investigation habit. Energy is expended in the direction of least resistance, and training and application are required that the proper direction for this expenditure is given. It remains only to be added that the volume under review is not less excellent in execution than in conception. In the 13 chapters into which it is divided it deals successively with the following subjects: Blood, Secretions of the Mouth, Gastric Juice and Gastric Conduits, Feces, Nasal Secretions, Sputum, Urine, Transudates and Exudates, Cystic Contents, Cerebrospinal Fluid, Semen, Vaginal Discharge, Secretion of the Mammary Glands.

A Manual of Obstetrics. By A. F. A. KING, M.D., Professor of Obstetrics and Diseases of Women in the Medical Department of the Columbian University, Washington, D. C., and in the University of Vermont, etc. In one 12mo volume of 612 pages, with 264 illustrations. Philadelphia and New York: Lea Brothers & Co. Cloth, \$2.50, net.

Dr. King's manual fulfils in every particular its chief purpose, being a book of convenient size which presents, in an easily intelligible form, such an outline of the rudiments and essentials of obstetric science as may constitute a good groundwork for the student at the beginning of his obstetric studies, and one by which he is better prepared to understand and assimilate the extensive knowledge and classical descriptions contained in the larger and more elaborate textbooks. That the manual has proved of marked utility is evidenced by the fact that the eighth edition is now presented. Although there have not been many additions, yet the work has been modified in conformity with the progressive trend of obstetric thought; omissions have been supplied; errors corrected; and the text has been embellished with 41 additional engravings. Attention is called to the 3 new remedies which have been employed in the treatment of puerperal septicemia: (1) nuclein; (2) hypodermoclysis of normal salt-solution; (3) antistreptococcic serum. Nuclein is supposed to increase the number of leukocytes in the blood, thus promoting phagocytosis; in addition it is considered to increase the antitoxic and germicidal properties of the blood-serum. The author believes that although its individual value as a curative agent cannot be definitely stated, yet there is sufficient evidence of its good effects to warrant its employment. The value of saline solution is undoubted. He considers that further experience is needed to demonstrate the superiority of serumtherapy, and thinks it is not justifiable at present to use the serum alone to the exclusion of other remedies. The other methods should be used conjointly. Ether is considered as the preferable anesthetic in labor because of its safety. The author also believes that it is less liable than chloroform to lessen the force of uterine contractions. The work of the publisher has been well done, printing and paper are good, and we can thoroughly recommend this work to the student and practitioner.

Normal Histology. By EDWARD K. DUNHAM, M.D., Professor of General Pathology, Bacteriology, and Hygiene, in the University and Bellevue Hospital Medical College, New York. New (2d) edition. 8vo, pp. 319; 244 illustrations. Philadelphia and New York: Lea Brothers & Co. Cloth, \$2.50, net.

The author's postulate on the study of normal histology is summed up in the beginning of the introductory chapter, where he urges upon the student the importance of "habitually associating his ideas of structure and functional activity, until he can hardly think of what a structure is without at once recalling what it *does*." He also says that "to the conception of the body during health," which the student "has formed by this thoughtful method, he must then add a conception of the influence exerted, both on the structure and activities of the body, by abnormal conditions which disturb or thwart the usual working of that complex mechanism." Notwithstanding these statements the reader

often may forget that it is neither a work on physiology nor on pathology which he peruses, so much is said of function, normal and perverted, relatively so little of form, *per se*.

Eminent authority can be named in support of this method of presenting the subject to students of medicine, not merely, according to the author, as a time-saving device, but, what is more important, as a corrective of spendthrift outlay of nerve-force. However, the morphologist may raise the question whether more is not saved in time and effort, and gained in acquisition, by simple concentration of attention on the subject, than by the method of association of ideas. Logically, knowledge of anatomy must precede study of physiology and of pathology (so also says the author) and more accurate knowledge of structure might occasionally avert complex theories of function with great advantage to the overworked student.

This book is arranged on the plan long familiar in other and older textbooks on histology and in this respect does not outdo them in merit, the author being at his best in his excursions into the provinces of physiology and pathology.

It is with some surprise that one finds the teeth described in the chapter on the skin, which is squarely against the author's theory of "logical correlation," and one cannot but wish that this same theory had led him to classify the organs and of course conformably.

The last chapter of the book is entitled "Histological Technique," which among other technical matters contains lucid instructions for making microscopic measurements, and this naturally directs attention to the omission of the magnification of all the—not original, but in the main well-chosen—illustrations accompanying the text.

Typographically, the volume is very attractive, and doubtless it will well serve the purpose for which it has been specially designed.

Medical Diagnosis, with Special Reference to Practical Medicine. A Guide to the Knowledge and Discrimination of Diseases. By J. M. DACOSTA, M.D., LL.D., Physician to the Pennsylvania Hospital, etc. Ninth Edition, Revised. Pp. 966. Philadelphia: J. B. Lippincott Co.

The appearance of another edition of this world-famed book, revised by the author himself, now more than a generation after the first edition was offered to the profession, is the occasion for mutual congratulation. The profession is fortunate in thus securing the benefit of ripe experience; while the author is privileged to see the fruit of his labors, not only in his own city, where he labored so faithfully and with such signal success, but also in the country at large, and even in foreign lands where his book is now a standard text in four languages.

The continued popularity of this work is due to the same causes which kept its author at the head of the profession in practice; a wide and thorough knowledge of the art and science of medicine, and a readiness at all times to prove each new departure and then accept it when its value was evident. This has been possible by reason of his adherence to the dictum laid down by himself in a recent address: "The life of a physician must be always the life of an observer and a thinker." The book itself is an admirable specimen of the publisher's art. Its form and size of page are more convenient than those of the last edition. Its type and printing are better fitted for perusal. The illustrations also reflect the general advance in bookmaking. The indexing has been amplified, which always adds to the value of a book intended for busy men.

The general clinical classification has not been changed since the first edition was issued 36 years ago. Time has demonstrated its correctness. A few special changes in classification are evident. The list of continued fevers is increased by the addition of plague, glanders, and Malta fever; while to it have also been transferred yellow fever, from periodic; and dengue from eruptive fevers. Typhomalarial fever is added, and fully discussed, under the heading of periodic fevers. This, however, the author points out is not a single disease, but a double infection. Malarotyphoid is suggested as a more fitting term for it.

In the section devoted to diseases of the blood, the latest clinical methods and microscopic findings are introduced.

The important subject of leukocytosis is discussed in its general and special relations.

Throughout the book bacteriologic methods and findings have been duly recognized.

Colored plates are introduced to illustrate the subjects of skiagraphy, blood changes, and malarial organisms.

A general survey of the book shows an adherence to old and tried lines, and shows the object of revision to be an effort at refining rather than amplifying. This edition cannot fail to enjoy even a greater popularity than its predecessors.

Practical Gynecology: A Comprehensive Text-book for Students and Physicians. By E. E. MONTGOMERY, M.D., Professor of Gynecology, Jefferson Medical College; Gynecologist to Jefferson Medical College and St. Joseph's Hospitals; Consulting Gynecologist to the Philadelphia Lying-in Charity. Containing 819 pages and 527 illustrations. Philadelphia: P. Blakiston's Sons & Co. Price, \$5.00.

In this day of multiplicity of textbooks on every subject, a new work must possess unusual merit to win for itself recognition and admission to the library of the busy practitioner; but we prophesy for this work a welcome reception, and a warm place in the estimation of both physicians and students, because it possesses those qualities which recommend it to busy men who want clear-cut, lucid and concise teaching, free from superfluities and theorizations which burden the mind without enlightening it. The rich experience of the author, both as teacher and surgeon, enables him to present the valuable and essential without a mass of useless verbiage or a cloud of speculative hypothesis. In this treatise there is no mere multiplication of words without knowledge; for the writer does not consider that "our felicity and happiness lie in superfluities, but rather in necessary things." The mature judgment has been exercised, and an American work for American physicians is offered to his confreres with the modest hope that it may be "the means of lightening the work of the student, of making more clear the pathway of the busy practitioner, and most of all, of benefiting suffering women through improved methods of diagnosis and treatment." The effort has been made to present a comprehensive treatise upon gynecology, giving the experience and methods of the most careful men, and to indicate which in the author's experience have been found most useful and worthy of acceptance. Each subject is considered with reference to its influence upon the entire genital tract, and the book is divided into sections rather than chapters. The plan of arrangement is unique and enables the student to study consecutively the inflammatory processes, neoplasms, or malformations of different portions of the genital apparatus, the practical or clinical rather than the anatomic classification being used. The author has found by experience that this arrangement is most effective in impressing the subject upon the student, and believes it will be preferable to one who uses the work merely to refresh his mind on any particular division of the specialty. By the employment of this classification, injuries of the perineum and cervix, as well as vaginal fistulas, are included under the section on "malformations" and denominated as acquired malformations. The plan of the book is thus: After an introduction dealing with the theories, foundation, and purpose of gynecology the following subjects are successively treated: (1) Diagnosis; (2) pelvic examination; (3) abdominal examination; (4) therapeutics: (a) medical treatment; (b) local therapeutics, and (c) electricity; (5) anatomy of the genitalia; (6) physiology of the sexual organs; (7) malformations; (8) inflammation of genital tract; (9) deviations of the pelvic organs; (10) genitourinary hemorrhage and ectopic gestation; and, lastly, genital tumors. A 12-page table of contents together with a comprehensive index of 30 pages, make the work especially useful as a book of reference. It is embellished with 527 illustrations, nearly all of which have been drawn and engraved specially for this work, for the most part from original sources; and these are so interspersed that they add much to the value and elucidation of the text. The typography is exceptionally good, errors very few, and the paper and binding show interested and careful publication.

Correspondence.

PREGNANCY SUBSEQUENT TO VENTRAL SUSPENSION OF THE UTERUS.

By J. C. RUTHERFORD, M.D.,
of Providence, R. I.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IN the JOURNAL for June 3, 1899, I reported a case of ventral suspension of the uterus, followed by normal pregnancy and labor. To that report I wish to add that Mrs. X. was taken in her second labor at 6 A.M., March 31, 1900. The head presented with the occiput posterior. The pains were vigorous and regular, and she was delivered, unassisted, of a large female child at 11.45 A.M. Rotation of the occiput to the pubes did not take place. Her lying-in was brief and uneventful.

Examination, September 12, showed the uterus to be in the normal anteverted position. The ligament attaching uterus and abdominal wall is, as nearly as can be made out by bimanual examination, about $\frac{1}{2}$ inch long.

DR. KIRKBRIDE'S SLIDE FORCEPS.

By JOHN LESHURE, M.D.,

Clinical Assistant, Department of Laryngology, Vanderbilt Clinic, New York.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

DR. KIRKBRIDE's article in your issue of September 8 reminds me of a forceps devised by me for the purpose of holding glass slides during the process of fixing, staining, etc. This forceps was described and illustrated in an article which appeared in the *Medical News*, May 6, 1899, so I can claim priority as far as the idea of originating an instrument of this kind is concerned. Dr. Kirkbride in his article states: "No attempt, as far as I know, has been made to avoid the staining and burning of the fingers which so frequently occur when the staining solution is poured on the slide and heated over a Bunsen burner," so I am sure he could not have known of my attempts in the same direction. His forceps is much simpler, and as efficient, perhaps more so, than the one described by me, and is constructed upon an entirely different principle. Having felt the need which Dr. Kirkbride has expressed for an instrument of this nature in my bacteriologic and hematologic work, I welcome this improvement with much satisfaction. It is, I think, the acme of ingenuity and simplicity.

RUBBER TAPE IN MINOR SURGICAL OPERATIONS.

By M. H. MUTSCHLER, M.D.,
of Philadelphia.

To the Editor of the PHILADELPHIA MEDICAL JOURNAL:—

I WAS surprised to see in a recent number of the JOURNAL the letter "Rubber tape in minor surgical operations." I do not deny that the doctor's treatment gave a satisfactory result, but such treatment is absolutely adverse to the first principles of surgery, and should not only receive disapproval, but should be severely condemned. Such treatment is sometimes seen in large machine shops where the minor injuries are washed with some antiseptic solution, after which some form of "sticking plaster" is placed over the

wound. When these patients report to the physician the following day, they almost invariably present a very nasty smear and mass of infection. All cases of injured fingers or toes, where the accident has been of a crushing nature, and when not severe enough to warrant amputation, should be thoroughly cleansed with antiseptic solutions, after which the wound margins should be carefully brought into position, if necessary introducing a few stitches to keep the margins of wound in apposition, and at the same time leaving place for drainage. A wet bichlorid dressing should be applied, and the part placed on a splint. As it is almost impossible to remove all the dirt from a wound of this nature, such wounds should be dressed daily for the first few days. Being connected with one of the largest surgical dispensaries in this city, where we treat a large number of injuries of this class, my experience has taught me that the above treatment is the most judicious. I sincerely hope that no physician in these days of antiseptic surgery will treat an open wound with any form of adhesive plaster.

PRECOCIOUS MENSTRUATION.

By HENRY A. STRECKER, M.D.,
of Philadelphia.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

THERE have been recently reported in your JOURNAL two cases of so-called precocious menstruation. Two of your correspondents consider this name as applied to the two cases a misnomer. The fact that a child has a vaginal bloody discharge shortly after birth, does not constitute it a menstruation. As your correspondent in your issue of September 22 states, it may be due to conditions foreign to the uterus. The case that I desire to report will, I think, be accepted as a true case of "precocious menstruation." The patient is L. M., aged $3\frac{3}{4}$ years. Birth was normal. Shortly after birth a bloody discharge escaped from the vagina. This continued for a few days and gradually disappeared. The condition excited no special comment as I had seen it in several other cases. Eighteen months later the bleeding returned. The onset was accompanied and preceded by severe abdominal pains. The discharge lasted for two days. Two months later it again returned, ushered in by the same symptoms of pain. The following month the same condition prevailed, and also two months later. For the next five months nothing of the kind occurred, but then it made its appearance and has done so regularly every 28 days. The onset is always preceded by pain for 24 to 36 hours.

An interesting feature of the case is that the menses in the child appear on the same day as that of the mother. The face and development of the child are those of precocity. Her two brothers, both of whom are older, are what would be termed delicate children. She is stronger and larger than either and weighs more than the eldest brother, who is five years her senior. Her bones are large and her muscles are well developed. Her mammary glands are large and stand out well from the chest. At the menstrual period she complains of pains shooting through them. Hair is beginning to make its appearance on the pubes.

There is nothing abnormal in either the mother's or the father's family. The mother began menstruating at about 15 and has been perfectly normal.

Five months ago I delivered the mother of another female child. Up to now this child has shown no abnormality. It will be of interest to observe this child and see if any such

condition of precocious menstruation will develop in her at about the age of 18 months as appeared in her sister.
324 So. 12th Street.

ERGOT POISONING.

By FRANCIS M. O'GORMAN, M.D.,
of Buffalo, N. Y.,

Second Assistant at City Hospital for Women.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

AMONG the correspondence in your issue of September 1 appears the report of a case of "Acute Ergot Poisoning," from the pen of Dr. E. S. Clouting, of Germantown, Pa. The report is very interesting to me, because a typical case of ergotism came under my observation during June. Being called about 7 P.M. in a hurry by a young husband, I found his wife in a comatose condition. Her pulse was very low (58), weak and small, respiration labored, and temperature 98°. I noticed while watching her, that the flexor muscles of her forearm underwent severe tonic contractions at intervals of a few minutes. Later on the flexor muscles of the thigh and leg underwent similar contractions. The husband told me that at the supper table she became giddy, laughed hysterically, and then seemed to faint and have a convulsion. Upon questioning him, he produced some medicine which, he said, she had been taking for four days because menstruation had failed to appear. The medicine was fluid extract of ergot, and she had taken it in dram doses every four hours. The patient was removed to the City Hospital, where she remained unconscious for about three days, minim doses of tincture of aconite, and one-eighth grain doses of morphin sulfate being given every two hours. Hot applications were applied to her body, and cold to her head continually for a week. Three days after entering the hospital, the rolling of her head and eyes ceased, but the contractions of her flexor muscles continued at indefinite intervals. Constipation was marked, but urination was free. The pupils were widely dilated, and she still complained of the light hurting her eyes. Purpuric spots appeared on her neck, arms, and limbs, which have not entirely disappeared yet. Her pulse was as low as 56, and for two weeks never went above 70, with the temperature at 98°. These facts, together with the rolling of the head and eyes, the dilated pupils, the tonic contractions of the flexors, constipation, headache, and pain in the abdomen, will probably aid in answering Dr. Clouting's question regarding vasomotor paralysis.

PSEUDOMENSTRUATION (?).

By H. BROOKER MILLS, M.D.,
of Philadelphia.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

I HAVE been very much interested in reading the four communications on this subject which have appeared during the past few months in the columns of the JOURNAL, and, with your permission, should be glad to report a case which recently came under my observation, particularly as I think it bears out the points so ably expressed by Dr. Mundé in his communication of September 22.

A. B., born at term after a normal labor of only a few hours, was the third child of healthy parents and apparently was perfectly healthy at the time of birth. At the age of one week the nurse called my attention to the existence

of what she termed a bloody discharge from the vagina, and upon separating the labia I discovered a small amount of reddish-colored liquid, but was unable to determine its origin. A day or two later Dr. W. C. Hollopeter was called in consultation, owing to my inability to find any food which agreed with the child, and his attention was called to this supposed pseudomenstruation. We examined the parts carefully and came to the conclusion that, beyond the shadow of a doubt, from our knowledge of the parents and the other children, together with the information secured by the examination, the reddish-colored liquid was blood from an abraded urethra due to the passage of uric-acid crystals. In three or four days the discharge entirely disappeared and up to the present time (two weeks later) there has been no return. After many attempts to secure some urine the nurse finally succeeded and examination showed the presence of uric acid, thus confirming the diagnosis. The parents, especially the father, suffers from the uric-acid diathesis, so that it is only natural to suppose the child should inherit this condition.

A point of interest in connection with this case is that the second child, who is now 2½ years old, almost died from several umbilical hemorrhages, which occurred immediately after the falling-off of the stump of the cord. This case was reported by me in the PHILADELPHIA MEDICAL JOURNAL of January 21, 1899.

PSEUDOMENSTRUATION.

By JOHN C. KAMP, M.D.,
of Buffalo, N. Y.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

Seeing several cases of pseudomenstruation mentioned in the JOURNAL, I wish to add a case which came under my observation and which has not been reported.

I confined Mrs. W. on the 18th day of August, 1898. Four days later I was summoned in great haste and found the mother very much frightened over a serobloody vaginal discharge from the infant. She said that the only other daughter, born to hersome 3 years previous, had a similar discharge, which lasted several months, when she died. In the case of the one under my observation the discharge stopped on the third day, and there has been no recurrence.

FOOD-VALUE OF ALCOHOL.

By HOWARD S. ANDERS, M.D.,
of Philadelphia.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

Is alcohol a "partial food"? In a JOURNAL editorial on August 18, Professor Hall's recent criticism of Professor Atwater's now famous calorimeter experiments is referred to, and the latter's correction of certain "misapprehensions and misstatements of his critics" mentioned and, if I apprehend correctly, his position as to the food-value of alcohol endorsed.

It is the logical consistency of that position that I cannot appreciate; nor, in his latest utterance, does Professor Atwater uphold the logic of his former claims so notoriously, since he states his belief that total abstinence is the best stand to take in regard to alcoholic beverages, so-called. Would he, could he consistently say that alcohol was "in a sense a food"? Obviously, here as in many other discussions—theological, philosophical and political, as well as medical—everything depends more or less at the outset upon a mutually admitted understanding of the meaning of the fundamental

and focal terms used in the statement of the question at issue; and this alcohol question will not be settled until it is settled right, including terms, propositions, evidence and inference; and whether alcohol is to be considered a food or not depends upon a generally accepted definition by competent scientific men as to what a food really is. As elsewhere, there is properly no room for hairsplitting or casuistry here.

We may agree, then, with the implied or expressed idea of a food as being a substance that, through metabolism, builds up normal structure and supplies waste of tissue, in a normal manner. But I do not desire to argue the broad question of alcohol as a food or not a food. I do not agree, however, with the Atwater mode of reasoning which calls alcohol a "partial food," simply because it appears to have one quality alone of a food, namely, that it is oxidized when taken in moderate quantities. Does that make it in any sense a food? Should the term *food* be applied to it at all, when there are *drugs* of which no less may be said than is thus claimed for alcohol? Is there really such a thing as a partial food? Rather, is it not as misleading or demoralizing as to speak of a "half-truth"? To quote the French jurist, Jacques Cujas: "What is not a whole truth is a whole falsehood, not a half-truth." But Professor Atwater would have us believe that alcohol is a partial food because it has the one property of yielding some energy as a result of oxidation in the body, and this in a negative, abnormal and narcotic way by depressing cellular activity.

The fallacy is right on the surface, too, in the editorial reference to Professor Atwater which says, in one place, that "alcohol may be called a partial food when taken in moderate quantities;" and a little further on, that "the moderate use of alcohol is dangerous," a manifest contradiction. Illogical, compromising thinking cannot truly harmonize conflicting facts and evidence.

And so regarding the teaching of temperance to children with the aid of the current textbooks on physiology. If it "is wrong to teach that alcohol in small quantities is always necessarily harmful," it is equally wrong to teach that it is in any sense a food, in the ordinarily accepted and complete meaning of that term. Perforce, in view of these alternatives, it is *neither a poison nor a food*, but stands by itself, unclassified, unless it be in relation to other facts or conditions that render its classification clear and easy. And it is precisely at this point that I wish to emphasize what I believe to be the true relative position of alcohol: it is always, naturally, essentially, rationally and ethically a *drug*, to be used, in whatever form,—the simpler and purer the better—with the cool, scientific deliberation and clear, sympathetic discrimination that morphin, nux vomica, calomel, or any other drug is or should be used; not according to the rule of thumb and fingers of the saloon drink of custom and mere tradition so common in much of our hospital and private practice.

I hold that our modern knowledge of alcohol in the human body justifies the belief that in health it is never a food in any sense, be the quantity small or large, but always a poison, biologically or physiologically speaking; that in disease it is neither a food nor a poison, but may be a suitable and helpful drug; and that neither in the last analysis or fullest synthesis, in health or disease is it a "partial food," in small, so-called moderate, or excessive quantities. Let us call it what it rightfully is, a *drug*, and *not a drink*, a *narcotic*, and *not a tonic*. It may take a generation or two before this view becomes as universal as one might wish, but I hope and believe that then it will so become.

SEPARATE URINES SIPHON.

By ANDREW J. DOWNES, M.D.,

of Philadelphia.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IN your issue of July 21, 1900, is a letter from Dr. M. L. Harris criticising the claims in my article of June 2 on the separate urines siphon. I have used both the Harris segregator and my siphon as I prefer to call it often enough to know that the smaller caliber, simpler curve at the beak end and the absence of a spring for elevating the partition rod make the use of my instrument much less distressful to the patient at the time, and subsequently there is no irritability of the neck of the bladder which was generally caused by his instrument. In regard to the claim "the introduction of a new feature siphonage alone for the withdrawal of the individual urine," which is the essential difference between my instrument and that of Dr. Harris, I feel this is justifiable. I aim by this instrument to obtain a partitioned bladder with a fairly deep sulcus or pocket on each side from which siphons with only one opening in each withdraw urine. The single opening I consider essential and this leads from the most dependent part of the pocket. This opening has no immediate connection with the opening of the ureter, so that a little variation in the distance between the openings of the ureters makes no difference. The urine as emitted from the ureters has, I believe, sufficient gravity to descend to the bottom of the sulci prepared for it. I am aware that when a catheter is placed in the bladder with the patient in the dorsal position that contraction occurs and the walls of the bladder approximate each other, yet not I believe so closely as to prevent the few drops from the ureters going by gravity to the respective sulcus prepared for it and from whence it is immediately siphoned out and at about the rate it enters the bladder from the ureter. Intermittent siphonage is maintained as described in my article. Dr. Harris' argument as to the necessity of suction apparatus with his instrument does not apply to urine. Mine is a siphon, his is not. In developing my instrument I thought of surrounding a very narrow beak with the opening in the very end, as now, by an outer perforated shell which would conduct urine from the higher levels as it emerged from the ureter to the bottom of the sulcus, an instrument theoretically and practically the same as it is now made, but perhaps more certain. My success, however, has been such as to make me feel that it may not be necessary. I have been out of practice for three months, and, excepting a few opportunities to use the siphon in Berlin, have not paid much attention to it this summer. In Berlin I used it on a private case for Dr. Freudenburg and easily obtained purulent urine from one side and clear urine from the other. In this case, after repeated attempts, Dr. Freudenburg had failed to catheterize either ureter. I also used it on a private case for Dr. Leymann and demonstrated pus coming from one side. In Dr. Knorr's clinic, with the assistance of Dr. Bierhoff, of New York, the following demonstration was made: A catheter was placed in the left ureter and my instrument then placed in the bladder and the bladder emptied. Urine then began to flow from the right side only of my instrument, while the left kidney urine came from the catheter placed in the left ureter. This was allowed to continue for about 15 minutes. The catheter was then removed from the ureter and immediately identical urine began to flow from the left side of the instrument and at the same rate that it had come from the catheter. We had here a positive proof of the efficacy of the

siphon. A proof that it requires no suction apparatus, and, therefore, a proof of a more or less radical difference from the Harris segregator. With few exceptions I have used the urine siphon on the female; the exceptions seem to indicate that it will be as practical in the male.

This summer I learned that Dr. Alfred Neumann, of Berlin, in 1897 had made, used, and published a description of an instrument which he called "Harnscheider." It could be used only in the female. I have seen it and do not consider it very practical. It is, however, a segregator. Dr. Harris' instrument is far superior to it. I am sure mine is simpler and, in some respects radically different from the Harris instrument. Notwithstanding ureteral catheterization in both sexes has now become quite practical to experts, there are very many reasons why a simpler method of obtaining the individual urine is desirable. In the interest of renal surgery I, for one, trust that a more useful instrument even than mine may yet be produced.

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Calendar of Meetings of Philadelphia Medical Societies for the week ending October 20, 1900:

Tuesday, October 16—College of Physicians, Section on Ophthalmology.

Friday, October 19—College of Physicians, Section on Orthopedics.

Titusville, Pa., is to have a hospital. The structure will cost about \$15,000.

The Home of the Holy Child for Colored Children, of Philadelphia, is under quarantine because of diphtheria in that institution.

Philadelphia Board of Charities and Correction.—William J. McLaughlin has been appointed a member in place of Dr. Joseph Neff, resigned.

Lock Haven Hospital.—A building site of 4 acres has been given by Wilson Kistler, of Lock Haven, Pa., for a hospital at that place. A building fund is now being raised.

Public Baths.—While the 9 public baths of Philadelphia were open, from June 25 to September 30, they were used by 1,271,278 men, 19,996 women, 3,594,260 boys and 74,221 girls.

At the Philadelphia Almshouse 4 graduates in dentistry will be added to the staff of residents. One is to be chosen from each of the 4 schools of dentistry here. They are to receive no salary.

University of Pennsylvania.—George F. Barker, M.D., Ph.D., for 28 years professor of physics at the University, has resigned because of ill health. The title of "Professor Emeritus in Physics" has been conferred upon him.

Pollution of Navesink River.—The New Jersey State Sewerage Commission has ordered a hearing, October 15, for the purpose of deciding on ways and means of stopping the pollution of the Navesink River at Red Bank. The condition has become intolerable.

Druggists Aroused.—A special agent of the State Pharmaceutical Examining Board is endeavoring to ascertain the competency of drug-clerks, and also the cautions observed in the sale of poisons in Philadelphia. It is believed that an effort is to be made to have the Legislature pass more stringent laws governing the sale of drugs.

College of Physicians.—By the will of the late Dr. Alfred Stillé, of Philadelphia, the College of Physicians will receive all the medical works contained in the decedent's

library. With the exception of certain pictures and papers, the remainder of the estate is left to relatives to revert to the College of Physicians if these leave no heirs.

Episcopal Hospital.—The will of the late Charles Edward Orme, of Philadelphia, devises his entire estate, valued at \$50,000, to the Episcopal Hospital "to maintain as many free beds, to be known as the Charles Edward Orme Free Beds, as the income will support." The bequest is not available until the death or remarriage of his widow.

Obstetrical Society of Philadelphia.—At a meeting held on October 4, Dr. WILMER KRUSEN read a paper upon **Varicose veins of the vulva complicating pregnancy**, reporting a case in which the veins became as large as a fetal head during the last months of pregnancy. He also exhibited a specimen of **ovarian dermoid**. Dr. E. E. MONTGOMERY read a paper on **Methods of hemostasis** in which the use of Doyen's angiotribe was advocated, using it only for crushing a groove in the tissue along which a ligature should be subsequently applied. He does not believe in depending upon the angiotribe alone for the control of hemorrhage. The use of a sterilized catgut ligature applied to the crushed tissue is the most effective method of controlling the bleeding and avoiding any secondary hemorrhage.

Vital Statistics of Philadelphia for the week ended October 6, 1900:

Total mortality	334
Disease.	Cases. Deaths.
Inflammation of appendix 3, brain 4, bronchi 4, kidneys 13, liver 1, lungs 18, nerves 1, peritoneum 4, pleura 2, stomach and bowels 20, uterus 1, veins 1, heart 1	73
Lungs—tuberculosis of 46, congestion of 1	47
Debility 3, inanition 14, marasmus 14	31
Heart—disease of 27, fatty degeneration of 1	28
Uremia 16, Bright's disease 5	21
Carcinoma of breast 1, jaw 1, intestines 2, liver 2, lungs 1, peritoneum 1, rectum 1, stomach 2, uterus 1, sarcoma of breast 1, jaw 2, knee 1, tumor of bladder 1, uterus 1	18
Apoplexy 8, paralysis 7	15
Diphtheria	97 14
Convulsions 8, puerperal 1	9
Cholera infantum	8
Casualties	8
Typhoid fever	99 6
Old age	6
Croup 1, membranous 4	5
Hemorrhage—brain 2, uterus 2, umbilical 1	5
Brain—congestion of 1, softening of 3	4
Suicide—gas 1, shooting 2	3
Cirrhosis of liver	3
Unknown	3
Dropsy 2, abdominal 1	3
Scarlet fever	30
Pelvic abscess 1, ovarian 1, asphyxia 1, asthma 2, anemia 1, carbuncle 1, tuberculosis of the bowels 2, cyanosis 2, diarrhea 1, dysentery 1, kidney disease 1, epilepsy 1, malaria 1, jaundice 2, obstruction of the bowels 2, surgical shock 1, sore mouth 1, traumatic tetanus 1, whooping-cough 1	

NEW YORK.

Gouverneur's Hospital.—Dr. Agnew H. Hilsman is the successor to house surgeon Dr. Frank. P. Leadley.

The Homeopathic Hospital, of New York, cost the city \$60,000, and recently \$149,000 has been asked for to equip and maintain it.

Tuberculosis.—At a meeting of the New York Board of Health it was stated that during the past year there were over 40,000 cases of tuberculosis in that city.

The State Forest Preserve Board of New York has just purchased 16,000 additional acres in the Adirondacks, at prices ranging from \$1.50 to \$6 50 an acre.

An Excursion for Nurses.—Mr. Elbridge T. Gerry recently took a party of 70 nurses from the New York Hospital School on an excursion up the Hudson on his steam yacht *Electra*.

New York Polyclinic Hospital.—Dr. Morrison, a graduate of Queen's, Kingston, Ont., has been appointed house surgeon of the New York Polyclinic Hospital.

Claim Against Dental Company.—A claim to collect \$2,000 damages has been made by Gustav Altenburg against the New York Dental Company because a sound tooth had been extracted in place of a decayed one.

Fraudulent Use of Soft Coal.—In New York City the Board of Health arrested 7 persons and issued warrants for nearly 100 others, who, owing to the rise in the price of anthracite coal, have violated the law relating to smoke by burning bituminous coal.

The Carnegie Laboratory of New York City, in which was prepared the pathologic exhibit for the recent meeting of the American Medical Association at Atlantic City, has, through the generosity of Mr. Carnegie, been recently refitted for elaborate bacteriologic and histologic research.

Homeopathic Home Remedy Company.—Suit has been brought against the Munyon Homeopathic Home Remedy Company by William Spiers, of Brooklyn, for \$10,000 damages for the loss of an eye which he says was injured by the explosion of one of the company's patent inhalers. The defence contends that he did not follow directions.

A Testator Objects to Chaplains.—A recent bequest of \$50,000 to the Geneva, N. Y., City Hospital contains a peculiar clause stipulating that the Hospital "shall not have an officer known as a chaplain, or have any person in its service at any time any part of whose duties it shall be to perform such services as are usually performed by a chaplain." Provision is made that in case the stipulation is not complied with, said bequest shall revert to the estate of the testator and then be given to the Rochester City Hospital.

Yellow Fever in First Cabin.—E. Bertweert, one of the saloon passengers of the Ward Line steamer *Havana*, who was transferred to Hoffman Island for the customary observation, was suddenly taken sick there with symptoms of yellow fever. Dr. Doty, Health Officer of the port, ordered him sent to Swinburne Island. Later, the previous diagnosis was fully confirmed. It is the first case brought to New York in the saloon cabin this year. Dr. Doty is reported to have said the patient is as comfortable as can be expected, and that it is too early to make any prognosis.

NEW ENGLAND.

Another Hospital for Springfield.—The united protective societies are contemplating founding another hospital in Springfield, Mass.

Superintendent of Poor.—Dr. Joshua F. Lewis has been elected superintendent of adult poor by the Massachusetts State Board of Charity in place of Dr. Stephen C. Wrightington, deceased.

Chelsea Hospital.—The Government has appropriated \$45,000 for the improvement of the United States Naval Hospital at Chelsea, Mass. Larger buildings are to be provided, and plumbing and ventilation regulated.

Typhoid from Mussels.—At Portland, Me., 4 members of an Italian crew are in the Marine Hospital with typhoid fever. An investigation revealed the fact that members of the crew had been eating mussels gathered from the pile beneath the wharf. A sewer empties into the dock near the wharf.

Maine's Next Governor a Physician.—John F. Hill, the next Governor of Maine, is one of the few physicians of the country who have entered or been successful in the political field. He took his degree of M.D. from Bowdoin Medical School. This is not the first time that a physician has occupied the gubernatorial chair of Maine, Dr. Garcelon having served as Governor of the State with distinction.

New Hospital at Pittsfield.—A new hospital or at least an important addition to the House of Mercy Cottage

Hospital will soon be built in Pittsfield, Mass. The late Solomon N. Russell bequeathed the tract of land known as "Russell Elms," opposite the House of Mercy, to that corporation, for the purpose of an additional hospital. The present buildings are taxed to their fullest capacity. The old House of Mercy building will then be used as a maternity hospital.

CHICAGO AND WESTERN STATES.

Vaccination.—A death from blood-poisoning caused by vaccination is reported from Indianapolis, Ind.

The Medical Association of Colored Physicians held its annual convention in St. Louis, Mo., the first week in October.

Barber's itch is epidemic in Milwaukee, Wis., and is causing much annoyance to barbers and their patrons, and making necessary stringent antiseptic measures.

Chicago Polyclinic.—Dr. J. Raouen Pennington, formerly of the Chicago Clinical School, has been appointed to the chair of rectal surgery in the Chicago Polyclinic.

Anthrax is killing many cattle near Crow's Landing, Cal. The germ is found in the water of a canal where the cattle drink. Some weeks ago the disease existed 40 miles further up the canal.

Passengers Vaccinated.—The steamship *Nome City*, 10 days from Cape Nome, was not allowed to proceed from Port Townsend to Seattle until her 386 passengers were vaccinated. This was considered necessary because there has been another outbreak of smallpox at Nome, although the vessel had no sickness aboard.

Better Hospital Service.—The chief surgeon of the Southern Pacific's hospital department, in order to advance its efficiency, will send one of his assistants East annually to visit the leading medical institutions and study the latest methods of surgery. Dr. W. B. Coffey, of San Francisco, Cal., is the first one to enjoy the privilege.

The Indiana State Board of Health reports a great increase in typhoid fever, and diphtheria and smallpox has been reported in 9 counties. In view of these facts the State Board will send to all applicants without cost pamphlets on the prevention of diphtheria, scarlet fever, and smallpox. A pamphlet on the prevention of typhoid fever is in preparation.

Osteopathy.—The first notes in proceedings against the osteopaths in Wisconsin have been sounded in Milwaukee. The first test case will be heard in a few days. A large "College of Osteopathy" exists in Milwaukee and they have retained one of the best law firms in the State. Judge Neelan, before whom the case will be tried, is the Judge who convicted the "Christian Scientists" some months ago.

A surgical operation for kleptomania is reported from Alameda Co., Cal. The patient is a boy of 10. Some years ago he received a severe blow on the head and since then he has been a kleptomaniac and has been inclined to torture or murder his playmates. The skull has been trephined at the point injured, pressure on the brain relieved and the surgeons look for a complete moral change in the boy.

Sanatoriums for the Tuberculous.—Application has been made by the Ancient Order of United Workmen, the Woodmen, and the Odd Fellows, for permission to erect a sanatorium for the tuberculous on the Government reservation at Fort Stanton, 150 miles south of Santa Fé, N. M., where the United States Marine Hospital for the Tuberculous is located. The Government has also under consideration a plan to allot each State desiring it, ground for a sanatorium.

Brain and Brawn.—In Chicago during the last 12 months, 7,000 school children have been carefully measured and tested, and it has been found that size and strength of body give an indication of proportionate brain power. Pupils, 12 years of age, in the eighth grade average 5 inches more in height and proportionately more in weight than second-grade scholars of the same age, and it is a reasonable deduction that brain power and size and strength go together.

The San Francisco Board of Health has appointed 2 food inspectors. An ordinance intended to regulate the maintenance of slaughter and packing houses and to prevent the sale of watercress and other edible vegetables growing near cesspools or on lands into which any sewage or impure matter is emptied has been adopted. Plans for the new Nurses' Home at the City and County Hospital, to cost \$2,000, have been filed and referred to the Hospital Committee.

Tax on Physicians.—In Oregon, physicians and lawyers are required to pay a license. Dr. E. B. Miller, of Portland, in commenting upon this tax, says that the public apparently has little or no appreciation of the amount of charity work done by the medical profession, that many practicing physicians of Portland do from \$1,000 to \$10,000 worth of charity work in a year, thus taking from the city a large burden. The nature of the medical profession seems to impose upon its members the duty of bearing this burden for society, and they are entitled to credit for it in summing up the amount of revenue to be drawn from them.

Tuberculosis and Public Health.—A Michigan jury is to determine whether tuberculosis is a "disease dangerous to public health." A statute of that State makes it the duty of a physician to report cases of smallpox, cholera, diphtheria, scarlet fever, "or any other disease dangerous to the public health." A physician was arraigned recently for failing to report a case of tuberculosis. The judge decided that the statute was not intended to cover tuberculosis and ruled out testimony offered to show that it is a "disease dangerous to public health." The physician was acquitted. On appeal to the Supreme Court it was decided that the question should be determined on evidence and should have been submitted to the jury. A new trial has been ordered.

SOUTHERN STATES.

Typhoid Fever.—An epidemic of this disease prevails in Washington, D. C. Impure water is thought to be the cause of the outbreak.

Galveston Sanitation.—Dr. George Loper, a New York sanitary expert, is directing the work of putting the streets of Galveston in a sanitary condition.

Hebrew Hospital.—An additional memorial fund of \$500 has been donated to the Hebrew Hospital Association of Baltimore by Mrs. Florence Eversman.

Bequests to Charity.—By the will of the late Simon Stein, of Baltimore, the Hebrew Orphan Asylum and the Hebrew Hospital and Asylum Association each received \$250.

Permitted to Practise Medicine.—The report of the Board of Medical Supervisors of Washington, for the past fiscal year, shows that 50 applications to practice in the district were made and of this number 37 passed.

A School for Colored Nurses has been established at Greenville, S. C. The course of study covers a period of 2 years. Applicants for admission must not be less than 18 years of age, and they are examined on all the English branches.

Municipal Hospital Site.—All proposals for the purchase of ground as a site for the new municipal hospital in Washington have been rejected. The prices asked are too high. Private negotiations for particular sites will now be made. The sum available is \$100,000.

St. Vincent's Hospital, at Birmingham, Ala., is nearly ready for occupancy. The electric outfit alone cost \$10,000. St. Vincent's, in its central building, has four clear stories above the basement and a roof story, and will have at the start a capacity for 200 beds. There are 40 bathrooms.

Quarantine Abolished.—The Louisiana State Board of Health has reduced by 2 weeks the quarantine against Central American ports, and after October 15 all vessels from ports on the Gulf and Caribbean, where there is no yellow fever, will have open communication with New Orleans.

Physician Sued.—Suit has been brought against Dr. Edward J. Bernstein, of Baltimore, by Henry Gerlach to recover \$10,000 damages for the death of his son, who, it is alleged, was unskillfully treated by the physician.

Richmond (Va.) News.—Dr. Henry L. Smith, president of Davidson College, North Carolina, addressed a large gathering of citizens and students of the University College of Medicine, Richmond, Va., on its opening, upon the subject of the value of true science in education. Up to October 6, 1900, 230 students have matriculated. At the Medical College of Virginia, 196 students have registered. Both schools show an increase of new students over last year. Dr. Landon B. Edwards has been elected professor of clinical medicine in the University College.

CANADA.

A hospital for contagious diseases at Westmount, Montreal, to cost \$75,000, is under contemplation.

MISCELLANY.

Quarantine.—Against the yellow fever infected ports of Southern Mexico a strict quarantine is being enforced by the authorities at El Paso, Texas.

School Sanitation.—The Medical Society of Nova Scotia offers a prize of \$10 to the pupil under 16 attending the public schools of the Province for the best essay on "School Sanitation."

Free from Yellow Fever.—For the first time in 4 seasons the quarantine year just drawing to a close has been free from yellow fever in the United States, and the season is now so far advanced as to give assurance against an epidemic. At the beginning of the quarantine season the Marine-Hospital Service appointed 7 acting assistant surgeons in as many cities on the Atlantic coast of Central America at the fruit ports to put in operation quarantine measures.

Investigating Yellow Fever.—The expedition under Drs. Durham and Myer, sent out by the Liverpool School of Tropical Medicine to study yellow fever in South America, received a cordial welcome from the authorities at Washington and Baltimore, and at the special request of Dr. Sternberg, Surgeon-General of the United States Army, has gone to Cuba with the American Government expedition to study yellow fever in Havana. From this point it will proceed to Para, its original destination.

Yellow Fever Serum.—Several years ago the Mexican government made a standing offer of \$100,000 to the discoverer of a remedy for yellow fever. Experiments have recently been conducted at Vera Cruz by Dr. Angel Bellinzaghi, a young Italian specialist, under the auspices of the government board of health. The commission appointed by the board to witness the experiments has reported favorably and the physician will be given part of the prize at once. He has been asked to make further experiments in various forms of the disease at Vera Cruz, and if they are successful he will win the entire prize.

Yellow Fever in Cuba.—Private letters received from Havana indicate that much apprehension exists among the Americans there regarding the yellow fever, as the condition grows worse instead of improving. Civilian employes in Cuba seem to be subject to the disease, and in several Government offices many have been stricken. There is yet no fear of the fever spreading among the troops. During the month of September 257 cases were officially reported, with a mortality of 25%. There are now 84 cases under treatment. Many cases are not reported at all as yellow fever, because of the non-development of the albumen symptom, although all the other symptoms are unmistakable.

Insanity in the Army.—It has been asserted that the percentage of discharges from the army on account of insanity has been excessive, an alarming increase on the record of previous years. The forthcoming annual report of the Surgeon General of the Army will throw some light upon this subject and will show that there is no such abnormal preva-

lence of insanity in the military service as is charged. It is true there are many cases reported by surgeons in the Philippines as insane, and the men thus supposedly affected are sent home on transports, but it has been found that in a majority of these cases the disability is removed by the time the patient reaches San Francisco, and the soldier is thereupon continued in the service and sent to one of the home battalions. The surgeons attribute the alleged cases of insanity to severe mental depression, a debility of the nervous system due to acute attacks of homesickness. The report for the calendar year 1899, show that there were 188 cases of insanity among 105,546 men, of which 58 cases occurred among 42,192 men in the United States, 84 cases among 39,280 in the Pacific Islands, 14 cases among 3,727 men in Puerto Rico, and 32 cases among 29,051 men in Cuba. Of course, the small force in Puerto Rico does not justify conclusions, but taking the 188 cases from the army-at-large, it will probably be disclosed in General Sternberg's report that hardly half of these cases were those of actual insanity. The results will probably show that the percentage of insanity, as a disability among the troops, is not much higher now than in previous years. There has been a great deal of interest in the subject, and one of the most important passages in General Sternberg's report will be that which deals with insanity in its relation to the foreign service now demanded of the army.—[*Army and Navy Register*.]

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended October 6, 1900:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
COLORADO:	Garfield Co.	Sept. 18-24	1	
"	Larimer Co.	Sept. 18-24	Reported.	
"	Las Animas Co.	Sept. 18-24	2	
"	Pueblo Co.	Sept. 18-24	11	
KANSAS:	Wichita	Sept. 22-29	1	
LOUISIANA:	New Orleans	Sept. 22-29	1	1
OHIO:	Cleveland	Sept. 22-29	6	
OREGON:	Portland	Sept. 5	3	
UTAH:	Salt Lake City	Sept. 22-29	3	
WASHINGTON:	Tacoma	Sept. 22-29	1	

SMALLPOX—FOREIGN AND INSULAR.

BELGIUM:	Ghent	Sept. 1-15	2	
EGYPT:	Cairo	Aug. 26-Sept. 2 . .	2	
ENGLAND:	Liverpool	Sept. 8-15	1	
"	London	Sept. 1-15	6	
FRANCE:	Paris	Sept. 8-15	12	
INDIA:	Calcutta	Aug. 25-Sept. 1 . .	5	
"	Karachi	Aug. 26-Sept. 2 . .	2	1
"	Madras	Aug. 20-31	3	3
JAPAN:	Formosa	July 1-31	3	
MEXICO:	City of Mexico	Sept. 2-16	13	7
PHILIPPINES:	Guimeras	Aug. 20	20	
RUSSIA:	Odessa	Sept. 8-15	6	3
"	Moscow	Sept. 2-9	2	
"	St. Petersburg	Sept. 1-8	22	12
"	Vladivostock	May 1-July 31 . .	3	
"	Warsaw	Sept. 1-8	9	
SCOTLAND:	Glasgow	Sept. 8-22	1	

YELLOW FEVER.

COLOMBIA:	Barranquilla	Sept. 8-16	1	
"	Cartagena	Aug. 31-Sept. 14 .	3	3
CUBA:	Havana	Sept. 15-22		9

CHOLERA.

INDIA:	Bombay	Aug. 28-Sept. 4 . .	177	
"	Calcutta	Aug. 25-Sept. 1 . .	4	
"	Karachi	Aug. 26-Sept. 2 . .	11	10
"	Madras	Aug. 25-31		44
JAPAN:	Fukuoka Ken	Aug. 28	40	
"	Osaka and Hiogo	Aug. 18-25	1	
STRAITS SETTLEMENTS:	Singapore	July 28-Aug. 4 . .	1	

PLAGUE.—FOREIGN AND INSULAR.

BRAZIL:	Rio de Janeiro	Aug. 1-31	90	46
EGYPT:	Alexandria	Aug. 20-27	2	2
INDIA:	Bombay	Aug. 28-Sept. 4 . .		57
"	Calcutta	Aug. 25-Sept. 1 . .		56
JAPAN:	Formosa, Tai-hoku Ken . .	July 31-Aug. 7 . .	3	4
PHILIPPINES:	Cebu	July 25	1	American boy.
"	Manila	July 28-Aug. 18 . .	10	5
SCOTLAND:	Glasgow	Sept. 18	7	1

Obituary.—WILLIAM W. BROWNING, of Brooklyn, N. Y., aged 48.—JAMES W. BRYANT, of Richmond, Va., September 29, aged 79.—STEPHEN E. D. HOORNBECK, of Ellenville, N. Y., aged 66.—S. POTTS EAGLETON, of Ocala, Fla., September 18, aged 33.—R. F. CARMICHAEL, of the Kingston General Hospital, Ontario.—CRAWFORD IRWIN, of Hollidaysburg, Pa., October 8, aged 76.—ALEXANDER LEWIS, of Arilene, Kan., October 8, aged 67. COLONEL JOSEPH BAYSON WRIGHT, Assistant Surgeon-General, U. S. Army, of Washington, D. C., October 9. Colonel Wright was the son of Brevet Brigadier-General J. J. B. Wright, surgeon, U. S. Army, a distinguished officer of the Medical Department. He graduated in Arts at Dickinson College, Carlisle, Pa., July, 1858, and in Medicine, March, 1860, the degree of Master of Arts being subsequently conferred upon him in the following year, 1861. His record of service is one extending back to the early years of the Civil War. He entered the service as assistant surgeon on May 28, 1861; was promoted to a captaincy on May 28, 1866; to a majority on July 28 of the same year; as lieutenant-colonel on April 23, 1889, and attained his final rank, that of colonel and assistant surgeon-general, on May 17, 1894. During the Civil War his service was principally in the Departments of Ohio and Cumberland, with General Grant's army in the field at Florence, Miss., and upon various executive duties as medical purveyor and assistant medical director. His long service necessarily took him to various posts and stations, chiefly in the West. He was ordered to the Military Prison at Fort Leavenworth, Kan., in July, 1884, at which place he served many years. During his more recent service Colonel Wright served as medical purveyor in charge of the large depot in St. Louis from December, 1893, until he was detailed as chief surgeon, headquarters Department of Dakota, St. Paul, Minn., November 24, 1899. At the time of his death he was on leave of absence pending his retirement on December 25, 1900.

Changes in the Medical Corps of the U. S. Army for the week ended October 6, 1900:

EKWURZEL, GEORGE M., acting assistant surgeon, is relieved from temporary duty at the Presidio and will proceed to Portland, Oreg., where he will report to the commanding officer on the transport "Thyra" for temporary duty during the voyage to the Philippine Islands. Upon arrival at Manila Acting Assistant Surgeon Ekwurzel will report to the commanding general, division of the Philippines, for assignment to duty.

ROSS, CHARLES A., acting assistant surgeon, is relieved from temporary duty at the Army General Hospital, Presidio, and will report to the commanding officer, First Battalion, Fifth Infantry, now in camp at that station, for duty with that battalion, to relieve Acting Assistant Surgeon Wharton B. McLaughlin.

McLAUGHLIN, WHARTON B., acting assistant surgeon, will report at the Army General Hospital, Presidio, for temporary duty awaiting transportation to the Philippine Islands.

WILLIAMS, ABRAHAM D., acting assistant surgeon, will proceed on U. S. transport "Ingalls" to Mayaguez, P. R., for temporary duty at that post.

BURKART, JOHN L., acting assistant surgeon, will proceed to Seattle, Wash., where he will report to the commanding officer on the transport "Port Albert" for temporary duty during the voyage to the Philippine Islands. Acting Assistant Surgeon Burkart is authorized to carry with him extra baggage (medical supplies) not to exceed 200 pounds. Upon arrival at Manila, Acting Assistant Surgeon Burkart will report to the commanding general, division of the Philippines, for assignment to duty.

MURTAGH, JOHN A., acting assistant surgeon, now at the Army General Hospital, Presidio, is granted leave for 21 days from October 8.

AGRAMONTE, ARISTIDES, acting assistant surgeon, is granted leave for 15 days, with permission to go beyond limits of division of Cuba.

TESSON, Major LOUIS S., surgeon, will proceed from Vancouver Barracks, Wash., to Portland, Ore., and make sanitary inspection of transports "Lennox" and "Thyra."

TEN EYCK, Captain BENJAMIN L., assistant surgeon, is granted leave for two months on surgeon's certificate, with permission to return to the United States.

GEORGE, W. R. S., acting assistant surgeon, will proceed from Adjuntas to Ponce, P. R., for temporary duty during the absence on sick leave of Captain Benjamin L. Ten Eyck, assistant surgeon.

McLAUGHLIN, WHARTON B., acting assistant surgeon, is relieved from temporary duty at the Army General Hospital, Presidio, and will report to the commanding officer, battalion of the Twenty-fourth Infantry, now in camp at that station, for duty with that battalion, to relieve Acting Assistant Surgeon Thomas G. Holmes.

HOLMES, THOMAS G., acting assistant surgeon, will report for temporary duty as transport surgeon on the Army transport "Hancock," to relieve Acting Assistant Surgeon Robert E. Williams.

WILLIAMS, ROBERT E., acting assistant surgeon, will proceed to Fort McDowell for temporary duty.

BACON, JOHN E., acting assistant surgeon, is granted leave for one month, from October 15.

A board of officers to consist of Lieutenant-Colonel ALFRED A. WOODHULL, deputy surgeon-general; Major JAMES C. MERRILL, surgeon; Major EDWARD C. CARTER, surgeon, is appointed to meet at the Army Medical Museum Building, Washington, November 1, and at such times thereafter as may be necessary, for the examination of officers of the medical department for promotion.

MEARNS, Captain EDGAR A., assistant surgeon, will report November 1 to Lieutenant-Colonel Alfred A. Woodhull, deputy surgeon-general, president of the examining board at the Army Medical Museum Building, Washington, for examination for promotion.

KIRKPATRICK, First Lieutenant THOMAS J., assistant surgeon, will report November 1 to Lieutenant-Colonel Alfred A. Woodhull, deputy surgeon-general, president of the examining board at the Army Medical Museum Building, Washington, for examination for promotion.

A board of officers to consist of Major WALTER REED, surgeon; Major JEFFERSON R. KEAN, surgeon; Captain ALEXANDER N. STARK, assistant surgeon, is appointed to meet at Columbia Barracks, Quemados, Cuba, October 22, for the examination of officers of the medical department for promotion.

STONE, First Lieutenant JOHN H., will report October 22 to Major Walter Reed, surgeon, president of the examining board at Columbia Barracks, Quemados, Cuba, for examination for promotion.

KELLOGG, PRESTON S., acting assistant surgeon, will proceed from Battle Creek, Mich., to Fort Keough for duty, relieving Acting Assistant Surgeon Muhlenberg K. Knauff, who will proceed to his home, St. Paul, Minn., and report by letter to the Surgeon-General of the Army for annulment of contract.

HOFF, Major JOHN VAN R., surgeon, is relieved from further duty with the United States forces in China and will proceed to San Francisco, Cal., and report by telegraph to the Surgeon-General of the Army for instruction.

The date of meeting of the American Public Health Association at Indianapolis, Ind., announced in par. 23, S. O. 202, August 28, this office, to be held October 1 to 5, 1900, is changed to October 22 to 26, 1900.

CURRY, JOSEPH J., acting assistant surgeon, is relieved from further duty as a member of the board of medical officers appointed January 16, 1900, for the purpose of studying tropical diseases in the Philippine Islands.

COSTINE, EDWARD F., hospital steward, and 24 privates of the hospital corps, recently enlisted, Jefferson Barracks, will be sent to Fort McDowell for duty with the hospital corps school of instruction at that post. Steward Costine will report to the commanding general, department of California, for transportation to Manila, P. I. Upon his arrival at Manila he will report to the commanding general, division of the Philippines, for assignment to duty in that division.

COWPER, HAROLD W., acting assistant surgeon, is relieved from duty in the department of Puerto Rico and will proceed to New York City and thence to Fort Ontario for duty.

FRICK, Captain EUCLID B., assistant surgeon, is relieved from duty at Fort Wadsworth, and will proceed to San Juan, P. R., and report to the commanding general, department of Puerto Rico, for assignment to duty.

WELLS, Captain GEORGE M., assistant surgeon, is relieved from duty at San Juan, P. R., to take effect upon the arrival at that place of Captain Euclid B. Frick, assistant surgeon, and will proceed to Fort Wadsworth for duty.

PAGE, First Lieutenant HENRY, assistant surgeon, is granted leave for 14 days.

MACHON, WILLIAM, hospital steward, Plattsburg Barracks, will be discharged from the Army, by way of favor.

Changes in the Medical Corps of the U. S. Navy for the week ended October 6, 1900:

BYRNES, J. C., surgeon, is detached from the "Massachusetts," October 1, and ordered to the New York Navy Yard.

WAGGENER, J. R., medical inspector, is detached from duty at the Naval Hospital, Yokohama, Japan, and ordered to duty in charge of the Naval Hospital, Cavite, P. I.

WRIGHT, B. L., assistant surgeon, is detached from the Isla de Luzon, and ordered to the Naval Hospital, Cavite, P. I.

VON WEDEKIND, L. L., passed assistant surgeon, is detached from the "Richmond," and ordered to the Puget Sound Naval Station.

BLAKEMAN, R. S., passed assistant surgeon, is detached from the Naval Training Station, Newport, R. I., and ordered to temporary duty on the "Pensacola."

LEYS, J. F., passed assistant surgeon, is ordered to the Naval Hospital, Newport, R. I., for duty.

MOORE, J. M., passed assistant surgeon, is detached from the Naval Recruiting Rendezvous, Chicago, Ill., October 8, and ordered home to wait orders.

ARNOLD, W. F., passed assistant surgeon, is ordered to the Naval Recruiting Rendezvous, Chicago, Ill., October 8.

BURR, C. R., assistant surgeon, is detached from the Puget Sound Naval Station, and ordered home and to be ready for orders to sea duty.

DICKSON, S. H., surgeon, is detached from the Washington Navy Yard, and ordered to duty at the headquarters of the Marine Corps, Washington, D. C.

HERNDON, C. G., surgeon, is detached from the Naval Museum of Hygiene, Washington, D. C., and ordered to duty at the Washington Navy Yard.

GREEN, E. H., surgeon, is detached from duty at the headquarters of the Marine Corps, Washington, D. C., and ordered to wait orders.

GREEN, E. H., surgeon, is ordered to the "Alabama," October 16.

LIPPITT, T. M., assistant surgeon, is detached from the "Monocacy," and ordered to the Naval Hospital, Yokohama, Japan, for treatment.

Changes in the U. S. Marine-Hospital Service for the week ended October 4, 1900:

STIMPSON, W. G., passed assistant surgeon, is granted 15 days' extension of leave of absence.

HOBDY, W. C., assistant surgeon, is granted leave of absence for 1 month, from October 3.

CORPUT, G. M., assistant surgeon, is relieved from duty at Mullet Key Detention Camp, and directed to proceed to St. Louis, Mo., and report to the medical officer in command, for duty and assignment to quarters.

HUNTER, S. B., acting assistant surgeon, is granted leave of absence for 7 days.

RODMAN, J. C., acting assistant surgeon, is granted leave of absence for 7 days.

RICHARDSON, S. W., hospital steward, upon expiration of leave of absence, to rejoin station at St. Louis, Mo.

Resignations.—Assistant Surgeon ELMER R. EDSON, September 22; Acting Assistant Surgeon A. G. GREENSTREET, September 30; Hospital Steward C. F. CROWLEY, September 4.

Foreign News and Notes.

GREAT BRITAIN.

Charitable Bequest.—Mr. J. R. Jefferies bequeathed the sum of £1,000 for the endowment of a bed in the new Victoria Wing of the East Suffolk and Ipswich Hospital at Ipswich.

New Technical Institute in Belfast.—The city corporation of Belfast has decided to build a new technical school and has selected an admirable site in the center of the city on a portion of the grounds purchased from the Royal Academical Institution.

The Plague in Glasgow.—The number of cases of plague in Belvidere Hospital has slightly increased, the number at present being 24. The "contacts" are much fewer, being only 88. The disease seems to be lurking about Govan, a suburb of Glasgow. Every facility is still being offered the medical profession by the Sanitary Department of getting to know all about the disease. A paper on the plague was read before the Philosophical Society of Glasgow some time ago, by Dr. Alexander R. Ferguson. In it he traced the history of the disease from the third century B.C. onwards to the fourteenth century, when it is estimated that not less than 25,000-000 persons perished.

CONTINENTAL EUROPE.

Physicians Needed.—In Hungary there are thousands of villages and hundreds of small towns without a doctor within 10 miles.

Defective Hearing.—Experiments made by German physicians have shown that about 25% of all school children have some defect in their hearing.

The Hertford Hospital in Paris, which was founded by the late Sir Richard Wallace for the benefit of the sick of British nationality in that city, has now been transferred to the British Government, and a committee of management has been appointed to provide for carrying it on.

Leprosy in Germany.—A report on leprosy in Germany, published by the Imperial Board of Health, states that 22 cases of leprosy were officially known in Prussia at the end of last year, being the same number as in 1898. In most instances the disease was contracted in foreign parts. The Memel district is the only one where the disease is endemic.

The Famous Blind Oculist, Dr. Javal, a member of the Paris Academy of Medicine and director of the Sorbonne Ophthalmologic Laboratory, has been promoted to the highest rank in the French Legion of Honor and decorated with the German Black Eagle. Although he is 60 years old and has been blind for 12 years, he still continues his scientific work.

Leprosy in Portugal.—According to the *Polyclinic* it is estimated by Dr. Falcão in a recent report on leprosy in Portugal that in a population of less than five million, 1,500 are affected. The disease does not restrict itself to any one focus, the cases being scattered about the country and no district being wholly exempt. The majority are, however near the coast.

Cremation in Spain.—A new sanitary law which is now under consideration in the Cortes, having already passed the upper house, removes the ban of illegality which has hitherto, through the influence of the church, rested upon the practice of cremation in Spain. In anticipation of the passage of this law a cremation society has recently been established in that country.—[*Medical Record.*]

Cancer in Germany.—The Prussian Government, in order to make a systematic study of the subject of cancer, has prepared a paper of questions which is distributed to every registered physician requesting him to give his experience in cancer cases. The principal points are whether cancer is hereditary and contagious, whether it is connected with a particular habit, as the alcohol or tobacco habit, or whether it is more prevalent in one district than another.

Women Longer-Lived than Men.—An English weekly magazine says that statistics show that women live longer than men. For instance, in Germany only 413 out of 1,000 males reach the age of 50 years, while more than 500 out of 1,000 females reach that age. In the United States there are 2,583 female to 1,398 male centenarians. In France, of 10 centenarians 7 are women and only 3 men. In the rest of Europe, of 21 centenarians 16 are women.—[*Medical Record.*]

Sanatorium for Tuberculosis in Italy.—The Italian Minister of the Interior has invited competition for a plan of a sanatorium for poor tuberculous patients. He has recently nominated a committee to examine the plans. It includes the names of Professor Bizzozzo of the University of Turin, Professor Durante of Rome, Professor A. de Giovanni of Padua, Professor A. Ballori, director of the Hospitals of Rome, besides those of several well-known architects and engineers.

Association of Anatomists.—The Association des Anatomistes, which was founded last year, held its second meeting in Paris recently. The session was devoted to the discussion of business matters, the Association having for purposes of scientific work joined forces with the Section of Anatomy and of Histology and Embryology of the International Congress of Medicine. The next meeting will be held at Lyons in 1901, the week before Easter, under the presidency of M. Renaut. Among the 32 new members admitted were Professors Waldeyer, His, Golgi, and Eternod.

Foreign University Intelligence.—ATHENS: Dr. Constantin Savas has been appointed to the chair of hygiene and bacteriology. BRESLAU: Dr. Richard Stern has been promoted to an extraordinary professorship of internal medicine. COPENHAGEN: Dr. Oscar Wanscher has been promoted to an extraordinary professorship of medicine. MUNICH: Dr. O. Messerer, extraordinary professor of forensic medicine, has been appointed honorary professor. STRASBURG: Dr. W. A. Freund, the well-known gynecologist, is about to retire from the chair of diseases of women. The names mentioned in connection with the chair are those of Professor Fehling, of Halle, and Professor Frommel, of Erlangen.

Female Students at Zurich.—The number of women attending the University of Zurich, according to the *British Medical Journal*, is steadily increasing. Of 850 students matriculated in the last summer semester there were 214 women. Of these 128 were students of medicine, 58 of philosophy, 21 of natural science, and 11 of law. The ladies appear to give theology a wide berth, but as the total number of students

matriculated in that faculty at Zurich last summer was only 9, it is perhaps hardly fair to conclude that the study of divinity offers no attraction to what the Latin Church calls the "devout female sex." Of the total number of women students 97 are Russians, of whom 84 belong to the medical faculty.

Liman Cure.—At Odessa the Liman cure is becoming popular. The limans are sheets of water that have been isolated from the sea and converted into salt lakes. The waters are concentrated by evaporation and are thought to possess great therapeutic value. The principal salts contained in them are the chlorids of sodium, potassium, and magnesium; calcium sulphate and magnesium, or sodium bromid. A black slimy substance of animal and vegetable composition covers the bottoms of the lakes and contains iodine, bromine, sulphur, sulphuretted hydrogen, and oleic and valerianic acids. Patients bathe either in the open lakes or in baths with the water at different degrees of concentration and temperature. The diseases treated are rickets, scrofula, chronic rheumatic affections, and certain chronic skin diseases.

MISCELLANY.

The court physician to the Ameer of Afghanistan is Miss Lillias Hamilton.

Plague.—It is reported that 5 new cases of plague, with 2 fatalities have occurred in New South Wales.

Yellow fever prevails in Senegal, a French colony in East Africa. The mortality is 86% of those attacked and 15% of the population has perished. The negroes are completely immune.

A Chinese physician's fee ranges from 2 to 5d. This can be accounted for by the fact that any one can practise medicine in China.

The hospital ship *Carthage* will go to Taku via Hong Kong, and the services of 2 military signalers have been sanctioned for the same.

Obituary.—C. P. GANAPATI, of Cuddapah, India, September 22, aged 42.—DR. AYMER, of Bervie, in Kincardineshire.—A. LAMOUROUX, of the Paris Municipal Council.—MORITZ MARCUSE, of Berlin, aged 62.—ABRAHAM KUHN, of Strasburg, aged 63.—FERREIRA DE ARANJO, of Rio de Janeiro, aged 52.—ARTHUR HENRY LEETE, at Talcombe, September 21, aged 33.—MICHAEL RICHARD RYAN, at Hong Kong, September 23, aged 48.—HENRY JAMES HAVILAND, of London, September 22, aged 74.—RICHARD SARELL, of Constantinople, aged 71.

Antityphoid Inoculation.—With reference to the antityphoid inoculations in India last year the *Indian Medical Gazette* publishes some important figures. There were 1,312 cases of typhoid fever among the British troops with 343 deaths, a death-rate of over 25%. The ratio of admissions to total strength was 20.6 per 1000. There were 4,502 inoculations, and among these men there were only 9 deaths from typhoid fever. This gives 0.2% of strength. There were 44 admissions, giving 0.98% of strength. Among the noninoculated in the same corps and at the same stations, of 25,851 men there were 657 cases and 146 deaths, giving the relative percentages of admissions and deaths as 2.54 and 0.56. This is strongly in favor of inoculation.

Plague in India.—The deaths from plague throughout India are still increasing. The recent increase is chiefly in the Mysore State and in the Bombay districts. Mysore city and Poona each show a sharp attack. During the past month 141 deaths have occurred in the latter city. It was at this season that the terrible outbreak occurred last year. The authorities have issued a notice for certain of the inhabitants to vacate their houses within 4 days and stay in the health camp. Dead rats have been found lately in many places. Affected places are disinfected, but segregation has been done away with and there is no compulsory inspection. In Bombay and Calcutta the amount of plague continues about the same, Calcutta reporting 85 deaths and Bombay city 49. Cholera is decreasing nearly everywhere.

The Latest Literature.

British Medical Journal.

September 22, 1900. [No. 2073.]

1. A Discussion on the Correlation Between Sexual Function, Insanity, and Crime. H. MACNAUGHTON JONES, J. GREIG SOUTAR, BERNARD O'CONNOR, W. W. WESTCOTT, R. P. SMITH, and G. A. CARDEW.
2. Epileptic Insanity. E. S. PASMORE.
3. Insanity in Lead Workers. ROBERT JONES.
4. Acute Delirious Mania. JOHN TURNER.
5. A Discussion on the Treatment of Epileptics in Colonies. W. ALDREN TURNER, ROBERT JONES, HARRY CORNER, E. S. PASMORE, and W. L. ANDRIEZEN.
6. The Relation of the Lunacy Laws to Neuropsychologic Diseases. J. M. MACCORMAC.
7. Organotherapeutics in Mental Diseases. C. C. ESTERBROOK.
8. Some Cardiopsychical Associations. J. R. WHITWELL.
9. On Blood-Pressure in the Insane. MAURICE CRAIG.
10. Peripheral Neuritis and Insanity. R. P. SMITH.
11. A Discussion on Muscular Tonus in Relation to Diseases of the Nervous System. F. W. MOTT, W. D. HALLIBURTON, L. J. J. MUSKENS, W. B. WARRINGTON, W. J. HARRIS.
12. The Condition of the Cells in the Spinal Cord After Various Nervous Lesions. W. B. WARRINGTON.
13. The Metabolisms of the Nucleins in Birds. T. H. MILROY.
14. A Note on Respiration. R. J. ANDERSON.
15. Observations on the Temperature of Man after So-called "Heat-stroke." M. S. PEMBREY.
16. Anesthetics and Urinary Secretion. W. H. THOMPSON.
17. The Effects of Inhalation of Certain Anesthetics on the Kidneys. DUDLEY BUXTON and A. G. LEVY.
18. The Retinal Response to Light. AUGUSTUS D. WALLER.
19. The Structure of the Mucous Membrane of the Esophagus. DENIS J. COFFEY.
20. A Digital Sphygmograph. A. D. WALLER.
21. On Some Changes in Volume of the Submaxillary Gland Accompanying Secretion. J. L. BUNCH.

1.—H. MacNaughton Jones, after reviewing at length the **correlation between sexual function, insanity and crime**, reaches the following conclusions: 1. Functional disorders of ovulation are frequently attended by mental aberration, and in a proportion of cases originate the mental disturbance. The same remark applies to disorders of ovulation which have a pathologic cause. 2. In the great majority of such cases, the nervous disturbance is of the neurasthenic character, and is associated with various visceral or other neuroses. In only a small proportion does the alienation assume so grave a type as melancholia, mania, or dementia. 3. Where in an insane person, ovulation and its external manifestation, the menstrual discharge, are erratic or absent, the erraticism or absence may be a consequence of the general and insane condition, and not a causal factor in its production; but under any circumstances such abnormal menstruation appears to have an aggravating effect on the insanity, and there is sufficient evidence to support the view that when such irregularity—especially if it be due to a pathologic cause—exists, it should be treated therapeutically or by operative measures. 4. The question of a gynecologic examination of an insane woman must be a matter for the discretion of the psychologist, influenced by the gynecologic view as to its expediency from the signs and symptoms present in the sexual organs. For many reasons, as a *universal* practice, with our present knowledge it is not advisable. 5. Sufficient evidence is now advanced to justify the removal of the adnexa or uterus in insane women, when there are gross lesions of the former or tumors of the latter. Here, again, such operation must be advised according to the psychologic condition of the patient and the type of her insanity. 6. From a mass of evidence, including some of the largest experiences in Europe, Canada, and America, it does not appear that there is in healthfully-minded women, who suffer from diseases of the genitalia, any special risk of post-operative insanity. On the other hand, if there be a psycho-

pathic predisposition, which had existed prior to and independently of the sexual disease, there is in such cases a larger percentage of postoperative mental disturbance than follows other operations. In such women the prudence of a radical operation may have to be carefully discussed. The postoperative mental effect does not appear generally to be of a serious or permanent nature. 7. It may be generally affirmed that when mental disease of a graver type follows upon sexual disorder there has been in the woman affected an underlying and often unrecognized psychopathic predisposition; the disorder of the menstruation or the disease in the genitalia completing the chain of the vicious circle needful for the final manifestation of the mental condition. 8. The relation of aberrant sexual function or a disorder of menstruation to any criminal act ought to be taken into consideration in determining the responsibility of the woman. [W.K.]

2.—The clinical history of **epileptic insanity** in its early stages in the adult is that of fits for several years; then, without warning, after a fit or a first succession of fits, mental symptoms show themselves, slight confusion of ideas or temporary loss of memory, or the performance unconsciously of some purposive act. These slight mental disturbances later develop into maniacal paroxysms of an impulsive, homicidal, or generally dangerous character. In some cases hallucinations of hearing supervene upon the post-epileptic phenomena and give rise to temporary delusions. For a considerable period in the course of the disease the mental faculties remain quite clear between the attacks, but gradually dementia sets in, preceded in its early stages by irritability of temper, confusion of ideas, restlessness, and querulousness. In other cases, before the onset of dementia the paroxysms of convulsions disappear, to be replaced by periodic maniacal outbursts. The histories of 6 cases are given which corroborate the statement that the periodic paroxysms of convulsions may be replaced by periodic maniacal attacks. The histories of 5 cases of recurrent mania are appended. These cases have hitherto been considered a distinct form of insanity; but they appear to Pasmore similar to those maniacal states associated with epilepsy. The features that are characteristic of epilepsy and epileptic insanity are: 1. That the disease is markedly hereditary. 2. That it is periodic in character. 3. That between the attacks the patient is quite *compos mentis* and it is only after varying periods that dementia supervenes. 4. That maniacal attacks precede and succeed the epileptic convulsions. 5. That these attacks alternate at times with the convulsive seizures. 6. That they might replace them. 7. That the maniacal attacks have certain definite clinical features. The features that are characteristic of epilepsy and insanity as we know it, and those that are characteristic of recurrent mania, appear to have many points in common: 1. Heredity seems to play a prominent part in both and a history of epilepsy appears common to both. 2. They are both periodic in character. 3. Between the attacks the patients show the same proclivities to well-being. Epilepsy might alternate with maniacal symptoms, and mania may precede or follow epilepsy. 5. Maniacal attacks might entirely replace the epileptic state, especially when that is of the *petit mal* type. 6. The mania associated with ordinary epileptic insanity, and that known as recurrent mania, showed marked similarity in their clinical symptoms. For the above reasons **recurrent mania** is considered to be an **epilepsy of a psychic type**, therefore it is proposed to term it **psychic epilepsy** or **epileptoid mania**. For clinical purposes, therefore, we may classify the insanities associated with epilepsy into: 1. Congenital, including (a) idiocy (epileptic), (b) imbecility (epileptic). 2. Idiopathic epileptic insanity, the ordinary insanity of epilepsy as met with in the adult. 3. Hysteroepileptic insanity, found chiefly in young girls about the age of puberty. 4. Psychoepileptic insanity; (a) recurrent or epileptic mania; (b) *amnesia transitoria* and *epilepsie larvée*. [J.M.S.]

3.—The last census gave one **lead-worker** to every 58 of the population of England and Wales; taking the proportion of lead-workers to the population to be unchanged, there should be 18 of this class in Claybury. There are, however, among the 1,959 male patients 35 which suggest *prima facie* that the **occupation of this class** may be a contributory factor in the **causation of insanity**. That lead has a far-reaching and subtle deleterious influence upon the

nervous system is undoubted. The use of virgin lead is not common as a cause of lead-poisoning. The danger with the metal begins with the smelting; the fumes given off by the molten mass, being poisonous, are absorbed by the mucous membranes, principally of the mouth and nostrils. The skin when intact is stated to be a doubtful source of poisoning, although chronic lead-poisoning has followed the use of cosmetics and hair dyes. When absorbed, the lead is said to be stored mainly in the liver, kidneys, and brain. Arterial degeneration, renal disease, anemia, privation, and drink predispose to **lead-poisoning and insanity**. The young are more predisposed, especially women. Out of 133 cases who, from the nature of their work, were liable to lead-impregnation, the following is an analysis of the mental condition: mania, 37; melancholia, 33; dementia, 19; dementia with epilepsy, 10; dementia with general paralysis, 24; general paralysis, 7; alcoholic mania, 3. Jones finds (1) that lead-poisoning is a contributory factor in the causation of insanity, and that in lead-workers there is a higher average number of general paralytics than in others of the population; (2) that there is a tendency in such cases to cardiac, renal, and arterial degeneration with complications due to syncopal or epileptiform fits; (3) that most cases present marked signs of anemia and ill health with unsteadiness of gait and general impairment of muscular strength and very frequently a history of temporary failing vision; (4) that the mental symptoms may be grouped among one or other of the following varieties: (a) those in the nature of a toxemia with sensory disturbances, which tend rapidly to get well; (b) those with hallucinations of sight and hearing, more chronic in their nature, that may be irrecoverable; (c) those resembling general paralysis with tremors, increased kneejerks, incoördination, and accompanied with listlessness amounting to profound dementia which tends to get well; (5) that in most lead cases presenting mental symptoms the tendency is to recovery, unless the patient dies early. The most characteristic mental symptoms of lead-impregnation are affections of memory, confusion, incoherence, headache, want of power to fix and sustain the attention. Depression, irritability, and suspicion are more frequent than active, restless excitement and noisy, rambling delirium. Visual and auditory illusions with terrors are frequent, but there is no reaction and resentment; fits occur in 36% of cases. The treatment of the cases reported has been mainly expectant. There is a tabulated summary of 19 cases of general paralysis. [J.M.S.]

4.—By **acute delirious mania** is meant a condition of delirium associated with a group of bodily symptoms of a typhoid type. There is extreme restlessness and weakness, feeble circulation, a dry, brown tongue, sordes of lips and teeth, and generally, but not always, a slight increase of temperature; sometimes the above group of mental and bodily symptoms appear in a previously healthy subject; at other times, and probably more frequently, they are superimposed on an existing condition of insanity. There are 3 divisions into which cases of acute delirious mania fall: (1) Those of alcoholic origin; (2) those of septic origin; and (3) those in which we are not able at present to identify any particular poison as the cause. The latter is due to a poison generated within the organism,—it is autotoxic. In a female, aged 43 years, the disease began 6 weeks prior to admission to hospital with symptoms similar to those noted on admission; her mother was "strange in her mind," a brother was a drunkard and committed suicide. When admitted the axillary temperature was below 95°; pupils were contracted but would react to light; pulse 80, tongue red and sticky at the sides, dirty-brown with yellow fur down center; lips, teeth, and palate covered with dirty slime; bladder distended; general condition very feeble. The patient lies and chatters to herself, smiles and calls out, pays no heed whatever to questions, mouths and waves her hands about, is at times noisy. She passed a large quantity of urine in the night and did not sleep; fell asleep at midday the following day and slept till 4.30 P.M., when a change was noted; she was breathing noisily and apparently unconscious; next day she was quite lively, and, when questioned as to her health, replied, "Quite well, I thank you." Twelve days later the patient died, 18 days after admission. Necropsy showed no gross lesions. In certain cases of acute delirious mania, a fairly constant change is met with in certain areas of the brain. The giant cells of the ascending frontal convolution present the most marked alterations. When stained in toluidin-blue and pressed out in Far-

rant solution or in glycerin an enormous accumulation of yellow pigment is found. The cell is generally plump and big with numerous dendrites of the usual bulk and configuration. Sometimes there is manifest crumbling of the Nissl bodies, both in the cell bodies and in the dendrites. The cells and their processes are not fragile, and probably not altered in shape. The axis cylinder stains very slightly deeper than usual. As a rule the color in the cell is so deep that the nucleus and even the nucleolus are obscured. A common feature in all sections made from the cases was a large number of free nuclei within the pericellular and perivascular spaces which were seen in all layers of the cortex. The giant-cells in section appear very much more altered than when studied in films. They are shrunken and distorted; often only an irregular, deeply-stained, pigmented mass is seen lying within a large pericellular space, and with only 1 or 2, perhaps fractured, processes coming off from it. The fracturing of the dendrites is obviously an artificial process, but it has a pathologic significance. It was seen in films that the cell retains its usual size and shape, but when subjected to dehydrating agents it appears as a shrunken, deformed mass. This seems to indicate that in this disorder the substance of the cell-body and its processes is of a more fluid character than usual; hence the greater shrinking that it undergoes when treated with alcohol. Of course this shrinking pulls the cell-body away from its dendrites, which are held by the matrix of the cortex, and thus causes them to fracture. In sections stained with osmic acid we generally find numerous tangential fibers in the ascending frontal region. By osmic acid a fatty degeneration of the nerve-cells of the second and outer part of the third layer can also be demonstrated. Fatty degeneration of the liver-cells is a very common occurrence. It is believed that all forms of acute delirious mania are of a toxic origin, but whilst some are obviously caused by the introduction of a poison from without, namely alcohol, others are caused by the absorption of septic material, whilst a third class are due to autointoxication, probably as a result of perverted metabolism, which the disordered nervous system is very likely the cause of. The fact that in these acute cases, occurring as they do in the prime of life, we almost invariably meet with fatty degeneration of the liver, an organ one of whose functions is most probably to prevent the introduction into the system of poisonous intestinal products, is in corroboration of this idea. [J.M.S.]

5.—Turner's experience in the **treatment of epileptics in colonies** is entirely limited to the working of this system, as seen at the farm-colony at Chalfont St. Peter. Provision should be made in all colonies for the education of epileptic children. The principles which have guided the author in the management of adult sane epileptics in the colony are: (a) The removal of the epileptic from town or city environment, including his removal from the sometimes unsatisfactory influence of the domestic circle; (b) regular and congenial employment in garden, fields, orchards, or workshops, under the supervision of capable persons; (c) a well-ordered and regular mode of life, with avoidance of excitement and abstinence from alcoholic liquors; (d) abundance of nourishment of a simple character; (e) the reduction of medicinal remedies to a minimal amount. The effect of the practical application of these principles upon the number and severity of the seizures, and upon general and mental conditions, may be briefly summarized: (a) The frequency of the fits is usually considerably diminished for a period after admission, a change which may be ascribed to the effects of improved hygienic surroundings. In a minority there is a temporary increase in frequency, probably due to a diminution of the potassium bromid, with which many are saturated on arrival. In the majority, the average frequency of the seizures is soon obtained. Of those who have been with them for the 6 years of the colony's existence, it may be said that they maintain a surprisingly constant average, both in the frequency and the severity of their seizures. (b) In the majority of cases an amelioration in the severity of the attacks has been seen; in a minority no material alteration is observed, while in a few there has been a distinct increase in severity. (c) In a very small minority there has been a steady downward tendency towards dementia, apparently the natural course of the disease in these cases, as it was associated with increased severity and frequency of the fits. In the great majority of cases no such mental deterioration has been observed. The average mental state is very constant. Many of the colonists are

capable of work requiring individual alertness and tact, while most are able to do good work under supervision. (d) It is scarcely necessary to do more than mention that under the influence of good food, regular meals, and improved hygienic circumstances, the general physical state undergoes material improvement. But apart from the influence which the colony system has as a remedial agent upon the duration or course of epilepsy, it has also to be regarded as of immense utilitarian value. It affords the means of giving employment to a class of the community who have great difficulty in finding work on account of their peculiar malady; it provides that kind of work which is most suitable for the slow, torpid nervous system associated with this disease; as the work usually performed is scheduled and under direct supervision, the nonimaginative and debilitated have as good a chance of success as the alert and imaginative, and that which is perhaps of most value lies in the general moral effect which the system exerts upon the individual colonists. If interest is taken in his work, in his mode of life, and in his amusement, the confirmed epileptic is capable of becoming quite a useful citizen. At the commencement of epilepsy, usually during puberty or in early adolescent life, the brain should receive that all-round rest which can only be obtained by withdrawing the patient from school or college, by lessening to the utmost the more severe forms of exercise so agreeable to the young, and preferably also by removing him temporarily from social intercourse with those of his own age. In the majority of cases which improve or get better the cure should only be spoken of in relative terms, for it has to be borne in mind that long intervals amounting to several years may elapse between seizures, and also that a dose of bromid at bedtime may keep down the explosive tendency for many years. Corner was much struck by the great waste of money and labor entailed by sending epileptics and trained high-grade imbeciles home after the period of their training since the value of their work when at home is very little—about 10% of that done under supervision. The speaker would divide the cases into 3 classes: (1) Those who when trained require supervision in a home; (2) those who might be made well enough to earn a livelihood in the outside world; and (3) an intermediate class who could be made practically self-supporting in suitable surroundings. Andriezen urged the importance of classification in obtaining practical results. There are sane epileptics in whom cure is impossible because the lesions begin in intrauterine life. There are idiots and imbeciles of low, medium, and high grades; there are epileptics with grave mental perversion and criminal instincts (epileptic paraphrenia), and finally there are epileptic phrenopaths in whom the epilepsy was a late symptom in life, and might often be an acquired disease. The low-grade epileptic idiots and imbeciles require the provision of custodial institutions, cheap, and managed on a large scale. They are uneducable and unproductive patients. The epileptic imbecile of higher grade and the feeble-minded epileptic require farming and industrial institutions. They are educable and trainable, and can with proper supervision be made to a great extent self-supporting, though if allowed to be in the world at large they cannot earn enough to live, as their labor has too little market value. They also tend to deteriorate and to perpetuate vice and crime, and to breed a bad progeny if living at large, and this should be prevented. Sane epileptics can be treated at home or in hospital as out-patients, according to their means. Epileptics with tendencies to violence, brutal impulsiveness, murder, and postepileptic automatism of a dangerous kind require sequestration and careful watching. Cases of psychical epilepsy proper may be associated with scholarly ability and even artistic talent. [J.M.S.]

6.—The article is only of interest to those practising under the lunacy laws of England. [J.M.S.]

7.—In order to determine the **therapeutic value of animal extracts in mental disease**, the fallacy of calling a "recovery" what may become only a temporary remission of symptoms; attributing to an extract mental recovery, improvement, or retrogression when these effects are in reality due to the natural course of the disease; and of ascribing to an extract benefit which is really attributable to psychotherapeutics in some form or another must be considered. To ascertain the pharmacologic actions of animal extracts in the insane, one is not justified in coming to final conclusions unless they have been obtained from various

animals, made up in different pharmaceutic forms, and administered by the stomach, subcutaneously or otherwise. The author administered **thyroid extract** in 130 cases of chronic or incurable insanity, 85 females and 45 males. There were 160 separate administrations of the drug; of these 120 were with large doses, 10 with moderate doses, 20 with small doses, and 10 with commencing small doses, gradually increased to moderate or large. In the case of large doses the equivalent of a sheep's gland was given daily for a week; pyrexia was absent in 15%, present in 85%. Loss of weight was constant in all cases weighed within 4 days of the cessation of the drug, and amounting on an average to 6 pounds. The loss was usually followed by a gain in weight, which did not set in till after the cessation of the drug. Increased perspiration and hyperemia, followed by desquamation and a healthier appearance of the skin, were common. Diminution of the hemoglobin was the most frequent change noted in the blood; decrease of the red blood-corpuscles came next in frequency, and a slight degree of leukocytosis was often present. The thyroid gland and the spleen were not apparently affected in size. Sensory symptoms in the form of pains and tinglings in various parts were common. Motor tremors and ultimately weakness were also common. The pulse was invariably increased in rate, usually by 30 or 40 beats, and became softer, and finally it became weak and irregular, and gave the signal to stop the drug in the majority of cases. Thyroid was well borne by patients with valvular disease of the heart, but very badly by those with fatty heart-disease. Pulse tracings showed distinct evidence of diminished tension. The respirations were increased constantly, usually by 6 per minute. The appetite was usually diminished during the drug, but considerably increased afterwards. Thirst was commonly increased toward the end of the treatment. In 25% of cases thyroid dyspepsia occurred, necessitating the stopping of the drug in 10%, the dyspepsia is of the nature of a catarrhal irritation produced by icdothyron, possibly by its iodine. Menstruation was frequently more profuse than usual during treatment. The daily amount of urine was usually increased, slight transitory albuminuria was produced in 10% of the cases. Total dissolved solids were markedly increased, the increase amounting generally to $\frac{1}{4}$ of the previous average daily quantity, the urea, similarly, was much increased, usually by $\frac{1}{4}$ of its previous quantity; the phosphoric acid was also markedly increased, especially during the earlier period of the treatment, the increase amounting usually to $\frac{1}{3}$ of its former average level. The increased phosphoric acid is probably in part derived from the metabolism of the nucleoprotein of the dry extract. Moderate doses, equivalent to $\frac{1}{2}$ of a sheep's gland, continued daily for 2 weeks, were given in 10 cases; and in 20 cases small doses were given, equivalent to from $\frac{1}{4}$ to $\frac{1}{2}$ of a gland. In these cases the physiologic effects produced were essentially similar in kind to those produced by large doses, differing usually only in degree. The preceding phenomena indicate that thyroid extract in the insane acts as a powerful metabolic stimulant, or more accurately as a katabolic stimulant. Small and moderate doses were tolerated well by all. In the case of large doses, the drug was borne badly by those under 20 years, and much more so by those over 60, the former showing special tendency to lose much weight, the latter to exhibit failure of the pulse. Out of 130 patients treated, 12 recovered, 29 were improved, and 89 were unimproved. Experience indicates that the thyroid treatment of insanity is more efficacious in women than in men, as in a table of cases it was seen that the best all-round results were obtained in the insanities connected with childbearing. **Parathyroid extract** was administered to 3 female patients. The pharmacologic effects were practically negative, with the exception of a slight increase in pulse-tension. The therapeutic results of parathyroid in the 3 cases were negative. **Thymus extract** was administered in 2 cases of insanity, both males. One a case of melancholia of resistive type and the other a case of general paralysis. The doses given in both cases varied from 60 grains on the first day to 90 grains on the second day, to 120 grains on the third day, continued for a fortnight, each patient receiving in all during this period 1,590 grains of the dry extract. The temperature rose in both cases and there was a loss in weight of 6 pounds in the general paralytic and of 5 pounds in the melancholiac during the first week of the drug; but during the second week both patients regained what they had lost

and the melancholiac gained an additional 5 pounds after the cessation of the treatment. No mental improvement was noted in either case, but in both there was distinct physical improvement. **Pituitary extract** was administered in 4 cases of insanity, 3 males and 1 female. The daily doses employed varied from 24 to 72 grains, and were continued for from 1 to 2 weeks. The temperature rose in 2 cases and was unaffected in the other 2. Three of the patients lost from 1 to 2 pounds each during the first week of treatment, but all 4 ultimately gained in weight. The pulse in the 2 general paralytics became distinctly stronger toward the end of treatment. The bowels became more and more regular in action during the second week in one case. All patients were unimproved mentally, but the 2 general paralytics were improved physically. **Cerebral extract** was administered in 19 cases of insanity; 16 women and 3 men, the daily doses varied from 15 to 90 grains. The temperature in $\frac{1}{2}$ the cases was subfebrile; in the others it was unaffected; weight was unaffected in all except 4 cases, in which there was a loss followed by a gain which set in either during the later course of the drug or afterwards; 4 patients became more excitable, talkative and impulsive; respirations, except in one case, were increased; nausea and vomiting were noted in 2 cases, diarrhea in 1. Menstruation appeared "irregularly" during treatment in one case, and in another case, a puerperal patient who had been amenorrheic ever since her confinement 9 months before, it appeared on the seventh day after the cessation of treatment. In the urine there was a slight increase in the total solids and in the urea. Dry brain extract tends to produce more particularly pyrexia and increase in urinary solids, indicating a slight increase in proteid metabolism, which is possibly due to the richness of nucleoproteid and nitrogenous matter in the extract. Of 19 cases reported, 14 were unimproved, 3 improved (all females), and 2 recovered. Those who recovered or improved mentally were also benefited physically. **Choroid plexus abstract** was administered in 2 male general paralytics, the daily doses varied from 10 to 50 grains. There were no pharmacologic effects, except a temporary slight loss in weight in one patient. Therapeutically the results were negative. **Suprarenal extract** was administered by the stomach in 4 cases of insanity, the daily doses varied from 15 to 120 grains. The temperature was unaffected in 3 cases and lowered in a fourth. The weight increased in 2 cases, was unaffected in one, decreased slightly in one, but regained on cessation of the drug. The blood was unaffected in one case, but in 2 cases the hemoglobin was slightly increased, the red corpuscles being slightly increased in the one and slightly diminished in the other. The pulse diminished in frequency in 3 cases and blood-pressure was increased. The respirations were slightly diminished in one case. The total solids, urea, and phosphoric acid were slightly diminished. The mental state in 3 cases was not changed; in one case there was a distinct cessation of excitement, during treatment. Dry **splenic extract** was administered in 2 female cases, the daily dose varied from 15 to 90 grains. There was evidence of a slight stimulation of proteid katabolism, followed by an anabolic reaction, effects in no way specific, but accountable for by the nucleoproteid in the dry extract. Therapeutically, both patients, adolescent and climacteric melancholiacs, showed a slight temporary improvement, physically and mentally, but soon afterwards continued much the same as before treatment. Dry **orchitic extract** was administered by the stomach in 8 cases of insanity, the daily doses varying from 15 to 120 grains. The temperature was continuously raised in 5 cases. Weight in 4 cases was diminished; the loss in weight was followed by a gain, which usually set in before the drug was stopped. In 2 cases there was a distinct increase in the water, total solids, urea, and especially in the phosphoric acid of the urine; in the other cases the increase in phosphates was usually present though less marked. Menstruation was unusually and severely profuse in 1 female adolescent, though occurring at the usual period; mental excitement occurred in 2 general paralytics, in one amounting to temporary acute mania, 3 patients were slightly improved mentally; the other patients were unimproved mentally, but 2 of them, as well as the 3 previous cases, were improved physically. Dry **ovarian extract** was administered in 36 female cases, the daily doses varying from

15 to 120 grains. Temperature was raised continuously in $\frac{1}{2}$ of the patients. The weight was mostly unaffected, sometimes increased by 2 to 3 pounds, but often temporarily decreased by 4 to 5 pounds, the loss in these cases being usually followed by a gain. The hemoglobin and red corpuscles were slightly increased or slightly decreased in a few cases. Menstruation was occasionally more profuse than usual at the regular periods, and in 5 cases it occurred irregularly during treatment, and in one case it reappeared 14 days after the cessation of the treatment, having been in abeyance for 8 months. The urine showed a slight increase in total solids, affecting the phosphates more than the urea. Mental excitement occurred in $\frac{1}{2}$ of the cases, and an increase of vigor occurred distinctly in 2 prematurely senile cases. Two patients made a recovery long after treatment, and probably independent of it; 4 cases mainly stuporous were temporarily improved, the others were unimproved. **Uterine extract** was administered in a case of puerperal mania which had subsided in severity, but was becoming stationary and relapsing in tendency. The therapeutic effects of uterine extract were negative, but the patient made a good recovery two months later, when menstruation became reestablished. **Mammary extract** was administered in 2 cases, one a puerperal maniac, who had become stuporous and stationary, and the other a lactational, still in the acute stage, the drug appeared to cause no change in the blood, pulse, respirations, or in the mental condition in either case. Both patients, however, eventually recovered. These investigations lead to the conclusion that those animal extracts that consist mainly of simple proteids and albuminoids, merely have a dietetic value; but that those animal extracts that are rich in nucleins and nucleoproteids produce, when given by the stomach in sufficiently large doses, a temporary stimulation of cell-katabolism with a subsequent anabolic reaction, this being evidenced by the common increase of the water, total solids, urea, and phosphoric (and uric?) acid in the urine; by the general tendency to a subfebrile pyrexia; and, perhaps most important of all, by the initial loss in weight, followed by a gain. This initial katabolic stimulation, with its resultant anabolic reaction, is the explanation of the physical improvement or "tonic effect" which occurs in a fair proportion of cases, and which, if pronounced, may be accompanied by mental improvement, and even by mental recovery. In this sense, therefore, these substances may be termed metabolic tonics, and it is probable that in the living body those organs which are naturally rich in nucleins and nucleoproteids produce, in virtue of the metabolism of these substances, similar distant "tonic" effects upon the general cell-metabolism. In the administration of animal extracts in diseases generally, it is of the utmost importance to recognize the fact that many of them (apparently those rich in nucleins and nucleoproteids) may produce this tonic effect. Apart from the general tonic effect upon cell-metabolism, it is extremely doubtful whether each organ possesses a specific internal secretion in the sense intended by Brown Séquard. Some organs probably have such an "internal secretion;" for example, the active principle (sphygmogenin) of the suprarenals which powerfully increases muscular contraction and apparently diminishes tissue oxidation. So also the thyroid has an active principle (iodothylin), whose specific effect is to stimulate cell-katabolism or tissue oxidation, for in this respect thyroid extract stands far above all others, and when it is administered in large doses the anabolic reaction never sets in until after the cessation of the drug, whereas in the case of all the other "metabolic" extracts which have been used an anabolic rebound generally sets in during the continuance of the drug. [J.M.S.]

8.—Whitwell reports a case which appears to present a disproportionate evolution between the cardiovascular and nervous systems; and in the case of the latter, though sufficient blood-supply was apparently present to carry on the vital organic change of mere growth, the progressive cytoplasmic changes and complex internuncial communications representing the educative intellectual life of the individual failed to be evolved. A second class of cases is one in which congenital or early infantile heart disease of serious type is present. In 2 reported cases the condition of puberty or early adolescence remains as almost a fixed one, and to this basis in each case is added its special individual symptom-coloring varying with education, heredity, and environ-

ments. These, it appears, are practically cases of pubertal or early adolescent insanity, existing at a period other than, and later than usual, as a result of serious congenital or early-acquired valvular disease of the heart, the permanent condition being one of physical and psychical immaturity. A still more common set of psychic symptoms to be found in connection with abnormal cardiac conditions is met with in some cases of mitral disease, especially stenosis, more frequently and more typically occurring in females. A case is reported that would be commonly known in an asylum as either mania or melancholia. The condition is merely the symptom reflex of a condition of irritable weakness. The cardiac condition associated with certain cases of senility appears to be one of asthenia, with its associated erethism, and the balance of evidence would appear to suggest the view that the cardiac was the primary condition, the mental symptoms being but an exaggeration of the mental condition typically present in acute cardiac asthenia. [J.M.S.]

9.—In states of acute mania the blood-pressure is low, whereas in the majority of cases of melancholia the blood-pressure is raised; in other words, with the affective disorders of the mind there is an alteration in the tonicity of the vasomotor system. It was hoped that in some way the data presented by Craig might assist in indicating the line of treatment likely to be suitable in different types of disorders, but the weight of evidence goes to show that altered **blood-pressure** is more a symptom in, than a cause of, **mental disorder**. All evidence at the present time shows that the low blood-pressure indicates restlessness. [J.M.S.]

10.—Smith has met with no case in which it could be said that there was a characteristic polyneuritic psychosis apart from alcoholism. [J.M.S.]

11.—Muscle is in part "autotonic," and in part dependent for its tonus on the nervous system. Muscle tone is dependent on every portion of the reflex arc, and loss of either centripetal or centrifugal nerve-impulses profoundly modify it. There is a seeming want of accordance between physiologists and clinicians as to the effect of transverse spinal lesions, the former stating that transection (after the disappearance of shock) leaves the reflexes increased, whilst the latter find that complete transverse crush of the cord produces the opposite effect. Halliburton believes that the difference of results obtained by physiologic experiments on animals and clinical observations on man with regard to the effect of total transverse lesions of the cord on reflex action are due partly to the fact that a crushing lesion is a different thing from a clean cut with a knife, for no doubt a considerable area of gray matter is injured also. It may also be that the gray matter in man is particularly susceptible to shock. Muskens said that the relation which undeniably existed between **muscular tonus** and the **tendon phenomena** was not a direct one. Although as a rule the sharpness of the tendon reaction increased with increase in tone of the muscles concerned, yet in many instances exaggeration of tendon phenomena accompanied markedly subnormal muscular tonus. He regards tendon phenomena as being dependent on the nutrition and irritability of the muscle-fibers, the passive tension of the muscle, and the muscular tonus. Apart from the muscle itself, other factors concerned are nerve-impulses from the cerebrum, the cerebellum, and the spinal cord. He does not regard **tendon phenomena** as reflex, but rather as directly excited by mechanical stimulation. [J.M.S.]

12.—In the cat and monkey the author has previously shown that the abolition of the afferent impulses which normally impinge upon the anterior cornual cells through the posterior roots, is accompanied by the change known as **chromatolysis**. This fact, in conjunction with the law established by Nissl, indicates that the normal life of the cell depends not only on the integrity of the parts of its own neuron, but on those which are immediately related to it. Complete section of the spinal cord is accompanied first by chromatolysis, and later by atrophy of the cells of Clarke's column, while the cells of the anterior horn remain intact even after a period of 150 days. Division of an anterior root is followed by chromatolysis in most of the cells at the outer part of the cord, whilst those situated most internally remain normal. This observation supports the contention of von Lenhossek that they are not root-cells, but commissural in nature. Speaking generally of the value of the Nissl method, the author has never found the condition of chromatolysis except

in morbid conditions, and hence he is convinced of the significance of its presence in cells. At the same time the reaction appears to be subject to certain limitations; it varies with the species of animal, with its age, and with the nature of the interference produced. He does not think it can be regarded as absolutely trustworthy in attempts, therefore, to delimitate nuclei. [J.M.S.]

13.—In birds, when uric acid is the most important end-product of nitrogenous disintegration, the source has been given a secondary place. The author fed and injected subcutaneously nucleins, nucleic acid, and alloxur bases to geese, turkeys, ducks, and hens, and found that on giving the 2 first mentioned substances there is a more distinct increase of uric acid than in mammals, and may be as distinct an increase in phosphoric acid. The rise in the excretion of P_2O_5 is greater than could be accounted for from the organically formed phosphorus absorbed, and one gets a leukocytosis more or less of the same type as in mammals. The blood of a hen under the influence of nucleic acid shows a much higher percentage of P_2O_5 than that of a normal one. The author cannot speak at present of intracellular changes in the case of birds after nucleic acid, nor of the effects of the alloxur bases, but there seems to be little doubt that the formation of uric acid from nuclear disintegration may be an important one in birds as well as in mammals. [J.M.S.]

14.—Anderson discusses the **mode of entrance of atmospheric air into the pulmonary lobules and infundibula**. Experiments suggested that the rate of entrance of air into the alveoli was exceedingly slow and hence, that the alternate rarefaction and compression of the alveolar air was by no means inconsiderable. [J.M.S.]

15.—Pembrey, Passmore, and Clayton report 4 cases of **heat-stroke**. The observations show that after the "heat-stroke" the skin was dry and hot, and there were no signs of sweat. The surface temperature was 3.5° to 5.5° F. above the normal temperature of the skin. The deep temperatures were 103° and 99.8° . One of the cases was one of so-called "heat exhaustion" with profuse sweating, collapse, and subnormal temperature 95° . Mitral incompetence was present, and possibly dates from the "heat-stroke." The observations are too few and incomplete to justify conclusions or theories, but they show that the cases of so-called "heat-stroke" are complex and obscure. With a high internal temperature and no sweating the temperature of the skin becomes abnormally high, and the body is warmed throughout. The heart appears to be affected, or it may be that men with weak hearts are more readily affected by the heat. There may be profuse sweating, with collapse and subnormal temperature. [J.M.S.]

16.—In a series of experiments carried out on dogs by Thompson, it was shown that **ether** caused an increase in the amount of urine secreted and a slight increase in the total quantity of nitrogen, whereas chloroform caused a diminution in the amount of urine and in the amount of nitrogen contained therein. Mixtures of these drugs caused very variable results. [G.B.W.]

17.—Buxton and Levy have carried out a research on the **effect of ether on the kidneys**, including experiments on animals and evidence gathered from clinical statistics. They do not believe that an initial rise of the blood pressure is a constant effect of ether-narcosis, and also take exception to the statement of Kemp and Johnson that a suppression of urinary secretion begins in the early stages of the narcosis and is due to a "specific ether effect," i. e., an ischemia of the parenchyma of the kidney, though it sometimes develops later on in the narcosis. They believe that the decrease in the amount of urine secreted during the anesthesia is due rather to the depletion of the watery constituents of the blood of patient preparatory to and after the operation by purging, vomiting and abstinence from fluids. They also claim that there is little evidence tending to show that ether exerts any deleterious influence on the kidney parenchyma. The albumin found in the urine of some dogs after ether, narcosis is due rather to the "specific effect" than to any pathologic change in the organ. [We are inclined to discredit the value of the above results, as they seem so contrary to generally adopted opinion of the influence of ether on the normal kidney. It has been distinctly demonstrated that ether is capable of producing in dogs and rabbits a temporary cloudy swelling of the parenchyma of this organ even when narcosis has lasted but a short while, and although this con-

dition does not permanently injure the kidney, we can scarcely bring ourselves to believe that the albumin sometimes found in the urine of dogs after etherization is due to an ischemia of that organ. Besides, ether does not produce an ischemia, but a marked congestion of the parenchyma. G.B.W.]

20.—Waller has invented an instrument which he calls a **digital sphygmograph**. It consists of a rather stiff-fixed spring and a movable support between which the tip of a finger is inserted; the movements imparted to the spring by the pulsatile elevations of the finger nail are magnified about 50 times by the lever, and, if desired, may be recorded on a smoked cylinder or glass plate. [J.M.S.]

21.—After an investigation of the **changes in volume of the submaxillary gland accompanying secretion** Bunch draws the following conclusions: 1. Changes in volume of the submaxillary gland may be brought about both by variations in the flow of blood to the gland and of secretion from the gland. 2. Cardiac inhibition, whether brought about by vagus stimulation or by drugs, is followed by shrinkage of the gland. When this shrinkage is brought about by vagus stimulation, it is followed after the stimulus has been removed by an after-dilation of the gland. 3. Stimulation of the chorda tympani causes diminution in the volume of the submaxillary gland, followed by an after-dilation. 4. After the administration of a dose of atropin sufficient to paralyze the secretory fibers of the chorda, excitation of the chorda causes dilation of the submaxillary gland. 5. Sympathetic stimulation causes shrinkage of the gland, and a maximum effect is obtained when the chorda has previously been subjected to repeated excitation. 6. Continuous stimulation of the chorda after blockage of the gland duct causes a maximum dilation of the gland. 7. The amount of secretion poured out as a result of chorda stimulation is chiefly if not altogether derived from the fluid in the gland cells, or, at least, from the extravascular portions of the gland. [J.M.S.]

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1. The Treatment of Some Common Diseases of the Skin. PHINEAS S. ABRAHAM.
2. The Etiology of Rheumatic Fever. FREDERICK J. POYNTON and ALEXANDER PAINE.
3. Some Points about Post-diphtheric Paralyzes. BERNARD E. MYERS.
4. Some Notes on the Use of Mercuriol; a New Remedy in Urethritis. RAMON GUITERAS.
5. Beri-beri. CECIL BULLMORE.
6. A Fatal Case of Poisoning by Paraldehyde. LOVELL DRAGE.
7. A Case of Phosphorus Poisoning. WILLIAM E. NEWBY.
8. Multiple Warts Cured by Revaccination. J. DIBBLE STAPLE.
9. Two Cases of Gangrene of the Lung Treated by Partial Excision. W. MURRELL and WALTER SPENCER.
10. Trephining and Drainage in an Apparently Moribund Case of Status Epilepticus; Recovery. W. ALEXANDER.

1.—In the treatment of **eczema**, an iron and magnesia mixture with a little nux vomica, or an alkaline bitter mixture with an aperient if necessary, and regulation of the diet as far as possible, should be administered. In acute inflamed cases ointments which contain 10 grains of acetate of lead, 10 grains of calomel, 20 grains of oxid of zinc, 20 grains of ointment of nitrate of mercury, and 1 ounce of vaseline can be used. Occasionally Lassar's paste, 3 drams each of zinc oxid and starch, 10 grains of salicylic acid and 1 ounce of vaseline may be necessary. When the weeping and inflammation are excessive a powder thickly dusted on is sometimes effective, half an ounce of starch, 2 drams of oxid of zinc, and 1 dram of powdered borax or boric acid. The zinc-gelatin treatment consists of half an ounce of gelatin, 3 drams of oxid of zinc, 1 ounce of water, half an ounce of glycerin, and 10 minims of ichthyol can be added. The mass melted in a glue-pot and painted over the diseased area, forms an elastic, protective, and soothing covering. In all cases, immediately before applying any of the above, the affected parts should be well bathed with a very dilute antiseptic lotion. If preferred a lotion containing half a dram of creolin to a pint of

soft boiled water can be used. In dry eczema and where there is but little inflammation tar ointments are usually very efficacious. Soap is generally detrimental in eczema, especially in the acute form. It is a mistake to use strong ointments. Although the constitutional element in **psoriasis** is of more importance than in eczema, external treatment is comparatively of much greater use in this disease. Thyroid gland in the majority of cases has no effect. The external application of chrysarobin undoubtedly removes the efflorescence quicker than anything else. It should be used in the form of a solution, to be rubbed in only on the patches which are situated on the extensor surfaces. Forty grains of chrysarobin, 10 grains of salicylic acid, and one ounce of solution of gutta-percha (in chloroform), this forms a film which, when dry, does not stain the linen. For other parts of the body a strong tar or creolin ointment may be used, *e. g.*, one dram of creolin, 10 grains of ammoniated mercury, and an ounce of vaseline, also with the addition of from 10 to 20 grains of salicylic acid. For psoriasis of the scalp, the most efficacious treatment in my experience is an ointment containing a dram of ammoniated mercury and $3\frac{1}{2}$ drams each of soft soap and vaseline to be well rubbed in every night. **Impetigo** is a disease easily cured by ammoniated mercury ointment. The crusts should not be removed by poulticing. Warm oil or a weak, warm, antiseptic lotion ought to be sufficient. If pediculi are present, a thorough nightly washing with soft soap and hot water immediately before applying the ointment should be instituted. **Acne** is a common affection which can be cured with certainty and in comparatively short time by a judicious combination of internal and external remedies. The majority of cases are benefited by the tonic and aperient iron and magnesia mixture between meals, others by an alkaline bismuth mixture before food. In all cases an ointment which contains 30 grains of sulphur, 10 grains of ammoniated mercury, 10 grains of sulphide of mercury, and an ounce of vaseline should be used. The quantities in particular cases may be varied and oxid of zinc may be added if there be much inflammation. Before its application the patient should bathe the face with hot water and a 10% ichthyol soap well lathered on. But a still more important part of the treatment is the cautious application to each pimple of the tiniest driplet of pure carbolic acid, just liquefied with a little water. In **ringworm of the scalp** the following measures are efficacious: The scalp is to be shaved every fortnight, and calico skull caps to be worn day and night, an ointment consisting of one dram each of pure carbolic acid and salicylic acid to the ounce of vaseline is to be well rubbed in with a stiff brush night and morning over the patches, and the rest of the scalp slightly smeared over with the same ointment. Twice a week the scalp should be lathered with hot water and a soapy mixture containing 2 ounces of soft soap, 2 drams of glycerin of carbolic acid, and 2 drams of glycerin of boric acid, to be followed immediately by an application of the ointment. Once or twice a week, if possible, immediately after the washing, a special pump which forces in by atmospheric pressure any parasiticide liquid which you may wish to use may be employed. [J.M.S.]

3.—During 1899 there were 1,316 cases of **diphtheria** in the wards of the Park Hospital; there were 275 cases of **postdiphtheric paralysis and paresis**, so that in about one case of diphtheria out of every 5 cases the patients suffered from paralysis or paresis. Out of 275 cases there were 174 cases that occurred between the ages of 3 and 8 years, equalling 63.2% of the total number. There were also 40 cases between the fifth and sixth year of age, equalling 14.5% of the fatal cases for all ages, which is in excess of any other period of life. Cardiac paralysis is clinically characterized by (1) heart-failure, (2) vomiting, (3) blueness of the skin and the mucous membrane, and (4) general coldness of the extremities in the final stage. Of 64 cases the average date upon which the symptoms appeared was the seventh day; the average duration of life after cardiac paralysis was first clinically noted was 4 days. There seems to be one particular kind of chart which occurs in the majority of cases of cardiac paralysis. For example, a patient, aged 6 years, was admitted on the fourth day of the disease with a temperature of nearly 101° F., which fell to 100° on the fifth day, then on the sixth day there was a drop to 97°, and though the temperature nearly rose to normal again for a

short time it kept near the 97° mark till the ninth day of the illness, when it was below 97° and death occurred. Large numbers of these cases show early and great swelling of the cervical glands, generally bilateral. There were 21 cases, or 7.6%, of diaphragmatic paresis and paralysis. Diaphragmatic paralysis rarely occurs without some other paralysis. Of 21 cases, 11 terminated fatally. The palate and the diaphragm; the palate, the internal rectus, the muscles of deglutition and the diaphragm; the palate, the ocular muscles, and the diaphragm; the larynx, the palate, the external rectus, and the diaphragm; the muscles of deglutition, the internal rectus, the ciliary muscle, and the diaphragm; the right external rectus, the flexors of the neck, and the diaphragm; the palate, the external rectus, and the diaphragm were some of the combinations of paralysis noted. There were 110 cases in which the palate alone was affected, which equalled 40%. [J.M.S.]

4.—Guiteras reports the results of treating 150 cases of gonorrhea with mercuriol, which he states is a combination of nucleinic acid with mercury. The drug was first used in a strength of .25%, later increased to as high as 5%. The average strength best borne by patients was 2%. Complications resulted in only 2 cases; 1 of gonorrheal rheumatism, 1 of epididymitis and posterior urethritis resulted in only 1 case. Guiteras believes that the drug acts as a germicide, destroying the gonococcus, lessening the severity of the inflammation and tending to prevent complications. When gonococci are no longer found, if there be still some shreds in the urine it is better to change to a mild astringent solution. [M.B.T.]

5.—Bullmore does not believe that **beriberi** as it is seen in England is infectious or contagious; in fact, he does not consider that it is beriberi such as is met with in foreign countries. He puts forward the theory that the disease which reaches England is due to an alkaloidal poison fanned into flame by the disarranged digestion of sailors who are kept on improper diet, and that by properly dieting the vessels and supplying the captains with iron and digitalis tabloids the disease in all probability would be reduced to a considerable extent, if not stamped out. The necessity for the proper dieting of persons on board vessels is, of course, no original suggestion. Such precautions have answered admirably in the Japanese navy, and the author sees no reason why the British sailor should not have a similar fortunate experience. [J.M.S.]

6.—A woman, 46 years of age, had suffered for some years from chronic emphysema, chronic bronchitis, and heart disease. She had been in the habit of using drugs of various kinds to excess; from midnight to midnight 16 drams of **paraldehyd** was used and in the next 9 hours 3 drams more was taken. About 2 hours later 2 ounces more was taken. Unconsciousness, profuse perspiration, rather deep cyanosis, intermittent pulse, and shallow breathing, about normal in time, were noted and death occurred about 3 hours after the administration of the lethal dose. [J.M.S.]

7.—The case of a man who was suffering from vomiting and intense burning pain in the stomach and bowels is reported. When "in drink" 4 days before he had swallowed three-pennyworth of rat-killer. Immediately after swallowing it he complained of violent pain in the stomach and sickness. He was given salt and hot water, after which he was very sick and vomited freely and expressed himself relieved. On the next day he was a little better, although he felt far from well. When he was seen the patient's temperature was normal, he was quite conscious and coherent, and his pulse was 90. He complained of thirst, constant vomiting, and great pain in the stomach and abdomen. An examination of the vomit proved it to consist wholly of altered blood of a very dark color. His stools were also very dark and pitchy in character. He died a week after swallowing the poison. At autopsy the whole of the neck in its entire circumference, back and sides, bore the appearance of having been stained in a deep solution of Prussian blue, the color being most intense and brilliant; it was not mottled, but uniformly stained. The arms and legs showed an icteric tinge; their superficial veins looked as though they had been injected with a solution of Prussian blue paint and were most beautifully mapped out. The stomach contained half a pint of liquid blood; it was deeply colored blue; it showed softening and ulcerations in patches and it was thickened in other parts. The whole of the intestines showed signs of an

irritant poison; they were deeply pigmented with the color, and the contents were dark and pitchy. The transverse colon was intensely inflamed and the fat of the great omentum showed bright extravasations of blood and was most striking in appearance. The heart, liver, and kidneys showed signs of commencing fatty degeneration. The lungs and the liver were deeply colored blue. The brain was rather anemic, soft, and almost diffident in parts. A diagnosis of **phosphorus poisoning** was made. [J.M.S.]

8.—A girl 15 years old had 94 warts on the right hand. She was revaccinated on June 1st. The operation was successful, but no effect was produced upon the warts until 7 weeks after, when, to use the description of the patient, the warts gradually "disappeared," leaving temporary white spots, and when the patient was seen, on August 30th, she had no trace of them. [J.M.S.]

9.—Two cases of **resection of the lung for gangrene** are reported. A man of 32 had been ill only 3 months with cough, expectoration, loss of flesh and an elevated temperature. There was dulness over the bases of both lungs posteriorly; the expectoration had a very offensive odor and separated into 3 typical layers. The seventh rib was resected, a portion of gangrenous lung removed and fetid pus evacuated. The patient rallied for a time, but died 4 days after the operation. In a second case a woman of 28 entered the hospital for pneumonia of the base of the right lung. Her illness continued without a crisis, and symptoms of gangrene of the lung developed. A portion of the eighth rib was excised in the post-scapular line. A large amount of pus and gangrenous sloughs were removed, iodoform emulsion was injected and an iodoform gauze plug inserted. Progress toward recovery was slow. Some time later tubercle-bacilli were found in the expectoration. The ultimate result is not given. [M.B.T.]

10.—A woman of 36, who had never had convulsions, was struck on the head by a policeman while intoxicated. After 2 weeks in prison she had an epileptiform fit. She gradually recovered and for 4 months was in fair health. Then the convulsions appeared again and the patient became progressively worse until she appeared moribund. The skull was trephined, but no evidence of tumor or bone lesion could be found. A drain was inserted and the wound closed. The convulsions continued 3 days, gradually diminishing in frequency and severity. Since this time there has been no return and the patient is now quite well. [M.B.T.]

Tuberculous Disease of the Middle Ear.—Milligan (*Transactions International Otological Congress*, August, 1899) says the causes which predispose to this disease are: Hereditary tendency, unhealthy environment, unsuitable feeding, exposure to infection from tuberculous relatives, and the presence of tuberculous nasopharyngeal adenoids. He calls attention to the great difficulty of finding the tubercle-bacilli in the discharge from the ear; but better results are obtained by inoculating a guineapig with a small particle of diseased bone or other tissue removed from the pathologic area. The complications which may be feared are meningitis, tuberculous enteritis, and general marasmus. He separates the cases into nonoperative and operative. The first includes small children and others not sufficiently strong to stand an operation. When operation is done it must be performed very thoroughly as the effort to remove all diseased bone is well nigh impossible. The author's conclusions are as follows: 1. Primary tuberculous disease in and around the middle ear is of fairly frequent occurrence, and that it most usually attacks the children of the poor, especially the poor of our large cities. 2. That a generalized tuberculous infection may arise from a primary focus within or around the middle ear. 3. That the prognosis of such cases is not very favorable, at least 40 to 50% of the cases succumbing even after operative treatment has been undertaken. 4. That in many of the cases operative treatment is contraindicated owing to the extent of existing diseases and the asthenic condition of the patient. 5. That when operative interference is possible the main object should be to scrape away all the foci of disease and to provide efficient drainage. 6. That the best and most reliable means of establishing the tuberculous nature of the disease is by means of properly conducted inoculation experiments. [A.B.C.]

Original Articles.

GENERAL SUMMARY OF THE CASES OF TYPHOID
FEVER TREATED IN THE JOHNS HOPKINS HOS-
PITAL FOR TEN YEARS.*

BY WILLIAM OSLER, M.D.,

Professor of Medicine, Johns Hopkins University.

DURING the ten years to May 15, 1899, 829 cases of typhoid fever were treated in the medical wards of the Johns Hopkins Hospital. The patients have been under my personal care, or, in my absence, under the care of Dr. Lafleur (to October, 1891), Dr. Thayer (October, 1891, to October, 1898), and Dr. Fitcher, my present first assistant. Not a little of the value of these records is due to a uniformity in the methods of observation, of record and of treatment, which cannot be reached in large general hospitals with four or five different medical services.

The following statistical details relate to age, sex, race, etc.:

SEX.—631 cases were males and 198 were females.

RACE.—729 cases were white and 100 were colored.

NATIONALITY.—Of the 729 whites, the nationality was as follows: Americans, 348; Germans, 200; Irish, 39; Bohemians, 30; English, 28; Poles, 21; Russians, 19; Scandinavians, 15; Lithuanians, 5; Scotch, 4; Italians, 3; Finns, 2; French, 2; Danes, 2; Swiss, 1; Austrian, 1; Welsh, 1; Dutch, 1; Hungarian, 1; West Indian, 1; Syrian 1; not given, 4.

AGE.—Five to fifteen, 99; fifteen to twenty, 159; twenty to thirty, 393; thirty to forty, 125; forty to fifty, 40; fifty to sixty, 6; sixty to seventy, 6; not given, 1.

SEASON.—The admissions in each month were as follows: January, 37; February, 15; March, 13; April, 27; May, 16; June, 24; July, 91; August, 169; September, 169; October, 122; November, 96; December, 50.

LOCALITY.—From the city of Baltimore, 590 cases; from Baltimore county, 139; from Maryland, outside Baltimore county, 29; from outside Maryland, 60; from steamers, 7; not given, 4.

MORTALITY.—In the 829 cases, there were 63 deaths, a rate of 7.5%. This represents the total death-rate of all the cases admitted to the hospital in which a positive diagnosis of typhoid fever was made. It therefore includes the group of cases met with in all general hospitals, to which patients are frequently admitted in a moribund condition, or so ill that death occurs within three or four days.

TREATMENT.—In the two previous reports I have dealt fully with the method of treatment, and to it I have nothing to add. It consists in:

1. A careful and thorough system of *nursing*, to which, as much as to any other single feature, I attribute the comparatively low rate of mortality for a general hospital. Our proportion of nurses to patients is above the average. We have been fortunate in having as head nurses in the ward's unusually able and devoted women, who have made the nursing of the typhoid fever patients their particular study. To Miss Hampton, to her successor, Miss Nutting, to the head nurses, and to their assistants, I am personally under a lasting obligation.

2. *Diet*. Milk, diluted with limewater, and egg albumen form the standard diet of the febrile stage. We rarely order artificial foods. The milk has not often to be peptonized, and we have had on the whole singularly few gastric complications, and comparatively few instances of serious bowel trouble. The patients are given in addition an abundance of cold water.

3. *Hydrotherapy*, either the full tub at 70°, or, if occasion requires, ice-cold sponges. Full details of this are given in *Studies No. II*.

4. *Drugs*. As a rule no medicines are given. If the pulse becomes rapid and feeble we give alcohol in the

form of good whisky, and strychnia, if necessary, in full doses. We use no antipyretics, and no intestinal disinfectants. Special complications, of course, require and receive appropriate treatment.

SYMPTOMS, COMPLICATIONS, ETC.

SYMPTOMS OF ONSET.—No features are more uncertain or indefinite in hospital histories than those relating to the onset of the disease. The patient is generally brought in by friends or relatives, who know very little about the case; there may be no statement from the doctor, and very often the patient himself is not in a condition to give an intelligent account of how his trouble began. The following is an analysis of the symptoms of onset as presented by the 829 cases: Headache, 595 cases; loss of appetite, anorexia, 414 cases; diarrhea, without medicine, 322 cases; with medicine, 21 cases; cough, 233 cases; abdominal pain, 227 cases; chilly sensations, 213 cases; vomiting, 209 cases; chills, 200 cases, of which 107 had a single chill, and 93 cases had two or more chills; epistaxis, 182 cases; malaise, 169 cases; constipation, 152 cases; general pains, 128 cases; nausea, 114 cases; sweats, 114 cases; backache, 99 cases; vertigo, 45 cases; delirium, 31 cases; stiffness of the neck, 30 cases; sore throat, 20 cases; pain in the right iliac fossa, 6 cases; 8 complained of deafness at onset; 1 of hiccough; in 4, one of the early symptoms was bleeding from the bowels.

THE RASH.—Rose-spots were present in 666 cases, 80% of the 829 cases.

THE FEVER.—In 592 of the 829 cases the rectal temperature registered 104° and over. Between 104° and 105° there were 329 cases; between 105 and 106° there were 240 cases; between 106° and 107° there were 27 cases; at 107° and over there were 6 cases.

THE PULSE.—There were 345 of the 829 cases with a pulse of 120 and over. Between 120 and 130 there were 168 cases; between 130 and 140 there were 72 cases; between 140 and 150 there were 59 cases; between 150 and 160 there were 13 cases; above 160 there were 33 cases.

DIARRHEA.—We have already stated that there was diarrhea at onset in 322 cases before the patient entered the hospital. During the stay in hospital, 163 of the 829 cases, *i. e.* 19%, had diarrhea at some time or other in the course of the disease, and 290 cases, 34%, presented constipation. This remarkably small percentage of cases with diarrhea may in part, at least, be attributed to our practice of not disturbing the bowels with laxatives or antiseptics.

SPLEEN.—As I stated in *Studies No. II*, we place much more reliance upon palpation than percussion in estimating an increase in the size of this organ. The left hand is placed on the side, the fingers well behind on the ninth, tenth and eleventh ribs, the palm of the hand over the splenic region itself. The patient is then asked to draw a deep breath. As he does, the fingers of the hand press forward, the palm of the hand laterally, and the diaphragm during inspiration presses downward and forward, so that by these movements, if the spleen is at all enlarged, the edge appears at the costal margin, where it can be readily felt by the fingers of the right hand, which are placed just below the costal margin between the parasternal line and the tip of the tenth rib. It is well to make the palpation just as the abdominal walls relax, following their recession quickly. In many cases the edge of the spleen can be seen tilting over the fingers of the right hand. It is well to remember that in children the edge of the spleen may sometimes be felt best as low as the tip of the tenth rib. In 591 of the 829 cases the spleen was palpable, 71%.

CHILLS.—In *Studies No. II* there is an article on the occurrence of chills in typhoid fever, considered under the headings of (a) at the onset of the disease; (b) at the onset of the relapse; (c) as a result of treatment; (d) with the onset of complications; (e) septic chills during convalescence in protracted cases; and (f) chills due to concurrent malaria. In the third series there were nine additional cases of chills:

RELAPSE.—We recognize two varieties: First, a genuine relapse, in which there is a reinfection after a distinct and definite period of apyrexia; secondly, the intercurrent relapse, in which, after the temperature has fallen nearly to normal, or after the morning temperature has been at 99° or 99.5° for three or four days, and there has been a decided

* From the forthcoming *Studies on Typhoid Fever*, iii. *Johns Hopkins Hospital Reports*, vol. viii.

lull in the symptoms, the fever again rises, and the patient goes through all the features of another attack. The conditions under which relapse occurs are not, I think, as a rule, within the control of the physician. The sources of the reinfection are doubtful. The typhoid bacilli linger in the adenoid tissues of the mucous membrane for a long time, and Dr. Mark Richardson has shown that they may be found in the stools even after a considerable period of apyrexia. We know, too, that they remain for a long time in the mesenteric glands and in the spleen. The interesting observations by Chiari, amply confirmed by others, that typhoid bacilli may remain in the gallbladder for an indefinite period, suggest that this may sometimes be the source of reinfection. Errors in diet may be associated with gastric disturbance, and the passage of a large number of bacilli from the bile-ducts into the intestines.

We are still really without full knowledge of the causes of relapse, but the frequent occurrence is a positive indication that immunity in typhoid fever is slowly acquired, and not reached at the period of apyrexia.

Incidence of Relapse.—In the 829 cases there were 86¹ relapses, a percentage of a little more than 10. In this we have included the intercurrent relapse.

The periods of complete apyrexia in the third series were as follows: 3, 9, 7, 5, 3, 5, 10, 4, 7, 8, 9, 4, 4, 23, 8, 1, 6, 19, 8, 4, 16, 15, 11, 10, 7, 4, 1, 36, 4, 7, 8, 13, 3, 3, 2, 8, 11, 5, 8, 8, 11 days.

POSTTYPHOID VARIATIONS OF TEMPERATURE.

The special care and the frequency with which the temperature is taken in our typhoid-fever patients (every two or every four hours), has brought out some interesting points. These may be considered under the following heads:

I. THE SUBFEBRILE STATE IN CONVALESCENCE.—In children, in nervous patients and in very protracted cases the general symptoms may improve, the tongue become clean, the appetite return and everything may look favorable, but the thermometer may show a daily rise to 100° or 100.5°, continuing for ten days or even three weeks, and may be a source of no little anxiety. If the spleen is not palpable, if the tongue is clean, the appetite and strength returning, and the urine free from typhoid bacilli, the best plan is to stop taking the temperature, let the patient sit up, and begin to give solid food. In some persons, particularly in children and in nervous subjects, the normal diurnal range of temperature may be between 97.5° and 100°. In a number of instances of this kind I have never seen any ill effects from the plan suggested.

II. HYPOTHERMIA.—Our records have taught us that low temperatures are very common in two diseases—malaria and typhoid fever. In the latter we see it—

(a) *As an effect of the tub, particularly in the third week.* Following the bath for an hour or more the rectal temperature may not be more than 97°. This is an every day occurrence in the wards.

(b) *Spontaneously in the third and fourth weeks,* at the period of marked remissions, the temperature may sink as low as 97°. The lowest temperature I remember to have seen during the spontaneous remissions of the disease was in a case which I saw with Dr. Delano Ames. On the twelfth day of the disease the patient had a very severe hemorrhage, which had reduced the temperature to 95°. He subsequently did well, but the attack was protracted, and in the fifth and sixth weeks there were extraordinary variations in temperature. Thus on the thirty-sixth day the temperature fell from 102.2° at 11 A.M. to 94.5° at 1 A.M. on the following morning. It then rose 8° by 10 A.M. on the thirty eighth day, but dropped again to 94.7° by 6 A.M. on the following day. He made a good recovery.

(c) *Following hemorrhage.* Here the temperature drop may be 8° or even 10°. It rarely falls below 98°, though I have one record showing 95°. The temperature may remain low for 24 or 36 hours.

(d) *Persistent hypothermia during convalescence.* For a week or 10 days, or longer, more particularly after protracted cases with great emaciation, the temperature may be 97° or 96.5°, and for days the maximum may not reach 98°. This is quite a common event, which is illustrated by some scores of our charts. It is of no special significance.

III. RECURRING PAROXYSMS OF CHILLS AND FEVER.—In *Studies* No. II I have dealt quite fully with the subject of chills in typhoid fever, and have given a number of illustrative cases. It is not sufficiently recognized that in the protracted convalescence paroxysms of fever with chills may recur at intervals for several weeks, and this in the absence of any signs whatever of localized trouble.

COMPLICATIONS AND SEQUELÆ.

HEMORRHAGE FROM THE BOWELS.—There were 50 cases in the 829 in which blood appeared in the stools, in large or in small quantities, a percentage of 6. Of these 5 cases died, a percentage of 10.

PERFORATION.—The question of perforation in typhoid fever is discussed with great fulness in the papers by Dr. Finney and Dr. Cushing in this number of the report. In the series of 829 cases there were 23 instances of perforation, a percentage of 2.7. Of these 3 recovered after operation.

Hematemesis.—F. R. H., male, aged 22 (Hosp. No. 14,933), admitted January 9, 1896. Vomiting of blood on twentieth and twenty-first days.

PHLEBITIS.—There were 16 cases of phlebitis of the veins of the leg in the 829 cases, a percentage of 1.9. Of these only 2 occurred on the right side, in both in the popliteal vein. Of the 16 cases of phlebitis 7 occurred in the femoral vein, 4 in the popliteal, 4 in the long saphenous, and 1 in a superficial varicose vein of the left thigh.

PNEUMONIA.—We may divide pneumonia in typhoid fever into two groups, according to its appearance with the onset, during the course, or toward the termination of the disease.

Pneumonia at Onset.—The interesting feature of this form, the so-called pneumotyphoid of the French, is that the cases may present all the characteristics of ordinary croupous pneumonia, no other diagnosis may be reached, and it may not be corrected until autopsy. In *Studies* No. I, page 29, the history is given of a remarkable case of this character, in which clinically we had no suspicion that there was any other disease than pneumonia, but the autopsy showed characteristic typhoid fever. Two other cases occurred in this series.

Pneumonia During the Course.—This forms a frequent and very serious complication of the disease, of which there were 15 cases in the 829.

URINE.—**Albumin** was present in 616 of the 829 cases, 74%.

Tube-casts were present in 391 of the 829 cases, 47%.

Diazo reaction was present in 543 out of 796 of the cases, 68%. The test was not made in the first 33 cases treated in hospital.

ACUTE NEPHRITIS.—Although albuminuria is so common in typhoid fever, accompanied also by tube-casts, it rarely is a serious condition, and indicates only the mildest possible grade of disturbance in the function of the kidney. In a more aggravated condition where the albumin is in larger amount, hyaline and granular casts and red blood-corpuscles are abundant, we have to consider it an acute nephritis. There are two interesting features of the typhoid nephritis. There is rarely dropsy, and it clears up as a rule completely. We have had no instance in the series, nor do I remember in my experience a single case in which a chronic nephritis followed the acute attack.

ORCHITIS.—One of the rarest complications of typhoid fever is orchitis, of which only 2 cases occurred in the series of 829 cases. Eshner² has collected 42 cases, a large majority of which, 29 cases, occurred during convalescence.

HERPES.—The statement is usually made that herpes is very rare in typhoid fever, but it was noted in 29 of the 829 cases, and probably occurred in a great many more. So frequent is herpes in malarial fever that its presence is often an important diagnostic suggestion.

For additional complications the reader is referred to the forthcoming fasciculus.

Sun-Baths.—An establishment for the giving of sun-baths has recently been opened in Strelau, a suburb of Berlin, and is extensively patronized. Many Berlin physicians prescribe these baths for nervous complaints.

¹ This number includes also Cases 7147, 7218, 8448, and 10,657, omitted inadvertently in *Studies* No. II.

² PHILADELPHIA MEDICAL JOURNAL, 1888, 1.

A REVIEW OF THE HISTORY OF CARDIAC PATHOLOGY, WITH ESPECIAL REFERENCE TO MODERN CONCEPTIONS OF MYOCARDIAL DISEASE.*

By ALFRED STENGEL, M.D.,

Professor of Clinical Medicine, University of Pennsylvania.

ONE is tempted at the end or beginning of a century to indulge oneself in reflections on the progress of knowledge to become retrospective, to estimate advances, to review with a feeling of superiority and pride of achievement the ignorance of the past, to dwell with fond fancy on the enlightened intelligence of the present, and finally, perhaps, to animadvert upon the problems of the future. Whether any real good is ever accomplished by such mental attitudes, and whether a consideration of the past and present ever leads to any significant advances in the future, is an open question, but at all events you will admit that it is a commendable feeling that prompts one to indulge in this diversion.

I have selected as a subject worthy of your attention the development of knowledge regarding Cardiac Pathology, because, as we shall see, this lies at the very root of all medical progress. The revival of medicine had its origin in the epoch-making discovery of the circulation, and our science reached its highest development with the acquirement of accurate knowledge regarding the vascular system.

Modern medicine, then, may be considered as having an age of about three centuries. The first or seventeenth century was taken up with the establishment of general principles and methods which have served as the foundation of subsequent advancements; the second or eighteenth century was given to the development of these principles and to the accumulation of many details of unclassified knowledge; while the third or nineteenth century established the science of medicine upon a foundation which would justify its classification among the exact sciences.

The diffusion of general knowledge through the perfection of the art of printing, the multiplication of universities and institutions of learning, and above all else, the greater freedom of the people, serve to make the opening of the seventeenth century the epoch of the revival of learning, and brought to an end forever the dark ages of fanaticism, ignorance, and oppression.

It is difficult to picture to the mind the condition of medicine at that time, but it is sufficient to point out that the medicine of the sixteenth century, like the medicine of the second and third centuries, was absolutely dominated by the teachings of Hippocrates and Galen, though supplemented and perhaps in some measure improved by the mystical, delusional theories and methods of Paracelsus. A better idea may be obtained of the character of the medicine of that period by a review of the teaching as practised in the University of Heidelberg.

The first professor, whose teaching was confined to therapeutics, followed certain books of Galen, namely, "de methodo medendi," "de ratione victus acutorum," "de compositione medicamentorum sec. locos," and "de ratione curandi per sanguinis missionem;" the books of Trallianus; the third book of Aeginetus; and the works of Rhazis. The exact distribution of his lectures was: (1) A short description of the names and

definition of disease as given by the Greeks and Arabs, Latins, and to some extent by the Germans; (2) the nature of the disease, because without a knowledge of this a correct cure would be impossible; (3) the signs and indications of disease of the parts affected; (4) the prognosis according to individual experience and with reference to the prognostic aphorisms of Hippocrates; (5) the cure of disease, giving the general indications and the special indications, with particular reference to the practice of the Arabians—Avicenna, Rhazis, Serapion, etc.; and (6) the prevention of disease. The second professor taught pathology. In the first fourteen months he discoursed on the sixth book of Galen concerning the different causes of disease and of symptoms, and in the next ten months on the causes of fevers, and in the twenty-four subsequent months on local diseases, etc., etc. The third professor, who taught physiology, discussed the elements, temperaments, liquids and powers of the body, with anatomy and medical botany, and performed anatomies on human subjects as well as on animals. The fourth professor taught surgery, and used as his guides Hippocrates, Galen, and Tagault, and to some extent in the course of time he relieved the anatomical professor.

The first professorship of anatomy was established in Strasburg in 1652, and at The Hague in 1668. The dates of establishment of anatomical theatres were: Dresden 1617, Strasburg 1671, Bremen 1685, Edinburgh 1697.

Practical bedside teaching was first undertaken privately by Otto Heurnius and Ewald Schrevelius in Leyden in 1636, and by Albert Kyper in the same place in 1648, but was discontinued on account of the lack of interest of the students for this new method of teaching. It was first successfully carried out by de la Boc Sylvius in 1658 at Leyden.

The scientific tendency of medicine was to some extent stimulated by the notable philosophical contributions of Francis Bacon (1561–1626), though the *Novum Organum* of the latter did not actually exercise a great influence upon the scientific world until the present century. Probably the *Principia* of Rene Descartes, published in 1664, had a more immediate effect upon the scientific world. The philosophical teaching of Locke, and the scientific writings of Glisson and Isaac Newton during the same period, and the mathematical influence of John Kepler and of Galileo, were among the other influences that were potent in forming new methods of teaching and of study.

It is remarkable that during this period of awakening into intellectual activity, the practical branches, or the teaching of practice itself, was still clouded with all the mysticism of the previous and preceding centuries. The teaching of the great Belgian physician, Jno. Baptist van Helmont, of Brussels (1578–1644), was paramount. Helmont first studied philosophy, then theology and magic under the Jesuits, then jurisprudence, natural history, and finally medicine. The practical application of medicine and even of surgery was distasteful to him, and he naturally fell into the consideration of mystics. Like his great master, Paracelsus, his teaching lacked all consecutiveness and was clouded with impenetrable obscurity.

Not until the end of this century was the practice of medicine wrested from the guidance of the mystics by the practical sense, the wide experience and attainments of Boerhaave, of Leyden, while in England a still more powerful influence was exercised by the writings and

* An address in Medicine, delivered before the Wisconsin State Medical Society, June 21, 1900.

the teaching of Thomas Sydenham (1624-1689), the most notable figure in the history of medicine in England, and one who has been deservedly called the English Hippocrates. The influence of Bacon is strongly marked in the writing and in the methods of Sydenham. The early life of Sydenham is more or less obscure. His first visit to Oxford in 1642, his departure the next year to join the Parliamentary army, in which he reached the rank of Captain, his reentry into Oxford in 1645, and his graduation as a Bachelor of Medicine in 1648, are facts that have been established. He later visited Montpellier and there received the bent for the Hippocratic method which is apparent even in his latest writings.

It will be observed that ancient medicine consisted essentially in a knowledge of certain anatomical facts and in an abundance of theories and crude beliefs, whose publication and subsequent perpetuation by men of undoubted great ability almost passes belief. Outside of anatomy there was only the vaguest speculation regarding the physiology of life and the nature of disease. It is, therefore, not unnatural that in anatomy the revival of medical learning found its first expression. Practically nothing had been added since Galen, and medical progress was absolutely at a standstill throughout Europe, though a few progressive spirits remained in Arabia, Africa, and Spain. The revival of anatomical knowledge, or rather the birth of modern anatomy, was found at the University of Bologna, which reached its highest state in the thirteenth and fourteenth centuries, and which was the mother school from which Padua and Naples sprang. As in many other movements that have had powerful consequences, it was the intelligence, energy, and genius of one man who gave to this movement so powerful an impulse that its progress was subsequently irresistible. The credit for this achievement is due to Mondino, Professor of Anatomy, at Bologna, who first gave anatomical demonstrations in 1315 and attracted a large number of earnest pupils, who carried to every quarter of the world the spirit and the method of their master. It will be remembered that among the ancient Greeks, the practice of dissection had been carried on to some extent on human subjects, while the prosecution of anatomical research in the lower animals had been more extensive. Subsequent to this era, however, the religious beliefs of the Arabians, who formed the only progressive school of medicine, and the practical slumber of all intellectual effort in Europe, had caused a cessation of advancement, and the revival of anatomical investigations at Bologna under the guidance of Mondino was, therefore, the starting point of a renewed activity. Isolated facts were gathered through the labors of various anatomists of lesser prominence during the fourteenth and fifteenth centuries, but it remained for the sixteenth century to bring forth Vesalius, the real father of modern anatomy. Andreas Vesalius was born in Brussels in 1515, but studied in Venice, and was engaged in teaching at the latter place in 1536. Subsequently he was called to Padua, where he completed his successful career. He was the first among the anatomists to approach the subject from an entirely new standpoint, not accepting the dogmas of Galen, or attempting merely to fulfil or complete the teaching of the latter, but founding an entirely new anatomy from personal and original observations. It is interesting to note, however, that even Vesalius could not entirely escape the influence of Galen, and caused two muscles to be drawn in his

plates, though he could not find them in his dissections. Galen had seen them in dissecting lower animals.

It is in the study of the circulation of the blood that we find the real springs of origin of modern medicine in its strictest sense.

The ancient belief was that the arteries were channels for the conveyance of air or spiritus. Galen in the second century first showed that the arteries contain blood and not air, as had been taught since Praxagoras and Erasistratus. It is certain that the ancients knew something about the movements of the blood in the body as has frequently been pointed out. Homer refers to the flow of blood, Plato speaks of it, and the experience of battlefields was frequently cited, but there is nothing to show that any one had a distinct conception of the systematic movement of this flow through definite channels and in a regularly continued direction. In 1559, Caesalpinus first used the term "circulatio," but this probably was applied, as one critic remarks, in the same spirit as a French policeman says "circulez."

Sylvius recognized the valves of the veins in the sixteenth century, Fabricius ab Aquapendente described the heart-valves, and Vesalius recognized that the interventricular septum is complete, though he still accepted Galen's "invisible pores," by which intercommunication might take place between the ventricles.

Servetus (1531) could not believe in this form of communication, and on this account and because of the large size of the pulmonary veins, concluded that there must be some communication between the pulmonary arteries and veins in the lungs. He was thus the first to have any suspicion of the actual circulation of the blood. Realdo Columbus (1559), had somewhat similar views as Servetus. The complete demonstration of the circulation, however, was left for Harvey, the most notable figure in medicine in the seventeenth century. William Harvey was born at Folkestone, near Dover, April 1, 1578. He received his early education at Canterbury, and then entered Cambridge. At the age of twenty-one, he visited Padua, and studied under Fabricius, Casserri, Minadous, and Servetus during two years. He received the professorship of Anatomy in 1615, and was physician to James I, in 1623. His first public discussion of the circulation of the blood took place in 1619, but his book entitled "*Exercitatio anatomica de motu cordis et sanguinis in animalibus*," etc., appeared in 1628. He became physician to Charles I, in 1632, and during his attendance upon the King, prosecuted important studies in the comparative anatomy of reproduction. The publication of Harvey's views on the circulation divided the medical world into two opposed schools, those who supported his views and those who opposed them, and in this connection it is necessary to observe that there was still a point of incompleteness in the circulation according to Harvey's notions. He had not been able to demonstrate the capillaries, and therefore assumed "porosity of the flesh" or tissues as the necessary connecting link. The capillaries were finally demonstrated after Harvey's time by Malpighius.

The influence of Harvey's discovery and demonstration was soon manifested in the establishment of accurate knowledge regarding certain fundamental principles of physiology and in a reliable view of anatomy. One of his contemporaries, Francis Glisson, of London, laid perhaps the first foundation of the modern conceptions of physiology in his principles of the irritability of tissues, an expression which he used to illustrate not

merely a contractility or contractibility, but a responsiveness to impressions or irritations of a general sort. His observations were carried much further, and were perfected in the beginning of the eighteenth century by Haller, who may be regarded as the founder of modern physiology. Contemporaneously with Glisson, Morgagni, of Padua, established pathological anatomy, having gathered together in his monumental work "On the Seats and Causes of Disease," all the reliable facts known to that time, and having added innumerable personal observations of the greatest exactness and merit. To this day, the volumes of Morgagni may be consulted with profit, and frequently surprise even informed pathologists by the accuracy of his observations.

As it was the discovery of the circulation that gave the first powerful impetus to modern medicine, it is not inappropriate that I devote my attention now to the consideration of the evolution of our present conceptions of cardiac pathology.

Some attention was given to the anatomy of the heart in the works of Hippocrates, though it must be considered doubtful whether these observations originated with Hippocrates and not with some of his followers. Galen's knowledge was considerably more extensive. Hippocrates and Celsus taught that the heart could not be diseased, but Galen observed pathologic conditions in the hearts of animals and discussed the possibility of their occurring in man. Galen, however, did not recognize the muscular structure of the heart, an anatomic fact which was first established by Steno in the seventeenth century. The valves of the heart had been recognized somewhat earlier by Fabricius ab Aquapendente (1574) and the imperforate character of the ventricular septum a little later by Servetus. After Harvey's demonstrations, scattered observations on the anatomy of the heart were made by Bonet, Valsalva, Vieussens, Lancisi, and Albertini; but the most important of all by Senac in France, and Morgagni in Italy. The former developed knowledge regarding cardiac disease in a clinical as well as a pathological way, but Morgagni was the first great exponent of the pathology of the heart as he was the founder of all pathology. Little, however, was known regarding the relation of the heart diseases to clinical symptoms, though Lancisi had indicated a connection of cardiac disease and asthma, though Vieussens had described quite accurately the character of the pulse in aortic regurgitation, and though Albertini recognized the alteration in the apex beat occasioned by hypertrophy and pericardial disease. In a pathologic direction, Vieussens observed the congestive effects of mitral disease, Morgagni appreciated the effects of pericardial effusion and adhesion, of enlargement of the heart and of aortic aneurysm. Harvey had long before reported a case of rupture of the heart, isolated cases of myocarditis were described by Beniveni, Bonet, Morgagni, and Senac. Fatty degeneration, or more probably fatty infiltration of the skeletal muscles had been seen by Haller, but was more carefully observed by Vicq d'Azyr, the physician of Marie Antoinette. Aneurysm of the heart had been described by Massa in 1534, and aneurysm of the aorta had been recognized during the life of a patient by Vesalius. Peripheral aneurysms had been mentioned by Galen, Paulus, Aribasius, Atius, Actuarius, and Avicenna, but none of these had recognized aneurysm of the heart or the great vessels.

All of these were, however, merely scattered obser-

vations, buried in the works of the masters and of no consequence so far as the general medical mind was concerned. Throughout the eighteenth century, clinical observations of sudden deaths and of stagnations of the circulation, of asthma with cardiac disease, and of swellings or dropsies, replaced ignorance with a confusion out of which the genius of Corvisart finally rescued medical science. Jean Nicholas Corvisart des Marets was born at Veuziers in Champagne on February 15, 1755. He became distinguished as the physician of Napoleon I, who said of him that he was the most brilliant and the most incorruptible of his followers. He had the merit of recognizing the great value of Auenbrugger's neglected method of percussion, which the now celebrated but then unknown Viennese clinician had published in 1761. Auenbrugger had applied his method in cardiac disease, and had indicated its applicability in the recognition of pericardial effusion and enlargement of the heart; but the systematic application of percussion to diagnosis was effected by Corvisart. Apart from his clinical achievements, he classified the observations of his predecessors and in particular called attention to the nature and causes as well as the symptoms of active and passive aneurysm of the heart, or as we would say today—hypertrophy and dilation; he described more accurately than his predecessors the various forms of pericarditis, recognized the relation of apoplexy to cardiac diseases, and discussed the pathology of acute vegetative endocarditis and of contractions and distortions of the valves following this condition. He appreciated the importance of congenital lesions of the heart in the production of cyanosis and the nature of thrills due to stenosis. One method of exploration of cardiac disease was, however, unknown to Corvisart, though his contemporary, Laennec, immortalized himself by its discovery before Corvisart's death. One day in crossing the garden of the Tuileries, Laennec was interested by a group of children who amused themselves by placing one end of a short piece of wood to their ears and scratching the other end, thus causing a peculiar transmission of sound. This led to his discovery of the art of auscultation, which he published in his work entitled "Medical Auscultation" in 1819, just two hundred years after Harvey's first public demonstration. With the introduction of two such valuable methods as Auenbrugger's percussion and the auscultation of Laennec, means were furnished for the rapid increase of knowledge regarding the diseases of the heart. Up to the time of Corvisart's death the valves of the heart had received very little attention, but soon after, through the clinical and pathologic studies of Bretin and his more illustrious pupil Bouillaud, the importance of the valves was appreciated, and cardiac diagnosis was further enriched by the works of Hope, Testa, Burns, and Kreysig.

In the way of a rapid review of the subject to this date (the early years of the nineteenth century) let me recall that the father of medicine, Hippocrates, and his pupils knew practically nothing of the functions or structure of the heart and that they denied the possibility of diseases of its structures; that Galen first indicated the probability of diseases of this organ, though he did not recognize the muscular structure and therefore had no possible conception of the real nature of cardiac disease; that through fifteen centuries little or nothing was added to Galen's ignorance; and that the first light to break in upon this obscurity was cast by Harvey's brilliant demonstration of the circulation

of the blood. After Harvey, little by little anatomic, physiologic, and finally pathologic facts of importance were added, and were eventually classified and amplified by Morgagni. Diseases of the heart were, however, little more than interesting curiosities, whose clinical relations were guessed at but never understood till the eminent French physician Corvisart brought a wealth of learning and abundance of experience to the task of clarifying the obscurity and classifying a mass of ill-digested knowledge. With Corvisart, however, the conception of cardiac disease stopped short of recognizing other than in a vague way the causes which operate to produce the diseases which he was able to describe so beautifully. The merit of making an important addition, the recognition of the potent part played by valvular disease, is Bouillaud's, and to him is due the credit of establishing notions regarding the pathology of the heart that have endured to the present day, and which it is one of my purposes in some measure to combat.

The role of the heart-muscle, and it is this to which I desire to call especial attention, was, of course, appreciated to some extent in the classification of Corvisart and was discussed by Bouillaud, though neither of these authors had a true conception of the prime importance of this part of the cardiac mechanism, Corvisart, because of his limited knowledge of the significance of hypertrophy and dilation, and Bouillaud, because of his too earnest advocacy of the importance of the heart-valve. For the former, cardiac disease was an obscure condition without definitely ascertained causes, for the latter it represented only mechanical problems immediately connected with valvular disease. It would not, however, give a just notion of the state of knowledge at the beginning of the century, if no further allusion was made to knowledge regarding the existence of muscular disease of the heart. I have before remarked that several of the older anatomists described cases of myocarditis, and in a study of the literature the frequent occurrence of the term "carditis" at first sight gives the impression that inflammation or disease of the substance of the heart was well recognized. Such a view, however, would exaggerate the state of knowledge, even at the time of Corvisart, for it was not until some years after the appearance of his work that Laennec pointed out the fact suspected by Corvisart, that in many, if not the most instances, this condition termed "carditis" was simply purulent pericarditis with secondary affection of the superficial layers of the muscle. Fatty disease of the muscles had been recognized as I have said by Haller and Vicq d'Azyr, but not of the heart. Observations of similar change in the heart-muscle were, however, recorded by later anatomists, and Corvisart, though he himself never observed such, refers to instances described by Kerkringius and Bonet. In each of these instances the condition seems from the descriptions to have been that of fatty infiltration or overgrowth. Another case is referred to by Morgagni in his third letter, article 20.

Fibroid change had now and then been alluded to by older writers, though the nature of the condition was not understood. Here again I must return to Corvisart, who states: "The *induration*, of which I am here speaking, must not be confounded with a thickening of the parietes of the heart sometimes acquire in aneurysm of the first species. Here, the fleshy fibers, though thicker and firmer, retain all their contractility, while the morbid state under examination is distinguished by

the more or less partial loss of muscular contractility; besides, this state is very seldom attended with any dilation.

"I have frequently noticed the *induration* of the muscular tissue of the heart; but in these numerous cases the induration has attained to different degrees. The following case which was inserted in the *Journal de Medecine* (Ventôse, an 9) will give the most remarkable example of this affection that I have seen."

The case referred to was that of a woman, aged 55, who succumbed to an evident cardiac disease with some anginoid manifestations. The heart-muscles were of unusual firmness, especially the wall of the left ventricle, which was twice its normal thickness and "actually formed a fleshy, very elastic sounding-box when struck, as if we had struck upon a sort of cornet." The author points to the peculiar weakness of the pulse in this case in contrast with the great size of the heart, and very properly calls attention to the difference between this induration and true hypertrophy.

In another place he suggests the occasional occurrence of insidious carditis without symptoms, basing this opinion upon his discovery of lesions suggesting a healed carditis; but it is most likely that the cases he refers to were instances of chronic pericardial adhesions.

Accurate knowledge regarding myocardial disease, however, dates from the middle of this century and must be credited among others to the observations of Hasse, Rokitansky, Bochkalek, Dittrich, and Virchow. In the same group must be placed the name of Gairdner, who long ago suggested the relation of arterial disease (coronary sclerosis) to myocardial degenerations, and that of Weigert, who first established this relationship in a convincing manner. Finally Bamburger in 1857, in discussing the consequences of fatty disease of the heart-muscle, introduced the term "insufficiency of the heart," and this gave the first impetus to a new conception of cardiac pathology, that which seeks in the mutual relationship of cardiac power and circulatory obstacles the explanation of clinical conditions. This impetus had its consequences in a careful clinical study of the heart under various conditions of strain and the writings of Allbutt, Myers, Seitz, and DaCosta established a clinical picture of cardiac disease without valvular lesions. The absence in some cases of pathologic lesions in the muscle of the heart was emphasized by Niemeyer in his often-quoted statement "that it is not always possible by means of the microscope to recognize all the alterations of the muscular fibrillae that diminish the functional power of the heart."

Subsequently Bollinger and his pupils in Munich described a peculiar form of enlargement of the heart which was very frequently met with among beer drinkers. This condition consisted in a uniform enlargement of the organ occasioned by muscular hypertrophy without valve disease, arterial disease, or interstitial nephritis. The term idiopathic enlargement or hypertrophy had previously been introduced to indicate forms of hypertrophy not occasioned by valve disease. Undoubtedly many instances of supposed idiopathic hypertrophy are in reality cases of fibroid degeneration or interstitial myocarditis, with which hypertrophy of the muscle-fibers is constantly associated. In proof of this view, I may cite the interesting example of enormous enlargement of the heart described by Quain, at first as a simple hypertrophy, but many years subsequently when he had made microscopic examination, as an instance of fibroid disease with coincident hyper-

trophy. In the Munich cases, however, accurate microscopical examination of portions of the heart-muscle showed no evidence of degenerative or inflammatory disease. It must be questioned, however, whether the more rigid systematic sectioning after the method of Romberg would not in many of these instances have shown some disease of the heart.

The occurrence of acute degenerative lesions of the heart was first indicated by Stokes in 1854, when he described the effects of typhoid and other fevers upon the heart-muscle, but the accurate study of the myocardial degeneration occurring after fevers is more particularly due to the observations of von Zenker. It is unnecessary in this place to enter upon a detailed description of the various forms of degeneration that have been described in fevers and in other conditions. I may, however, name among these conditions parenchymatous degeneration or cloudy swelling of the muscle-fibers, the hyalin transformation of Zenker, fatty degeneration with various forms of destruction of the fibers, atrophy of the muscle-fibers in association with interstitial myocarditis, and the segmentation and fragmentation of the fibers which has occupied so much attention of late. Until quite recently the opinion was generally held that the form of disease occasioned by infections is usually degenerative. The investigations of Leipzig pathologists, including Romberg, Krehl, Pässler, Kelle, and others, have shown that acute myocarditis is the condition usually produced and that this form of disease of the heart-muscle is practically always present in fatal cases of diphtheria, scarlatina, typhoid fever, and other acute infections. In cases in which the symptoms during life have indicated distinct disturbance of the heart's action, the changes in the heart-muscle have been correspondingly marked, but systematic studies have shown many instances in which there were no clinical symptoms and in which even the macroscopic inspection of the organ presented no evidence of disease, and yet in which the microscopic examination of serial sections has discovered localized or diffuse myocardial change. The termination of these conditions cannot, of course, be studied directly, but all analogy would indicate that the recovery from inflammatory and degenerative lesions of the myocardium of this sort could only be in resolution or the development of fibroid areas. If this were true, an explanation would be offered for the development of some of the cases of chronic myocardial degeneration of fibroid character whose etiology up to the present time has been obscure. It is not to be supposed, however, that all instances of fibroid heart have this origin. The interesting contributions of Dehio of Dorpat may be cited in this connection. Dehio described the fibroid changes of the heart with particular care and applied the term "myofibrosis" as descriptive of the condition. Further he advances an interesting theory of etiology of the fibroid change in these instances. It will be recalled that Thoma constructed a theory which has been widely accepted as explanatory of the fibroid areas or patches in fibrosis or atheroma of bloodvessels. According to this theory, the localized nodules of the arteries represent attempts on the part of fibrous tissues to strengthen, by their hyperplasia, spots of weakness occasioned by degenerations of the muscular tunics. In the same way Dehio suggests that when the muscle of the heart has become weakened through degenerative disease or functional insufficiency, hyperplasia of the fibrous tissues of a conservative character takes place and main-

tains for a time the resistive power of the heart-walls against dilation. Eventually, the fibrosis becomes insufficient to withstand the intracardial pressure and the remaining muscle-fibers themselves suffer in consequence of the pressure of the invading fibrous tissue, which was in the first instance designed for their preservation and support. Attractive as this theory seems, it cannot be regarded as more than hypothetical.

While there are instances of fibroid and fatty degeneration of the heart-muscle which are obscure in their etiology, the very great majority of instances are clearly traceable to the influence of disease of the coronary arteries, and advanced myocardial disease may usually be assumed to be but one of the expressions of general or local arteriosclerosis. The causes of the latter have been more or less definitely fixed. Whatever ignorance there may still remain regarding the ultimate manner of action of these influences, it is certain that syphilis, alcoholism, laborious occupations with exposure, and gout are among the conditions that are capable of hastening the involution processes of old age in the arteries and of developing the exaggerated form of arterial disease known as atheroma. Among the favorite localities of this process, the root of the aorta and the coronary arteries take high rank, in consequence of which a starvation of the heart-muscle sooner or later follows and degenerative lesions are developed.

The degree of coronary sclerosis, of course, plays a very important part in the extensiveness of the muscular degeneration, but there are other influences that must be taken into account. In the first place, the thought suggests itself that a heart, which has been the seat of infectious myocarditis in early life, and which has, in consequence, been left to some extent damaged in structure, though still quite capable of adequate function, would in later years suffer degenerate change as a result of moderate grades of coronary disease. In the second place, it is not improbable that inherent weakness of the heart, a condition which may be assumed to exist, though it is difficult to demonstrate, may render the muscles more liable to degenerative disease than a normal one. We are but approaching the threshold of knowledge regarding this matter of primitive functional weakness of organs. There does not seem much doubt, however, that some individuals are born with weak stomachs, nerves, livers, brains, or hearts. That influences, which, in the normal man are capable of causing disease of these parts, should more readily affect the congenitally weak organs is a self-evident proposition.

Finally, I wish to call attention to a matter of some and perhaps of great importance. The experiments of Romberg and Pässler have shown that, in the course of infectious fevers, circulatory weakness is especially due to central depression or paralysis of the vasomotor mechanism, and in but a secondary degree to the existence of myocardial disease. In the later stages of such diseases when the fever has subsided, and convalescence has begun, the vasomotor disorder becomes of less consequence, while the organic muscular disease is all-important. There does not seem much doubt of this, even leaving experimental demonstration out of the question. Closely allied with this subject is the matter of disproportion in the cardiac power, and the general needs of the system. Experimental and clinical investigations have demonstrated what at first sight seems most doubtful, that fatty degeneration and overgrowth of the heart affect its functional activity comparatively little; yet there are many instances in which obesity with

fatty heart is attended with signs of a maximum grade of cardiac asthenia. If the size and weight of the heart in these cases is taken into consideration, and compared with the general body-weight, it will be evident that the cardiac power is relatively, though perhaps not actually, deficient. The same thought applies to the investigation of the circulation and of the cardiac power in persons of unusual height. It has been the clinical experience of others and of myself, that men above 6 feet in height suffer greatly from circulatory weakness during and after typhoid fever, and it has often been observed that tall soldiers are less enduring than those below the medium height. The explanation is possibly to be found in the greater demand made upon the heart rather than any special deficiency of that organ.

This brings me to speak of another matter connected with the functional activity of this organ, viz., regarding the so-called reserve power of the heart-muscle. In the condition of entire health, the power of the heart is sufficient to cope with ordinary demands, and on occasion to fulfil unusual demands without unpleasant consequences. When physical strains are placed upon the organ with sufficient frequency, increase of power may be developed, but only in proportion to increased size, or hypertrophy; similarly, when diseases of the heart-muscle, the valves, or the general system have increased the difficulty of circulation, hypertrophy of the heart ensues, but only sufficient to counterbalance the unnatural obstacles. In other words, the reserve power is practically wanting. As a matter of fact, I believe that the fully compensating heart does possess a certain amount of reserve, but this is undoubtedly much less than that possessed by the normal heart. With continued increase of the circulatory impediments, or as a consequence of intercurrent diseases, there must finally come a time when the reserve-power is consumed, and the power fails for even ordinary demands. Evidences of continuous cardiac insufficiency then become so plain that they cannot be overlooked. Before that event, however, the reserve-power may suffice to prevent disturbances, and the patient is unaware of the existence of a cardiac or circulatory weakness.

The nature of this loss of reserve power of the heart is, however, a matter of pure speculation. As I have before noted, Dehio regards the fibroid changes of senility and of cardiac disease as a conservative process designed to strengthen a weakened muscle, and Rosenbach advanced a similar theory. Whether this be true and explicable on the theory that degenerative changes or purely vital processes first weaken the muscle, or whether on the contrary the fibroid change is the primary cause of the loss of cardiac power, it may be taken as an established fact that in nearly all cases of cardiac disease, including acute inflammations of the endocardium and pericardium, in chronic valvular disease and the so-called idiopathic enlargements, disease and consequent weakness of the heart-muscle is the essential lesion from the point of view of progressive insufficiency of power. This consideration necessitates a change of attitude toward these diseases. The predominating importance of the mechanical impediments in the form of the valvular lesions or arterial obstructions, which has so exclusively engaged attention since the time of Bouillaud and Freysig, must be abandoned, and the heart-muscle must hereafter be given a greater share of attention in prognosis and treatment. The diagnosis of the future, as Jürgensen remarks, will not be endocarditis or pericarditis, but pancarditis. An

objection to this term might be recorded, as proofs are wanting that the condition of the muscle is an inflammatory one, but the general thought is uninfluenced by this exception.

It is necessary to add a few words regarding the role of the nervous system. The tendency of recent times has been to minimize the importance of the intracardiac ganglia and the central nervous mechanism, and to assign a greater importance to the automatic contractility of the muscle. His and his associates have demonstrated the rhythmic contractions of embryonic hearts at a time when the intracardiac ganglia and the nerves have not yet developed. The important function of the nervous mechanism is a regulatory one; heart-rhythm is more immediately dependent upon the nervous integrity than is heart-power.

Having pursued this subject to such length let me recapitulate in a few words the succession of events which I desire to establish. At the beginning of the century the occurrence of cardiac hypertrophy under certain conditions was recognized, but the causes of the hypertrophy were not even remotely guessed at; the mechanical influences that operated to produce dilation were somewhat more clearly appreciated. Bouillaud first established the importance of valvular lesions as the causes of hypertrophy. Subsequently the effects of functional overwork in developing cardiac enlargement followed by irritability and weakness were appreciated, and still later the frequent occurrence of organic lesions as the foundation of these weakened states. Only in the last decade has the frequency of myocardial change in infectious diseases of all sorts been appreciated, and the relations of the general vasomotor system and the functional demands to cardiac power been properly understood.

We find ourselves then at the present day confronted by an entirely new problem, the search for the ultimate causes of muscular weakness and degeneration of the heart, fully realizing the multiplicity of causes that play a part. This is no unimportant task, for experience and statistics alike indicate a growing frequency of disorders of the circulation. Hirsch points out in his *Geographical Pathology* that the number of cases of disease of the heart increased enormously in France at the end of the eighteenth century and in the troubled times of 1830; as well as in Italy in the revolutionary year of 1848, and in Sicily, in 1860. Though the increase during the French Revolution could with much probability be ascribed to the prominence of Corvisart and his teachings, it is not unlikely that the troubled times and the general unrest of mankind played an important part. Were this the case, and were it fully established that physical overwork operates to cause cardiac disease, we should naturally expect to find an increase in circulatory diseases in these modern days of active life and wasteful expenditure of nervous energy. The statistics of our census seem to bear out this view, though I am free to admit the unreliability of statistics of any source in matters of this kind.

DISEASES OF THE CIRCULATORY SYSTEM, INCLUDING HEART DISEASE.

The census of 1850 showed..... 991 per 100,000 deaths.
The census of 1860 showed.....1999 per 100,000 deaths.
The census of 1870 showed.....3460 per 100,000 deaths.
The census of 1880 showed 3971 per 100 000 deaths.
The census of 1890 showed.....5569 per 100,000 deaths.

It must, of course, be admitted that such figures are likely to be misleading for several reasons. In the first

place, as is pointed out by Dr. Billings in his general review of the statistics of 1880, such diagnoses as dropsy, asthma, etc., which formerly figured so largely in census reports, have disappeared, and the causes of these symptoms have become more generally known, with a consequent increase in the number of circulatory diseases. Again, it is likely that obscure cardiac diseases are more frequently recognized as such than formerly, but when all of the facts are considered, it is not improbable that the number of diagnoses of cardiac and circulatory diseases has suffered diminution as well as increase through wider knowledge.

The opinions of physicians of large clinical experience seem to establish a fairly presumptive claim to increase in the frequency of cardiac disease. One factor of importance in this connection is that of average longevity, and while the statistics in this connection are little less reliable than those above cited, it seems more than probable that the average length of life has increased materially during the present century. On this assumption it would be easy to understand that cardiac diseases (at least those of a dangerous sort) had increased during the same period. It is needless to enter into this subject more extensively; my reason for introducing it at all was to emphasize the importance of attention to the form of disease under consideration, as it is quite likely that the purely muscular diseases have increased more extensively than valvular disease.

In taking up the discussion of the clinical side of cardiac disease, I do not wish to enter upon any consideration of valvular disease, though the relations of the cardiac muscle to the valvular deficiency is of the utmost importance; but it is of even greater consequence for us to appreciate the frequency of cardiac diseases affecting the heart-muscle in particular. Valvular diseases are not readily overlooked, because even in the beginning when active symptoms are wanting, a casual examination may disclose the nature of the disease by reason of the presence of murmurs. In muscular diseases of the heart, however, it is unlikely that any physical signs would be present during the earliest stages, and the disease approaches in an insidious manner and cripples the cardiac power before the clinician becomes aware of the nature of the patient's malady. If, however, anything is to be accomplished in the way of medical aid, it must be in the forming stages, before the degenerative lesions have increased to such a degree that an arrest of the process would leave the cardiac power insufficient for the ordinary needs of the circulation. In the closing paragraph of his book on cardiac disease, Corvisart points out the uselessness of treatment as far as the cure of the local conditions is concerned, and expresses the hope rather that the future may disclose means of early recognition and at the same time of prophylaxis whereby the frequency of cardiac disease may be reduced. I have alluded to the frequent occurrence of myocardial lesions in the course of the acute infectious diseases. It is very evident to the student of pathology that complete resolution cannot occur in such cases unless the organ is placed under the most suitable conditions; that is to say—unless the maximum amount of rest is enjoined. It follows that if we are to reduce the frequency of muscle-disease of the heart in later life, we must see to it that the convalescence of the acute infectious diseases of childhood and of early manhood is conducted with great care. I have often observed that young men after typhoid fever suffer more or less circulatory weakness and insta-

bility for as much as a year or eighteen months after their recovery. It is altogether likely that during this time the lesions of the myocardium, as well as other lesions throughout the body, are undergoing slow resolution, and it follows that any excess in the way of mental or physical strain during this period might delay or stop all effort at resolution. After an apparently complete recovery, it seems not improbable that the myocardium still may remain in a morbid state insufficient to cause clinical symptoms but sufficient to initiate progressive disease in subsequent years when strain has begun to tell upon the organism as a whole.

The onset, however, of such myocardial disease is always insidious, and after its full development and clear recognition it will usually be impossible to determine the exact date of beginning. There is one set of phenomena, however, which is of great importance and which probably more often foreshadows the developing disease than any other symptoms. Unfortunately these signs are of so vague and indefinite a character that they do not suffice to localize the disease in the absence of other indications. I am now referring to the peculiar loss of vitality and strength which characterizes most of the cases of progressive myocardial degeneration. This is so gradual in its development that it is more often ascribed to increasing cares and to advancing years than to the real cause. Most of the patients suffering with the disease under consideration are above middle age and the majority of them are of the male sex. The more pronounced instances occur in men who have led active business lives, and who have subjected themselves to repeated or continuous strains. When we see in such persons a falling off in activity, a disposition to be less interested in affairs, a loss of strength of a purely physical kind, especially when the individual shows some loss of color, a premature grayness of the hair, and that peculiar yellowish-whiteness of the face, combined with slight injection of the venules, which is so characteristic of atheroma as to be called the atheromatous facies, we are justified in suspecting a deep-seated, vital, morbid process, and should not overlook the heart as a frequent seat. As an instance of the indefiniteness of onset, I recall the case of a physician who died of angina, and who had been suffering for some months with vague symptoms indicating progressive loss of vitality. His daughter, who had watched him very closely, and who really suspected the serious nature of his disease long before his physician, noted his disinclination to assume tasks which formerly seemed easy, and in particular called my attention to an occasion when her father had remained at home on account of the weather, which was not more than ordinarily severe, and which in previous years would have caused him no inconvenience. He was not suffering with any acute trouble at the time, and his daughter's reference to it was simply to illustrate his gradually increasing loss of energy.

It would be impossible, however, from symptoms of the sort above indicated, to arrive at a positive diagnosis of myocardial degeneration. They would serve only to indicate a progressive malady of a serious kind. The first and most significant localizing sign to which I wish to call attention is irregularity in the pulse and in the heart action. Intermittency and irregularity of the pulse may be due to reflex disturbances taking their origin from the stomach or other organs, or they may be the consequence of overuse of tea, coffee, tobacco, or alcohol; but in persons above the age of 40, such

explanations of the occurrence of cardiac arrhythmia should be accepted only with the greatest care. Much more frequently it will be found in the course of time that the reflex disturbance or the toxic cause of the irregularity was simply a spur to the more serious organic disorder of the heart which was the essential cause of the irregular action.

Some attention has been paid of late to a disproportionate weakness of the pulse as compared with the apex beat. This has been referred to as a sign of dilation of the cardiac chambers in consequence of myocardial weakness. There can be no doubt of the correctness of the clinical observation—that in many instances of progressing myocardial weakness the pulse becomes excessively weak, while the apex beat remains strong, and sometimes indeed becomes extraordinarily vigorous and extensive; but this sign is not often present in striking form in the early stages.

In the same connection I would call attention to the fact that abortive systolic efforts on the part of the ventricle are not infrequent even in the earlier stages of myocardial disease. These occur in their most pronounced type in the later stages of fibro-fatty heart, but may, as I have just said, occur even in the beginning, particularly if care is taken to examine the heart's action after prolonged effort or after nervous strain. At such times the disturbances of action are heightened and an early diagnosis may thus be assured. In the more pronounced cases, it will be found that the cardiac sounds indicate a much greater frequency of ventricular systole than the pulse, as many of the contractions are insufficient to produce a palpable pulse. In the less pronounced types there is merely a weakness of some of the pulse-beats, so that apparent intermittency is occasioned. In such instances the sphygmograph may show the slight or abortive systolic efforts.

Another symptom of importance, and one which has not been especially described, is the tendency to relaxation of the skin. In many cases of myocardial trouble, I have found that for some time prior to the development of distinctive symptoms, there has been a tendency to a relaxed state of the skin with copious sweat, which has sometimes occasioned diagnoses of rheumatism, post-influenzal debility, etc. Whether this phenomenon be a vasomotor reflex, whose ultimate purpose is relief of the heart from strain, or whether the condition may be the result of extended peripheral vascular weakness is an unimportant matter from the clinical point of view. The symptom, however, is significant, though by no means indicative of a definite malady. I mention it here only because of its obvious relations to other vascular phenomena, though it is far less significant of an underlying cardiac disease than are the other vascular symptoms to which I have referred.

I have before made reference to a pallor as among the symptoms of increasing cardiac weakness, but I wish to dwell upon this more particularly. In advanced cases of myocardial degeneration, and especially in those cases dependent upon arteriosclerosis, the color of the skin grows progressively more pallid, and in the face this has an almost characteristic distribution and appearance. The first evidences are seen about the mouth and nose and over the temples and in front of the ears, and the pallor is apt to be increased by general fatigue and nervous depression. A sudden fright in particular is likely to cause a distinct change of color, and this may persist for a long time instead of rapidly disappearing as would be the case in an individual in

good health. In the later stages the pallor increases in extent, and eventually the whole face is involved, though as a rule some color is preserved in the cheeks until a very late stage in the disease. This change of color, together with the change of disposition caused by a gradually increasing loss of vital energy, leads to such a marked general change in the individual that sooner or later the family, and finally the friends and acquaintances are struck by it. All of these changes, however, are so gradually produced, and are so frequently ascribed to increasing cares or increasing years, that the real underlying cause is apt to be overlooked until a stage has been reached at which the most casual observer is shocked into an appreciation of the serious condition of affairs.

I wish to make allusion to another vague, indefinite, and only very slightly reliable symptom, viz., the variability in the specific gravity of the urine. This is marked in cases in which there is widespread arteriosclerosis. It is less likely to occur in other forms of myocardial disease. I have, however, been frequently struck with the changing specific gravity of the urine in persons with increasing arterial sclerosis, at a stage of this affection when albuminuria and other more definite indications of interstitial change in the kidney have not yet made their appearance. Of course it is scarcely necessary to refer to the fact that the amount of liquid consumed by patients to some extent governs the excretion of urine, and therefore the specific gravity of this fluid. It is, however, a matter of daily clinical experience that normal persons, living a uniform life, excrete urine of more or less uniform specific gravity. When, however, arterial disease has begun, I have frequently observed a marked variability, so that while the morning urine is not rarely heavy, giving a specific gravity of from 1.010 to 1.025, the evening specimen showed a specific gravity of from 1.005 to 1.010, notwithstanding the fact that the amount of liquid taken had not been abnormal. This tendency to rapid excretion of liquid, to which the term tachyuria has been given, is not among the recognized symptoms of early arterial disease, but I am convinced from clinical observation that it will be found to exist in most instances.

One other symptom, or set of symptoms, occurring in the earlier stages of myocardial disease requires special mention. I refer to the gastric phenomena. I recall several instances of men who have suffered with fibro-fatty heart, and who have finally died in anginoid paroxysms, who have presented among the earliest manifestations gastric disorders of one sort or another. To some extent gastric disease in cardiac affections is the result of sluggishness of the circulation and congestion of the mucous membrane of the stomach and gastrointestinal tract. This explanation is especially true of valvular disorders, and in particular of mitral disease. It is, however, of subordinate importance in the myocardial diseases which we are now considering. In the latter cases the gastric symptoms occur so early, are so variable, fluctuate with such marked rapidity, and are of such a character, that another explanation must be invoked. The close relation of the stomach and heart in their innervation needs only to be mentioned. It is on account of this nervous connection, no doubt, that myocardial diseases are frequently attended with painful disorders of the stomach. In one striking instance that has come under my notice, the patient suffered with typical gastralgic attacks for some time and was treated with the idea that the disease was

primarily a gastric disorder. Subsequently the gastralgic attacks became transformed into typical paroxysms of angina pectoris. I have since observed this in several other marked cases.

Next in importance is nausea, which, though far less distinctive than painful seizures, is a great deal more common in the early stages of chronic myocardial disease. It may persist for a long time without vomiting or it may be accompanied by vomiting, but in either case relaxation of the skin and marked weakness of the pulse are usually associated. I have always felt that these gastric paroxysms are attended with relaxation of the abdominal vasomotor mechanism.

In the later stages of myocardial disease, increasing dilation of the chambers of the heart occasions murmurs and changes in the size of the heart which cannot be overlooked by even the most careless observer. Coincidentally with these physical signs, marked symptoms such as dyspnea or cardiac asthma, swelling of the feet, and later, general anasarca, albuminuria, and venous stagnation, proclaim a cardiac disease, but it is unnecessary to refer to these symptoms in detail. A diagnosis at this stage of the affection can have no other value than as confirming or correcting previous impressions. If the treatment is to be of any value, it must be applied in the early stages of the disease.

It is my firm belief that many of these cases may be arrested in the earlier and less serious stages, and that perhaps some restitution may be effected. This, however, presupposes early recognition, and rigid dietetic and general prophylactic measures of treatment. The patient himself does not realize the seriousness of the disease, nor does the physician recognize the existence of the trouble in the early stages. Alertness to the danger and frequency of the condition, however, cannot fail to make its recognition more frequent, and it has been my object to indicate some of the earlier signs, though I am well aware that a positive diagnosis is usually impossible prior to the time when the disease has become incurable and unmanageable.

FRACTURE OF THE CARPUS.

A Study of 52 Cases of Injury in which One or More of the Carpal Bones were Involved.

By G. G. ROSS, M.D.,

of Philadelphia,

Assistant-Surgeon to the German Hospital,

AND

M. I. WILBERT, Ph.G.,

of Philadelphia,

Director of the Radiographic Laboratory at the German Hospital.

MODERN man is largely dependent on his manual dexterity to provide himself and those dependent on him with the absolute necessities and as many of the luxuries of this world as his abilities will admit. It is largely due to this manual dexterity that the more civilized races have been able to make the rapid strides in the mechanic arts that have played so important a part in the development of the resources of the world. The usefulness of the hand is largely dependent on the radio-carpal articulation, or wrist-joint. This is a condyloid articulation with a very wide range of motion, both laterally and also in an anteroposterior direction.

This joint being somewhat complicated, is subject to

a variety of injuries and diseases, all of them more or less difficult to diagnose or to differentiate. Among the more common injuries, what is commonly called "a severe sprain" is probably one of the most unsatisfactory so far as diagnosis and treatment are concerned. This diagnosis is made to fit any case with a history of injury, and in which there is no easily distinguished fracture and no extensive laceration of the muscular and fibrous



FIG. 1.—Diagram from radiograph No. 1757. Shows simple fracture of scaphoid in right wrist, accompanied by some displacement of the fragments.

tissue. While in many of these so-called sprains the wrist is restored to its normal condition in a reasonable length of time, there are, however, others that give more unsatisfactory results, have a very prolonged convalescence, and a persistent, or sometimes an acquired, interference with full use of the joint. These latter cases are sometimes classed as cases of chronic rheumatism. A careful study of a number of these so-called cases of "severe sprain of the wrist" that have come under our observation during the past two years, has brought us to the conclusion that many of them are really more or less extensive fractures of one or more of the carpal bones.

The clinical features of a fracture of the carpus are not definite nor well defined. The usual history is that of a fall or of having been hit on the palm or sometimes on the back of the hand. Pain is usually present, though seldom severe. There is generally more or less swelling, and while it can hardly be considered characteristic, the swelling is usually persistent and more marked on the dorsal surface. Crepitus is rarely obtained, as might be expected from the anatomic relations of the carpal bones. There is seldom much if any deformity, although in cases in which there is much impaction, and in which the annular ligament is involved, there is a decided broadening of the wrist. The function of the wrist is always more or less interfered with, due largely to the pain, and in cases of impacted fracture to the mechanical interference of the fragments.

It is generally recognized that the same amount of force applied in different directions will produce different results. This physical truism also applies to injuries about the wrist. Every physician who has met with any number of these cases, must have had his

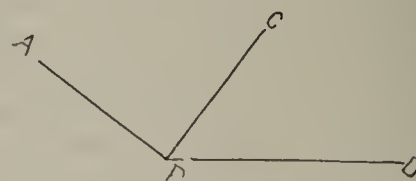


FIG. 2.—Diagram to illustrate the angles at which a fracture of the carpus or one of the long bones is likely to occur.

attention called to the fact that a comparatively slight fall will sometimes cause a very severe fracture of the bones of the forearm at the wrist, while at other times a similar fall, or what would ordinarily be considered a more dangerous one, will not give any evidence of having caused serious damage to any part of the joint.

It is among these latter cases that we usually find, on more careful examination, a fracture of the carpus. Fig. 1 will illustrate a case of this kind.

The patient, a young man 35 years of age, fell from a bicycle several days before applying at the hospital for treatment. He gave a history of having struck an obstruction while riding along a country road, and of having been thrown off his wheel; as near as he could remember he struck on the palm of his hand. The wrist did not pain him much at the

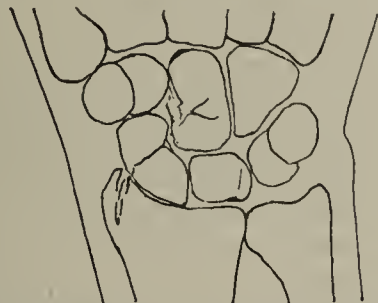


FIG. 3.—Diagram from radiograph No. 1759. Fracture of the os magnum, scaphoid, and styloid process of the radius.

time, as he claims to have remounted his wheel and ridden home, a distance of 12 or 14 miles. The wrist getting steadily worse, he was induced by one of his friends to paint it with iodine. This did not relieve the pain, and the following day he decided to consult a surgeon. When examined at the German Hospital he presented a wrist that was decidedly swollen and painful. A careful clinical examination did not reveal any evidence of a fracture. On account of the nature of the accident, and also on account of the pain and swelling it was thought advisable to make an examination by means of the x-rays. The resulting radiograph showed a transverse fracture of scaphoid, with slight impaction.

This leads us to say a few words as to the mechanics of these fractures.

The mechanics of a fracture of a carpus are closely related to those producing what is commonly called a Colles' fracture, the two occurring under very similar conditions, and with but a slight variation in the direction of the applied force. Fig. 2 will illustrate this point. If we allow the line A, B to represent the hand as it strikes the ground, then in case the arm should form the angle as described by A, B, D, we would probably, as the result of the fall, have a fracture of the lower end of the radius, for, as will be readily seen, the impetus or force would be transmitted by the metacarpal and carpal bones squarely, striking the lower end of the radius at an angle which generally results in a chipping off of a more or less extensive portion of this bone.

In case, however, the forearm and hand describe the

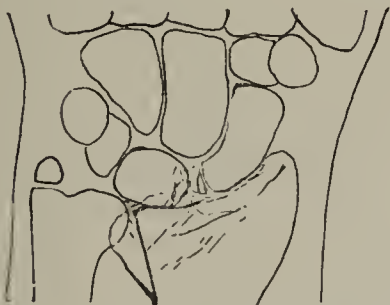


FIG. 4.—Diagram from radiograph No. 2266.—Fracture of the scaphoid and semilunar, accompanying a fracture of the lower articulating surface of the radius, and a fracture of the styloid process of the ulna.

angle A, B, C, with the hand either in full extension, or full flexion, it will be easily seen that we would have the bones of the forearm placed to the best advantage, and in this case we would have one of two things, either a fracture of one or more carpal bones, or a fracture or luxation about the elbow.

In children we are more likely to have the injury about the elbow, while in adults, in whom the elbow has become more solid, the damage is more likely to occur at the lower extremity. Here it is a fracture of the scaphoid that is the most common of the simple fractures of the carpus. This fracture may vary from a so-called sprain-fracture, caused by the tearing away of a very minute splinter of bone by the attached ligament to a complete transverse or impacted fracture of the bone itself. The latter fracture is no doubt caused by the os magnum being forced into the scaphoid, striking that bone on the lower or inner side of the arch, thus breaking it in the line of least resistance.

The fractures of the other carpal bones are no doubt caused in very much the same mechanical way, practically hammered or split in half between 2 other bones that for the time being are stronger, or have a relatively more favorable position in reference to the direction that the lines of applied force are traveling. The carpal bones that have been found injured in this series of cases are the scaphoid, the os magnum, the semilunar, and the cuneiform, either in combination or alone. The number of times that the scaphoid seemed to be the principal bone involved was in 18 out of a total of 33 acute or recent cases.

Every one will admit, that, to be able to treat any injury or disease in a rational or satisfactory way, it is of the greatest importance to know exactly the nature or location of the injury or disease. With a complete

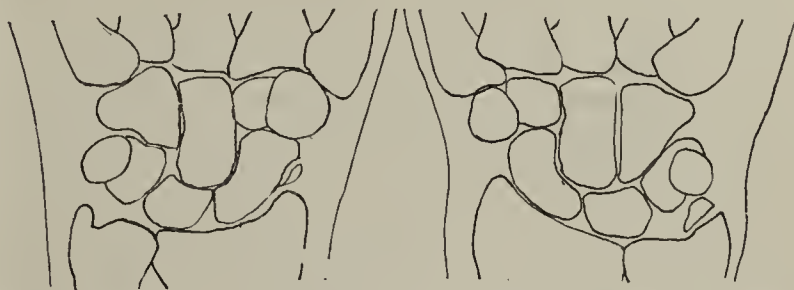


FIG. 5.—Diagram from radiograph No. 2796. Shows a sprained fracture of the scaphoid in left wrist, and an old ununited fracture of the styloid process of the ulna in the right wrist.

and satisfactory diagnosis the rational treatment of an injury is very much simplified. This is to a large extent due to the confidence that is inspired by knowing exactly the ultimate results to be obtained by treatment. The reason, no doubt, that more of these fractures have not been recognized, even by means of the x-rays, is that many of them are somewhat obscure, the lesion not being extensive and there being little or no displacement. The lines of fractures are sometimes more or less hidden, and are seldom easily recognized in the somewhat complicated shadows cast by the normal carpal bones.

The safest, or rather the only, way to get a satisfactory picture or positive information, is to take both wrists on the same plate under precisely the same conditions. This may be readily accomplished by covering one-half of the holder containing the photographic plate by a piece of sheet lead. In this way we can expose one wrist on the uncovered portion of the plate, then by covering up the exposed portion of the plate, and moving it so as to bring the unexposed portion to occupy exactly the same position under the tube that the exposed portion had, we can obtain a radiograph of the other wrist, in practically the same plane. If we now develop this plate sufficiently to bring out all the minor details, we will have a negative that may be readily studied, and by carefully comparing the two

wrists bone for bone, we can easily distinguish and detect even comparatively slight differences. This plan is illustrated in Figs. 1 and 5. These diagrams are outline drawings from the original negatives, and demonstrate the advantages of the plan very well.

There are several minor details that we must not lose sight of. A very slight change in the relative positions of the wrists will produce a corresponding change or

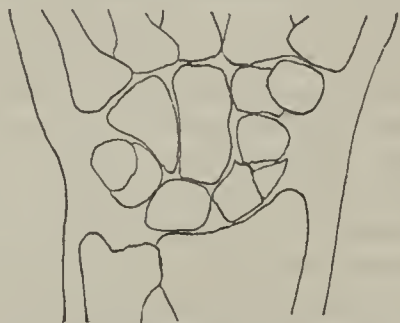


FIG. 6.—Diagram from radiograph No. 2097. Shows a comminuted fracture of the scaphoid.

apparent difference in the shadows of the resulting radiograph. Even normal wrists may show a slight difference in the development of the various bones or in their densities. We have seen several cases in which, even after a number of years, no bony union had taken place between the fragments. A case of this kind is apt to be mistaken for a recent fracture unless we take into consideration the history and also the clinical symptoms.

Fracture of one or more carpal bones may accompany a fracture of any of the related long bones of the hand or wrist. Or, as in several cases that we have seen, the fracture of a long bone may be secondary to that of a carpal bone and may be produced by muscular energy, such as a fracture of the styloid process of the ulna. This latter fracture is probably produced in a similar way as is the corresponding fracture when it accompanies a fracture of the lower end of the radius. The injury of one or more carpal bones, in connection with a fracture of one of the long bones, was noted in 9 cases. Figs. 3 and 4 illustrate cases of this kind. Both of these injuries resulted from falls from a considerable height. Fig. 3 is taken from a radiograph of the right wrist of J. R., 42 years of age, who fell from the roof of a shed, a distance of 12 or 14 feet, striking the palm of his hand. In this case the force was probably a glancing one, and the direction seems clearly indicated by the three bones involved, the os



FIG. 7.—Diagram from radiograph No. 2645. Comminuted and impacted fracture of the scaphoid, caused by a blow on the palm of the hand.

magnum, the scaphoid, and the styloid process of the radius. Fig. 4 is from a radiograph of the left wrist of J. S., 23 years old, who was admitted to the German Hospital on October 24, 1899, with a fracture of both wrists. The right wrist had an impacted fracture of the radius and a fracture of the styloid process of the ulna, while the left wrist, in addition to the fracture of both

long bones, showed a fracture of the scaphoid and the semilunar.

Writers on the subject of fractures, as a rule, content themselves by speaking of fractures of the carpus as being very rare, and usually caused by direct violence, such as a crush between heavy weights. According to the observations that we wish to record here, neither of these remarks can be accepted as being absolutely correct. We have seen in less than three years, 52 cases in which one or more of the carpal bones had undoubtedly been injured at some time, and in which the patients were at the time suffering pain, or were being inconvenienced by the injury or its effects.

The patients who applied for treatment within two or three weeks of the initial injury, we may class among acute cases. These numbered 33, or a total of more than 20% of all the fractures involving the bones of the hand and wrist, and nearly 5% of all the fractures that were treated at the German Hospital during that time. Of the chronic cases, 19 in number, some were of more than twenty years' standing. One case in which the wrist had been sprained nearly 25 years ago, still showed the initial lesion to have been a fracture of the scaphoid. In this latter case there was apparently more or less motion between the two fragments, and this probably accounted for the persistent pain and inconvenience complained of by the patient.

As to the statement that fractures of the carpus are



FIG. 8.—Diagram from radiograph No. 2847. Fracture of the scaphoid, also shows a deformity of the ulna following a fracture of that bone, and likely to be mistaken for a pathological condition in a clinical examination.

usually caused by direct violence, the histories gathered from 52 cases give but 9 in which there is a clear history of a blow or crush at the carpus. Five gave a history of having been struck on the palm of the hand, the missiles varying from a steamhammer in one case to a baseball bat in another. In 19 cases the patient gave a history of a fall on the palm or back of the hand, the distance in each case not being more than about six feet. In 13 cases there was a history of having fallen either a considerable distance, or from a moving object. In 6 cases no definite or satisfactory history of the initial injury is on record. The latter are among the chronic cases in which the radiograph was taken to discover the cause of a persistent ankylosis or necrosis. Among the patients enumerated, there were 45 males and 7 females. The right wrist was involved in 30 and the left in 22 of the cases, while the age of the patients varied from 15 to 66 years.

The following table gives the approximate ages of the patients when under treatment:

Age.	15-19.	20-29.	30-39.	40-49.	Over 50.	Total.
Acute....	6	11	5	7	4	33
Chronic.	2	6	4	3	4	19

A cursory glance at the appended age-table of the cases reported here will impress us with the fact that this injury would seem to have a tendency to occur during the age of an individual's greatest usefulness, or at the time of his greatest earning capacity, so that, from an economic point of view, the proper treatment of these cases should be of great importance.

A few cases to illustrate the various types of injury will not be out of place here.

Fig. 5 illustrates a case of "sprained fracture," an outline drawing from the radiograph of J. S., 66 years of age, who, several days before he applied at the hospital for treatment, was run into and knocked down by a bicycle. He complained of considerable pain in the left wrist, especially on motion; the wrist was also slightly swollen. A radiograph of the left wrist showed a separation of a very small fragment of bone from the outer edge of the scaphoid, while the accompanying radiograph of the right wrist seemed to show a fracture of the styloid process of the ulna. Here is a case in which the simple "say so" of the radiograph would be misleading. Upon inquiry it was found that the patient had sprained his right wrist some 30 years before, the joint was a long time in regaining its usefulness, but, as the patient put it, "had given him but little trouble of late years."

Fig. 6 represents a comminuted fracture of the scaphoid, the history as recorded in the case-book is terse. J. B., 30 years of age, while chasing a horse, fell over a dog, striking on the palm of his hand; supposed to have sprained his wrist. Fig. 7 shows an impacted fracture of the scaphoid. The patient in this case was at work at a steamhammer, and in



FIG. 9.—Diagram from radiograph No 1993. Old fracture of the scaphoid, with displacement of fragments and considerable inflammatory exudate or callosity, involving the styloid process of the radius.

putting up his hand as a signal to stop the machine, was hit on the palm of the hand by the falling hammer.

Fig. 8 is probably particularly interesting only from the peculiar callus or growth on the ulna, the result of an old fracture of that bone 17 or 18 years before. The fracture of the scaphoid in this case is a simple one, though there is more than the usual deformity. The patient gave a history of falling on the palm of the hand, and complained of much pain. In this case the physical examination was misleading, as the callus on the ulna was mistaken for an acute condition.

Fig. 9 is an outline tracing from an old case of injury to the scaphoid. The patient, L. L., 35 years of age, came to the hospital on July 7, 1899, with a history of having sprained his right wrist some 9 or 10 years before, by falling on the palm of the hand. At the time, the wrist was very painful, and it has given him more or less trouble ever since. He has been treated repeatedly for what was supposed to be rheumatism. During the past 2 or 3 years the joint has become progressively worse, and when admitted to the hospital was much swollen, inflamed and practically ankylosed. The patient said the joint had been in this condition for several months, and that he has not been able to use the hand for several years. The diagnosis in this case was an arthritis caused by persistent irritation and the consequent inflammation of the joint. There was also some necrosis and breaking down of the fragments.

There are two forms of arthritis that are apt to be mistaken for one following a fracture of the carpus. These are:

Rheumatoid Arthritis.—Here the previous history is of great importance, an initial attack of rheumatoid ar-

thritis at the wrist-joint is rare. The x-rays, in these cases, are also of great value, by showing the ulceration or destruction of the cartilages. Even in well-advanced cases when there has been more or less destruction or necrosis of the carpal bones themselves, the resulting radiograph would still distinguish between an old fracture through the body of a bone, and a necrotic process following the destruction of the cartilage surrounding the bone. In the case of a fracture we would have a more or less clean break of the bone, with inflammatory exudate surrounding it, while in the case of rheumatoid arthritis, we generally have a more or less irregular breaking down of several of the carpal bones.

The arthritis following the prolonged immobilization of the wrist-joint, for a fracture or other injury about the lower end of the forearm. This, unfortunately, is a form of arthritis that is not infrequent with the general practitioner, who, in many cases seems to think that it is necessary to tie up a fracture at the wrist for six weeks or two months so as to get good union between the fragments, before allowing the patient to use the arm. In these cases the radiograph usually shows a more or less general diffusion of inflammatory exudate throughout the carpus. This, of course, may ultimately break down and will then present the same necrotic appearance that we see in the advanced cases of rheumatoid arthritis. The history of an injury, or the finding of an old fracture of one of the long bones at the wrist, will aid materially in distinguishing this form of arthritis from either of the others.

In fracture of the carpus there is seldom any displacement, consequently no replacement is necessary; and while it is undoubtedly true that the injury is seldom extensive, still the recognition of the lesion is of great importance, so as to be able to prevent by rational treatment the sequels that are likely to follow injuries about a joint.

A word as to the treatment—the wrist must be kept quiet for from two to three weeks, so as to allow the repair of any injury to the soft tissues, then careful massage should be used. This in fractures of the carpus is of very great importance, as it has a tendency to facilitate the absorption of inflammatory exudate that is generally thrown out quite freely at the seat of fracture, and especially if the fracture involves a joint.

SOME PHASES OF THE TUBERCULOSIS PROBLEM IN COLORADO.¹

By S. G. BONNEY, A.M., M.D.

Professor of Medicine, University of Denver; Visiting Physician, St. Luke's Hospital.

THE present interest attached to this subject, with its vital relation to pulmonary invalids as a class and to the resident population of Colorado as well, renders it fitting and opportune to call attention to a few practical considerations concerning the rationale of the problem and methods of solution.

There exists in Colorado not only an appreciation of the communicability of tuberculosis and the necessity for rational preventive measures, but also, unfortunately, a somewhat unreasoning fear as to the dangers of direct infection, despite strict conformity to recognized precautionary steps. There has developed an increasing

¹ Read before the American Climatological Association at Washington, D. C., May, 1900.

popular prejudice against the ordinary association with the consumptive, and a beginning sentiment against the further importation of individuals afflicted with the disease. The early feeling of apprehension among the people with reference to what appeared a somewhat mysterious but ever-present danger of contagion has grown to a sense of alarm. The agitation originally conceived through scientific knowledge applied to public health, is giving birth to a somewhat ill-proportioned and ignorant crusade. There result embarrassing difficulties in the way of securing adequate accommodations for the consumptive, and much unnecessary humiliation, with lack of moral encouragement, to those entitled to every sympathetic consideration.

Have the actual exigencies of the situation been sufficient to justify in the interests of society the development of a somewhat immoderate professional attitude and an intolerant popular sentiment? Is it not well to propound a deliberate inquiry from an impartial standpoint relative to their causes and justification?

My position is defined with emphasis in hearty support of the admirable efforts of the health authorities, and with contempt for the indifference of those who refuse to cooperate in the rigid enforcement of regulations tending to the restriction of the disease. I am not in sympathy, however, with an agitation not warranted by the facts and tending to create alarm. While the attraction of our climatic conditions has become a serious question for our resident population, it is apparent that the present local sentiment is but partially justified by actual conditions.

Public attention has been repeatedly drawn to statements emanating from the Health Departments relative to the increasing number of cases of pulmonary tuberculosis reported to have originated in Colorado. Unequivocal interpretations have been promulgated by some physicians to the effect that the source may be ascribed to direct contagion, and that as a logical deduction tuberculosis is likely to become an important indigenous disease in Colorado, entailing future ruinous effects upon her communities. I am unable to accept the evidence presented to substantiate the alleged increase of consumption contracted in Colorado, and submit that the data as yet introduced are altogether too meager to warrant such conclusions.

Some years ago, in presenting a paper before the Colorado State Medical Association, I protested against a popular premature verdict concerning this subject. In support of my position then taken and, I believe, now to be confirmed, I will refer very briefly to portions of my previous article, with such statistical addenda as have been furnished subsequently.

"A review of the material offered as evidence to establish the large proportion of cases developed in Colorado to those contracted elsewhere, indicates that the chief source of information is found in the records of the Denver Health Department. In the annual report for 1896 it is stated that the number of deaths during the past year from tuberculosis developed in Colorado 'is a little more than $\frac{1}{6}$ of the total tubercular death-rate.' It is also noted that the percentage of deaths from tuberculosis contracted in this State has been progressively increasing. In 1893 the proportion is stated to be 11 $\frac{1}{4}$ %; in 1894, 13.7%; in 1895, 15%; in 1896, 18.4%."

Later reports from the Health Department show the proportion in 1897 to be 18%, and in 1898 19.7%. The source of information upon which these statistics have

been compiled has been the returns upon the death certificates.

"I must insist that the *percentage of deaths* is by no means a fair criterion of the proportion in Denver of cases said to have developed in Colorado to those contracted elsewhere. The pulmonary invalid from a distance, with hopeless prognosis, is usually advised to return to his home. Comparatively few of such cases, fortunately, are permitted to die in Denver, removed from family and friends. The proportion, then, of 1 to 6 does not properly apply, as might be inferred, to the existing cases of tuberculosis in Colorado.

"It is easy to demonstrate the fallacy of the alleged rapid increase in the percentage of deaths from tuberculosis contracted here.

"It is apparent that a change may be effected in a given ratio by a change in *either* of its terms. In other words, the percentage of deaths from tuberculosis developed in Colorado may be increased from year to year by reason of an increase in the number of such deaths, the total tubercular death-rate remaining unchanged. Likewise, the proportion is increased if the number developed in Colorado is constant, provided the entire death-rate from tuberculosis is diminished.

"While the figures of the Health Department show the *percentage* to have very rapidly increased, the actual number of cases originating in Colorado is but slightly larger for the four years, while the total number of deaths from tuberculosis is considerably less; thus, of course, effecting an increase in the proportion, but possessed of no further significance. Thus in 1893, the total number of deaths from tuberculosis is reported as 435, of which 49 are specified as contracted in Colorado, establishing the percentage of 11 $\frac{1}{4}$. The next year the total number was 377, a diminution of 58, while the number contracted in Colorado was 51, an increase of but 2 cases for the entire year. It is obvious at once that the increase is entirely insignificant, yet the proportion is published as being 13.7%, a gain of 2.5% in the deaths, originating in Colorado for the year."

An analysis of the statistics for 1895 and 1896 gives practically the same results. The number of deaths in 1896 is but 2 more than for 1895, and but 17 more than for 1893, in spite of an increase in that time of 26,000 in our population. Yet the percentage is much increased in 1896 on account of a diminution of 60 in the total tubercular death-rate.

It is of much interest to note that the statistics for 1899 recently furnished by the Health Commissioner are decidedly at variance with those previously reported, and serve to some extent as an official refutation of the alleged rapid increase of pulmonary tuberculosis in Colorado.

Despite an increase of 50,000 in the population of Denver since 1893, the number of cases specified as having developed in 1899 is but 4 more than in 1893, and the percentage of such cases to the total deaths from tuberculosis is but 9.9, about one-half of that reported for the three previous years, and less than any proportion which has been determined since 1893. The compilation of these statistics was based upon the same official sources of information and with the employment of the same methods as in previous years.

The practical significance of a material annual increase in the population has not been considered in the system of computation thus far employed. Admitting the possibilities of error necessarily attending any method of determining the relations of indigenous

consumption, I can suggest none more satisfactory than the proportion of such cases to the population. Accepting the figures of the Health Department relative to the population of Denver, and the number of deaths from primary tuberculosis during the past seven years, the percentage of such deaths per one thousand inhabitants is found to vary but little from year to year, the proportion being less in 1894 than in 1893; in 1896 slightly less than in 1895, and in 1899 0.30% as compared with 0.36% in 1893.

A factor of no inconsiderable importance is the strong inherited susceptibility of a portion of the younger population in Colorado. Manifestly, in view of the special predisposition, such infant cases should not be recorded as instances of deaths from indigenous tuberculosis. A great majority of these are cases of tubercular meningitis, recognized as developing largely from previously infected bronchial glands rather than from external sources.

While, at first thought, observations concerning tuberculosis in the native born appear particularly conclusive, it becomes apparent that they possess but little significance in support of the supposed evidences of an alarming and widespread dissemination of the disease through direct contagion. It seems proper, therefore, to emphasize the fact that, of all the cases reported to have died from tuberculosis contracted in Colorado during the past 7 years, nearly one-fourth were in children under 4 or 5 years of age, 85% of whom died of tuberculous meningitis. In 1897, out of a total of 88 cases of indigenous tuberculosis, 22 were under 4 years, and 19 died of tuberculous meningitis.

A further consideration is the absence of proof that cases, reported to have developed in Colorado, were actually contracted there. Much testimony has been adduced in recent years, demonstrating the extraordinary frequency of unsuspected tubercular infection. Under changed conditions in subsequent life, an active process supervenes, as the individual resistance is lessened. In view of the large number of people who come to Colorado to remain indefinitely with invalid relatives and friends, frequently undergoing hardships and privations themselves, and thereby diminishing their resistance, is it not highly probable that some may develop an active condition from an infection previously latent? The fact that an individual exhibits physical signs of tuberculosis 1 or 2 years after arrival is no evidence that the disease was originally contracted in the State. No case should be thus recorded without recourse to a diligent investigation concerning the history. While, under certain conditions, direct contagion is an accepted possibility in Colorado, as elsewhere, I submit that a reasonable interpretation of official data fails to indicate that consumption contracted there is actually increasing to any extent. If it is, it remains to be demonstrated by statistical observations not as yet introduced.

On the other hand, much clinical testimony has been presented, tending to establish the relative infrequency of such cases. As far as I have been able to observe from the experience of others and my own, there has been in almost every case abundant reason for the development of the disease by virtue of marked inherited taint, the presence of some recognized predisposing cause, environment, occupation, or special exposure. In view of the foregoing considerations, I protest against dogmatic statements relative to the danger of contagion and the spread of tuberculosis in Colorado.

It must be remembered, however, that the influx of consumptives in all stages of the disease and in every condition of financial distress, constitutes an economic problem not to be ignored. The somewhat indiscriminate character of the cases sent to Colorado is not such as to appeal to popular welcome, nor inspire sympathetic and mutually cordial relations. Unfortunately it is the advanced case that is more frequently observed. Many come to the State as a place of last resort, having vainly sought improvement elsewhere.

A reference to my own statistics, previously reported, shows 71% of all the cases to arrive with distinct evidences of tubercular infection in each lung, with a total average period of delay before arrival following the development of the disease of a little over eighteen months.

A large class with no conception of their individual needs, and with mistaken ideas as to conditions found, are hurried to Colorado, impoverished financially, expecting to secure immediate employment. Many are compelled to work for a pittance in order to supply the most pressing necessities; others are doomed to disappointment even in this, and are obliged to seek assistance in order to return home, or become a charge to the State.

Serious hardship is reflected upon the resident employee and his family in being forced to compete with the cheap labor of the unfortunate consumptive in his desperate strait. The frequent spectacle of hopeless cases removed from home, family and friends, tends to inculcate public pessimism and unbelief in the possibility of ultimate arrest of the disease in general, to retard charitable impulses and interested efforts for the relief of those less seriously afflicted.

At the same time the struggle for work and the meager compensation allotted a portion of the population, added to an exaggerated notion of the practical dangers of contagion, serves to awaken a sense of resentment, and to impair to some extent natural humanitarian instincts.

It can hardly be said that the consumptive with such limited resources profits materially from the hardships unwillingly imposed upon others. Whether successful or not in securing employment, the battle for him is necessarily against great odds, and the ultimate disastrous results afford a further commentary upon a state of affairs deplorable, and to some extent avoidable. With added care and discernment on the part of physicians elsewhere as to the character of cases referred, local conditions may be materially modified by a comprehensive system of public instruction and a conservative legislative control.

The first requisite should be compulsory notification and a properly conducted registration of all cases of tuberculosis. This does not imply isolation, personal humiliation, or interference with social or business pursuits. Quarantine for such a disease is neither desirable nor practicable in the interest of either the consumptive or the general community. To be in a position to receive competent instruction from some responsible source, either directly or, when feasible, through the medium of the attending physician, entails no hardship for the consumptive and affords added protection to himself and the public. Whatever burdens might be imposed upon the pulmonary invalid by reason of such a procedure would result purely through public misconception as to the manner in which the infection is conveyed, and exaggerated ideas as to the every-day dangers of contagion.

For such erroneous popular impressions, which have thus reacted to delay the practicability of more thorough protective measures, the medical profession is to some extent responsible, and should in turn apply the remedy; *i. e.*, the inculcation of more complete knowledge. With a capable and humane enforcement of notification and registration laws, there can be directed toward the consumptive and his family and the general public distinctive and separate methods of instruction. The invalid, through whose active and personal cooperation alone can success be attained in the effort for public protection, can be furnished with carefully prepared circular information, explaining the dangers of infection and reinfection, and describing in detail all necessary preventive measures, with an emphatic and insistent appeal for their observance. It is the infected individual to whom special efforts of this nature should be directed, rather than to the community, which is only influenced thereby to an inflamed public sentiment without the accomplishment of practical benefits.

For general distribution, official information should be essentially of a reassuring character. The public should receive instruction from responsible sources concerning the comparatively few methods of possible infection. Full explanation should be made of the exceedingly slight danger of contagion from an intimate and prolonged association with the consumptive under certain precautions, compliance with which prevents him from becoming a source of danger to the community. It should be made clear that the disease never results from a single exposure; that the infection is comparatively slow and incremental in character. Emphatic announcement should be made of the fact that the mere presence of the bacillus is not the sole factor in causing the spread of tuberculosis; but that an element equally potent and necessary is the individual predisposition; that without lessened general resistance and increased vulnerability of the tissues, the soil is not receptive to the bacillus and to infection.

To maintain a high degree of resistance in those already predisposed, and establish greater immunity for all, the argument should be advanced in favor of greater individual attention to mode of life, occupation, and environment, including the hygiene of the home, and a degree of governmental inspection and control, with especial reference to the construction and ventilation of public buildings, churches, schoolhouses, theaters, libraries, tenement-houses, factories, commercial establishments, and conveyances.

The question of legislative interference with marriage and other matters involving the liberty of the consumptive, and disturbing his relation to his family and society, should receive no mention in official public communications as being at present both impracticable and unwarranted. A problem so delicate can never be fairly adjusted by recourse to arbitrary legal enactments based upon the medical principles of marriage-selection and social aspect of procreation. More properly is it within the province of the physician in his advisory capacity to exert such an influence as may be indicated in his own judgment and justified by circumstances.

It is not too great an assumption to hope that, with the adoption and intelligent elaboration of such a supervisory and educational system, there may be afforded adequate protection for the community without an abatement of kindly and humanitarian feelings toward a large, afflicted class of our fellow-beings.

RUPTURE OF SYMPHYSIS PUBIS DURING PARTURITION, WITH REPORT OF CASE.¹

By G. A. HIMMELSBACH, M.D.,

of Buffalo, N. Y.

Assistant Attending Physician of Buffalo General Hospital.

IN presenting this brief paper, I shall make no attempt to advance anything new or original, but simply to review the clinical history of the case, with some few references as to the literature on the subject. The details of the case will suggest to you the fact, that we as physicians are too often unmindful and, I might say, too heedless, of the possibilities of what at first appear to us normal cases of obstetrics.

Rupture of the pelvic articulation is not new, for it has been known in medicine since the time of Hippocrates. The accident, however, is of unusual occurrence, and this may account for the dearth and brevity of references I have been able to find.

Several able authorities have written monographs on this theme, but, I am sorry to say, that it is too frequently overlooked by obstetrical writers generally.

Probably the most complete work on the subject in the English language is an essay by Dr. Frederick G. Snelling, in the *American Journal of Obstetrics*, Vol. II, No. 3, February, 1870. Parvin says that the accident occurs in labor only in rare instances, and is known as "rupture of the joint." This is preceded by a physiological condition of softening of the articular surfaces, causing a relaxation of the joint. Osteomalacia predisposes to rupture of the joints, but the accident is quite rare in the rachitic pelvis. Pelvic contraction and great size and solidity of the fetal head, and unfavorable position have also been mentioned as causes. He mentions one instance where this accident resulted from the remarkable growth of the trunk of the child, requiring forceps for delivery. I find that in many instances the lesion has been attributed to the use of forceps. Havajewicz found that in 23 cases of separation of the symphysis, forceps had been used in 16.

Renny reports three cases, one in which forceps was used, and in the other two delivery was spontaneous. Ulsamer believes that rupture of the pelvic articulation from forceps is much more frequent than is reported.

Relaxation of the pelvic ligaments during the gravid state also contributes. Somone has said that it occurs, especially in women who have had pregnancies follow one another in rapid succession.

Pategrat says that sometimes there is really no rupture of the articulation, but merely a stretching of the pelvic ligaments. Stoltz, in connection with this, regards the relaxation of the pelvic ligaments as a result of a pathologic process, because the physiologic relaxation in most pregnant women could not possibly produce so wide a separation of the symphysis, as to render parturition more easy. It is then really of a pathologic nature and occurs either spontaneously or suddenly upon the employment of force, or in consequence of extraordinary natural efforts.

In 1875, Ahlefeld collected 100 cases of lesions of the pelvic joints, and in 1888, Schultz added 18 more to this list. Fordyce Barker has an excellent presentation of the subject in his work on "Puerperal Diseases." Trousseau has written an able paper on "Loosening of the Pelvic Symphysis." Snelling states that a certain degree of relaxation of the symphysis occurs in many

¹ Read at the sixteenth annual meeting of the New York State Medical Association, May 8, 1900, at Buffalo, N. Y.

pregnant women which may be regarded as physiologic.

Barker says the ligaments lose their firm and resilient qualities, the synovia is greatly increased and presses the bones asunder; the pelvis becomes incapable of sustaining the body and so gradually yields to the weight above; or some slight and insignificant movement of the patient suffices to precipitate the rupture. He also says there are so many distressing sensations incident to the lying-in period, that if the affection be but slight and nonpersistent, it is most natural to attribute it to the puerperal condition or to some uterine displacement or irritation. Women themselves are so accustomed to vague pelvic and uterine and lumbar pains, that they almost regard them as a natural heritage, and themselves assist in deceiving the physician by ascribing them to the uterine system. In a great majority of cases where this has gone to the extent which constitutes a pathologic condition, the characteristic phenomena are first manifest during the puerperal period.

There is no anatomic reason, so far as is known, why the one sacroiliac symphysis should be more susceptible to the rupture than the other, but from the investigation of Schauta, the accident most frequently involves the pelvic symphysis first, and next in order the right sacroiliac articulation. Rarely the two sacroiliac articulations are affected without the pubic. My case, as will be seen in the appended history, agrees with Schauta's experience, in the fact that both the pelvic symphysis and the right sacroiliac symphysis were injured at the same time.

Renny reports a case in which labor ended without any indication of the injury, but which was made known in some movements of the patient a short time afterward, there having been a "silent rupture." In this respect you will observe that my case again agrees perfectly in that there was no indication of injury, usually manifest by a sudden violent pain in the joint, and moreover there was no accompanying crack or snap commonly heard by those present. Should the injury not be detected at the time of the occurrence or while the patient is in bed, it is recognized when she gets up and attempts to walk. If she succeeds, Trousseau states that she waddles and drags one leg after the other. When the injury is suspected a direct examination of the joint with two fingers or with a thumb and fingers will detect it. It is also stated that if the pelvic articulation is injured, the lower limbs, when the patient is recumbent, will be everted.

In the treatment of this condition, two principles must be observed: first, antisepsis; and, second, immobilization.

Parvin says, if this accident occurs in labor it is important to redouble antiseptic precautions to avert all danger of infection. Dührssen has recorded 33 cases in which suppuration in the joint followed the injury.

The essential treatment, however, is a firmly applied bandage encircling the pelvis, which must be applied sufficiently tight and in such a way as to bring into contact the separated surfaces of the symphysis. A roller towel is a good improvised bandage. The union of the joint may take place in from 10 to 14 days, but sometimes several weeks or even months are required.

The following is a report of my case:

H. G., aged 25 years, primipara taken with pains October 14, 1899, at 10 o'clock A.M. I was called at 10.30 P.M. and found her pains strong, and every 6 to 8 minutes. On

bimanual examination, the external os admitted the index finger freely. The head was found presenting, with sutures and fontanel indicating the first position. The boy's pelvis to the examining hand appeared sufficiently large to freely admit the passage of the child without offering any unusual obstruction. No exact measurements, however, either with the hand and finger or the pelvimeter were taken. The vulval outlet appeared very small and the parts rigid and unyielding. At 1.30 A.M. the os had fully dilated and the head began to descend. The pains were strong and at short intervals; the head soon rested on the perineum, and here it remained fully 1½ hours, or until 3.20, when a male child was born; the third stage lasted only 5 minutes. Uterine contractions were good and, all told, a very slight blood loss. Upon inspection a slight median laceration was found, which was restored with silk with a perfect result.

Thus far the labor with the exception of the apparent vulval atresia was to all appearances normal and uneventful. I called at 11 o'clock the same morning and found the patient comfortable, except that she complained of the usual muscle-soreness, which I concluded was from the terrific strain. The next morning I found the patient lying on her back and was told by the nurse that she had found considerable difficulty in turning in bed. I paid little heed to this complaint, thinking that it was simply due to fatigue or muscle-tire. On the following morning, however, the nurse again called my attention to the fact of her patient's disinclination to move, and at the same time said that the soreness was localized to two areas, one in the pubic region and the other in the right hip posteriorly; and, moreover, the nurse wished me to explain to her why every time her patient attempted to turn on to her side, a loud crack or snap was heard, as if two bones were forcibly separated.

The snap was audible at a distance of several feet from the bed, and was not only heard by those present but was distinctly and painfully felt by the patient. This aroused my suspicion and I at once sterilized my hands and made a digital examination of the parts. I found the labia considerably swollen, which was not unusual, but by placing my hand firmly against the symphysis pubis and having my patient turn gently, a separation of the two bones was very plain; one pelvic bone would glide up and down over the articular surface of the other, according to the direction the patient was turned. My attention was now called to the sacral region, and here I found a swelling and ecchymosis over the right sacro-synchondrosis; my hand placed against this region elicited none of the motion that was so plain in the anterior joint. I had never seen a similar case, but my common sense told me that strict asepsis of the vulval region and immobilization of the hips were indicated. A strong and broad bandage, extending from below the breasts to one-third way down the thighs, was immediately applied, and the patient was warned to remain on her back and to move only when the functions of the bowels and bladder compelled her. Strange to say, all of this pubic disturbance did not interfere with her bladder function. My patient was kept on her back for 24 days; during this time I felt certain that the damage was being slowly but surely repaired. On the twenty-fourth day I felt safe in elevating the shoulders in bed, changing somewhat the position of the body, but not applying much pressure on the pelvic organs.

On November 8, I felt safe in lifting her into an inclined chair, but standing on her feet was interdicted for some time thereafter. When standing and locomotion (with support) was first permitted, the pain in

the pubic region was distressing, and this signal warned us to postpone further activity. For a couple of weeks more she was assisted from her bed into a reclining chair. Gradually, but cautiously, she gained her footing and the power to walk; but nearly two months elapsed before she could walk, and then only with considerable discomfort. Particularly was this so when she felt well enough to respond to the front door bell and attempted to climb the stairs, bearing her full weight alternately on one hip and then the other.

I saw her March 15, five months after the confinement; her gait was even (not waddling), but she still complained of pain at times.

CONCERNING CALENTURA.

By FRANK W. FOXWORTHY, M.D.

Captain and Assistant Surgeon, 34th U. S. Infantry, Lavag, Luzon, P. I.

IN tropical countries the term "Calentura" embraces anything from pernicious malarial fever to a simple pyrexia, and the natives often designate any febrile condition as calentura. But strictly it should be limited to that fever occurring usually during the months of December, January, and February, which exhibits the symptoms of a simple continued fever with a small mortality. It has been called tropical fever, gastric fever, remittent and intermittent malarial, and even abortive typhoid fever. The symptoms as shown in this country are usually a sudden rise of temperature to 104°, 105°, or even to 106°. This may or may not be accompanied or preceded by a rigor. In my experience it was not in 90% of the cases. The patient has the headache, malaise, furred tongue, anorexia of a high fever. In cases with temperature over 105° vomiting is usually present. Pains in the back, chest and legs are present. The patient complains of these pains, or of the intense soreness he feels, more than he does of his headache. He can't endure much jolting and groans with pain at any sudden movement. Some speak of the pains as resembling the ones present in la grippe. Others speak of the soreness of the back as of a soreness from a severe beating, while in some the feeling is as though their back was broken. In these cases the site of the pain is located in the lumbar muscles. In 80% of the cases here the pain is confined to some portion of the back. In the remaining cases the chest and legs are included. There is no rash or eruption of any kind and there is no definite time for recurrence of the fever, and no diarrhea.

In southern and central Luzon predisposition to the fever was especially marked in those who had insufficient covering at night. As the soldiers of the Thirty-fourth Infantry were detached to form a flying column to rescue Lieutenant Gilmore and the American prisoners they were stripped of all superfluous clothing. Every blanket was left behind, officers and men faring the same. The officers carried a change of underclothing; the men leaving even this behind. The ones first taken with this fever were those who after a hard day's work in water, failed to dry themselves thoroughly before sleeping, and having no blanket became thoroughly chilled at night. The heat of the sun of the following day soon caused them to drop out of the column with a raging fever. Others predisposed to the fever were the few men who were continually on the lookout for alcoholic stimulants, which was in the form

of the deadly "vino." These soon succumbed. When we reached the mountains, and especially mountain valleys, the cool mountain breeze seemed to bring the fever with it, and those who had not indulged in excesses and with a fair covering at night even became subjects of this fever. During the march the command had practically the same rations throughout, which were generally rice, native sugar, native buffalo or vaca, and sometimes bacon. The best water available was used for drinking purposes, but in many instances this had to be taken from rice fields or muddy streams, and no time was available for boiling it. Very few mosquitos were found from Manila to Aparri, and as there wasn't a single mosquito bar along all fared alike. I don't consider them as a factor in any sense in the production of this fever.

In the towns and cities situated in valleys in the interior I found the fever prevalent among the native Filipinos. At Bangued especially was there a large number ill. While there a number of telegrams from General Tino to Aguinaldo fell into my hands. Leaves of absence were asked for a number of insurgent officers and many of their men who were suffering from "Calentura." Almost every family had at least one member sick with the disease. The Native Provincial President had 5 children and his wife sick at once. From many talks with the residents of that city, the fever always came concomitant with a breeze or wind from the mountains. "Malo viento" they called it.

In the cities along the coast San Fernando de Union was the first one we found with any quantity of it. At that place there were 124 soldiers of the Maccabebe scouts and a few Third Cavalrymen down with the fever. The unaccustomed exposure of the native scouts to a high altitude and the cold nights with no covering for them made them all easy victims. At Namapacan, a few miles further up the coast, about 35 more cases of calentura had developed among the Maccabebees who were accustomed to the warm climate and low altitude of the southern part of the island. Later on, at Vigon and Lavag, cases of calentura were seen, but in diminished numbers. Lavag being from the mountains a little distant, very few were discovered even in the months of January and February. The cases at San Fernando and Namapacan were seen the latter part of November, at Vigon and Bangued in December, while January and February were spent in Lavag. While at Lavag it was noticed that every 10 or 12 days a cool wind blew from the mountains to the sea. The cases of simple continued fever commenced at the beginning of this wind. The town of San Miguel is at the foot of the mountains, 4 miles from Lavag. The fever appears there among the natives at the same time that it appears at Lavag. More are attacked by it there. The town of Dingros is 12 miles from Lavag, and situated in the Dingros valley. The epidemics of calentura are quite severe there and correspond to the "bad wind" from the mountains. At all the three foregoing towns the water-supply is from a swift-flowing stream, the Lavag river, which is clear and flows over a gravelly bottom. Its source is in the neighboring mountain range. There are some mosquitos at each place, of a small variety, but I have never been able to trace any connection between the presence of mosquitos and the calentura. Unfortunately, our march was so rapid that it was impossible to carry along that indispensable aid in tropical diseases—the microscope, and it has not been my good fortune therefore to have its help.

I have tried to eliminate the mosquito-theory and also the water-theory as means of propagation of the germ that causes this fever. As the Maccabees suffered from it in changing from a low altitude, from a life on or near the water, to the high, dry, and cool mountains; and as there was no definite time for the recurrence of the fever, it does not have characteristics like malarial fever. The Spaniards here do not consider it as a malarial fever. One of them who had lived in the Province of Batanzas for twenty years told me that he suffered but once from it, and that was during the first year of his residence in this country. He attributed it to the effort of his system to become acclimatized. His wife, however, a Spanish mestizo, born in this country, suffers from the fever several times each year. Her attacks are usually concurrent with her monthly sickness. In the cases occurring among Americans I have noticed recurrences as many as nine times in six months in the same individual, but no definite interval elapsed. The cause was attributed to some excess in which the soldier had indulged. In one officer four days of fever from 104.6° to 106.2° occurred the last week in November, 1899. He was then marching north from San Fabian. The same kind of a fever recurred on March 27, 1900, at Lavag, and he had had perfect health during the intervening time. He spoke of the same "grippy" pains which he had before, and like many others remarked on the similarity to "la grippe" which he had experienced in America. But these recurrences at indefinite intervals seem to differentiate this class of fevers from the successive and periodical crops of the plasmodium malariae, as does the sudden rise of temperature, without the customary malarial chill preceding.

The differential diagnosis from dengue is difficult. The mode of onset is the same. The rheumatic-like pains in the limbs and the intense distress in the back accompanying the initial fever are identical. But the terminal fever and the ever-present eruption and desquamation of dengue are entirely absent. Variola, however, with its high initial fever and the exceedingly sharp pains in the lumbar region of the back, also is much like calentura. The attendant vomiting, severe headache, and great prostration of variola are the early differences. Several times have I seen one mistaken for the other. One of the mistakes was very vividly impressed on my mind. Private R., Company F, 34th U. S. V. Infantry, on the night of December 3, 1899, had severe pains in legs and back, temperature 106.2° . As this followed a hard march that day and I had several others with similar temperature and pains, the diagnosis of calentura was made. The next day occurred the battle of Tanguadin Pass, and all sick were left three miles in the rear. On the following day R., still having the same pains and from his own account a high fever, was picked up by General Young's wagon-train and carried to Vigan. At that place he was treated by two assistant surgeons of the navy at a temporary hospital. On December 6, the third day since I saw him, he walked into the hospital I had established at Vigan for the wounded of the Tanguadin and Vigan battles. At that time he was carrying his bedding and feeling first-rate. But there were about a dozen of the true vesicles of smallpox on his face. He was at once placed in an isolated building. The next day a case of smallpox developed in the wards which had been diagnosed by the surgeon in charge of the ward as "calentura." It is often impossible to dis-

tinguish between the two until a couple of days have passed.

Typhoid fever will not be diagnosed in a case of calentura, on account of the temperature-chart, absence of epistaxis in calentura, absence of abdominal pain and borborygmus, absence of the typhoid eruption.

The treatment among the natives is to wrap a cloth tightly around the head and lying down wear the fever out. I have never seen any benefit from this plan. However, it is universal among the Filipinos to tie tight bandages around the affected organ or where the pain is felt, no matter if it be an asthmatic chest or a pregnant uterus. The native physicians give an emetic and follow with large doses of quinin, a gram being the size of some of the doses given. They do not understand the Brand system of cold baths, nor do they fully comprehend the benefits of the coal-tar products. In the first case of calentura I tried quinin in small, and then large doses, but so far as I could determine no specific effect ensued; only the antipyretic action incident to large doses. I came to the conclusion then that the native physicians used quinin because of no better antipyretic available, and also from long-established usage. Quinin could be secured in most large towns, while other antipyretics were not to be had. In treating the Maccabees at San Fernando each one of the 124 were stripped and given a cool bath, followed by an antipyretic. When on the march a soldier would suddenly be taken ill with the calentura he was placed on the bottom of a caribou cart which was impressed into service at the nearest village. Fifteen to twenty grains of phenacetin or antipyrin were given him and a banana leaf put over him. In this fashion he would be pulled along in the rear of the column. If we had a little malted milk, it was given; if not, some rice and chicken soup. In two or three days he would be able to resume marching. The large doses seemed specific in action, as I rarely saw a recurrence. In the Abra valley, especially at the capital, Bangued, I used acetanilid and antipyrin with excellent success. About 20% of the population were sick with calentura during my stay there, and most of those brought to me were relieved by a simple purgative and one dose of an antipyretic. Cool baths would have been used also but for the fact that water was scarce and had to be carried two miles. However, after the fever was allayed the soreness in the loins and legs often persisted for several days. This was combated by a liniment of equal parts of kerosene, cocoanut oil, and vino, three ingredients to be had anywhere in Luzon, which was thoroughly rubbed into the affected parts.

Calentura is rarely fatal in this country. The short duration takes away the dread of it. Out of over 900 cases I have personally seen, only 3 were fatal. One of them was an old lady in her dotage, living in Bangued, in the province of Abra; her weakness was such that any disease would carry her off. The other two were little Maccabee scouts, too small to be soldiers, who had endured unnumbered hardships and exposures in the mountains near San Fernando de Union. They were brought down to the city too weak to eat their ration of rice, and having had no medical attendance, both suffered the typical symptoms of calentura, one dying just before our command entered the city, and one just afterward. In all these cases death seemed to be due as much to other causes as to the fever itself.

Finally, whether this fever will be designated as one of the obscure varieties of malarial fever, or will be

known as a distant relation of "influenza," which it simulates often in epidemic form, or whether it will continue to be one of the many unclassified fevers of the tropics with only a local appellation, time and the microscope will decide.

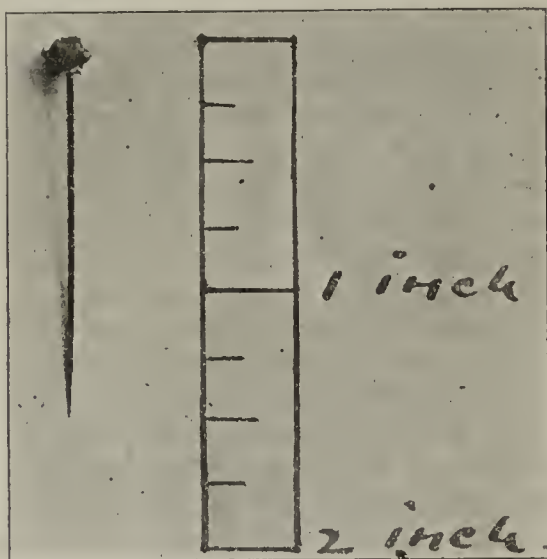
APPENDICITIS: PIN IN APPENDIX.—ABSCESS OF LIVER.—PURULENT PERITONITIS.—DEATH.

By E. H. TROWBRIDGE, A.B., M.D.,
of Worcester, Mass.
Surgeon to Worcester City Hospital.

A. P., aged 33, married, laborer, examined December 27, 1899. Family and personal history not important. Present illness dates back to December 10, 1899, when he came home from work complaining of chill accompanied with pains in all parts of the body. In the course of two or three days the pains ceased, and since then has had pain over the region of the stomach, and being unable to take a deep inspiration.

Physical Examination.—Pulse, 112; temperature, 100.2°; respiration, 25. In the lungs there were audible a few diffused, squeaky sounds. The heart was negative. The liver was enlarged upward. On the right side, just below the margin of the costal cartilages, and over the epigastrium, considerable tenderness on moderate pressure was elicited. Below the costal margin in the right mammary line there is a small area of swelling and increased tenderness, from 1½ to 2 inches in diameter. The abdominal muscles were very rigid, so that deep palpation was unsatisfactory. The urine, negative. From the date of entrance to the hospital (December 27) to the 31st, he had at various times attacks of severe abdominal pain, accompanied by green vomit. The abdomen became more distended and more tender. On December 31, in the morning, he had an attack of severe pain on the right side, lower down in abdomen than on previous days. The abdomen was universally sensitive and greatly distended. He had two attacks of vomiting, the vomit being green in color. The perspiration for two days had been profuse.

During the morning visit on December 31, 1899, I was asked to see the patient and the examination revealed the following: The patient has a pasty color and an anxious look. Pupils dilated; he sweats profusely; the tongue is thick and covered with white coat. He is nauseated and vomits a dark, green fluid. The chest is negative. The abdomen is uniformly distended and extremely rigid; a *boggy feel*, though nothing definite can be felt; he lies with limbs drawn up, and has slight tremor. Leukocytosis, 28,000. The abdomen was barrel-shaped.



At the time of examination it was evident that there was pus in the abdominal cavity, and the writer believed then that the appendix was the primary cause of the condition of the patient. An exploratory incision was advised and the patient prepared for operation, which was done on the afternoon of the 31st. An incision, 4 inches in length, was made in the right linea semilunaris, commencing just below the costal margin. The abdominal cavity contained a large

amount of seropurulent fluid; the bowels in the immediate vicinity were covered with pyogenic membrane—evidence of purulent peritonitis. The liver presented a dark and mottled appearance, but no evidence of a pus-cavity could be located by the hand, which was passed up and over the left lobe and the right lobe; the fact that the surface of both lobes was uniform in smoothness to the touch was due, I believe, to the immense pressure and distention.

On enlarging the incision downward toward the appendix, the bowels were seen covered by a purulent exudate, and



Appendix with pin in place, the head of pin in the distal end, and the remainder of appendix slit open.

the abdominal cavity filled with the seropurulent fluid as was first observed. The appendix was covered with this purulent exudate. On examining the appendix something hard could be felt in it and at its distal extremity a nodule could be seized by the thumb and finger. The appendix was drawn out of the wound and amputated; the stump was inverted and sutured. The abdominal cavity and the pelvis, in which there was a large amount of this seropurulent fluid, were thoroughly irrigated with normal salt-solution.

While this was being done, the appendix was slit open, and from it was removed a small shawl pin an inch and one-half in length. The base of the appendix was immensely thickened,—nature's method to protect the part from the point of the pin and prevent dangerous consequences. After irrigation the incision was closed, as in emergency cases, with silk sutures which were passed through the abdominal wall. A small opening was left through which passed the strip of gauze packing. The patient's condition at the end of the operation was fair; it was necessary to administer stimulants during the operation. The pulse was 140 and the temperature 102.6°.

From this time on until January 3 the vomiting persisted, the peritonitis continued and patient died at about 4.15 of the afternoon of that day.

On the patient's being questioned as to his swallowing the pin, he stated that he had no recollection at all of swallowing it.

There were present at the operation, Dr. G. H. Tripp, who sent the patient into the hospital, and Dr. Wesley Davis, of the medical hospital staff, who had charge of the patient up to the time of operation.

At the autopsy on the 4th, Dr. F. H. Baker, pathologist to the Worcester City Hospital, found three abscesses in the liver, one in the left lobe which had ruptured and two in the right lobe.

¹ Reported February 14, 1900, at meeting of the Worcester District Medical Society.

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GEORGE M. GOULD, M.D., *Editor*

Collaborators

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D. L. EDSALL, M.D.
D. RIESMAN, M.D.
J. M. SWAN, M.D.

M. B. TINKER, M.D.
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Home Rule in Medical Ethics.—When gentlemen join their efforts for carrying out a work which they have at heart they do not inquire as to the private opinions of the members on subjects which do not concern the undertaking in hand. When scientific medical men form an organization for prosecuting scientific research and for advancing medical art and education, why should they look into each other's personal opinions upon matters which do not directly relate to scientific things, and over which men will eternally differ? Home rule is of the essence of republicanism or democracy, and surely of that of the American type. Upon questions of medical ethics practitioners will forever differ when it is attempted to reduce these principles to definite hard and fast binding rules. Why, therefore, should not these things be left to the local organizations, who when they elect delegates to the national societies (the American Medical Association and others) assert that these are duly authorized to represent them in scientific things, and that the home organization is the best judge of the delegates' ethical qualifications? Let us unite the American medical profession, and, as a prerequisite thereto, let us have home-rule in medical ethics.

Scientific Milk-Supply.—The person who should secure for a city a supply of pure and rich milk would be more worthy of a place in a praiseworthy "Hall of Fame" than any so far included in the proposed New York list. There is, of course, no danger that the judges would include him in that farcical list, and it is more certain that he would not wish to be in it. We call especial attention to the report, in our foregoing issue, of the Philadelphia Pediatric Society. In it one will find the indication of a spirit which hardly exists elsewhere in the world than among scientific medical men. We mean the application of scientific principles to the prevention of human suffering by the very men whose livelihood at present comes from that suffering. Despite the popular ingratitude which turns to every crazy 'pathy and every idiotic sort of quackery which ingenuity can devise, despite the hatred of the profession by the rabid antis of a hundred kinds, we everywhere find the hated men straining to render their own calling useless, and for the good of the ingrates and haters. The illustrative work of this society to which we refer has a distinctive and unique value. Not only is it

doing the extremely important negative duty of freeing milk from noxious ingredients, but it is positively seeking to increase the nutritional qualities of milk so that this shall not only not harm, but shall have the greatest nourishing value. Such a work requires, as those know who have looked into the matter, more than a revolution in the occupations of farming, dairying, and milk-handling; it demands long education and persistently upheld consciences of every man engaged in these industries. It seems strange that while men give millions to alleviate the results of evil, or waste millions in self-flattery, few or none care about preventing the causes that bring about the bad results. We still await with ever fresh disappointment the coming of rich men who will endow organizations of preventive medicine. The death-rate and the sufferings, and the expenses of American life can now be reduced by one-half whenever a few rich men agree to utilize the good will and the good science of our profession in that work. If that benevolent man, Mr. Andrew Carnegie, would give us one-tenth of the money he proposes to give away each year, we would undertake to do ten times the good with it that he will effect with his nine-tenths.

Unchristian Unscience, not being the product of reason or of morality, is not, of course, affected, so far as concerns its adherents, by logic or by immorality. If it can withstand the riddling given by Purring-ton, and the laughter of Mark Twain, it may yet live awhile. But this is on the condition that the grinning death's-head of financial trickery do not bring it up standing. *Harper's Weekly* proves what has long been suspected, that the money of the faithful is cunningly used to bolster their faith, and bring more money, by the old arts of the advertiser and of reading notices. It says:

The present paragrapher noticed with interest the other day in an important newspaper published in one of the larger cities of New York State an account in detail, half a column long, of the recent appearance of Mrs. Eddy, the Christian Science seeress, at the State fair in Concord, N. H. The piece had a prominent place and an extended heading in big type, such as is given to important telegraphic news, but from peculiarities of type and other marks it was suspected that it was a paid advertisement. So it was, as was ascertained by inquiry of the manager of the newspaper. This is the first instance the present writer has noticed of the employment by Eddyites of patent-medicine methods. It is a natural development. There is a great deal of money now invested in Eddyism, and a good many persons get their living by it. No doubt skilful advertisement of its founder's triumphs is worth to some one whatever it costs.

Church Dispensaries.—The Rev. David H. Greer, a distinguished clergyman of New York, is much interested in a fine new dispensary which his church is about to build as an adjunct to its parish work. This fine dispensary is to cost \$200,000. The work to be done in it will, of course, be charity work, and will be done largely by and at the expense of the medical profession. Rev. Dr. Greer, whose attention has been called to the abuse of this kind of charity, has written a letter in which he shows that he is entirely satisfied with this scheme for levying upon the medical profession for church charities. He thinks that there has been a great deal of "cheap and superficial statement" about persons going to dispensaries who are able to pay. Such cases, he is quite sure, are exceptional. Too many persons, he complains, look at the subject from the professional point of view, and not from the point of view of the general public (and of Rev. Dr. Greer). The general public and Rev. Dr. Greer believe, of course, that the best kind of medical work is charity work. Rev. Dr. Greer says magnanimously that if he were holding a brief for "poor and incompetent physicians" he might have something to say against church dispensaries, but as the brief he holds is for the "mass of the people" he is strongly in favor of exacting tribute from the medical profession, and he thus implies that the poor and incompetent physicians are none of his concern. We would simply inquire of Rev. Dr. Greer where he obtained his brief for the mass of the people, and by what authority he speaks for any one outside of his own parish? Rev. Dr. Greer reminds us of the Englishman who proclaimed that he was for the Empire and Little Pedlington. In this whole matter it is plain enough to be seen that the easiest kind of charity is that which one man does at the expense of another.

Opsomania.—A new disease is always a thing to be welcomed, for it adds variety to life and, sometimes, to death. But when, with the advent of a new disease, there comes also the announcement of a sure cure for it, the event has a double interest for physicians. Opsomania is the latest new disease, and hypnotism is its remedy. Like dipsomania and pyromania this new creation in the world of pathology is a process of degeneration, but whether or not it has yet received the approval of Nordau we cannot say. We herald opsomania as a new disease because its discovery has just been announced by a very respectable newspaper, but we regret to say that when we come to look the subject up, we find that the newspaper, as is not unusual, is away behind the times in pathology. Opsomania has had a place in the medical dictionaries for some years, and was, if we mistake not, announced by the *London Lancet* as long ago as 1892. It is characterized by an uncontrollable desire for sweet and dainty food. As such it would not be an alarming disorder, if it were not that it attacks young women and demands for its

relief a supply of confectionery at the hands of young men. It therefore urgently demands a remedy, and to meet this demand a recent work on hypnotism gravely suggests that a cure for it is found in hypnosis. We publish these facts for what they are worth, but for ourselves we doubt whether there is any cure for this disorder in young women. It is worth while noting, however, that the science of hypnotism seems to be itself degenerating to the level of trivialities.

Dangers to Health from High Buildings.—The *American Architect* evidently dislikes "sky-scrapers" for esthetic reasons, but in order to make out the whole case against them, it does not confine its criticism to esthetics, but goes into the subject also of hygiene. These huge structures, according to the *Architect*, deprive adjacent streets of light and air; they promote a congestion of both foot and wheel traffic in their neighborhood; they complicate the problem of protection from fire; they overtax the capacity of the sewers and water mains that serve them, and they increase the dangers of elevator travel. Moreover, the *Architect* hints darkly that these monstrous buildings cause a variety of new diseases hitherto "unknown to the human frame"—(and likewise, we suppose, to the doctors). That tall building are hotbeds of new diseases, is a novel idea to us, and we call upon the *Architect* to hasten and inform an anxious medical profession what the symptoms of these rare and curious affections may be. Our contemporary says that it has even seen mention of an alarming mortality among elevator conductors, forced to travel at speed through these drafty vertical tunnels day after day under varying conditions of temperature. The worst indictment, however, is brought by Professor Hyatt, of St. Louis, who claims that these monstrous structures perceptibly increase the temperature in a city. But this, while an evil in summer, would not be a disadvantage in winter; in other words, the evil is balanced by the good. We think, moreover, that such effects must be but slight, and only felt in the immediate vicinity. On the other hand, there are probably many hygienic advantages in this very respect in tall buildings, and these the *Architect* should acknowledge. These building supply offices and workshops that are splendidly lighted and ventilated, and high above the noise, and dust, and flies, and atmosphere of the streets. Such offices are in marked contrast with the old dingy, deeply-buried dens so often found in old-fashioned buildings. In a hot summer there is some solace in being 75 or 100 feet above the street. From the esthetic standpoint we agree with the *Architect*, but from the hygienic point of view we must dissent on some accounts at least.

Raw Food for Diet.—From Chicago we learn that the latest advance in dietetics is the use of raw food. If reports are true, some of the Chicagoans are eating raw

flesh and uncooked vegetables. The great apostle of this movement is Prof. Tyler, of Indianapolis, whose name sounds rather familiar to us as an advanced thinker of the day. The philosophy of the raw food cult is easy to understand. Fire, it is claimed, destroys all that is life-giving and healthful in food. As man is the most intelligent of all animals he ought, according to Prof. Tyler, to live longer than any other animal. The logic of this statement is not quite apparent, but the subject is further illustrated by examples from the lower animals. For instance, a gosling becomes a goose in one year, and lives to be twenty years old; a swan gets grown in two or three years and may reach the century mark; a horse requires five years for his development and lives to be twenty or even thirty years old; but poor man requires, according to Prof. Tyler (but not in fact), twenty-five years to develop, and lives on an average to be only thirty-four. The reason for all this is found in the fact that man, for some unknown reason, eats dead cells that have been cooked and thus rendered unfit for nutrition. Cooking expels all the acids and gases, so necessary for the preservation of health, and nothing is left but a supply of ash, lime, and other unsuitable substances.

We do not quite see the accuracy or logic of all these statements, and if they are propounded seriously they are merely evidences of the loose thinking that is a prevalent characteristic of the times. The subject of how and why and when man became a cooking animal, is a curious and interesting one in anthropology, but it leads the inquirer far back into the dim regions of remote antiquity. We doubt not there were good and natural reasons for it, and we advise our readers to cling to this ancient usage, and leave it to our friends in Chicago to eat raw flesh and uncooked vegetables. Tapeworm and other parasites, together with pathogenic bacteria, will do less harm when killed by cooking than when eaten alive with raw food.

Increased Prevalence of Insanity.—In his address on the Prevention of Insanity, delivered as President of the Section on Psychology, at the recent meeting of the British Medical Association, Dr. R. Percy Smith pointed out that the total number of patients in England and Wales under the cognizance of the Commissioners in Lunacy on January 1, 1899, was 105,086, or 3,114 more than in January 1, 1898. In addition to this absolute increase there was also an increase in the ratio of the insane to the general population, the proportion being as 1 to 306 in January 1, 1899, as compared with 1 to 308 on January 1, 1898 and in 1 to 337 in January 1, 1899. In commenting on this paper the *Lancet* points out that the ratios in Scotland have been as follows: in 1881, 1 to 374, in 1891, 1 to 320, in 1899, 1 to 278; while in Ireland the figures were for 1891, 1 to 328, for 1899, 1 to 222. Probably no single factor is responsible for the increased prevalence of insanity that the

figures cited indicate; but there is scarcely room for doubt that the most potent influence is the modern method of living, with its ceaseless activity, its strains and competitions, its overwork and underrest, and there can be no hope for relief until the higher civilization comes when each will be more thoroughly solicitous for the wellbeing of his fellows and the half of life will not be wasted in the struggle for maintaining the other half. Heredity is the most potent etiologic factor in the development of insanity, and its influence can be removed only by educating the people to a knowledge thereof and the adoption by them of the only practical restrictive measure, namely, abstinence from marriage and procreation on the part of those who have been insane or are descended from insane progenitors. Alcoholism and syphilis are next in importance as causes of insanity and their influence too is to be removed by an enlightened self-repression, together with rational restrictive legislation.

The Cost of Crime.—Mr. Eugene Smith, a well-known writer in sociology, recently read a paper before the Prison Congress at Cleveland, Ohio, in which he made an attempt to estimate in dollars and cents the cost of crime. As Mr. Smith pointed out, it would be a great mistake merely to take the cost of maintaining the prisons, the police, and the criminal courts as the measure of this cost. The problem is much more complicated, for this charge affects almost all items of public expenditure, directly or indirectly. For instance, the expenses of the executive and legislative, as well as judicial branches of government, are chargeable in a certain proportion against crime. The militia also of a State is supported in part as a guard against riot and disorder. Finally, the cost of maintaining public charities is largely to be charged against law-breakers. The enormous sums spent in this way are, according to Mr. Smith, at least double what they would be if there were no such thing as crime.

According to the *Evening Post*, the author arrived at his estimates by analyzing the statistics of certain large American cities. In New York the outlays, in 1899, which might be charged wholly to crime, were \$12,988,804. These outlays were for the Department of Correction, District Attorney's Office, Police, and the Courts. To these are to be added a large proportion of the expenses of the Sheriff's office—at least \$7,789,259—making a total of more than \$20,000,000. As the total tax-list of the city is \$90,000,000, it thus appears that crime entails almost one-fourth of this burden upon the public. From this and similar analyses in New York and other cities, Mr. Smith estimates that the annual cost of crime for each citizen is \$6 in New York, \$5 in San Francisco, and in some other cities named from \$3 to \$3.50.

In the whole United States a total annual expenditure of \$200,000,000 is chargeable to crime. Of this

sum, about one-half is city taxation, and about one-quarter is town and county, and State and Federal, taxation respectively.

If now to all this vast sum is added the earning capacity of criminals, which is not realized, and which Mr. Smith estimates at about \$400,000,000, we have the enormous total cost of crime in the United States as about \$600,000,000. These figures give food for reflection, but the remedy, unhappily, in the present state of society, is not in sight.

Increased Frequency of Suicide.—The question as to the justifiability of suicide has at all times been a debatable one, and the answer will probably never be unanimous in either the negative or the affirmative. Apart from the presence of actual mental disease, any opinion on this subject must be based on ethical grounds, and it will necessarily vary, therefore, in accordance with the habits of thought, the social environment, and the mode of life of the individual and the community in which he lives. The time is past when suicide can be considered exclusively an insane act. While it may at times seem unjustifiable or irrational, it may, nevertheless, be the outcome of calm, deliberate, logical reasoning. The act, however is one that cannot be sanctioned by any authority, as it does not make for the common good, and although the individual is not responsible for his introduction into existence, yet having become a part of it, he has acquired certain obligations which he cannot with right and justice shirk. His life, his potentiality, and his other attributes are not really his to dispose of as he would; but they belong to the world, of which he is only an atom. In some communities suicide is by law declared a crime, the penalty for which must be borne by the victim's estate; in others, punishment is prescribed for unsuccessful attempts. In concluding an interesting account of the light in which suicide has at different times and by different persons been viewed, Styles (*American Journal of Insanity*, July, 1900, p. 97) cites statistics showing the extent to which the act has increased in frequency. Thus, there were in France from 1841 to 1845, among every 100,000 of the population, 9 suicides; from 1846 to 1850, 10; from 1861 to 1870, 13; from 1871 to 1875, 15; from 1876 to 1880, 17; for 1890, 21; for 1893, 22; and for 1894, 26. Between the years 1826 and 1890 the number of suicides has increased in Belgium 72%, in Prussia 411%, in Austria 238%, in France 318%, in Saxony 212%, in Sweden 72%, and in Denmark 35%. Norway constitutes an exception to the general rule, the proportion of suicides per million having declined steadily from 108, in the period from 1831 to 1835, to 67 in that from 1881 to 1890. It is especially interesting to note that this reduction corresponds with a decrease in the consumption of alcohol. In Great Britain, conversely, it has been found that the increase in suicide and in attempts

at suicide is concurrent with an increase in alcoholism. It has been observed, further, that suicide is less prevalent in Roman Catholic countries than in others, the proportion per million being 68, as compared with 100 in Protestant countries. It is also less common among the married than among the unmarried.

Tuberculosis of the Skin.—An interesting discussion on the subject of tuberculosis of the skin took place recently at the Cincinnati Academy of Medicine. Dr. Ravogli considered the clinical phases of the disease, and adhered closely to the classification of French writers, particularly Leloir, who makes the following divisions:

A. True lupus excedens and nonexcedens.

B. Atypical varieties of lupus: (1) Lupus vulgaris colloides; (2) lupus vulgaris myxematosus; (3) lupus vulgaris sclerosus; (4) lupus vulgaris erythematoides.

C. Scrofulotuberculosis: (1) Dermic gummata; (2) hypodermic gummata.

D. Ulcerous tuberculosis: (1) Primary ulcerations; (2) secondary ulcerations.

E. Mixed skin tuberculosis from two or more varieties.

On the much-discussed subject of lupus erythematosus, Ravoglia pronounces himself in favor of the tuberculous nature of the affection. The eruption may not be due to the tubercle-bacilli itself, but to its toxin.

The pathology of tuberculosis of the skin formed the theme of a paper by Dr. Heidingsfeld, who divided the lesions into (1) the typical or primary, called lupus, or tuberculosis vulgaris cutis; and (2) the atypical, or secondary, commonly called scrofuloderma. The first are caused by the direct infection of the skin by the tubercle-bacillus from without; in the other the skin becomes secondarily involved by the direct extension of a tuberculous process in an adjacent tissue, most frequently by the breaking down of an underlying tuberculous gland. The second form is the more common, at least in this country.

In discussing the treatment of tuberculosis of the skin, Dr. Drury dwelled first upon prophylaxis, and then cited the various active measures employed to arrest and cure the disease—caustics which are not much in vogue at the present day, galvanocautery and excision, which are only applicable to small lesions; cureting, which may be useful in superficial lesions, and may be followed by the application of caustic potash or a pyrogallic acid ointment; and linear scarification, which has the disadvantage of requiring a long time before it yields results. No reference was made to phototherapy, a treatment that seems to be full of promise.

Much has been said about the extravagances of dermatologic nomenclature, and in no subject is this more patent than in that of tuberculosis of the skin. If dermatology could only divest itself of its cumbersome and largely antiquated phraseology, and if it would

seek to find, in addition to the Latin terms, equivalent expressions in the vernacular, it would be far more interesting and intelligible to the general practitioner, and discussions like those in the Cincinnati Academy of Medicine would be more frequent, to the common advantage of all branches of medicine.

Correspondence.

AN EARLY SIGN OF TYPHOID FEVER.

By H. H. VINKE, M.D.,
of St. Charles, Mo.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IN typhoid fever I have found the presence of a few scattered sudamina, or clusters of sudamina, over the inguinal regions, near the anterior superior spinous processes of the ilia, an early and fairly constant symptom. These sudamina appear at a very early stage of the disease, several days before the rose spots make their appearance. At a later stage of typhoid fever, when the fever begins to subside and the patient is perspiring more or less freely, sudaminal and miliary eruptions, at times over the entire body, are frequently found.

But these eruptions are not characteristic of typhoid fever, but are found in all diseases that are accompanied by profuse sweating, and at times in healthy individuals who perspire freely. The eruption I have described, however, I have found in cases in which there was scarcely any perceptible perspiration, and I would like to know whether their presence under these circumstances possesses any diagnostic value.

SPECIMENS OF MALIGNANT GROWTHS DESIRED.

By CHARLES E. SIMON, M.D.,
of Baltimore, Md.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

LAST March I directed an appeal to the American medical profession at large, through the columns of your esteemed JOURNAL, requesting that specimens of malignant growths be sent me for the purpose of a chemical investigation. As a result, I am indebted to you for a number of valuable preparations. The amount of material, however, which I have so far been able to obtain is not sufficient for the work intended, and I therefore take the liberty of asking your aid, once more, in this direction. Specimens, to be of value, should be cut in small pieces and placed in chloroform-water (containing about a teaspoonful to the quart) as soon as possible after removal at operation or postmortem examination. They may then be shipped to me at my expense. Records will be kept of every specimen, and due credit given at the proper place.

Trusting that this appeal will lead to the desired end, accept my thanks for your courtesy.

1302 Madison Avenue.

HAT PIN IN THE URETHRA.

By CHAS. M. ELLIS, M.D.,
of Elkton, Md.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

THREE cases of this accident have been reported. I add another, making the fourth. A man, 70 years of age, came to

my office early on an October morning in 1893, from Herford County, Md. He had enlarged prostate. He declared that he had, on several previous occasions, used a hat pin with which to relieve himself when he had trouble in passing his water, but that on the previous evening the instrument had escaped his grasp, and the head had passed into the bladder. The point of the pin was immediately located in the urethra, behind the scrotal attachment. Fixing the point, I caused it to penetrate the penile urethra and the overlying skin. This I seized and drew out until the head engaged in the urethra. Depressing the point, the head was made to travel the urethra reversely, and was taken from the meatus in less time than it requires to describe the operation. The pin was 8 inches long, and the head $\frac{1}{4}$ of an inch in diameter. Incision of the urethra, which was practised, I believe, in all the other cases reported, was entirely unnecessary in my case, and in all probability equally unnecessary in the others. Relief was immediate, and no after-treatment of the minute puncture was required.

DESIGNATION OF THE OPERATION OF ROUND LIGAMENT VENTROSUSPENSION OF THE UTERUS.

By CARL BECK, M.D.,
of New York.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

YOUR issue of September 29 publishes a description of my method of operation on "Round ligament ventrosuspension of the uterus" (ligamentopaxis), by Dr. D. Tod Gilliam, of Columbus, Ohio, which gives every detail of the various steps of the operation, but does not mention my name. My method was first published and illustrated in the *Centralblatt für Chirurgie*, August 21, 1897. It was also reported by Dr. C. A. von Ramdohr before the New York Obstetrical Society in the same year, and was the subject of a graduation thesis at the University of Paris, under the auspices of Poirier, Berger, Guyon, and Albarran. Garrigues' "Diseases of Women" also contains it, and the *American Journal of Obstetrics and Diseases of Women and Children*, vol. xlii, No. 3, 1900, gives a description of the original operation and some of its modifications.

I must assume that all this was entirely unknown to Dr. Gilliam, and that on being informed of the facts, he will correct the omission.

POISONING BY CODEIN.

By M. J. KONIKOW, M.D.,
of Boston, Mass.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IN looking up the literature on poisoning by codein I did not find any case reported that would be similar to the following, which was observed by me lately. On April 23, in the morning, I was called to see a little patient—a strong, fairly-developed nursing boy, about a year old. An examination revealing nothing except high temperature, caused probably by cutting of the upper incisors, I left a prescription calling for powders of phenacetine in half-grain doses. About 10 P.M. the same day, the druggist informed me through the telephone that a grave mistake had occurred; instead of delivering the powders intended for my patient, he delivered powders intended for another adult patient, containing each 15 grains of bismuth and $\frac{1}{4}$ of a grain of codein.

On arriving at the house I found the child asleep. It

had been made to take the enormous powder in toto, at about 3 P.M. The pulse was about 110, but otherwise normal. The pupils were normal, reacting to light. There was no nausea and no depressing symptoms. I ordered the white of an egg, followed by repeated doses of ipecac sirup, with the usual result. I left instructions to keep the child awake for a few hours. I saw it in about an hour and a half afterward. It was sleeping, though easily to be aroused; there was normal breathing, and the pupils were more or less contracted. The next day the child was normal except as to the stools, which, as I expected, were black.

Most remarkable in this case was the absence of any symptoms of poisoning in spite of a relatively large dose of codein. There are cases on record in which smaller doses in proportion have produced quite severe symptoms. C. Mettenheimer¹ reports a case where severe vomiting, colics, retention of urine, profound sleep and myosis, followed in an adult person a codein dose of 2 grains. Dr. Reamy² has also observed some disagreeable symptoms in an adult patient after a dose of one grain of codein. According to Young's formula, taking as the maximum dose of codein for an adult two grains, we would have the maximum dose for a child one year old, $\frac{2}{12}$ of a grain. The only explanation I can have for the absence of unfavorable symptoms in this case, is the great amount of bismuth subnitrate (15 grains) which probably held the codein in suspension, preventing its absorption.

A CASE OF BROMATOTOXISMUS WITH ABSENCE OF NAUSEA, VOMITING, AND PURGING.

By A. F. KINGSLEY, M.D.,
of Centerville, Mich.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

THE patient was F. S. C., male, aged 40 years. On the morning of August 19, together with others of his family he partook freely of frozen strawberry sherbet which had been made the previous afternoon. Some hours later—about 11.30 A.M.—the frozen sherbet being entirely gone, and a little of the thawed product remaining, he drank this—about four fluid-ounces. In about an hour he was taken with severe griping pains in the suprapubic region, radiating upward in the abdomen, being most intense on the left side. He felt a desire to go to stool, which was gratified, the movement being about normal, except for the griping pain which increased. Patient was slightly nauseated, but did not vomit. Arriving about 15 minutes after the beginning of the attack, I found the patient occupying the dorsal position with the thighs flexed, with evidences of great pain. Upon ascertaining what he had eaten, I administered hypodermically atropin sulfate, grain $\frac{1}{16}$, and a little later, by the same method, apomorphin hydrochlorate, grain $\frac{1}{16}$. This promptly induced vomiting, so that the stomach was very thoroughly emptied. The vomitus was of a dark brownish color, containing bits of undigested apple which he had recently eaten, together with some strawberry seeds from the sherbet; it emitted a slightly disagreeable odor.

The abdomen was now so tender that the weight of the hot-water bag could not be endured, and hot flannels were applied and frequently changed. The pain continued and the man was unconscious at short intervals; a few tonic convulsions developed. I now gave atropin sulfate, grain $\frac{1}{12}$, with morphin sulfate, grain $\frac{1}{8}$, hypodermically, and about 3 hours from the beginning of the attack the pain gradually lessened

and in a half hour more the patient was very comfortable. I left some belladonna to be given that night, and returning in the morning, found the patient had rested quite well during the night and was then very comfortable except somewhat sore and quite exhausted. He continued to recover rapidly and was soon about his usual duties.

There was no history of renal calculi nor did anything appear after the attack, such as the passing of a calculus, or of bloody urine, which would point to such a diagnosis. In fact there was no history of kidney trouble, and Dietl's crisis was out of the question. My patient has no hernia, and intestinal obstruction is not to be considered, for patient's bowels were regular before the attack and have continued so since.

About 3 fluidrams of the thawed sherbet remained, and next day I fed this to a kitten. About 30 minutes after eating it, the kitten was taken very ill, and appeared to suffer from abdominal distress, but after about 3 hours recovered, without, however, any vomiting or purging.

I think this case interesting, inasmuch as it was undoubtedly one of bromatotoxismus, but with pain as the chief symptom, while nausea, vomiting, and purging, which are usually given as cardinal symptoms, were absent.

PROGRESS OF BLOOD-EXAMINATIONS.

By ROBERT L. WATKINS, M.D.,
of New York.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

WE like occasionally to take a retrospective view of blood-examination for disease. Thirteen years ago the disease known as leukemia was occasionally examined for by the instructor, or, more commonly, the professor, because others did not know how; it was so uncommon. This disease was discovered in 1846 by Virchow and is generally fatal. About that time, the spirochetæ of Obermeier, a parasite in relapsing fever, was known but was seldom looked for. Examinations by the profession were made only casually, and then more for curiosity than any other reason. Hanoque, of Paris, in 1892, was experimenting with his test for the coloring-matter in the blood. This had been worked out by Gowers, Fleischl and others, but none of these examinations was taught in the institutions.

About this time the importance of the plasmodium of Laveran was beginning to dawn upon the profession. There was nothing written upon the blood either in book or pamphlet form, that I could find except that mentioned above, and some matter, years old, which was considered by the profession as obsolete. Ehrlich was working on a certain method of staining the blood cells, and thus differentiating, as he claimed, certain diseases. This he was teaching to his private students, I was told when in Germany. Today a modification of Ehrlich's method is taught in all our institutions, and used in all the hospitals, where they test for the different kinds of cells, and malaria in all its forms, and, as is well known, they also use a test for the hemoglobin.

Ten years ago I remember speaking about the microscopic fibrin in the blood-serum to a professor in one of our laboratories. He did not know what was meant, and even when a photograph of it was shown to him, he did not recognize it. This same professor at the recent meeting in Atlantic City acknowledged that he was wrong at that time, and asked to see more of the work. Another young professor, at this meeting in June, said: "Oh, yes, there is fibrin in the blood, but it's in all blood, and is not pathologic."

When men will acknowledge progress in others and mis-

¹ *Memorabilien*, 1891-2, N. S., xi, 136.

² *Cincinnati Lancet and Clinic*, 1879, N. S., iii, 514.

mistakes of their own, it shows that the world is advancing. We hope before long that the pathologic importance of the several varieties of fibrin will be generally recognized for it; for we say here that in some diseases the blood contains very little microscopic fibrin, while in others it is abundant and of different varieties.

In a recent number of the *Journal of the American Medical Association*, Dr. Fussell has an excellent article on the "Examination of Blood," in which he says: "By the use of a microscope and a slide of fresh blood, one may observe: First, whether the leukocytes are largely increased in number; second, whether the red cells form properly in rouleaux." This examination of fresh blood is important, and I am glad to note that he is examining fresh specimens, and not old, even by one minute.

In regard to the leukocytes, I would like to call attention to the simple way of telling the number; I presume the doctor uses the same method by his use of the term "largely increased." It is this: In healthy blood with a $\frac{1}{4}$ objective, there are visible on the average one or two leukocytes to every microscopic field. Anything more or less than this is abnormal. This is much easier to consider, and just as practical as the tedious method of counting with the Thoma-Zeiss apparatus. I also note in his Textbook, Osler uses the term 1 to 6 in comparing the white and red cells. I am glad to note that he also is using the method I have used so long, of simply counting without a counting apparatus. By using this method it only takes a few minutes to make a photograph, and thus have a definite record, for the photomicrograph you can examine any time and keep for future use.

Dr. Fussell mentions a case—Miss P.—in which endocarditis was present and the increase in white cells was marked, and he gives the actual counts. I remember a girl, 10 years old, who had a severe endocarditis, and the blood also showed this increase in leukocytes (see illustration), but I did

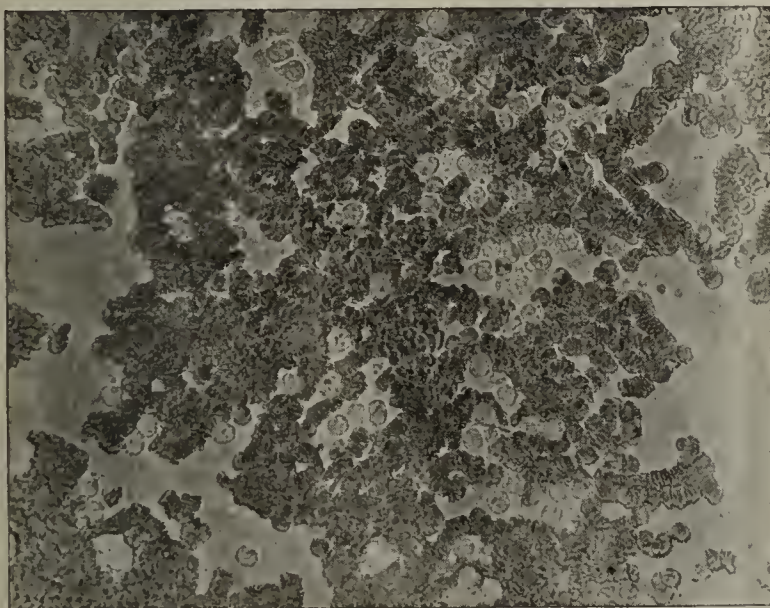


FIG. 1.—During the attack of endocarditis.

not, and never do, go to the trouble of counting the leukocytes. Make a photograph, and there you have them. This patient we mention is now 16 years old, is perfectly well and free from any perceptible cardiac lesion (see photograph taken lately). She has no increase in white cells now, they being perfectly normal. I would like to repeat that for practical purposes the counting of the white cells by the Thoma-Zeiss apparatus is merely a consumer of time, and that one's judgment, as pointed out above, is the only practical method.

Second. He says we should note "whether the red cells

form properly in rouleaux." Dr. Cabot also mentions this in his work, and I am glad to note that the profession is now recognizing this rouleaux arrangement in health. For it, as

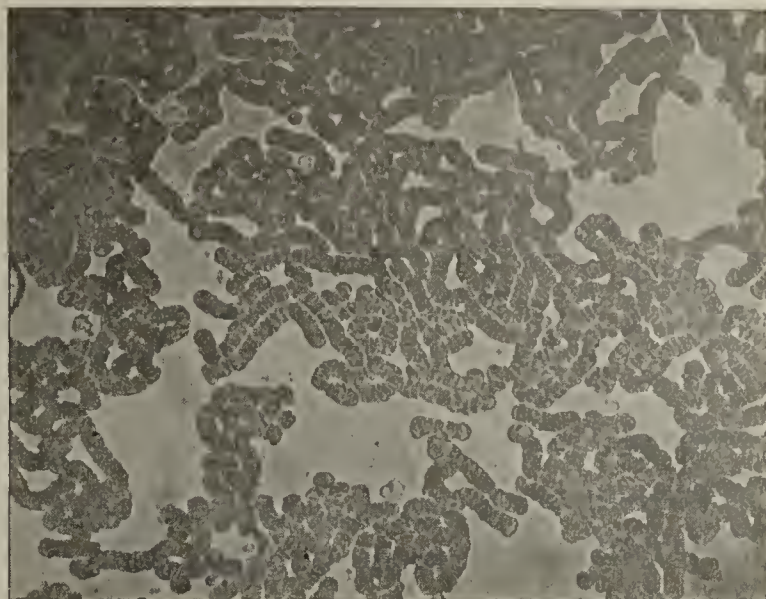


FIG. 2.—After recovery.

as well as the even distribution of the red cells, is characteristic and important in fresh blood. Old blood is liable to be evenly distributed after only a few minutes' standing.

TREATMENT OF HEMORRHOIDS BY INJECTION OF CARBOLIC ACID.

By EUGENE F. HOYT, M.D.,
of New York.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

I HAVE just read a most interesting and scholarly thesis in the current number of your JOURNAL, by Dr. J. W. J. Doyle, in which he discusses the Pathology and Treatment of Hemorrhoids. If a general criticism were allowed, I should say that in the article *theory* seems to override experience, and that the practical side of the question is lost sight of. Regret is expressed of the almost universal neglect of this subject by the profession, intimating that the widespread prevalence of irregular remedial agents must be due to want of success on the part of general practitioners. As a result, nearly all patients are fearful as to the outcome of surgical interference, and hence the great prevalence of rectal diseases today.

One of the most startling features of Dr. Doyle's paper takes the form of a sweeping assertion that seemingly brushes out of existence the method of management known as interstitial injections. So drastic are his words that every one must infer that in all cases treated by this method the attending physician is paid by the executor of the patient's will. Such is not the result of my experience in an exclusive practice of this specialty for 26 years, in which I have used this treatment many thousand times. With this experience I feel that a wholesale condemnation is hardly a fair presentation of the subject—it is a brief without any data. A proper experience can only be gained by treating something like 2,000 cases—as it requires something like this number of instances to make a medical proposition into a medical fact. One will then find himself equipped to deal with all such hemorrhoidal growths as are constituted by an anastomosis of the bloodvessels. Other forms are unadapted to this treatment. I inject into the hemorrhoids slowly and sparingly a 10% solution of carbolic acid, thereby neutralizing all nourishment of the tissue involved, so that this must promptly yield its hold upon existence, restoring the hemorrhoidal dominion to its original condition.

Society Report.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Twenty-sixth Annual Meeting.

THE twenty-sixth annual meeting of the Mississippi Valley Medical Association was held at Asheville, N. C., on the 8th, 10th, and 11th inst. Dr. M. H. Fletcher, as chairman of the Committee of Arrangements, called the meeting to order, after which the Rev. R. F. Campbell, offered up a prayer, and addresses of welcome were delivered by Mr. Theo. F. Davidson, on behalf of the city and State, and Dr. John Hey Williams, on behalf of the profession of Asheville. Mr. Davidson remarked that he did not like to greet the physicians present as healers, because this term had been rather brought into disrepute by those who professed to be able to heal without the aid of *materia medica*, and on the other hand there was a danger of their being confused with another body of men who were now being much spoken of—he referred to the Tammany heelers. Passing on to speak of the locality in which the meeting was being held he said that the fine atmosphere of Asheville was the deadly enemy of the local doctors, who would literally starve to death if it were not for the patients sent them from other parts of the country. The president of the Association, Dr. Harold N. Moyer, of Chicago, acknowledged the cordiality of the welcomes, and then the official reports were read, all of them going to show that the affairs of the Association were in a highly satisfactory condition.

The President's Address.—DR. MOYER, in his presidential address, dealt with an apology for the American profession which had been delivered by one of its Nestors at the meeting in Paris of the International Medical Congress. He did not want to wash any professional dirty linen. If there was anything of that kind to be done, it could be best attended to in the local professional laundry. But there were some matters which had been referred to in the address referred to that were of the utmost importance alike to the profession and the public. In his apology the essayist went into particulars of a question of ethics which was twenty years old, but of which somescintillations appeared still to exist on the Atlantic coast. Most of them probably thought the subject long since dead and buried, but unfortunately it had not been embalmed, and now it had been resurrected with all its old malodorousness. He (Dr. Moyer) maintained that the American profession needed no apology, and as proof thereof he quoted from an editorial article in the London *Lancet*, in which it was pointed out that, allowance being made for the difficulties that had to be overcome in a new country, and particularly one where democratic principles prevailed, it was remarkable what American physicians and surgeons had achieved, and what had been and is being done to raise the standard of education among students of medicine. In the light of this quotation, it was evident that the American medical profession required no defence. All they needed to do was to apologize for the representative appointed to speak for them in Paris. One statement in the address referred to was that there were too many medical societies in America, the essayist referring to the fact that there were only two medical societies in the old Colonial days, in which he seemed to regret they are not still living. Here, again, he (Dr. Moyer) felt it necessary to express dissent. Not only did he think there are not too many medical societies; he maintained that even the most insignificant of them were helping to advance medical science, and that it was principally due to their united efforts that so much progress had been made, and that the profession occupied the position which had evoked the tribute of the London *Lancet*. In this country, it was to be remembered, they had almost no endowment of medical education or research. They had no Government subsidy, and no paid hospital staffs. But in spite of all this American physicians and surgeons were admitted to take high rank by reason of their achievements. The medical societies here had enabled the profession to do for itself what abroad was done for it by legislation and subsidy. Referring to the Mississippi Valley Medical Association, Dr. Moyer said some people thought there was no particular need for it, inasmuch as it did not represent any definite geographical

area and the State and National Associations might be supposed to meet all legitimate wants. The prosperity of the Mississippi Valley Association, however, was sufficient to show that it served a useful purpose; and it was noteworthy that its members were also active members of the National Association, of which the Mississippi Valley Association was a useful auxiliary instead of being in any sense a rival. Another matter of importance was the relation of law to the medical profession. A good deal of misapprehension existed as to the attitude of physicians and surgeons in relation to the movement for the passing of statutes for the regulation of medical practice. Legislation was required, not so much for the protection of the profession as for that of the public; and with the view of making the law operative against unqualified practitioners and quacks he suggested that, instead of attempting to define "practising medicine," they should leave it to the courts to say what came within that category. The law required that pilots of steamboats should possess certain qualifications as a guarantee that they could be trusted with the lives of the public; and that was all that medical men asked in regard to their own profession. Personally, they might prefer that there was no such thing as a Medical Practice Act; but laws of the kind were necessary for the protection of the public. Another charge of the essayist who had apologized for the profession at Paris was that in America they had too many medical journals, and that they did not all preserve the high standing that was desirable. The medical journals could no doubt be left to look after themselves; but those acquainted with the facts knew that the medical journals of America could compare favorably with those of Europe. There as here there were plenty of weak-kneed, advertising, nostrum-fostering journals, but the European journals of that class were unknown here, and it was mistakenly supposed as a consequence that all European medical journals were of the same high standard as the *Lancet* and the *British Medical Journal*. Dealing finally with the subject of specialism, Dr. Moyer showed that there was too much tendency on the part of beginners to aim at becoming specialists, whereas the only genuine specialties were those grounded on a good experience in the field of the general practitioner. Specialism in medicine was like matrimony. It should not be forced, but accepted only where it came naturally.

The reading of papers then proceeded, the first being one by DR. H. O. WALKER, of Detroit, Mich., on **Vaginal versus abdominal hysterectomy**. The question, he said, was largely one of working in a light or a dark passage. The conclusion at which he has arrived was that the abdominal route was the better of the two, and for the reason that, not only could the surgeon see more clearly what he was doing, but he obtained a better control of hemorrhages, and ran less risk of complications through the slipping of ligatures. In other words, the danger to the uterus was limited, and if any injury was done it could be easily repaired. The paper was favorably commented on by DR. E. W. LEE, of St. Louis, and others.

Cancer of the Uterus.—A paper on this disease and its treatment was read by DR. R. S. SUTTON, of Pittsburg, Pa. Cancer operations, he contended, should be recommended, not as curative but as palliative, and in that respect useful. Total vaginal extirpation of the uterus at or after time of climacteric, he said, should find a place as prophylactic treatment against cancerous disease. After reviewing the anatomy, pathology, diagnosis, and present method of treatment, the author said that treatment for existing cancer of the uterus had probably reached its complete evolution; but in view of the ultimate results of this treatment, which he heartily endorsed because there was no other known treatment to take its place, he asked, *cui bono?* Proceeding to discuss the question of prophylaxis, he stated that the average age of the patients he had operated upon was 43 years and a fraction, and claimed that if these patients had all been subjected to total vaginal extirpation at the average age of 40, all of them would have escaped cancer of the uterus. According to statistics he had prepared, only 4% of them would have died, whereas nearly 100% did die within a period of 2 or 3 years after operations for cancer. He urged greater attention to the early repair of lacerations of the cervix, together with a more painstaking observation and consideration by physicians at large of the train of symptoms which preceded and led up to the development of can-

cer of the uterus. Radical surgical treatment should be resorted to in all such cases; but above all if they were to reduce the number of cases of uterine cancer, and consequent mortality, steps must be taken to forestall the disease.

Tracheloplasty.—DR. H. P. NEWMAN, of Chicago, read a paper on this subject, in which he called attention to the need of recognizing the normal and pathologic significance of the cervix uteri, the importance of its function, and the improvement which had been introduced in the technic of the surgical reparation of this organ.

Postoperative internal hemorrhage was the subject of a paper by DR. A. H. CORDIER, of Kansas City, Mo. He showed that in diagnosing postoperative hemorrhage a review of the operative history should be gone over carefully. Symptoms of shock and hemorrhage were very similar, but in suspected cases a single stitch cut in a closed wound would tell the difference. In all cases when a hemorrhage was feared, a tube should be introduced. The surgery must be quick and decisive in postoperative procedures, and large quantities of normal saline solution would save many lives.

A case of **Intermittent hydrops of the knee** was described by DR. GEORGE W. CALE, of Springfield, Mo., the patient being a lady of 40 years of age who had recurrences of the disease at intervals from 1 to 6 months during the last 5 years.

Ventral Hernia Following Laparotomy.—In this paper DR. B. BRINDLEY EADS, of Chicago, emphasized the importance of this sequel of abdominal operations, discussing the principles involved in the choice of incision, the making and closing of the incision, and the way to cure ventral hernia.

DR. E. H. RICHARDSON, of Atlanta, Ga., reported a case showing perfect recovery following **Gangrene of the scrotum and penis**. The initial lesion was an abrasion of the skin near the os pubis with probable infection from the erysipelas cocci at this point, and later a mixed infection from the streptococcus of gangrene, terminating in the destruction of the gangrenous portion of the entire integument of the penis and of three fourths of the scrotum. Plastic operation was adopted with the effect of preserving the integrity of the penis and testes.

A paper on **Middle-ear disease in its relationship to the cranial cavity** was contributed by DR. OTTO J. STEIN, of Chicago, stereopticon demonstrations being given by an assistant. The object of the author was to show the necessity of recognizing the importance of possible intracranial complications in every case of middle-ear disease.

SECOND DAY'S PROCEEDINGS.

The proceedings on the second day commenced with an **Address in medicine** by DR. I. N. LOVE, formerly of St. Louis, now of New York, who chose as his subject **Nutrition and stimulation**. The physician, he observed, should be the family counsellor, and in particular should be consulted in regard to all matrimonial plans. When a new being was brought into existence its proper nutrition should be looked after from the very beginning—even prior to birth. After birth the security of the infant depended upon the proper appreciation of its proper feeding. One danger which had to be guarded against was that of overfeeding, which was apt to lead to infantile obesity and giantism. On the other hand it was necessary to give sufficient nutrition to provide for growth as well as life. After maturity was reached less food was required, for it was only necessary to furnish nutrition that was needed for the maintenance of life. Food, like alcohol, was used too much for pleasure rather than the maintenance of life. Stimulants, the speaker went on to say, were of value if used in the right way and at the right time, but in the healthful condition they were not needed. They were essentially a luxury, and all luxuries should be used with the greatest care, only the thoroughly healthy being able to indulge in them at all freely. The use of tobacco, especially when the smoke was inhaled, as it usually was by cigaret smokers, he maintained, did even more harm than the abuse of alcohol.

Proctologic Diseases.—A symposium of papers on proctologic subjects followed, the first being one by DR. JOHN L. JELKS, of Memphis, Tenn., on **The treatment of perirectal abscesses**. The author maintained that these abscesses when properly treated were not so serious as when poulticing was in practice and that they need not necessarily

result in fistula. The walls, he pointed out, were not got rid of when simply incised and drained; thorough curetting was also essential. The next paper was by DR. J. RAWSON PENNINGTON, of Chicago, who described a simple operation for the **Enucleation of hemorrhoids**, each quadrant being grasped with a pair of T-forceps, and the hemorrhage being controlled by torsion and rubber-covered tampon. He contended that there was less pain and that earlier recovery could be relied on by this method than by any other. DR. STERLING B. TAYLOR, of Columbus, Ohio, who read the third paper of the series, dealt with the subject of **Obstipation**. Defining obstipation, constipation, and costiveness, he proceeded to classify the causes of the first-mentioned complaint, principal among them being hypertrophy of the rectal valve. He defended Martin's views and methods. The discussion on the papers was opened by DR. JOSEPH M. MATHEWS, of Louisville, Ky., who said he had been very much interested and entertained by the papers, and that of Dr. Jelks he wished to commend very highly. When fistulas were at all complicated, no man could say that he could cure them by a first operation; therefore, if they could prevent them they should certainly do so. Dr. Pennington had also given them a number of useful suggestions, but he did not agree with his method of treatment. He used to excise tumors, but he had ceased to do so because of the severe hemorrhages which ensued, and had gone back to the old method of the ligature. He admitted that excision was the ideal method, or at least would be so were it not for the danger of hemorrhage, and if Dr. Pennington had discovered a means of effecting it without that danger he had done a great thing. He suggested, however, that to make the operation safe it would be well to bring the parts of the mucous membrane together and suture them. As to the last paper he remarked that if they substituted the word "constipation" for "obstipation" it would convey a better idea of the complaint, and many old country doctors would tell them how to cure it. The authorities made no mention of these rectal valves about which they had recently been hearing so much, and for his part he did not believe in their existence. Folds no doubt there were, but they could not have the effect attributed to them. He would certainly await further developments before adopting the new procedure which was known as "valveotomy." Several other speakers said they had been very anxious to see those rectal valves, but had never succeeded in doing so. DR. PENNINGTON, in replying to criticisms, said if he could not control a hemorrhage by torsion he would use a ligature, but he had never found it necessary to do so. DR. TAYLOR maintained that the question of obstipation had been dodged by those who did not admit the existence of rectal valves while acknowledging that every one had what they preferred to call folds.

THIRD DAY'S PROCEEDINGS.

Address in Surgery.—This was delivered by DR. C. A. WHEATON, of St. Paul, Minn. He devoted himself principally to the subject of **appendicitis**, which he claimed was essentially a disease for the surgeon to deal with.

Tuberculosis of the Spine.—A paper on the treatment of this disease was contributed by DR. ALEX. C. WIENER, of Chicago. He entered a plea for early diagnosis before deformity was visible, extension and hygienic treatment being essential if complications, such as paresis and gravitation, were to be avoided. He exhibited a specimen showing the possibilities of Cobat's forcible correction of the spine, and described cases of psoas abscess which had been cured by injections of carbolic acid, accompanied by other treatment.

DR. H. HORACE GRANT, of Louisville, Ky., followed with a communication on the medical and surgical treatment of **acute and chronic lymph-nodes**. Having referred to the useful purposes served by the lymphatics, he said they should not be removed except for good and sufficient cause. When they became diseased and useless there should be no hesitation about taking them out. In the course of the discussion which followed DR. WHEATON protested against the indiscriminate use of the knife in the case of affected glands, his belief being that the majority of cases would get better with proper hygienic surroundings and internal medicine.

Cocain-Anesthesia of the Spinal Cord.—DR. CARL H. ANDERSON, of Chicago, reported a number of cases in

which this operation had been performed, and discussed the physiologic and clinical results of the procedure. While advocating the operation, he warned the profession against the dangers it involved, chiefly because of the difficulty of obtaining a sterile solution. He had tried in vain to get a sterile solution by Tuffier's method, though he had succeeded in doing it by a process of his own. DR. MOYER gave a demonstration of the technic of the operation as performed by Dr. Anderson. If he were asked his advice as to this method of anesthesia he would say with their present knowledge, and having regard to the delicacy of the operation and other circumstances, "Don't do it." At the same time the subject was a fascinating one and incalculable benefits would result from the procedure if it could be freed from some of the dangers now attending it. Therefore, further experimentation was desirable, but it should only be carried on in well-equipped clinics.

Hip-Joint Diseases.—DR. A. M. PHELPS, of New York, read a paper on the **Treatment of tubercular and purulent hip-joint diseases with large speculum drainage and pure carbolic acid.** All abscesses, he said, should be opened as soon as diagnosis was made, for the purpose primarily of exploration, and secondarily for drainage and any surgical operation which might be deemed advisable. The action of the carbolic acid on the skin and tissues was neutralized by the use of pure alcohol. Incidentally it was brought out that carbolic acid was a specific for erysipelas. The profession was much indebted to Dr. Seneca Powell, New York, for discovering the antidotal properties of alcohol as regarded carbolic acid, thus rendering the latter available for use in the ways indicated as well as in others.

Pulmonary tuberculosis in infancy and childhood was discussed in a paper by DR. FRANK P. NORBURY, of Jacksonville, Ill. Heredity was a factor, but not so important a one as was sometimes thought. Infection was the most common source of the disease. The principal avenues of infection were the respiratory and intestinal tracts. Other diseases, as was well known, paved the way for the infection. House pets frequently introduced it into a household; therefore care should be taken of cats, dogs, and other domestic animals which feed upon tuberculous meat. The author then proceeded to discuss the parts that hygiene, climate, and symptomatic treatment played in the cure of the disease.

DR. STEIN, of Chicago, in discussing the paper, advocated intratracheal injections of oil to relieve patients whose stomachs were liable to be upset by taking it by the mouth.

The physician as a sanitarian was the subject of a paper by DR. HUGH A. COWING, of Muncie, Ind. While many physicians rendered invaluable services to the community by the attention they devoted to the cultivation of sanitation, there were others whom he considered criminally negligent and careless, and were often the means of spreading infection.

The Girl at Twelve.—This was the title of a paper by DR. J. H. TAYLOR, of Indianapolis, Ind. Discussing the management of girls at the age of puberty, he laid stress on the bad effects of manual labor and overwork in school, contending that physical and mental overexertion were alike to be deplored. Emmenagogs should be avoided in the case of girls at this period, and more attention paid to the general health. He appealed to mothers and physicians to unite in giving more care to girls entering on the stage of womanhood, as by so doing they would prevent many diseases which now so frequently resulted from lack of care and excess of work or study.

Asthma.—DR. R. A. BATE, of Louisville, Ky., in discussing this subject, quoted the saying of Loomis that the primary cause of asthma is undoubtedly some constitutional idiosyncrasy, and also the remark of Haig that asthma represents one of the effects of uric acid on the circulation. The curative treatment consisted of diet, hygiene, and anti-lithic measures. DR. THOMAS H. STUCKY, of Louisville, Ky., said the primary causes of asthma were imperfect salivation or mastication. Personally he knew when he was going to have an attack of asthma, not by how he felt, but by what he ate. Asthmatics were fond of sweet, starchy food, they were people of full habits, and they were lazy. He confessed that he filled the bill all through. DR. C. L. MINOR, of Asheville, referred to the relation between asthma and tuberculosis. He believed every asthmatic had uric acid, and pulmonary patients who had uric acid were fortunate. In this respect

asthma was like gout. They probably knew of the physician who told a patient he had the choice of dying of gout or tuberculosis. The patient chose gout, and showed his wisdom by so doing, because he lived much longer. Gout and asthma were alike favorable symptoms in pulmonary patients.

Curability of Inebriety by Medical Treatment.—DR. T. D. CROTHERS, of Hartford, Conn., read this paper, in which it was maintained that inebriety was a neurosis, usually self-limited, and very largely curable. The craze for drink was symptomatic. The real causes were central nerve-irritation, exhaustion, poisoning, and starvation. The success of medical treatment depended upon accurate knowledge of the causes and conditions present in each case, and the accurate application of general means and measures for their removal. Each case required special means and measures particularly adapted to meet the conditions present. The family physician as well as the specialist should treat these cases successfully. The stopping of the use of spirits should always be followed by medical treatment, but it was necessary to guard against the substitution of drugs which would produce even worse effects than alcohol. When properly treated as a disease a degree of cure far beyond expectations would be obtained, and when it was so recognized the family physician and not the clergyman or the quack would be called on to advise in such cases.

The Suprarenal Capsule.—DR. W. H. BATES, of New York, contributed the results of some further observations he had made on the clinical application of this drug, the aqueous extract of which he said was the most powerful astringent hemostatic and heart-tonic known. It lessened the congestion of the eye and other organs. The extract was not irritating or poisonous, and, unlike other powerful drugs, it was never contraindicated. There was no remedy which was so useful in all forms of inflammation. DR. J. A. STUCKY, of Lexington, Ky., said he had obtained excellent results from the use of the suprarenal liquid combined with chloretone, particularly in middle-ear complaints and hay fever.

The Philosophy of the Science and Art of Medicine.—In this paper DR. WILLIAM F. BARCLAY, of Pittsburg, Pa., showed the value of approaching the study of medicine from a purely philosophic point of view. The philosophy of medicine was the comprehension of the truth in the investigation of the science enabling one to arrive at rational conclusions in the study of the physical laws which governed organized matter in their normal and pathologic condition.

New Office Bearers and Next Place of Meeting.—The following were elected the office-bearers of the association for the ensuing year: President, Dr. A. H. Cordier, Kansas City, Mo.; first vice-president, Dr. Charles F. McGahan, Aiken, S. C.; second vice-president, Dr. C. L. Minor, Asheville, N. C.; secretary, Dr. Henry E. Tuley, Louisville, Ky.; treasurer, Dr. Dudley S. Reynolds, Louisville, Ky.; the last two being reelected.

It was arranged to hold the next meeting at Put-in-Bay, Ohio, on September 10, 11 and 12, 1901. Dr. J. C. Culbertson, Cincinnati, was appointed Chairman of the Committee of Arrangements.

Drs. Wheaton, Lanphear and Moyer were appointed delegates to the Pan-American Medical Congress to be held at Havana in December.

The proceedings were brought to a close by a banquet in the Battery Park Hotel.

Aphasia and Mental Confusion Caused by Cerebral Cyst.—John Lindsay Steven and James Luke (*Glasgow Medical Journal*, September, 1900) report a case, interesting because of completeness of recovery and of the clear indications for operation. The patient had an incomplete paralysis of the right arm and was clearly word-blind and also word-deaf. There were no certain indications as to the nature of the lesion, although on the whole the phenomena suggested the presence of hemorrhage. Trephining over the left motor area was determined on after the development of convulsive spasms, limited to the right side of the face. A large hemorrhagic cyst, situated in or over the left cerebral hemisphere, was exposed and evacuated. A few days afterward the patient recovered the power of speech and the use of his arm and has remained well since. [G.C.C.H.]

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Calendar of Meetings of Philadelphia Medical Societies for the week ended October 27, 1900:

Monday, October 22—Neurological Society.

Wednesday, October 24—County Medical Society.

Thursday, October 25—Pathological Society.

Fountain Springs State Hospital.—The legislature will be asked to appropriate \$50,000 for the erection of an annex to this institution.

Dr. Maurice H. Richardson, of Boston, will be the guest of the Medical Club of Philadelphia at the Hotel Bellevue, on Friday evening, October 26, 1900.

Pennsylvania Hospital.—Dr. Francis Stuart has resigned as superintending physician at the Pennsylvania Hospital and Dr. Charles Mitchell, of Wilkesbarre, senior resident physician, has been appointed his successor.

Scarlet Fever and Diphtheria.—In Lancaster, Pa., these diseases are said to be spreading rapidly among school children. The authorities say the spread of the diseases is due to the carelessness of persons residing in infected houses.

Warrants for Oleo Dealers.—Warrants have been issued in Pittsburg for the arrest of 419 dealers of oleomargarin. It is said that of 800 samples of butter examined, 498 were found to be oleomargarin. In all, 647 suits have been instituted.

Physician Infected at Autopsy.—It is reported that Dr. J. M. Simpers, of Germantown, Pa., is at Baltimore Medical College suffering from an infection in his right hand contracted while performing an autopsy. The result will be the loss of the second finger.

Report of Immigrants Inspected at the Port of Philadelphia, Pa., during the Month of September, 1900.—Total number inspected, 1,443; number passed, 1,403; number certified for deportation on account of dangerous contagious or loathsome diseases, or for other physical causes, 40.

Memorial.—Mrs. S. Weir Mitchell, wife of Dr. S. Weir Mitchell, of Philadelphia, will endow the University of Pennsylvania with a memorial to her daughter, who died about 2 years ago. Just what form the gift will take has not been announced, but it will probably be in the shape of a wing to the University Hospital buildings. This will form an important addition to the hospital, which has doubled its capacity during the last 6 years.

Vacancy in Professorship at University of Pennsylvania.—Owing to the election of Dr. Edward Martin to the professorship of clinical surgery in the University of Pennsylvania, the position of clinical professor of genito-urinary diseases in that institution is vacant. Individuals desiring to be considered as candidates for the position may send notice of such desire to the Rev. Jesse Y. Burk, secretary of the Board of Trustees, 400 Chestnut street, Philadelphia, before November 10, 1900.

Floating Quarantine Hospital.—The schooner *Georgie Clark*, recently bought by the United States Marine-Hospital Service, has been turned into a floating quarantine station at Philadelphia. She will be equipped with disinfecting chambers, supplemented by a sulphur furnace for fumigation by sulphur dioxide, and tanks and pumps for bichlorid solution. This equipment will be placed on deck, so that while in operation in a hot climate it will not be necessary for any of the work to be done in the hold of the vessel. The *Clark* will go to Cuba or Puerto Rico.

Must Report Disease.—Chief J. Lewis Good, of the Bureau of Health, has mailed a printed circular to each practicing physician in Philadelphia, notifying him of the regulations of the Bureau concerning contagious diseases, bac-

teriology, pathology, and disinfection. It states that cultures and other materials sent to the police station houses or the Detective Bureau will be forwarded to the division of bacteriology at once, on request of physicians. Diphtheria antitoxin as well as diphtheria culture outfits can be obtained at the same places, day or night, free of charge.

Medico-Chirurgical College.—The Board of Trustees has elected Edward M. Paxson, former Chief Justice of the Supreme Court of Pennsylvania, president of the college, and recommended measures that will cause a complete change in the policy of this progressive institution. The Board of Trustees has heretofore consisted of 15 members, 9 of whom were elected by the faculty of the college from its membership, and one as a representative of the alumni, while the remaining 5 members were laymen. The trustees have felt for some time that the interests of the college could be better served by the withdrawal of the members of the faculty from the board and the filling up of their positions by laymen. In consequence Judge Paxson will have associated with him such a Board of Trustees.

Change in Mortality.—While the death-rate from some diseases in Philadelphia has diminished during the last 18 or 20 years in others it has greatly increased. During the last 21 years the city's mortality from cancerous diseases has increased about 31%; from pneumonia, 60%; from diphtheria, 66%, and from kidney diseases, about 175%. On the other hand the diminution of the death-rate from pulmonary tuberculosis in 18 years is about 31%. The average death-rate from typhoid fever from 1892 to 1898, inclusive, was about 40% less than the 7 years immediately preceding. There has, however, been a slight decrease in the entire mortality-rate of the city, though not so great as the falling off in the amount of general sickness might lead one to expect.

Better Clinical Instruction.—At a recent meeting of the Board of Charities and Corrections of Philadelphia it was resolved to enlarge the scope of clinical teaching of the Philadelphia Hospital, and under regulations arranged with the superintendent is to be an obligation assumed by every member of the visiting staff, and can only be omitted by members of the staff after special arrangement with the superintendent.

Among the appointments made by the board were those of Dr. Joseph McFarland, of the Medico-Chirurgical College, and Dr. Simon Flexner, of the University of Pennsylvania, as pathologists at the Philadelphia Hospital; Dr. R. F. Sonnekamp, as assistant physician in the insane department, and Dr. Robley D. Newton, as surgical registrar.

A Case in Medical Jurisprudence.—In Court of Common Pleas No. 1, of Philadelphia, there has been filed an action of peculiar interest to the legal and medical professions. The Statement of Claim as filed on behalf of Peter B. Sprenkle and wife, is for damages to the amount of \$50,000 against the Munyon's Homeopathic Home Remedy Company, and avers they were influenced by an advertisement appearing in various newspapers to the effect that "Munyon's skilled specialists are at your service for the mere asking," and that "Munyon's doctors are free at 1505 Arch Street." The plaintiff's claim is based on the alleged fact that Rebecca E. Sprenkle applied at the office of the defendant company, and while suffering only slightly from pains in her head, was induced by Dr. W. S. Moat, an agent, employe, and representative of said defendant company, to be treated for an alleged serious internal trouble, for which treatment she paid \$30 in a period covering from April 7, 1900, to June 2, 1900, and that the treatment, medical and surgical, was of such a nature as to wreck her health and produce permanent ventral hernia, and that she was immediately thereafter compelled to seek the advice of another physician and retire to a hospital where she was obliged to remain for a great length of time, and has since become a confirmed invalid.

Philadelphia Pediatric Society.—At the meeting on Tuesday, October 9, 1900, Dr. W. O. XANDER exhibited 2 boys, 8 years of age, who developed, a week apart, attacks of **acute nephritis** with great dropsy, the urine containing large amounts of albumin, blood, renal epithelium and casts.

Mumps existed in the neighborhood and there had been in these cases some swelling near the angles of the jaws, which had disappeared when the cases were seen, so that it was thought possible for the nephritis to have been secondary to mumps. In the discussion DR. GRIFFITH said that so many conditions simulated mumps that the history was not sufficient upon which to base a diagnosis of mumps. DR. WELCH was of the same opinion and thought that the cases might easily have been scarlet fever, the rash and desquamation having disappeared. DR. STENGEL, who saw the patients with Dr. Xander, was of the opinion that they had glandular fever primarily with secondary nephritis; mumps could be excluded by the history of the location of the swellings, and scarlet fever was considered, but no rash had been seen and there was no trace of peeling.

DR. T. S. WESTCOTT gave formulas illustrating a method for the **Differential Modification of the Proteids of Cow's Milk in Percentage Mixtures.**

DR. MACLACHLIN presented a patient, an infant 24 days old, with a rapidly destructive **syphilitic lesion** of the upper lip, the greater part of the right half being destroyed; the right eyeball was sunken in the orbit and there were ulcers on the mucous membrane of the right cheek; a large nevus covered the right side of the face and the right scapula. In the discussion, DR. SCHAMBERG thought that the distribution and character of the lesions pointed to some trophic origin rather than to syphilis.

DR. F. A. PACKARD read the **Report of the Milk Commission**, which appears in another column of the JOURNAL. DR. M. OSTHEIMER reported a case of **fatal intestinal hemorrhage** of unknown origin in an infant of 5 months; autopsy showed no ulceration in any part of the alimentary tract.

DR. J. H. JOPSON exhibited a **larynx with a stricture** extending from below the vocal cords to the cricoid cartilage, removed from a boy 5 years old, who had had to wear an intubation tube for 41 days after membranous croup; when the tube was removed dyspnea and cyanosis began to come on with increasing severity; as the smallest sized intubation tube could not be inserted tracheotomy was done; an attack of measles developed with pneumonia, terminating fatally; the stricture scarcely admitted a small grooved director. The treatment of "retained tubes" was dwelt on.

Vital Statistics of Philadelphia for the week ended October 13, 1900:

Disease.	Cases.	Deaths.
Total mortality		338
Inflammation of appendix 1, bladder 2, brain 7, bronchi 4, kidneys 9, liver 1, lungs 14, peritoneum 7, pleura 1, stomach and bowels 12, tonsils 1		59
Lungs—tuberculosis of 55, hemorrhage of 1, congestion of 3		59
Debility 3, marasmus 17, inanition 7, ...		27
Heart—disease of 21, fatty degeneration of 1		22
Carcinoma of bladder 1, breast 3, liver 2, rectum 1, stomach 5, throat 1, uterus 3, sarcoma of leg 1, stomach 1, liver 1		19
Diphtheria	99	16
Brain—diseases of 2, congestion of 3, hemorrhage of 5, tumor of 2, softening of 1 . .		13
Uremia 9, Bright's disease 4		13
Old age		13
Casualties		11
Typhoid fever	49	10
Cholera infantum		10
Liver—cirrhosis of 7, fatty degeneration of 1		8
Paralysis 5, apoplexy 3		8
Convulsions 4, puerperal 1		5
Drowned		4
Poisoning—phosphorus 1, strychnin 1, puerperal 1		3
Diarrhea 1, dysentery 2		3
Abscess of liver 1, pelvis 1		2
Suicide—carbolic acid 1, illuminating gas 1, Scarlet fever	24	1
Aneurysm of aorta 1, atheroma 1, colic 1, membranous croup 2, cyanosis 1, abdominal dropsy 1, epilepsy 1, erysipelas 1, fracture of thigh 1, senile gangrene 1, hemorrhage of bowels 1, umbilical hemorrhage 1, jaundice 1, rheumatism 1, spinal sclerosis 1, surgical shock 1, septicemia 2, syphilis 1, tabes mesenterica 1, tetanus 2, whooping-cough 2		

Pittsburg Academy of Medicine.—At a meeting held October 8, DR. E. W. DAY read a paper on **The sequelae of middle-ear suppuration, with a report of 4 cases.** The serious nature of the condition which may follow a chronic suppurative process in the middle ear, and the anatomic relations which favor their development were pointed out. These are: (a) Purulent meningitis; (b) extradural abscess; (c) sinus thrombosis; and (d) cerebral or cerebellar abscess. When there is free drainage through the external auditory canal, such sequelae are not apt to follow, but so long as the middle-ear is the seat of an inflammatory process, extension to the cranial cavity through its bony walls is always possible. Not infrequently intracranial involvement occurs so slowly, and gives rise to so few symptoms, that it is entirely overlooked until an acute exacerbation of the inflammatory process in the ear aggravates the condition and produces a lesion sufficiently extensive to give rise to the characteristic symptoms. It is a common error to consider the virulence of the infection proportionate to the odor of the purulent discharge. To quote MacEwan, "as purulent otitis media and the extension of the inflammatory process to the mastoid antrum and cells is the primary focus which leads most often to intracranial inflammatory lesions, the eradication of the otitis media must be regarded as the most potent factor in the prophylaxis of inflammatory cerebral lesions." To wait until symptoms of intracranial involvement appear frequently sacrifices the life of the patient. Purulent meningitis is the least amenable to surgical treatment, as the symptoms appear so suddenly and the inflammatory process spreads with great rapidity. A fatal case of this complication was reported in the person of a girl who had suffered destruction of the tympanum, and partial loss of the malleus following scarlatina years before. There was no discharge and no granulations, and the inflammatory process seemed to have long since subsided. At operation the inner wall of the antrum was found eroded, exposing the dura, and pus oozed from between this membrane and the bone. Extradural abscess, when localized and promptly evacuated, gives the best results, the mortality being quite low. A case previously reported was referred to. The diagnosis and operative treatment of lateral sinus thrombosis were considered at length, and two cases reported. In operating for this condition the most rational procedure is to ligate the jugular vein below the seat of thrombus and dissect it out up to and including the lateral sinus as far as thrombus extends. DR. M. R. WARD, speaking on the same subject, said that cerebral and cerebellar abscess are almost always traceable directly or indirectly to a suppurative process in the middle ear. The tympanic and cerebral cavities are separated by a thin, bony partition, which is often the seat of a necrotic process. This is especially true of old and neglected cases of a suppurative character, and is to be regarded with the greatest apprehension. If the inner wall of the attic be involved, the cranial cavity may be infected by perforation. If the mastoid is affected the lateral sinus is in danger. The following cases were reported: (a) Epidural abscess following infection from the middle ear which burrowed backward and perforated the occipital bone $1\frac{1}{2}$ inches back of the mastoid without involving the brain proper. Operation was followed by recovery, and the patient was presented for examination. (b) Epidural abscess over temporo-sphenoidal lobe from perforation upward through roof of auditory canal. Entering the cranial cavity through the mastoid which was free from pus, two drams of pus were evacuated at operation. Patient died. (c) Pyemia with metastatic abscesses in almost all the joints of the body due to a purulent otitis media. Death. (d) Localized meningitis of otitic origin. Mastoid opened and a quantity of pus evacuated. Severe cranial symptoms, including aphasia, followed, with ultimate recovery. The great danger in operating upon this class of cases is not in doing too much, but in doing too little. Every vestige of necrotic tissue must be removed. In closing, Dr. Day said that if a culture made from a case of purulent otitis media showed streptococci, we might expect serious complications. Other bacteria are of little prognostic importance. Symptoms are very unreliable, but it is wise to record pulse and temperature every 2 hours night and day. Dr. Ward concurred in the slight value of symptoms, and instanced his case of pyemia in which the temperature, 2 days after admission, was never above 100.4° F., and the greater part of

the time was 99° or less. Wilde's incision is a very doubtful surgical procedure, but in some cases is sufficient. A case was cited as an example. Cerebral complications are possible without perforation of the bony plate, but not probable. Dr. WILLETS contended that the case cited by Dr. Ward in justification of Wilde's incision did not show that it was of any value, as the outer wall of the mastoid had already been perforated before incision was made.

NEW YORK.

Home for Aged Men.—The late Samuel Pringle, of New York, left a fund of \$250,000 to erect and maintain a home for old men who were once rich, but have lost their fortunes.

Requests to Charity.—By the will of the late Ignatz Hoff, of New York, the following institutions each receive \$5,000: St. Joseph's, Columbus, and St. Francis Hospitals, and the German Hospital and Dispensary.

Physician Found Wounded.—Dr. Joseph W. Dwyer, a physician of Passaic, N. J., and house surgeon in the general hospital there, was found in a dying condition in an areaway of that city October 13. Whether he fell or met with foul play is not evident.

Bullets Cause Insanity.—An autopsy performed on the body of George Reimherr, who died in the insane pavilion of Bellevue Hospital recently, showed that the man's insanity had been caused by 2 revolver bullets which were lodged in his head. They had been imbedded there for 2 years.

Trinity Hospital of New York, which has been closed since May for repairs, was reopened October 15. This hospital, which has been under the management of the Sisters of St. Mary for many years, will, in the future, be under a secular superintendent, the Sisters having withdrawn.

Private Charities.—Applications have been received by the Board of Estimates of New York from private charitable institutions. St. Joseph's Asylum asked for \$90,000; St. Joseph's Institute for \$30,900; the Actors' Fund for \$20,000 and the Washington Square Home for Girls for \$9,859.

Dr. S. Baruch, of New York, has been awarded a silver medal for his efforts in behalf of free public baths by the jurors of the Paris Exposition of 1900. Chicago, Buffalo, and (prospectively) New York are the only cities in the world that provide free cleansing baths, with soap, hot water, and towels.

Memorial Hospital at Oneonta.—The corner-stone of the Aurelia Osborn Fox Memorial Hospital at Oneonta, N. Y., a gift of Mr. Reuben L. Fox, in memory of his wife, was laid with Masonic ceremonies on October 5. The hospital is designed to be a beautiful structure erected according to the most approved sanitary and scientific plans.

New York Obstetrical Society.—At the annual meeting of this society, held October 9, 1900, the following officers were elected for the ensuing year: President, Dr. H. J. Boldt; first vice-president, Dr. Ralph Waldo; second vice-president, Dr. H. N. Vineberg; recording secretary, Dr. G. L. Brodhead; assistant secretary, Dr. G. G. Ward; corresponding secretary, Dr. E. E. Tull; treasurer, Dr. J. Lee Morrill; pathologist, Dr. W. S. Stone.

Correction by Dr. A. L. Benedict.—Dr. A. L. Benedict, of Buffalo, writes: "The report of my paper on eye-strain, read before the Buffalo Academy of Medicine, and published on page 615 of your issue of October 6, is liable to give a wrong idea of my views. For instance, the first sentence, which correctly expresses my belief that eye-strain is an infrequent cause of chronic gastric symptoms, might from the context be understood to claim that eye-strain is the result of gastric disturbances, a manifest absurdity. As Dr. Jones and Dr. Starr were not at the meeting I do not understand how they could have taken part in the discussion. While conceding that eye-strain may be the last straw in producing gastric subacidity, nausea, etc., I hold that this etiologic relation should not be taken for granted, but should be established by exclusion, after using other methods of

diagnosis. Barring the fact that my language was misunderstood in one particular by one of the discussers, the discussion showed a surprising harmony of opinion, though the relative frequency with which gastric symptoms and eye-strain should be regarded as coincidences, and as related, as effect and cause, naturally appeared differently according as one looked at the matter from one or the other standpoint, without being able to follow up many cases with the combined experience of oculist and digestive specialist."

NEW ENGLAND.

The American Humane Association has awarded a prize of \$125 for the third best essay on "Vivisection; Its Abuses and Their Remedy," to Arthur W. Towne, of Amherst College.

Typhoid at Newport.—An epidemic of typhoid fever is reported at Newport, R. I. The city has no Board of Health composed of medical men; the Aldermen act in that capacity. The Newport Hospital is full and a committee has been appointed by the Aldermen to arrange for the establishment of an emergency hospital. The city water will be examined.

Society Doctors' Hospital.—At a meeting in Springfield, Mass., of the delegates representing the United Protective Association, they voted to recommend to their respective societies that patients be sent to the Buscall Sanatorium. A rate has been made that will be good for all members of societies, and physicians employed by societies will be granted admission.

Yale Medical School.—Prof. Russell H. Chittenden, director of the Sheffield Scientific School, has been elected professor of physiology in the Yale Medical School. His relationship to the Sheffield Scientific School will not be affected. Dr. Yandell Henderson, who has been an instructor in the Sheffield Scientific School, will be Professor Chittenden's assistant in his work in the medical school.

A Vigorous Legal Decision.—The following important decision has recently been rendered by Judge Grime, of Fall River, in the case of Dr. Ezra R. Wilbur, clairvoyant physician, against a police officer, to recover for professional services. Judge Grime ruled in these words: "I am satisfied in my own mind that the services rendered were worse than valueless, and that had they been continued without change the defendant would have reaped his reward in death. Still, he employed the plaintiff and must pay the bill."—[*Boston Medical and Surgical Journal*.]

CHICAGO AND WESTERN STATES.

The County Hospital at Milwaukee will be remodeled and rebuilt at an expense of about \$100,000.

The Visiting Nurses of Chicago, during the summer months have cared for 2,096 patients, making 9,790 visits.

Rockford Hospital, Illinois, has received a bequest of \$1,000 from the estate of the late Elizabeth Hulse Moffatt.

Northwestern University Medical School.—Dr. August F. Lemke has accepted a position in the department of didactic medicine.

A Medical Defence Association has been formed by the physicians of Tippecanoe Co., Indiana, to secure reasonable promptness in the payment of bills.

For Disabled Soldiers.—It is probable that the hospital at Fort Logan, Colorado, will be rebuilt and made into a national sanatorium for sick and disabled soldiers.

The College of Physicians and Surgeons of San Francisco has added a postgraduate department to its curriculum. A new Polyclinic has also been organized in that city.

The Women's Medical School of Northwestern University began its fall term October 1, with the quota of 100 students, to which it is limited. Mary G. McEwen, lecturer on anatomy, has been added to the faculty.

Anti-Fat Remedy.—A resident of Wabash, Ind., who 2 years ago weighed 350 pounds, is reported dying from ulceration of stomach and liver, caused by the antifat remedies which he used to reduce his obesity.

New Hospital at St. Paul.—Of the \$50,000 which is desired by the Norwegian Lutheran Synod to establish a hospital at St. Paul, Minn., \$10,000 has been raised. As soon as \$35,000 is subscribed work will begin on the structure.

The St. Clair Co. Medical Society of Illinois gave a pleasant surprise and reception to Dr. A. Berger, of Lebanon, on his seventy-ninth birthday. He was the founder of that Society and is the oldest practitioner in Southern Illinois.

St. Louis Hospital.—Plans for the new city hospital at St. Louis, Mo., are about complete. They include 1 octagonal ward 3 stories high, 1 isolation ward, 5 general wards, surgical room, kitchen and laundry, etc., with a large open court in the center.

The State Board of Health of Colorado, in a recent bulletin, disavows any intention to undertake a crusade against tuberculous individuals. It points out the danger that this class may be to the community and the means of preventing them.

Manila Hospital Appointment.—Dr. John R. McDill, of Milwaukee, Wis., for the past year major-surgeon of the Thirtieth Infantry, U. S. V., now in the Philippines, has been appointed chief operating surgeon of the Government Hospitals at Manila.

The Inland Empire Clinical Society held its first semiannual meeting in Spokane, Washington, recently. The following officers were elected for the ensuing term: President, Dr. J. W. Morris, of Lewiston, Idaho; vice-president, H. W. Mauzey; secretary, C. P. Thomas; treasurer, A. F. MacLeod.

Sanatoriums at Hot Springs.—A plan is under consideration to build a large sanatorium at Hot Springs for railroad men, and the Knights of Pythias are considering a proposition to build a \$250,000 sanatorium at that place. A committee of 5 representatives of the Supreme Lodge is endeavoring to raise the funds.

Arkansas Hot Springs.—An interesting report on the Hot Springs Reservation in Arkansas has been made by the superintendent, Martin A. Eisele. He says there were 50,000 visitors during the season. The income to the Government from water and groundrents amounted to \$18,670. The reservation includes 911 acres, and in this tract there are 157 Government lots still unsold. These lots have been appraised at \$75,000. The amount of water distributed to each bathhouse is scrupulously controlled and the public protected from monopoly and extortion by the schedule of charges provided by the Secretary of the Interior. The free Government bathhouse is of great benefit to indigent sufferers, who otherwise would not have the benefit of the waters. The record for the year shows 9,508 applications for free baths, of which only 216 were refused.

SOUTHERN STATES.

The Hebrew Hospital and Asylum of Baltimore received donations to the amount of \$2,500 at the thirty-third annual Succoth Festival held October 14.

Insane Veterans.—St. Elizabeth's Insane Asylum at Washington recently received 16 insane soldiers, veterans of the Civil War, from the Soldiers' Home at Milwaukee, Wisconsin.

Naval Surgeon Lippitt, of Washington, who was on duty in Peking during the siege of the legations, was badly wounded in the left thigh, the bone being fractured. The leg has been shortened about 3 inches.

General Inspection of Pupils to be Instituted.—On account of reported prevalence of disease in several country parishes, the New Orleans City Board of Health has decided to examine all pupils now in attendance in the public schools of the city.

A Korean Woman Physician, Mrs. Pak, was recently graduated from the Woman's Medical College, Baltimore. Her first instruction was received at a mission school in Seoul. She has returned to Korea, where she intends to engage in medical missionary work.

Old Quarantine Grounds for Sale.—It is reported that the old quarantine grounds on the shore of the Potapscow River, just opposite Fort McHenry, are for sale. At one time this property was estimated to be worth \$100,000. The proceeds may be used to help erect a hospital for infectious diseases in Baltimore.

Baltimore Council Wants Hospital.—At a meeting of the Baltimore Council recently an amendment to the ordinance providing for the sale of the Eastern Potter's Field was offered, which provides that the money received from the sale of the ground shall be used to help in the erection of a hospital for contagious diseases.

The Ophthalmological and Otological Society, of Washington, D. C. (Dr. S. O. Ritchey, president), held its first fall meeting for 1900, October 9, at the residence of Dr. W. K. Butler, who read the paper of the evening, entitled "The Necessity for Wearing Glasses," which was well received and heartily responded to by the members.

Springfield Hospital for the Insane.—At a meeting of the board of directors of this institution at Sykesville, Md. recently, it was decided to fit up a room in the institution as an operating room. Inquiries have been made in regard to the admission to the institution of feeble-minded and idiotic children. The board decided against the admission of such patients.

Regulation of Marriage.—The Tristate Medical Society of Tennessee, Alabama and Georgia, recently in session in Chattanooga, Tenn., has taken steps to secure medical legislation in those 3 States for the purpose of regulating or prohibiting the marriage of habitual criminals, persons afflicted with incurable diseases, drunkards, and victims of harmful drugs.

The Clinical Society of Washington, D. C., after its usual summer vacation, reconvened at 1121 Fourteenth street, N. W., October 8. DR. WALLACE JOHNSON read an interesting paper on **Clinical pathology**, in the discussion of which many of the 25 members present engaged. The following officers were elected for the ensuing year: Dr. Charles C. Marbury, president; Dr. Duff G. Lewis, vice-president; and Dr. J. Carlisle DeVries, secretary and treasurer.

Richmond (Va.) News.—Owing to the large number of cases of typhoid fever in the State and city, the Richmond Academy of Medicine, at a recent meeting, discussed the subject freely. The principal speaker of the evening advanced the idea that its prevalence was due to the long hot dry summer, followed by pouring rains, which flushed and flooded the lands, thereby carrying germs to the drinking water. The number of cases reported in this city for September, 1899, was 21, with 6 deaths; for September, 1900, 44 cases, with 15 deaths.

The bids for the construction of the new Charlotte Williams Hospital have been received by the committee and work on the foundation will soon begin.

Orleans Parish Medical Society.—At the meeting, October 13, DR. C. JEFF MILLER read a paper on **A case of double intraligamentous cyst**, with remarks on the operative procedure in the case. Dr. Miller further outlined the plan to be pursued to avoid hemorrhage from the uterine and ovarian arteries in operating upon these cases. DR. S. P. DELAUP reported **A case of Raynaud's disease** which had sustained 10 amputations and was now about to undergo the eleventh, at his hands. Amputation has thus far been the only efficient means of relieving the intense pain. Gangrene had also to be contended with. DR. GORDON KING exhibited several specimens of **polypi** removed from the nasopharynx of patients at the Ear, Nose, and Throat Hospital, displaying several styles of snares and explaining the indications for the use of each.

Hospital Sites.—Dr. Woodward, in memoranda regarding sites for hospitals, recently submitted to the Commissioners

of the District of Columbia, is reported to have said that the site of Johns Hopkins University Hospital is equivalent to 1,679 square feet per bed, while the Edinburgh Royal Infirmary has but 829 square feet. Dr. Woodward quotes an authority who says that with a hospital of from 100 to 200 beds, 60 square yards per bed may suffice under very exceptional conditions, but with 300 to 400 beds the area should be at least 90 square yards per patient, and with 500 beds and upward 120 to 140 square yards per patient would be required; but it may be safely laid down that on a town site surrounded by houses it is not admissible to afford in any hospital less than 90 to 100 square yards per patient.

CANADA.

A Crematory is being built at Montreal. Arrangements have been made to accept Sir W. C. McDonald's offer to build and endow the institution.

Toronto University.—The department of Dr. J. J. Mackenzie, professor of pathology in the medical department, is being equipped at an expense of \$4,000.

Proposed Legislation for Inebriates in Ontario.—Before the conference of the Canadian Charities and Correction Convention, which assembled recently in Toronto, Dr. Gilbert Gordon, President of the Toronto Medical Society, outlined the plan for dealing with the inebriate class of the community. Bills is to be introduced into the Ontario Parliament at the next session. The Government will be called upon to appoint a superintendent whose duty it will be to organize the medical treatment of this class on the probation system. In cities of 20,000 or over a probation officer will be appointed who will have the supervision of inebriates under suspended sentence. Wards will also be arranged for in the General Hospitals of the province. The scheme has already been endorsed by the Ontario and Canadian Medical Associations.—[*Medical News*]

MISCELLANY.

Relief stations will be established at San Juan and Ponce, P. R., and at Honolulu, H. I., by order of the Surgeon-General.

Invalids from Manila.—On September 23 the transport *Sherman* with 411, and on October 2 the *Meade*, with 273 sick soldiers on board, left Manila bound for San Francisco.

American pharmacy is to be congratulated on account of the international recognition of American pharmaceutical literature. The Paris Exposition of 1900 has announced that the highest award (the Grand Prize) was bestowed upon Remington's Practice of Pharmacy. The work was exhibited by the publishers, J. B. Lippincott Co., of Philadelphia.

Hospital Care of Soldiers.—The Secretary of War has amended paragraph 1457 of the army regulations so as to provide that an officer or enlisted man on duty with any command or detachment who may require hospital care and treatment at a place where there is no army hospital may be taken to a civil hospital at rates not to exceed the usual local charges for like services to private patients.

Obituary.—ROSS RICHARDSON BUNTING, of Philadelphia, October 11, aged 66.—JOSEPH TREPP, of Adrian, Mich., September 25, aged 73.—SAMUEL S. DOWNS, of Waterville, O.—JAMES M. MONTMOLLIN, of Ashland, Ky., September 24.—EDWARD N. WEBSTER, of St. Louis, Mo., September 25, aged 52.—JOHN BOSWELL, of Colfax, Wash., October 11, aged 90.—DAVID PELLMAN BOYER, of Philadelphia, October 15, aged 76.

United States Navy.—Rear Admiral Van Reypen, surgeon-general of the navy, reports that the health of the navy and marine corps has been good during the past year. The death-rate from disease has been less than the average for the same period. Owing to 21 deaths from gunshot wounds, the mortality-rate from injuries was somewhat increased. There are now 17 vacancies in the list of assistant surgeons. It is hoped that these vacancies will be filled so soon as it is generally known that recent legislation gave assistant surgeons in the navy the same rank as assistant surgeons in the army.

The American Electrotherapeutic Association will hold its eleventh annual meeting in Buffalo, N. Y., September 17, 18, and 19, 1901. The following is the list of officers for the ensuing year: President, Dr. Ernest Wende, Buffalo, N. Y.; first vice-president, Dr. Fred. H. Morse, Melrose, Mass.; second vice-president, Dr. D. R. Braiser, Chicago, Ill.; treasurer, Dr. R. J. Munn, Savannah, Ga.; secretary, Dr. R. Bué, Harrisburg, Pa.

Yellow Fever in Havana.—In the systematic attempt to control the yellow fever outbreak in Havana, Major Gorgas and his staff inspect more than 600 houses daily, with the view of enforcing cleanliness. Since October 1, 113 new cases have been officially reported. The disease prevails in Havana to a greater extent than since 1897. The excess of mortality during the present year over the 2 preceding years is due to the fact that there are many more unacclimated persons in Havana now than at any time since 1897. The filthy condition of the harbor of Havana is believed to be largely responsible for the prevalence of the disease, and many medical men are of the opinion that the only effective measure that could be adopted would be the cutting of a tidal canal, which would allow the tides to flow back and forth through the harbor.

Marriage of the Deaf.—Prof. E. A. Fay has examined the records of 4,500 marriages of the deaf and he discovers that, while taking the marriages of deaf persons as a whole, nearly 9% of the offspring are deaf, as contrasted with less than $\frac{1}{10}$ of 1% of deaf children as a result of the marriages of normal persons, a very different and much more favorable result is obtained if it be found that the deaf parents had no trace of previous deafness in their families. In cases of this kind Prof. Fay proves that the "marriages of deaf persons without deaf relatives is no more likely to result in deaf children than any marriage in the community at large;" while "the intermarriage of hearing persons who have deaf relatives is just as likely to result in deaf children as the marriage of the deaf." Intermarriage of blood relatives, with one or both defective, is very dangerous, and while Prof. Fay gives certain deaf mutes the hope of normal offspring, his study makes the evil possibilities of the marriage of defectives loom large.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended October 12, 1900:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
ALASKA:	Nome Oct. 7	1	(in barracks.)
KANSAS:	Wichita Sept. 29-Oct. 6		
OHIO:	Cleveland Sept. 29-Oct. 6	10	
PENNSYLVANIA:	Philadelphia Sept. 29-Oct. 6		

SMALLPOX—FOREIGN.

AUSTRIA:	Prague Sept. 8-15	1	
BRAZIL:	Pernambuco Aug. 24-31		4
ENGLAND:	Liverpool Sept. 15-22	1	
"	London Sept. 15-22	2	
FRANCE:	Paris Sept. 15-22		3
"	St. Etienne Sept. 1-15	1	1
GERMANY:	Konigsberg Sept. 8-15	2	
MEXICO:	Vera Cruz Sept. 22-29		1
RUSSIA:	Odessa Sept. 15-22	11	2
"	St. Petersburg Sept. 8-15	9	5
SCOTLAND:	Glasgow Sept. 21-28	22	3
YUKON TERRITORY:	Dawson Sept. 8		Present.

YELLOW FEVER.

COLOMBIA:	Barranquilla Sept. 16-23		1
"	Cartagena Sept. 1-14	3	3
CUBA:	Havana Sept. 22-29		19
MEXICO:	Vera Cruz Sept. 22-29		10

PLAGUE.—FOREIGN.

PARAGUAY:	Asuncion July 21-28		
SCOTLAND:	Glasgow Sept. 15-22	3	2
WALES:	Llandoff Oct. 9		1
(Imported from Rosario.)			

CHOLERA.

STRAITS SETTLEMENTS:	Singapore Aug. 11-25		
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Changes in the Medical Corps of the U. S. Army for the week ended October 13, 1900:

WINN, Major WILLIAM B., surgeon, will proceed to the Philippine Islands on the army transport "Hancock," to sail October 1.

REYNOLDS, CHARLES R., acting assistant surgeon, is relieved from temporary duty at the Presidio and will proceed to Seattle, Wash., where he will report on the transport "Oopack" for temporary duty during the voyage to the Philippine Islands, for assignment to duty.

WESTERDAHL, Gus. J., hospital steward, is assigned to temporary duty with troops on the army transport "Hancock," to sail for the Philippine Islands about October 1. Upon arrival at Manila he will report for assignment to duty.

REILLY, Lieutenant-Colonel ROBERT M. O., deputy surgeon-general, is granted leave of absence for 20 days.

JOHNSON, BURKE L., acting assistant surgeon, is relieved from duty in the division of the Philippines, and will proceed to Washington, D. C., and report to the Surgeon-General of the Army for instruction.

JOHNSON, BURKE L., acting assistant surgeon, is granted leave of absence for 3 months, to take effect upon his relief from duty in the division of the Philippines.

TESSON, Major LOUIS S., surgeon, will report to the commanding general, department of the Columbia, for assignment to duty as chief surgeon of that department in addition to his duties as surgeon at Vancouver Barracks.

EMERSON, HERBERT, acting hospital steward, Fort Columbus, is transferred to Fort Dade to relieve Hospital Steward James V. Mackie.

MACKIE, JAMES V., hospital steward, will be sent to San Juan, P. R., for assignment to duty in the medical supply depot at that place.

VAN TUYL, WM. R., acting assistant surgeon, is relieved from duty at Jefferson Barracks, to take effect upon return to duty at that post from leave of Major Marshall W. Wood, surgeon, and will then proceed to Fort Thomas for duty.

WILSON, NELSON W., acting assistant surgeon, is granted leave of absence for 1 month.

KERVIS JOHN NAN, hospital steward, Fort Duchesne, is transferred to Fort Washakie for duty.

The following-named hospital stewards (appointed October 3, from acting hospital stewards) were assigned to duty at their present stations: OSCAR A. MANSEAU, Plattsburg Barracks; HARRY T. SMITH and HERBERT CURTIS, Army general hospital, Washington Barracks; GEORGE W. MCKENZIE, Fort Bliss; HUGH C. CLOVER, Fort Washington; HERBERT THOMPSON, San Diego Barracks; WILLIAM J. DONAHEY, Fort Morgan; JOSEPH C. MERRY, Fort Mott; JULIUS STRAUSS, Fort Hunt; JAMES J. COOK, Fort Casey; FREDERICK S. SIMMONS, Camp Osborne, Idaho.

MACCLEERY, HUGH R., hospital steward (appointed October 3, from acting hospital steward), now at Humacao, P. R., will report to the commanding general, department of Puerto Rico, San Juan, P. R., for assignment to a station.

PHARES, WALTER L., hospital steward (appointed October 3, from acting hospital steward), now at Fort Myer, will be sent to Columbus Barracks for duty.

KILLIKELLY, HENRY, hospital steward (appointed October 3, from acting hospital steward), now at Fort Barrancas, will be sent to Fort Screven for duty.

DODGE, DONALD B., hospital steward (appointed October 3, from acting hospital steward), now at Vancouver barracks, will be sent to Fort Duchesne for duty.

GATES, CHARLES, hospital steward (appointed October 3, from acting hospital steward), now at Vancouver barracks, will be sent to Fort Huachuca for duty.

WOODHULL, Lieutenant-Colonel ALFRED A., deputy surgeon-general, is granted leave of absence for 10 days.

BORDEN, Captain WILLIAM C., assistant surgeon, is detailed as a member of the examining board at Washington barracks, vice Captain Edward L. Munson, acting surgeon, relieved.

Changes in the U. S. Marine-Hospital Service for the week ended October 11, 1900:

WOODWARD, R. M., surgeon, has been detailed to represent the Service at the meeting of the American Public Health Association, to be held at Indianapolis, Ind., October 22-26, 1900.

STONER, G. W., surgeon, is granted leave of absence for 7 days. October 9.

BANKS, C. E., surgeon, the 4 days' leave of absence granted by department letter of June 5 is revoked. October 10.

WHITE, J. H., surgeon, is granted leave of absence for 1 month. October 11.

COBB, J. O., passed assistant surgeon, to proceed to El Paso, Tex., on special temporary duty. October 9.

MATHEWSON, H. S., assistant surgeon, is relieved from duty at Philadelphia, Pa., and directed to proceed to San Juan, P. R., and assume command of the service, relieving Assistant Surgeon C. H. Lavinder. October 9.

LAVINDER C. H., assistant surgeon, upon being relieved from duty at San Juan, P. R., to proceed to Washington, D. C., for orders. October 6.

WILSON, R. L., assistant surgeon, is relieved from duty at San Francisco, Cal., and directed to proceed to Honolulu, H. I., and report to Surgeon Carmichael for duty.

CLARKE, P. M., acting assistant surgeon, is granted leave of absence for 20 days from October 15. October 6.

GOLDSBOROUGH, B. W., acting assistant surgeon, is granted leave of absence for 1 day. October 11.

TUTTLE, JAY, acting assistant surgeon, is granted leave of absence for 30 days from October 24. October 11.

ALLEN, G. C., hospital steward, is granted leave of absence for 6 days from October 22. October 5.

SOUTHARD, F. A., hospital steward, is granted leave of absence for 15 days from November 5. October 10.

MARR, HARRINGTON, of Tennessee, appointed acting assistant surgeon. October 2.

DOUGLAS, RICHARD, acting assistant surgeon, resigned October 7.

Changes in the Medical Corps of the U. S. Navy for the week ended October 13, 1900:

RICHARDS, T. W., passed assistant surgeon, detached from the "Indiana" and ordered to the "Alabama." October 16.

MORRIS, L., passed assistant surgeon, ordered to the Naval Academy.

MORGAN, D. H., assistant surgeon, detached from the "Vermont" and ordered to the Pensacola Navy Yard.

MURPHY, J. A., assistant surgeon, detached from the Pensacola Navy Yard and ordered to the Asiatic Station for duty on the "Don Juan de Austria;" to report at San Francisco, Cal., October 30, for passage on the "Solace."

HAAS, H. H., assistant surgeon, detached from the "Don Juan de Austria" and ordered home and to wait orders.
(Orders issued by the commander in chief of Asiatic Station.)

LUNG, G. A., passed assistant surgeon, detached from the "Monocacy" and ordered to the Cavite Naval Station.

THOMPSON, J. C., assistant surgeon, detached from the "Monocacy" and ordered to the Cavite Naval Station.

foreign News and Notes.

GREAT BRITAIN.

Death by Plague at Cardiff.—A sailor who recently arrived on the Tyne from Rosario, Argentine Republic, became ill. He went to Cardiff, Wales, where he died October 7, of the bubonic plague.

Dr. Yersin, to whom the Academy of Moral Sciences recently awarded a prize of 15,000 francs in recognition of his services to the cause of philanthropy, has devoted the sum to his antiplague serum establishment at Nha-trang.

Vaccination Cures Warts.—Dr. J. D. Staple, a public vaccinator of Bristol, gives a curious account of the cure of warts on the hands of a girl by vaccination. On one hand 94 warts were counted. In about 7 weeks after the operation the warts had gradually disappeared, leaving temporary white spots.

Diphtheria in Leicester.—The outbreak of diphtheria in Leicester is assuming serious proportions, no less than 73 cases having been notified in one week with 9 deaths. During a period of three months 444 cases were notified, as against 258 for the quarter ended in June last. A new isolation hospital has been opened.

Dowie in London.—The general secretary of the Medical Defence Union is reported to have said that England's medical men will ask the incoming Parliament to pass an act for the suppression of such humbugs as John Alexander Dowie, Chicago's divine healer. At present England has no law to fit this alleged healer's case.

Meath Hospital.—Richard Lane-Joynt has been elected surgeon to the Meath Hospital in Dublin in place of the late Sir William Stokes. Mr. Lane-Joynt has filled the position of assistant surgeon to the hospital for the past 7 years. He has devoted special attention to the study of x-ray skiagraphy, and was offered a position in this capacity on the staff of the Irish Hospital, but found himself unable to accept the offer.

A Female Military Medical Officer.—The Colonial Office has appointed Mrs. Hamilton Williams, M.B., B.S., to be one of the special service medical officers to the Ashanti force. She has distinguished herself greatly as Prideaux Scholar at the London School of Medicine for Women, and as the winner of the County Council research scholarship last year. We believe that Mrs. Williams is the first woman to occupy such a position in the British service.—[*Medical Press*.]

The Army Hospitals.—Sir William MacCormac, speaking in support of the Unionist candidate, said he was a Liberal, but he endorsed the position of the Unionist candidate in regard to the war. He went to South Africa in sympathy with the Boers, but experience in the country altered his opinions. The Army Medical Service was much undermanned, but as to the charges against hospitals the man who made them ought to have made them on the spot. The work done by the medical staff was beyond praise.

The Plague.—The latest reports regarding the position of the plague in Glasgow are most satisfactory. There have been no new cases for over 2 weeks. In Belvidere Free Hospital 21 cases of plague and 2 suspected cases remain. The number of contacts in the reception-houses has been now reduced to 19. Experience in India has established the fact that the so-called puerperal type of plague is an especially fatal form, and the observation would appear to be confirmed in Glasgow. The police authorities in Glasgow are dealing summarily with cases of overcrowding in the prescribed plague area. Some 70 cases of offense in this direction were brought up at the Southern Police-Court of the city, and fines were imposed. There seems every hope that the outbreak is drawing to a close. The advent of colder weather may assist the sanitary authorities in their attempts to get rid of the disease, although climate and season have but little influence in the behavior of plague. In no other part of the British Isles is plague known to exist. The number of cases of bubonic plague has gradually decreased in Hong Kong; at present about one case daily is reported. The total number of plague cases since the beginning of the year has been 1,053, with 995 deaths.

CONTINENTAL EUROPE.

Typhus Among German Troops.—Typhus fever is raging in the Sixty-eighth Infantry at Coblenz, Germany, and also in the garrisons at Brunswick and Saarbrücken.

Royal Lady a Physician.—The only royal lady in Europe to hold the degree of M.D. is the consort of the King of Portugal. She was the Princess Amélie of Orleans, and was born at Orleans House, Twickenham.

Lady Physician for Female Prisoners.—The Berlin Chief of Police has appointed Fräulein Agnes Hacker, M.D., as medical officer for female prisoners. She is the first lady doctor appointed to such a position.

At the Thirteenth International Medical Congress in Paris, 4,000 members and delegates were present. Of this number 2,000 were Frenchmen, 750 Russians, 570 Germans, 350 Americans, 330 Italians, and 220 Spaniards.

"El Siglo Medico" announces that the Spanish government has appropriated \$8,000 to enlarge Dr. Cajal's laboratory at Madrid, with \$1,800 annually for its maintenance and a pension of \$1,600 for the distinguished scientist, on whom the Moscow prize was bestowed by the International Medical Congress.—[*Journal American Medical Association*.]

The Military Step.—Dr. Colin, regimental physician in the French Army, has published the results of his investigations into the effects of regular marching in disciplined bodies upon soldiers. The regularity of the step causes the indefinite repetition of a shock of the bones and brain, infinitely more deleterious than an irregular walk, and to this regular repetition of the shock to the same parts of the body is due the peculiar aches, pains, and illness of troops. Dr. Colin's preventive is a rubber heel in all military boots. This heel has been tried at his instance in the French infantry, he says, and the result has been found to be a great relief to the soldiers.

MISCELLANY.

Leprosy.—There are 14 cases of leprosy on the Island of Guam. It is said that the disease is not increasing.

General Hospitals.—The Government of India has sanctioned the despatch of a third native general hospital of 500 beds, and the preparations at Calcutta of equipment for a fifth native general hospital of 500 beds.

The hospital ship "Maine" has arrived at Wei-Hai-Wei from Taku with many invalids on board, of whom 71 are Americans, including 2 officers.

Plague on British Vessel.—The British steamer *Highland Prince*, from Antwerp, August 30, London, September 7, and Bahai, October 4, arrived at Montevideo with plague on board. During the voyage 5 deaths occurred.

Obituary.—CLARK A. DUCKET, of Great Yarmouth, September 30, aged 69.—ARTHUR HENRY LEETE, at Salcombe, September 21, aged 33.—HENRY SAVAGE, of London, October 3.—SAMUEL JAMES FLOOD, of the Royal Army Medical Corps, recently in Ireland.—JAMES DIXON BRADSHAW, of London, September 23, aged 52.

A Specific for Dysentery.—The Kafirs and Zulus of South Africa make use of the root of the geranium, in the treatment of dysentery. They simply chew the root, but the British army surgeons give it in the form of decoction in milk. The remedy is reported to be a real specific, no failure to cure within 36 or 48 hours being recorded.

Medical Reform in Ceylon.—In order to protect the natives of Ceylon from the magic treatment of their quacks or "medicine men," the Government has established hospitals throughout the island from which official distributions of quinin are made to the natives in the fever districts. The Government medical officers also make prescribing tours during which they frequently hold an outpatient department beneath a big banyan tree in order to accommodate the natives who come in large numbers for treatment.

Hospital for the Insane in Syria.—On one of the lower slopes of Mount Lebanon, Syria, near the road from Beyrout to Damascus, is a newly built hospital for the care of lunatics. Mr. Theophilus Waldmeier, a veteran missionary in Abyssinia and Syria, is the founder, and it consists of a central administration block and 2 pavilions, accommodating 20 of each sex. At present 17 patients are under care. Dr. Wolff, from the Munsterlingen Asylum, Switzerland, is the medical superintendent. This is the first organized lunatic hospital in Syria and it has in consequence attracted much attention, the need for such institutions in the East being great. It will probably be dependent upon support from Europe for a good many years. Dr. Percy Smith is the chairman of the committee in London.

South African Hospitals Commission.—The Hospitals Commission held its opening sitting at Kimberley on October 1. The doctors and the members of the hospital staffs, in giving their evidence, says the *British Medical Journal*, agreed that the hospitals in the town were well arranged and equipped, and that no complaints had been made. The evidence given by the men who took part in the fighting was exactly contrary. They complained of bad treatment at Paardeberg owing to the lack of administrative ability. The field hospitals there had been so badly placed that many men had to lie in pools of water. The camp at Maitland was placed in a similar position, the men lying in tents full of water, many of them without blankets, overcoats, or oilskins. Two deaths occurred in consequence. The men also complained of the food arrangements, and stated that the supplies were unsuitable for convalescents.

Plague and Cholera in India.—An increase in plague-mortality is reported throughout India. The chief rise is in Mysore State. In Bombay City the mortality has increased from 51 to 75, and in the province from 64 to 160, in one week. Cholera continues to prevail in Bombay City and a few other places, but it is decreasing among the troops. The total number since August 3 is 271 cases, with 165 deaths, while in Bombay City alone over 400 deaths occurred the last week of August, and over 100 were reported in Kashmir. Fresh plague regulations of a very modified form have been recently promulgated at Poona. They are apparently the result of the recent resolution of the Government of India on the report of the Plague Commission. There will be disinfection of houses in which plague has been found to exist, and also of adjoining houses. Free inoculation will be available at convenient hours and facilities will be given for inoculation at home. There is no evidence to show that the avoidance of active measures in Calcutta contributed to the outbreaks. On the contrary, Calcutta has suffered much less than other places have suffered.

The Latest Literature.

British Medical Journal.

September 29, 1900. [No. 2074.]

1. A Discussion on Influenza as it Affects the Nervous System. JUDSON S. BURY, W. H. BROADBENT, PETER EADE, T. CLIFFORD ALLBUTT, G. NEWTON PITT, JOHN M. MACCORMAC, F. MONTAGUE POPE, SARAT K. MULLICK, S. EDWIN SOLLY, ROBERT SAUNDBY, ELIZABETH GARRETT ANDERSON, JOHN HADDON, WILLIAM EWART, JOHN WILLIAM MOORE, ST. CLAIR THOMSON, WILLIAM CALWELL, and THOMAS BUZZARD.
2. A Discussion on the Problems of Gastric Ulcer. J. FRANK PAYNE, S. HERBERT HABERSHON, WILLIAM GORDON, WILLIAM CALWELL, JULIA COCK, G. NEWTON PITT, W. STUART LOW, HENRY PYE-SMITH, and ROBERT SAUNDBY.
3. On Intermittent Pulse. A. R. CUSHNY.
4. Headaches and Other Nervous Symptoms in Relation to Postnasal Adenoids. DAVID MCKEOWN.
5. The Diastolic Expansion Movement of the Ventricles as a Factor in Compensation for Disease of the Mitral Valve. T. STACEY WILSON.
6. The Origin of Gout. W. RINGROSE GORE.
7. Subcutaneous Saline Infusions in Pneumonia. WM. EWART and BEAUMONT PERCIVAL.
8. The Progress of the Sanatorium Treatment of Consumption in England. JANE H. WALKER.
9. Consanguinity as a Factor in the Etiology of Tuberculosis. CHARLES A. DAVIES.
10. A Case of Fatal Malignant Endocarditis and Right Embolic Hemiplegia. WILLIAM EWART.
11. A Discussion on the Pathologic Distribution of the Diphtheria Bacillus and the Bacteriologic Diagnosis of Diphtheria. F. W. ANDREWES, DAVID LISTER, W. MILLER CROWFOOT, ROBERT MUIR, W. S. LAZARUS-BARLOW, and E. KLEIN.
12. A Case of Purpura and Intense Anemia, with Marked Deficiency in the Red Bone Marrow. ROBERT MUIR.
13. Uterine Myomata and Developmental Irregularity. W. ROGER WILLIAMS.
14. A Discussion on the Pathology of Cirrhosis of the Liver in Adults and Young Children. ARTHUR VOELCKER, LUDVIG HEKTOEN, SIMON FLEXNER, W. S. LAZARUS-BARLOW, J. O. WAKELIN BARRATT, T. DAVID LISTER, THEODORE FISHER, J. LAIDLAW MAXWELL, JR., and STUART MACDONALD.
15. The Etiology of Tropical Dysentery. SIMON FLEXNER.
16. Nutrient Media of "Standard" Reaction for Bacteriologic Work. J. W. H. EYRE.
17. Two Cases of Lipoma of the Kidney. W. S. LAZARUS-BARLOW.
18. The Significance and Pathology of the Argyll Robertson Pupil. WILFRED HARRIS.

1.—Bury opened a discussion on **influenza as it affects the nervous system**, in the section of medicine of the British Medical Association. Cases in which the nervous system seems to be specially selected for attack by the bacilli and their poisonous products may be separated into 2 groups. 1. A group of nervous diseases which develop during or shortly after the febrile stage; such as meningitis and hemorrhagic encephalitis. 2. A group of nervous diseases which usually occur after the attack has subsided, such as neurasthenia and multiple neuritis. Of the nervous diseases belonging to the first group, 2 types of cases may be seen: (1) The comatose type; and (2) the delirious type. In the comatose type the patient gradually became drowsy and apathetic. Recovery may occur, but a fatal termination is more common. An examination of the brain in such a case may reveal nothing abnormal, or there may be congestion of its surface, or a purulent meningitis with or without an encephalitis, which is usually hemorrhagic in character. In the delirious type, restlessness, irritability, delirium, and even mania are the essential features. As a rule, affections of the cord appear to develop at a varying time after the attack of influenza; but, in rare cases, spinal symptoms show themselves during the attack and may constitute its salient features.

A greater variety of disorders of the nervous system may come after influenza than after any other disease. The cause of the postinfluenzal paralyses must be either functional disturbances by the influenza toxins or very slight changes in nerve-tissue, inflammatory or degenerative in character. Broadbent said that some of the effects of influenza on the nervous system are due to the action of the toxin. Other effects appeared to be directly due to the microorganisms. There are cases in which the results seem to be attributable rather to antecedent instability of the nervous system than to anything specific in the action of the influenza poison. The comatose form of attack seems to be due to the direct action of the microorganisms. Eade said that in his opinion the special nervous symptoms were due to absorption of the toxin secreted by the special germ of influenza, Pfeiffer's bacillus. This toxin exerts a selective affinity for different parts of the nervous centers, with a strong tendency to affect the medulla oblongata. In the spinal cord the sensory appear to be more markedly affected than the motor portions. Allbutt said that one of the clinical features that may, perhaps, be called decisive in relation to the diagnosis of postinfluenzal nervous diseases is the great suddenness of onset. The frontal lobes of the cerebrum are preferentially attacked. Pitt said that the great cardiac irregularity and failure not infrequently met with after an attack of influenza may be due to an affection of the cardiac ganglia and nerves quite as much as to a lesion of the muscle. MacCormac said that he believed that influenza was not a specific and distinct disease. It appears to him that influenza may cause throat, lung, gastrointestinal, or skin troubles by a disturbance of the nervous system through atmospheric influences. Mullick wished to emphasize the fact that there was too great a tendency to accept influenza as the primary cause of nerve-lesions. He was inclined to believe that many cases which were quoted as influenza were really due to syphilis, alcohol, or rheumatism, causes which had been revived by influenza toxins. Saundby said that he was a little surprised to hear influenza described by some speakers as a primary disease of the lungs or nervous system; an infectious process may localize itself in different organs. In postinfluenzal diabetes the pancreas will be found to be the organ involved. The interstitial pancreatitis, which is present in a considerable proportion of cases of diabetes, may be due to the action of the toxins of infectious disease. Ewart suggested that there might be a chronic influenzal intoxication due to microorganisms remaining lastingly in possession on the upper respiratory tract. In all patients, but particularly in those who had been subject to repeated attacks and who probably harbored the microorganism permanently, sanitation of the nasal cavities is an important indication. St. Clair Thomson said that cases of complete anosmia were not uncommon, and from the history of certain of these cases and from the absence of local lesions there could be little doubt but that influenza was the causative agent. Calwell drew attention to the importance of obtaining a history of recent influenza before the administration of anesthetics, especially of chloroform. There have been a large number of deaths from chloroform administration, and this is especially the case during influenza epidemics. Buzzard said that the relative as well as the absolute number of grave diseases of the nervous system ascribable to toxemia had very largely increased during the last few years, and he was disposed to think that, although this increase was by no means to be attributed exclusively to the invasion of influenza, a large proportion must be credited to the direct influence of that disease. [J. M. S.]

2.—Payne opened a discussion on the **Problems of gastric ulcer** at the section of medicine of the British Medical Association. The following are the problems connected with gastric ulcer which seemed to the author most in need of elucidation: 1. Is gastric ulcer increasing in frequency? 2. Is the connection of hyperacidity with gastric ulcer proved; and can it be ascertained without danger? 3. Are our present means of diagnosis in nonfatal cases quite satisfactory, especially in cases where there has been no hematemesis, but even when this symptom has occurred? 4. Is there an acute form of gastric ulcer, different from the chronic form? 5. Is the original cause or starting-point of gastric ulcer really known? 6. Is gastric ulcer so rare in the upper and middle classes as seems to be generally supposed? 7. During rectal feeding should taking water by

the mouth be prohibited? 8. Is acetonuria a frequent accompaniment of rectal feeding? Gordon said that a theory of microbic origin would explain the facts of gastric ulcer better than any other. When a gastric ulcer is excised it should be cut in half. One half should be hardened for cutting and staining, whilst the other should be immediately used for bacteriologic experiments. Calwell emphasized the necessity of preventive treatment in gastric ulcer. The physician must be emphatic in his conduct of the case and, although the affection is apparently but a case of indigestion, if the patient is a young woman she should be put to bed, and an absolute milk diet insisted on. It is possible that some so-called perforations are really rents in the coats of the stomach due to adhesions. Cock reported a case in which there was simulation of gastric ulcer followed by perforation and subphrenic abscess. At autopsy pneumonia and pleurisy, with marked involvement of the diaphragmatic pleura in the inflammatory process, and adhesions between the diaphragm and the base of the lung was found, and no ulcer. She also reported a case in which, at laparotomy, no ulcer was found to have perforated. Stuart Low said that for some time he had been treating his cases of irritable stomach, painful digestion, and gastric ulcer with mucin, with most satisfactory and gratifying results. He used mucin in powder form that had been manufactured from animal bile. It is a dark brown powder, and almost tasteless and odorless and, therefore, quite unobjectionable to swallow. It should be given just before meals with an equal quantity (10 grains) of sodium bicarbonate. The good effects of this substance are markedly evident in the immediate alleviation of all painful sensations in the gastric region, and in the establishment of regularity in the action of the bowels. That the constipation is relieved is a most important fact, and the value of mucin as an aperient is a great point in its favor as a therapeutic agent, and of much interest physiologically. The diet in cases of gastric ulcer is also carefully regulated, such substances as calves' foot, mutton, and chicken jellies and thin cornflour with the frequent use of a jujube of freshly prepared marshmallow are allowed. The author feeds his patients regularly every 2 or 3 hours, according to the severity of the symptoms. The rationale of this method of treatment is to protect the irritable surface of the gastric mucous membrane, and especially the ulcerated part, from attrition by the food and constant worry by the hyperacid gastric juice; therefore, the mucin is given first to form a gluey coating over the lining membrane, and the surface is thus soothed and protected. If there is still any pain or uneasiness after nourishment then another dose of mucin and sodium bicarbonate is given, and the increased acidity is thus counteracted. The ulcerated surface of the stomach-wall is thus treated just as one on the surface of the body would be protected from friction and rested and given a chance to heal. [J.M.S.]

3.—The studies of Cushny indicate that **intermittent pulse** may be divided into several classes, which can be diagnosed from each other tolerably readily: 1. True ventricular intermissions in which the pause is exactly equal to 2 pulse-intervals, and during which there is no cardiac sound. 2. True auricular intermissions in which the pause is shorter than 2 pulse-intervals, and during which there is no cardiac sound. This form is not infrequently seen in healthy persons, and appears to be due to excessive inhibition, for the phenomenon disappears on treatment with atropin, which paralyzes inhibitory nerves. In other cases it may be due to auricular disease. 3. False ventricular intermissions in which the pause is equal to 2 pulse-intervals, but is often interrupted by a slight elevation. In every case a first heart-sound can be heard during the intermission. This form appears to be caused by excessive irritability of the ventricle leading to a premature systole. 4. False auricular intermissions in which the pause is shorter than 2 pulse-intervals. There is often a slight elevation of the pulse during the intermission, and the stethoscope reveals a systolic sound very soon after the last regular pulse-elevation. 5. Another form of intermission has been described by Wenckebach, who attributes it to imperfect conduction of the impulse through the heart, perhaps especially in the auriculoventricular connecting fibers. [J.M.S.]

5.—Wilson believes that the heart has the power of enlarging its chambers by means of a true muscular expansion

movement. In mitral regurgitation we have cardiographic evidence of increased **diastolic expansion of the ventricles**. In mitral stenosis cardiographic tracings show an accessory wave which the author calls the suction recoil wave. This is a small, sharp wave which occurs just after relaxation of the cardiac muscle has occurred. When relaxation commences there is still a strong stream of blood flowing into the ventricle. It is the impact of this stream upon the relaxed heart-wall that causes the small rise referred to. This suction recoil wave is closely associated with a diastolic cardiac sound which, in the author's opinion, is also due to the aspiratory power of the ventricle. This is the so-called reduplicated second sound which is heard at the apex in mitral stenosis. It might be called the third sound of the heart. It coincides exactly with the commencement of the suction recoil wave just spoken of. This sound is caused by the inrush of blood into the ventricle at the commencement of diastole. It is produced as follows: During the phase of diastolic expansion the auriculoventricular valve is kept more or less rigid by the rigidity of the heart-muscle. As soon, however, as relaxation sets in the valve is free to move, and if the auricle has not already been emptied by aspiration during the expansion movement, the in-rushing blood-stream will flap the valve back against the wall of the ventricle in a manner calculated to produce the faint sound we are speaking of. The diastolic murmur of mitral stenosis is a suction murmur due to ventricular aspiration, and the fact that it is very often strong enough to give rise to a palpable thrill is evidence as to the force of the aspiration. If the diastolic expansion movement was purely a mechanical one it ought to be evident in aortic regurgitation as it is in mitral regurgitation. The cardiogram shows that this is not so. A marked feature of all the tracings taken by the author in aortic regurgitation is the absence of the diastolic expansion wave. [J.M.S.]

6.—Gore concludes (1) that **gout** is not due to the presence of uric acid in the blood; (2) that the symptoms of gout are due to a toxin; (3) that the concurrent presence of uric acid is due to the action of the toxin on the liver; (4) that the toxin is formed by the action of one of the intestinal bacilli on an intestinal secretion specifically altered by diet, this alteration being assisted by hereditary disposition.

7.—Ewart and Percival have used **subcutaneous saline infusions** in cases of **pneumonia** with uncertain and exceedingly anxious though not hopeless prognosis. The histories of 6 cases are given. The authors conclude (1) that in the severe cases treated no unfavorable results were observed from the saline infusions; (2) that the infusions seemed to delay rather than to accelerate the fatal termination; (3) that they were not resented by the patients, and that in some instances they were acknowledged to be comforting; (4) that they were powerless to check the fatal course of the pneumonia in the worst type of cases; (5) that they do not seem, except in cases where only clear serum exuded from the cut surface of the gray hepatization, to have made any difference in the characteristic appearances of the pulmonary changes. While results have been disappointing, they do not suffice to prove that saline infusions are absolutely useless. A different composition, a larger bulk, or a greater frequency of administration might lead to very different results. The effects noticed were such as to recommend the method for a more extensive trial in cases with anxious prognosis. [J.M.S.]

8.—Other things being taken into consideration, it is advisable to cure consumptive patients in the climate in which they will ultimately have to live. The **sanatorium treatment of consumption** is a minute and elaborate system made up of endless details, all of which are important. It is not enough to say, "Open all windows wide in all weathers, and all will be well;" it is not enough even to add, "Feed all patients very plentifully, put them through a process of superalimentation." With these two points, essential as they are, must be united careful regulation of exercise and rest and constant medical supervision. The qualities which most aid consumptives in recovery are: (1) strength; (2) wisdom; and (3) equability of temperament. Therefore, the essentials of the general treatment of phthisis are to preserve and strengthen the physique, to enforce prudence, and to induce placidity. In considering the length of time residence at a sanatorium is necessary, attention must be paid not only to the arrest of the disease, but to the permanent raising of the standard of the patient's health, in order that

recurrent attacks may be warded off. Walker thinks that the sanatorium treatment of consumption is, after all, a system of elaborated common sense, applied to a long and tedious illness, and for it to be a success all the factors which make up the convenient term hygiene must be introduced; a permanent supply of fresh air, a large quantity of nourishing and digestible food, carefully regulated exercise and rest, and the removal of all causes of worry and anxiety. The sanatorium treatment is capable of still further expansion; for example, children of tuberculous parents, whose physical resistance is presumably below par, might very usefully spend some time in a suitable sanatorium, from prophylactic considerations. There should be sanatoriums for children who are definitely tuberculous, and with these should be combined some arrangements for education for those who are able to avail themselves of them. The cure of tuberculosis in growing children is a far slower process than in people whose growth is completed. What are called, for brevity, "maternity sanatoria" might be formed with great advantage to the community. By this is meant sanatoriums where tuberculous pregnant women might be received for 3 or 4 months prior to their confinements, and in which they might remain for the necessary period afterwards. [J.M.S.]

9.—Davies, after a careful study of the question, concludes that the consanguinity is the chief factor in producing the high mortality from tuberculosis in the Isle of Man. [J.M.S.]

10.—Ewart reports the case of a groom, of 26 years, who was aphasic and paralyzed on the right side. A careful physical examination could detect no abnormality, thoracic, abdominal, or circulatory, except a systolic mitral murmur. The temperature oscillated between 101° in the evening and normal in the morning. The pulse ranged from 80 to 100, respirations from 24 to 34. There was a trace of albumin in the urine. A week after admission the general and the cardiac conditions became aggravated and he vomited. At this time the discovery of a changing and increasing murmur defined the case as one of **malignant endocarditis**. No improvement took place under treatment, although the patient seemed to be progressing fairly favorably; and his rather sudden death was unexpected. The state of the mouth was unusually bad. Besides stomatitis there was an exceedingly foul condition of numerous stumps. The fetor of the breath was intense and reminded one of the worst smell of decaying or macerating dead bone. Some of the hollow teeth contained plugs of offensive decomposing material. There were no glandular enlargements at the angle of the jaw. The case was diagnosed as one of **embolic hemiplegia** due to vegetations and ulceration or detachment of the aortic valve, with either vegetations upon the mitral valve or the condition producing Flint's murmur. Twenty cubic centimeters of antistreptococcus serum were given at the time of the aggravation of the symptoms, 6 to 10 cc. injections were given subsequently as well as one pint of saline infusion containing $\frac{3}{4}$ grains cacodylate of sodium. This injection was repeated 4 times. At autopsy a large, rough, grayish vegetation was found attached to the ventricular surface of the left posterior aortic cusp at the point of insertion where an ulcerative perforation had formed. Ragged vegetations also occurred on the right posterior cusp. The myocardium was free from disease. A large anemic infarct was found in the left kidney. In the cranial cavity an adherent decolorized clot was found in the left middle cerebral artery, about one inch from its origin. The tip of the temporosphenoidal lobe and the subcortical tissue of the island of Reil as far as the outer edge of the lenticular nucleus were softened. The latter softening extended in an anteroposterior direction for about $\frac{3}{4}$ inch in the tissue of the brain. [J.M.S.]

11.—In the discussion on the **pathologic distribution of the diphtheria bacillus and the bacteriologic diagnosis of diphtheria** at the section of pathology of the British Medical Association, the general opinion seems to be that there is nothing more certain than the fact that it is absolutely impossible to give a strictly scientific and certain diagnosis in a suspected case of diphtheria in 24 hours, and as the result of microscopic examination alone. The only thing that the physician has a right to expect is an opinion of a greater or less degree of probability. [J.M.S.]

12.—Muir reports a case characterized by hemorrhages from the mucous membranes and by **purpuric eruptions**,

intense anemia, marked deficiency in the amount of red bone marrow, and a deposit of iron containing pigment in the liver and in the kidneys. The patient was a boy, aged 14 years, who was suffering from nosebleed, vomiting of blood, with purpuric eruptions over his body and legs. A month before he had had a chill and suffered from a cough, with slight hemoptysis. On admission the patient showed marked anemia and there was evidence of a general oozing of blood from his gums. A slight general improvement resulted, and the purpuric eruption disappeared, but 7 weeks after his admission, the spots reappeared. On the following day, he vomited blood, and subsequently passed into a stupor, in which he died. The blood was examined about a week after his admission, when the red blood-corpuscles numbered 800,000, the hemoglobin was 11%, and the leukocytes equalled 7,000. The red blood-corpuscles showed little alteration beyond some variation in size and slight poikilocytosis; there were practically no megalocytes; and there were no nucleated red blood-corpuscles discoverable. There was a very marked diminution in the polymorphonuclear (neutrophile) leukocytes, which numbered only about 25% of the whole. The lymphocytes numbered about 70%, the rest being made up of hyalin cells. No eosinophile cells could be found. The blood plates appeared to be practically absent, a condition which has been observed in other cases of purpura. The urine contained no blood or albumin. The liver and the kidneys contained iron pigment. When the marrow of the femur was examined, instead of showing the red appearance usually found in anemic cases, it was found to consist almost exclusively of fat of whitish appearance. A similar condition was found in the ribs. When passed into chloroform for purposes of embedding in paraffin, the marrow became dissolved, leaving scarcely a trace behind. In addition to showing this peculiar character, the marrow was deficient in quantity, the bone being distinctly thicker than normal, and also of unusually hard consistence. Microscopic examination showed that there was very widespread fatty degeneration in the various organs, heart, kidneys, liver, etc., and also in the small bloodvessels. The change seemed especially to affect the smaller arterioles, and was chiefly marked in the intima. The great mass of the marrow consisted of fat cells. Red blood corpuscles and the various forms of cells normally present were found in extremely small numbers. Only one or two nucleated red blood-corpuscles could be found after a very long search. The finely granular marrow cells were also extremely scanty, and of smaller size than usual. No eosinophile marrow cells could be found. In addition to the usual fat cells there were also some cells of indeterminate nature containing small globules, and there were also a few amorphous broken-down cells. There was no evidence of pigment deposit in the bone marrow. The condition of the bone marrow was a primary change, or, to be more correct, did not occur secondarily to any of the other lesions noted. [J.M.S.]

13.—Williams thinks that **uterine myomas**, in a large proportion of cases, have their origin intimately associated with developmental irregularities; and conditions of this kind are probably the chief morphologic factors in their development. Many cases are cited from well-known surgeons to substantiate this view. When Cohnheim first announced his theory of the origin of tumors from sequestered fragments of the germinating tissues, very few facts could be adduced to support it; but the light of modern science has shown that sequestered fragments of the various tissues and organs do exist in every part of the body that has been specially examined for them. The urogenital system is no exception to this rule, for the tract of the Wolffian and Mullerian ducts is strewn with debris of this kind. Long before Cohnheim's time the tendency of tumors to originate at the seats of development defects had been recognized by Paget, Virchow, and others; and as far back as 1853, Paget had remarked upon the weakness in resisting disease which belongs to parts congenitally abnormal. Recent observations show that most uterine myomas and cysts arise from dislocated myomatous elements connected with abnormally evolving "rests" of Wolffian and Mullerian structures, or even of the uterine mucosa itself. Thus their initial multiplicity may be accounted for, as well as the similitude of their structure to that of the uterine wall. [W.K.]

14.—Voelcker opened a discussion on the **Pathology of cirrhosis of the liver in adults and young children**

in the section of pathology of the British Medical Association. To ascertain what influence alcohol had as a cause of hobnailed liver the author examined the records of 2,020 necropsies made at the Middlesex Hospital; of these, 149 were cases of cirrhosis of the liver, which was hobnailed in 36. Of the 36 cases, alcoholism was acknowledged in 15, denied in 9, and not noted in 15. Of 4,278 necropsies made on children under 12 years of age at Great Ormond Street, there were 23 cases, and hobnailing was present in 13. He concluded that alcohol played an important part in the production of cirrhosis, but in what way was uncertain. Large livers were rather more common in spirit drinkers than in beer drinkers, but the "gin-drinker's liver" could be produced by beer. Voelker alluded to the effect of other poisons than alcohol in producing cirrhosis, and to the associated changes in the spleen, pancreas, and kidney. Hektoen wished to refer briefly to some recent demonstrations made in his laboratory on cirrhotic processes in the liver of animals directly induced by two different bacilli. The observations seemed to him to be of some interest in the suggestiveness of a somewhat similar course of events in some instances of human cirrhosis. One of the series of observations was produced by a bacillus belonging to the colon group, which was isolated from a guineapig that died spontaneously. The bacillus lost its virulence rapidly, and before sufficient experiments had been made to establish clearly the relation between the necrotic and proliferative changes in the liver. With early death, necrotic and degenerative changes only were found in the guineapig; in those animals that lived longer proliferation of connective tissue was associated with necrosis, and in other animals again cirrhosis entirely replaced the degenerative changes. The second series of observation concerned a bacillus that might be placed in the pseudodiphtheria group. It was isolated from the lesions of a case of blastomycetic dermatitis of the back of the hand. Inoculations in various ways with this bacillus and its products had been found to produce with a fair degree of consistency more or less necrosis and diffuse cirrhosis of the liver in guineapigs and other animals. Unfortunately this bacillus also lost its virulence before many of the experiments planned could be completed. Flexner's experiments include the inoculation of animals with poisons derived from bacteria, from the higher plants and other animals. The chief results were obtained with ricin and abrin and the blood-serum of the dog injected into the circulation of the rabbit. In these experiments it was shown that the primary effects of the poisons were exerted upon the liver-cells; necrosis was common. In the animals that died from acute poisoning, they were the principal and, excepting for a moderate leukocytic infiltration, the only important lesions. Where the animals survived some weeks, proliferative changes in the connective tissue, with the production of the so-called newly-formed bile-ducts, were met with. When the new growth of tissue came from the surface capsule, indentations were produced suggestive of the granulations of atrophic hepatic cirrhosis. While these results were suggestive of the part played by a primary degeneration and necrosis of the parenchyma they failed entirely to clear up the question, in that they did not exactly reproduce the morbid appearances seen in human hepatic cirrhosis. A study of the tissues from cirrhosis by ordinary staining, then after digestion of the sections with pancreatin, and lastly after staining for elastica by Weigert's method, show that not one only but all the connective tissues enumerated are increased or altered. The most surprising result is the great amount of elastic tissue in the perilobular new growth of connective tissue, and now for the first time to be found within the lobules. Flexner also called attention to the fact that death in chronic diseases, in most instances, is a bacterial affection and he emphasized the importance of such terminal infections. The chief microorganisms concerned are the pyogenic cocci. They may occur as causes of local infections. The portal of entry may or may not be discovered clinically or at the necropsy. It may be an angina, an old ulcer (as in the leg), or the result of a trifling surgical operation, as in paracentesis, or it may baffle every attempt to discover it, when we speak of the infection as cryptogenetic. Lazarus-Barlow said that he believed that in the case of hepatic cirrhosis we have first a destruction of the hepatic cells themselves, be it as the result of the action on them of alcohol or some of

the bacterial poisons, and that subsequently an overgrowth of the normal fibrous tissue of the liver occurs to fill up a potential lacuna. A variety of hepatic fibrosis which affects children at an older age than is the case with intercellular fibrosis is often associated with great ascites and with a well-marked jaundice of a greenish hue, and considerable distention of the superficial abdominal veins. The view of Rolleston seems to be in accordance with the facts. He suggests that this form of cirrhosis is really a late manifestation of congenital syphilis, not in the sense that it is a distinctly syphilitic lesion, but that the syphilitic poison when it acts upon the liver-cells of the fetus to a degree less than that which is necessary for the production of the typical syphilitic intercellular cirrhosis, damages them, and thus places the liver in an exceptionally vulnerable position. When, then, some factor arises that would be without effect upon the healthy liver, but which completes the injury commenced in intra-uterine life by the syphilitic poison, the way is laid open for the occurrence of that fibrous tissue hyperplasia which ultimately characterizes the hepatic condition. Barratt's observations, made in connection with Harley, which were continued over lengthened periods of time, furnish a complete demonstration of the fact that simple ligation of a single bile-duct produces cirrhosis in the corresponding liver-area. Lister reported a case of the association of an acute interstitial hepatitis with an acute diffuse hemorrhagic ulcerative catarrhal colitis of uncertain origin, which had caused death by hemorrhage and exhaustion. Fisher differed from the view that all cirrhotoses originated as proliferation of interstitial tissue consequent upon degeneration of liver-cells, and thought that some might originate as an interstitial hepatitis. MacDonald referred to a case of cirrhosis of the liver in a girl with fatal hematemesis. [J.M.S.]

15.—See PHILADELPHIA MEDICAL JOURNAL, Vol. VI, p. 414.

16.—Eyre believes that the standardization of nutrient media by exact titration methods, using a really delicate indicator and accurately standardized neutralizing solutions, can alone be depended upon to give consistent and comparable results. [J.M.S.]

17.—**Lipoma of the kidney** is quite a rare condition and offers certain marked differences from ordinary lipomas, in the situation which it affects. As a rule lipomas are found in places where fat is normally present, but when they affect the kidney it is not in the region of the hilum they are found, but in the cortex, a part of the organ which is normally devoid of fat. The 2 specimens reported by Lazarus-Barlow were found at the postmortem and at first sight were thought to be secondary deposits. They were both about the size of a Spanish nut and were situated in the cortex immediately beneath the capsule. Although they were easily distinguished from the surrounding tissue they did not possess any distinct capsule. These tumors are only pathologic curiosities and do not have any clinical importance except possibly when they reach enormous size, as in a case reported by Warthin, in which a lipoma weighing 2 pounds was recognized and removed during life. [G.B.W.]

18.—Though the **Argyll Robertson pupil** is chiefly seen in locomotor ataxia and general paralysis, it may be found in many other diseases. It should be looked upon as an almost certain sign of antecedent syphilis, either congenital or acquired. Harris has seen it in juvenile locomotor ataxia and general paralysis with marked evidence of congenital syphilis, in progressive muscular atrophy, in lead-poisoning, aortic aneurysm, hemiplegia, syphilitic meningitis, ataxic paraplegia, nuclear ophthalmoplegia, choroiditis, and in numerous instances in patients who presented themselves for all manner of symptoms, but showing no signs of ataxia or anesthesia, and with normal or even brisk knee-jerks, but in almost every instance with a clear history of syphilis. It seems most probable, in the absence of direct pathologic evidence, that the Argyll Robertson pupil is due to sclerosis of the nondecussating Meynert's fibers, on one or both sides, according as the loss of light reaction is unilateral or bilateral, rather than due to any nuclear degeneration. [G.B.W.]

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1. The Treatment of Typhoid Fever. JAMES BARR.
2. Experimental Proof of the Mosquito-Malaria Theory. PATRICK MANSON.

3. Puerperal Sepsis. R. P. RANKEN LYLE.
4. The Etiology of Scarlet Fever. WILLIAM J. CLASS.
5. A Lymphatic Anemia Met with in Children. ALEXANDER MACGREGOR.
6. The Etiology of Rheumatic Fever. FREDERICK J. POYNTON and ALEXANDER PAINE.
7. The Determination of Chloroform. A Method of Determining with Precision Minute Quantities of Chloroform in the Blood, Secretions, or Organs of Animals Varies Anesthetized with Chloroform. JAMES EDMUNDS.
8. On the Calorie-Values of Certain Artificial Infant's Foods. WALKER OVEREND.
9. A Halfpenny Impacted in the Esophagus. T. COKE SQUANCE.
10. A Case of Presumed Rupture of the Anterior Annular Ligament of the Ankle-joint. GEORGE W. ORD.
11. A Case of Typhoid Septicemia; Necropsy. H. G. TURNEY.
12. Four Cases of Acute Ileocecal Intussusception; Treatment by Laparotomy with Reduction or Excision. J. HOWSON RAY.
13. Two Cases of Renal Surgery. JOSHUA DUKE.

2.—See PHILADELPHIA MEDICAL JOURNAL, Oct. 13, p. 675.

3.—Lyle defines **puerperal sepsis** as nothing more or less than a surgical fever arising from the infection of a wound, the only differences being: (1) the large extent of surface liable to infection; (2) the structures involved; (3) the presence of a quantity of dead material which easily lends itself to infection; and (4) the fact that the patient is undergoing certain physiologic changes, this, perhaps, making her more liable to infection. The varieties of puerperal sepsis are: 1. Sepsis, or septic intoxication due to acute sepsis and which includes fetid sepsis due to the absorption of the products of decomposition in the parturient canal; suppurative, due to the absorption of toxins produced by suppuration on the surface of the parturient canal; and inflammatory, due to an acute inflammation of the vagina, uterus or parametrium. 2. Septicemia, otherwise known as an acute septic infection which is extremely fatal but comparatively rare, and may arise independently or as a consequence of any of the preceding conditions. 3. Pyemia, which is due to the absorption of a septic thrombus in one of the uterine sinuses into the bloodstream by means of the veins. Lyle says that it is well to remember that any obstetric operation, even the making of a vaginal examination, is similar to a surgical operation, and the sources of infection are exactly similar. There are a few rules which he thinks would, if strictly observed, materially lessen the prevalence of puerperal sepsis. 1. The thorough disinfection of the patient's external genitals and the hands and forearms of the medical attendant and the nurse, prior even to a vaginal examination. 2. The abolition of routine antepartum and postpartum douchings, which are often both unnecessary and dangerous. Corrosive sublimate solution is especially condemned as having many disadvantages from which creolin and carbolic acid solutions (half an ounce to a gallon) are free; and it has no advantage; for it is the quantity of the douche which is important, since it is not a question of destroying the bacteria in the uterus, but of washing away the bacteria out of the uterus. 3. All instruments used during an obstetric operation should be aseptic, and when not in use should be kept in aseptic cases. 4. The proper conduct of the third stage of labor. 5. The strict limitation of vaginal examinations. 6. The disuse of all so-called "aseptic lubricants," since they are unnecessary and may form good culture-media for bacteria. 7. The immediate suturing of all perineal lacerations, not only for the sake of the patient's comfort in after-life, but also to diminish the extent of the surface liable to infection. [W.K.]

5.—MacGregor describes a form of anemia which is not uncommon in children, and which he believes is never met with in the adult. The anemia is accompanied by enlargement of the lymph-nodes. Differential count of the leukocytes showed 12 to 13% lymphocytes, 20 to 39% large mononuclears, 41 to 63% polymorphonuclears, and 2 to 7% eosinophiles. The condition is called **lymphatic anemia** by the author. [J.M.S.]

6.—Poynton and Paine have studied the **etiology of rheumatic fever**. They have demonstrated diplococci in

8 successive cases of acute rheumatism. These organisms have been present in 5 cases in pure culture. They have obtained them (a) from the blood of living patients suffering from acute rheumatic pericarditis; (b) from the pericardial fluid and from the fragments of granulations removed from the valves after death; and (c) from the throat of the living patient suffering from rheumatic tonsillitis. They have isolated them and grown them in an acid medium and also upon blood agar. The organisms have also grown in the pericardial fluid, which was proved on those occasions to be acid. They have been isolated in pure culture from the joint exudation, heart blood, urine from the bladder, and cerebrospinal fluid of rabbits that have been inoculated with a sufficient dosage. They have been demonstrated in the cardiac valves, pericardium, and tonsils, and in a nodule in fatal cases of rheumatism. They have been demonstrated in the cardiac valves, pericardium, joint exudation, kidneys, liver, connective tissues, pleura, cerebrospinal fluid, lungs, and urine of rabbits inoculated intravenously. When inoculated intravenously into rabbits they produce a polyarthritis, bursitis, and tenosynovitis. This polyarthritis may completely disappear. In some of the joints that have been affected for a considerable time the fluid is opaque and contains fibrin, endothelial cells, mononuclear and polymorphonuclear leukocytes. In other joints the exudation is clear. In one case they produced a paresis of the lower extremities which passed off in about 3 weeks. They produce multiple valvulitis and pericarditis, both nonsuppurative. They produce in the liver and kidneys a condition of coagulation necrosis. This in the case of the kidneys chiefly occurs in the convoluted tubules. They produce plastic pleurisy and pneumonia. The urine is acid and loaded with urates. They have not produced suppurative foci in the viscera. They produce a condition of fatty degeneration and destruction of the muscle fiber in the myocardium analogous to that found in the human heart as a result of severe rheumatic carditis. The clinical symptoms are characterized by multiple painful joint swellings, wasting, with (in the less severe cases) a maintenance of the appetite. There is moderate pyrexia. The heart is affected early; tachycardia, dyspnea, and irregularity of cardiac action, together with valvular murmurs, pericardial and pleural friction, have all been observed. The clinical symptoms are, on the whole, remarkably constant when the organism is passed from animal to animal, though the tendency is for increase in the severity of the cardiac lesions and diminution in the arthritis. The organisms occur as minute cocci associated in pairs; in liquid media they grow in chains of varying length; while in solid media they grow in masses that resemble the arrangement of staphylococci. They grow both aerobically and anaerobically. They may be cultivated upon ordinary media, but do not thrive and rapidly lose both their virulence and their characteristic appearances. There can be but little doubt that these diplococci are identical with those discovered by Triboulet in 1897 and by Wassermann in 1899. The resemblance between the disease produced in rabbits and the rheumatic fever of man is a very striking one. The valves of the heart are attacked from within and the diplococci are not at first found upon the surface. When the connective-tissue proliferation that they produce in the valve becomes a granulation and breaks down, they may be found on the surface. The discovery of the diplococci in the rheumatic nodule is of especial interest, for this lesion above all is looked upon as highly characteristic of rheumatic fever. The organism has been found in the kidneys of rabbits after death, especially in the convoluted tubules where they lie in the cells and where they produce coagulation necrosis. Their presence is associated with a urine which is acid, which contains granular casts, and which is loaded with urates. They have been isolated and cultivated from the urine in the bladder of rabbits. In the rabbit the authors have found areas of coagulation necrosis in the liver. The liver-cells undergo a rapid destruction and the microorganisms can be demonstrated within them. They occur, sometimes in vast numbers, in the joint exudation in the rabbit. In the lungs and pleura of one of the rabbits that had been killed when suffering from pericarditis, valvulitis, pleuritis, and pneumonia, diplococci were demonstrated, which are believed to be identical with those found in the other viscera. In one case both tonsils were found enlarged after death and inflamed, and this when the illness had been of long duration.

In a film from the deeper part of these tonsils the authors found diplococci, and diplococci were also present in the sections that were made of the tonsils. Diplococci were isolated from the throat of an adult, the subject of rheumatic fever, who was suffering from an acute faucial catarrh. In the case of a rabbit that died from severe valvulitis the diplococcus was isolated in pure culture from the fluid in the lateral ventricles. In a case of chorea numerous diplococci were demonstrated in the perivascular lymph-spaces of the pia mater, in its capillaries, and also in some parts of the motor area of the brain. In another case of chorea of similar type they were demonstrated in large number in the mitral valve. The term "infective endocarditis," which has for some time been under suspicion, can no longer be used in contradistinction to "rheumatic endocarditis," for both are plainly infective. [J.M.S.]

7.—In the **determination of chloroform** the true objective at which to aim is the measurement of CHCl_3 by means of its chlorin. Edmunds describes a method by which the chlorin is promptly and easily reducible to the saline form and made to serve as the measure of its chloroform. The weight of the chlorin being accurately determined multiplication by the factor 1.12314 gives the weight of the chloroform. A solution of permanganic acid and potash in excess with potassium permanganate, potassium hydrate, and water is employed in the process. [J.M.S.]

8.—Overend gives the calorie-values of certain artificial infant foods. [J.M.S.]

9.—A girl 6½ years old swallowed a half-penny, which was successfully removed from the level of the second dorsal vertebra by means of a flexible wire covered with gutta-percha. [M.B.T.]

10.—A boy of 13 twisted his right ankle while bowling at cricket. Probable rupture of the anterior annular ligament resulted, which was successfully treated by strapping and bandaging. [M.B.T.]

11.—Turney reports the case of a girl, aged 15 years, who died of **typhoid septicemia**. Serum diagnosis was positive during life. At the necropsy the alimentary canal was normal from the fauces to the rectum. The *Bacillus typhosus* was isolated from the splenic pulp. [J.M.S.]

12.—Four cases of acute ileocecal **intussusception** are reported which were treated by celiotomy with reduction or excision. A male child, 8 months old, had an ileocecal intussusception reaching nearly to the anal canal, of 2 days' duration. Blood and mucus had been passed. There was vomiting, tenesmus, and a tumor was felt. The abdomen was opened, the intussusception reduced, and a loose meso-appendix was sutured to the mesentery to assist in preventing a recurrence. Recovery resulted. In a second case a male child, 7 months old, had ileocecal intussusception reaching to the splenic flexure, and also a double enteric intussusception about 18 inches from the cecum. The symptoms had lasted about 12 hours. A little blood was passed, there was no vomiting, tenesmus and a tumor were felt. Celiotomy was performed and reduction effected. A good recovery resulted. In a third case a boy, 7 weeks old, had had symptoms of ileocecal intussusception for 5 days. There was vomiting, passage of blood, and a tumor, which was palpated with difficulty. On opening the abdomen a rupture of the colon and peritonitis was found. Excision of the intussusception with end-to-end anastomosis by Murphy's button was performed. Death resulted from shock 9 hours after the operation. In a fourth case a girl, 5 months old, had been suffering with symptoms of ileocecal intussusception for 2½ days. There was vomiting, passage of blood and mucus, and a tumor. Celiotomy was performed and reduction effected, but death resulted 30 hours later.

13.—An Indian soldier, 28 years of age, had been suffering for some time with pain in the right loin, radiating into the groin. As there was no improvement under treatment, **nephrolithotomy** was performed. At the first operation no stone was found, and at a second operation nothing could be felt, but on needling the kidney, a stone was located at the seventh puncture, and a calculus was removed which weighed 36 grains. Uneventful recovery followed. In a second case a man, 35 years of age, gave a history of renal colic and pain. Nephrotomy was performed and several small cysts were opened, but no stone was located. During convalescence the patient had to be placed in a ward containing many famine-stricken patients with sloughing ulcers, and

erysipelas got into his wound, nearly killing him. Recovery eventually resulted. [M.B.T.]

New York Medical Journal,

October 6, 1900. [Vol. lxxii, No. 14.]

1. Prevalent Errors Regarding the Diagnosis and Treatment of "Eye Strain" from Various Causes. AMBROSE L. RANNEY.
2. Some Observations upon Syphilitic Manifestations in the Optic Nerve and Retina; Inflammatory Manifestations. PAUL TURNER VAUGHAN.
3. The Use of the Suprarenal Capsule in Diseases of the Heart; a Preliminary Report. S. FLOERSHEIM.
4. Combined Electrization, or Galvanofaradization. A. D. ROCKWELL.
5. Implantation of an Artificial Vitreous; "Mule's Operation." MATTHIAS LANCKTON FOSTER.
6. Fibroma of the Larynx. A. B. THRASHER.
7. A Case of Pin in the Larynx for Two Years; Removal by Endolaryngeal Methods. A. W. DE ROALDES.

1.—Ranney gives certain axioms relating to the modern methods of diagnosis and treatment of **eyestrain**, the gist of which is as follows: Correct accurately all errors of refraction both for distant and near points, for this a mydriatic is, in all but the very rarest of cases, necessary. Astigmatism should be detected by the ophthalmometer of Javal and by cylindric trial lenses. Neither retinoscopy, trial lenses, nor the ophthalmoscope are positive in estimating "latent" refractive errors, but the former is the best in skilful hands. Cylindric glasses should preferably be set in spectacle frames. All glasses should be inspected by the oculist before being worn by the patient, and decentered lenses should be carefully guarded against. Patients should be instructed as to decentering of their glasses from bending and should also be taught to test their eyes from time to time for any change in the refraction of an eye. All tests for muscular disorders should be made after the errors of refraction have been corrected. The "manifest" muscular errors are only of much value when acting as pointers in the search for some latent heterophoria. The most positive and uniform standard of power in any of the ocular muscles is the normal power of abduction. Whenever the abduction falls below 8°, latent esophoria may safely be suspected; whenever it exceeds 8° exophoria is apt to be present. A marked difference in the power of sursumduction on the 2 eyes is always to be regarded as a suspicious sign of hyperphoria. Manifest or latent anomalies of the vertical muscles should as a rule be rectified before coexisting anomalies of the lateral muscles are treated. Operative procedures upon the eye-muscles should never be too hastily performed. [G.B.W.]

2.—Vaughan says that during the past year 4 cases of papillitis have come under his observation, but in only 2 instances was the inflammation of the **optic nerve** ending due to **syphilitic changes** within the cranium. He believes that the optic nerve can become involved in syphilis in 3 different ways. First, from the direct action of the specific poison upon the nerve-fibers themselves, thus producing a primary syphilitic inflammation; secondly, from a syphilitic growth—either a gumma or a syphilitic meningitis—within the cranium, thus producing an increased intracranial pressure, with its resulting papillitis or papilloretinitis, or direct extension of inflammation in case of meningitis; and thirdly, from diseased conditions of the bloodvessels in the cerebrum, optic nerve, and retina, produced by syphilis. In his 5 remaining cases the retina alone was involved in 3, and both the retina and choroid in 2. [G.B.W.]

3.—Floersheim has found that when the heart has been irregular in its rhythm, with lessened force and quality of the sounds, in many cases, **suprarenal capsule** has caused the heart to become more regular in its action, the force quite markedly increased, and the pulse more forcible in character. In some cases a slight increase in the number of pulse-beats has been noted; whilst in other cases no change resulted or there was a slight fall or decrease. The heart seems to be markedly toned up in many cases treated. When the heart's action is full, bounding, and regular in rhythm, no appreciable effect was noticed. When the heart is flaccid, the pulse weak, the apex beat diffused, the action of the

heart fluttering and irregular, we find the most marked and beneficial effects of the drug. After the immediate stimulating effects of the drug have passed off, the heart seems to be left in better condition than it was before the administration of the remedy. Sometimes suprarenal causes the intermittent character of the heart's action to disappear. Suprarenal extract acts in from 10 seconds to 10 minutes. [J.M.S.]

4.—By **combined electrization or galvanofaradization** is meant the simultaneous application through the same electrodes of the 2 forms of dynamic electricity, galvanic and the faradic currents. The application of both forms has been made by Rockwell in cases of urethral spasm, spasm of the pharynx, facial spasm, exophthalmic goiter, and paralysis of the diaphragm with satisfactory results. The combination of mechanic and chemic effects stimulated the phrenic nerve in the latter case far more powerfully than either current alone would have done. [J.M.S.]

5.—Foster reports 3 cases of **Mules's operation**, which consists in the insertion of a glass globe into the eyeball after an exenteration had been done. The result in these cases were all good, though in the first there was not as much motion to the artificial eye as had been hoped for. The great advantage of Mules's operation is that the glass ball within the sclera maintains the muscular apparatus of the eye in nearly its normal position, and so secures its better action, which results in better motility of an artificial eye when properly fitted. Also it is probable that in children the development of the orbit is maintained by the presence of the rounded globe in its cavity. The most serious objection is the prolonged convalescence, which lasts from 10 to 15 days, about double the length of that following enucleation. Sometimes the glass ball is discharged, due either to suppuration, the insertion of too large a ball, or to the early absorption of catgut sutures. The operation is especially adapted as a substitute for enucleation in children. [G.B.W.]

6.—The case reported by Thrasher was that of a woman of 56, who had been for some time suffering from increasing hoarseness, with gradually developing dyspnea. On laryngeal examination a growth was found occupying the posterior and lateral walls of the **larynx**. A piece of the growth was removed, and under the microscope proved to be a **fibroma**. As beginning cyanosis was present when the patient was seen for the second time, immediate operation was deemed necessary. After a preliminary tracheotomy, the larynx was opened, and from the lower border of the cricoid to above the vocal cords the mucous membrane of the larynx was found pushed into the lumen of the larynx, causing it to present a flattened instead of the normal concave surface. There were no especial circumscribed growths. By means of cutting forceps and curets, enough of the fibrous tissue was removed to allow of easy breathing. In removing the tissue no thought was taken as regards the position of the vocal cords. The inner surface was cauterized with a saturated solution of trichloroacetic acid, iodoform dusted on and the larynx brought together with silver wire sutures. After a period of less than a month the tube was dispensed with, the laryngeal opening being quite sufficient for all breathing requirements. The final result was most satisfactory, the patient being able not only to breathe comfortably, but also to speak, though in a somewhat husky voice. [G.B.W.]

7.—In this case the **pin** had been **lodged in the larynx** for 2 years, causing continued suffring and ever-increasing ill-health. After considerable difficulty the position of the pin was made out by laryngoscopic examination and was seen to have passed directly through the right arytenoid eminence with the sharp point and about $\frac{1}{2}$ of its length emerging from the posterior aspect of the larynx. Attempts at removal without general anesthesia failed because of restlessness of the patient. The child was therefore anesthetized and after considerable difficulty the pin was extracted by the combined use of forceps and finger. The recovery was prompt though the external induration did not disappear for 3 months. [G.B.W.]

October 13, 1900. [Vol. lxxii, No. 15.]

1. Hypertrophy of the Turbinated Bodies, and Their Relations to Inflammation of the Middle Ear, With a Report of Fifteen Hundred Operations. CHRISTIAN R. HOLMES.
2. Dilation of the Colon. H. G. MARXMILLER.

3. On the Employment of the Upright Position in Ether-Operations Upon the Nose, Throat, and Ear. THOMAS R. FRENCH.
4. The Present State of Our Knowledge Concerning the Cause, Nature, and Treatment of Asthma. WALTER A. WELLS.
5. The Future of Specialties. CHARLES B. KELSEY.
6. The Etiology of Pulmonary Tuberculosis, Its Course and Termination. S. A. KNOPF.

1.—Holmes continues his article on **hypertrophy of the turbinated bodies**, and says that Schneff has proved that the direction of the air-current is not changed by the total absence of the middle and inferior turbinates. Further, he calls attention to the importance of attending to nasal and pharyngeal conditions, in cases of middle-ear disease; especially does he lay stress on the fact that the adenoids, hypertrophies of the turbinated bodies, polypi, etc., must be removed if normal conditions are to be obtained. [G.B.W.]

2.—Marxmiller reports a case of **dilation of the colon** in a machinist, aged 52 years, which he believes is due to a tertiary syphilitic lesion of the spinal cord. [J.M.S.]

3.—French says that the idea of danger following **etherization in the upright position** is not based on the proper comprehension of the conditions present. He says that even in deep narcosis, if reasonable care is taken to prevent the blood from flowing over the arytenoid structures, the danger of pneumonia or bronchitis from inspiration of the blood or secretions is very slight. He has devised a chair, built of bicycle tubing and furnished with fixtures for securing the patient thereto, which greatly facilitates etherizing the patient in a sitting posture. The advantages of the upright position for ether-operations upon the nose, throat, and ear, may be summed up as follows: (1) The very considerable reduction in the amount of blood lost; (2) the reduction of the chances of ear-complications, by securing complete drainage of the nasopharynx of blood; (3) the ease, thoroughness, and accuracy with which operations can be done in the shortest time, by the retention of the usual relationship between operator and patient. [G.B.W.]

Medical Record.

October 8, 1900. [Vol. 58, No. 14.]

1. Medullary Narcosis During Labor. S. MARX.
2. Observations on Subclavian Deligation. SCHUYLER COLFAX GRAVES.
3. Tuberculosis and Its Treatment. MARGARET STANTON.
4. Appendicitis Larvata and Inflammation of the Right Broad Ligament, Tube, and Ovary. OTTO THIENHAUS.

1.—It is of interest to note that **medullary narcosis** is not a new method. The prior claim to the operation must in all justice and honor be given to J. Leonard Corning, who, in 1885, made original practical experiments and published a number of papers describing his work. Marx has used medullary narcosis in 30 cases of labor and gives in detail the history of 23 of these, and fully describes the technic of his method. In his experience there has never appeared any symptom to make him apprehensive of either immediate or remote danger. All the patients made ideal convalescences, and all the children alive before delivery were born alive and well, although many difficult and trying labors were encountered. Explorations, versions, extractions, placental removals were readily done, and he never noticed any greater disposition to bleed than in an ordinary case. Asepsis of person, of instruments, of patient and of the solution must be as carefully attended to as if the abdomen were about to be opened. The operation should be done only by one trained in surgical asepsis. He has found eucain valueless and uses cocain, the solution of which must be freshly prepared and the injection made between the fifth lumbar and first sacral vertebra. The anesthesia lasts from 1 to 5 hours. He has carried a woman by repeated injections for 8 hours through her labor with practically no pain and considers it a method ideally suited to mitigate or absolutely allay the dreadful pains of a normal labor, with no danger to the mother and none to the child, immediate or remote. [W.K.]

2.—Graves proposes substituting for a guide in the ligation of the subclavian artery the cord of the brachial plexus of nerves for the scalenus anticus muscle instead of exposing the deep-lying muscle and feeling in front of it, the more easily located brachial cord is exposed and the finger placed behind it. His attention was called to this by an operation of this kind which he performed, and since then he has made a number of dissections to determine this point. [M.B.T.]

3.—The article is a plea for greater care in the **treatment of tuberculosis**, and for the provision of more satisfactory means for the treatment of the poor in proper sanatoriums. Among other points in the treatment of cases of tuberculosis, Stanton states that she has been able to persuade patients to take milk with eggs in it, or other fluids, after meals, when the appetite has already been satiated, while solids could not have been taken. This does not, in her experience, upset the appetite for the next meal, but does aid in getting much more nourishment into the patient. [D.L.E.]

4.—The term **appendicitis larvata** was introduced by Ewald in 1889, and by it is understood appendicitis of a chronic, insidious character which moves softly without developing into a real acute attack. Thienhaus reports 3 cases, and as an aid to diagnosis of this chronic condition thus summarizes the symptoms: Disturbances in the intestinal tract, flatulent colic, abdominal pain of more or less intermittent nature, located by the patient sometimes in the right, sometimes in the left iliac region, extending in some cases to the navel, epigastrium, or right hypochondrium. These disturbances are associated sometimes with headaches, dysmenorrhea combined with menorrhagia, and more or less increasing cachexia; slight attacks of fever occur in some cases. On physical examination slight, ill defined tenderness is found at McBurney's point, about the navel, sometimes in the left side or in the neighborhood of the liver. On bimanual palpation, through either the vagina or the rectum, the uterus is found to be in dextroposition or dextroretroverted or flexed, the right broad ligament shortened and retracted; the right tube and ovary more or less in a state of inflammation. Concerning the treatment of appendicitis larvata, it must be recognized that only operative measures can be taken into consideration. They are indicated because (1) there is no other means of correcting existing pathologic conditions, and (2) the patient is in constant danger of an attack of appendicitis, followed by peritonitis. This radical treatment is especially necessary in case of patients with whom subsequent pregnancy is probable, since appendicitis in combination with pregnancy gives the most serious prognosis for both the fetus and the mother. [W.K.]

October 13, 1900. [Vol. 58, No. 15]

1. Medullary Narcosis (Corning's Method): Its History and Development. L. MARCUS.
2. The Modern Treatment of Pulmonary Tuberculosis. M. J. BROOKS.
3. A Consideration of the Anatomical Construction Predisposing to Inguinal and Femoral Hernia, and the Measures to be Taken in Securing Their Radical Cure. IRVING S. HAYNES.
4. Light as a Remedial Agent. J. W. KIME.

1.—Marcus says J. Leonard Corning, of New York, in 1885, is the first gentleman to record spinal anesthesia; he reports his experiments tried on a dog and the human subject. In this his first report he claims that it is unnecessary to inject the medication into the spinal canal, stating "that in the human subject numerous small veins (vena spinosa) run down between the spinous processes of the vertebra, and, entering the spinal canal, join the more considerable vessels of the plexus spinalis interna;" that by this arrangement of the circulation the cocainization of the cord would be obtained. The record of his experiments is as follows: 1. He injected 20 minims of a 2% solution of cocain into the space situated between the spinous processes of 2 of the inferior dorsal vertebra. Five minutes after the dog had been injected he noticed incoordination of the lower extremities. A short time after, on testing with the faradic current he noticed anesthesia of the region supplied by the cord below his point of injection. Four hours later the animal had entirely recovered. In Experiment 2 he injected in a human subject, between the spinous processes of the eleventh

and twelfth dorsal vertebra, 30 minims of a 3% solution of cocain. After the lapse of 6 or 8 minutes, having obtained no results, he injected a similar quantity into the same place. Ten minutes later the subject complained that his legs "felt sleepy." Sensibility was impaired when tested by the electrical current. The impairment "was principally limited to the lower extremities—the lumbar regions, the penis, and the scrotum." When standing the subject complained of dizziness; the ability to distinguish differences in pressure seemed to be well preserved. He was able to pass a sound almost unnoticed, though this was usually accompanied by considerable pain. The pupils were slightly dilated. The constitutional symptoms noted were headache, slight vertigo, but no nausea. The subject experienced tingling sensations and numbness of his lower extremities until night, also dryness of the throat and mouth accompanied with mental exhilaration, probably due to the amount of cocain injected. The utility of this method so impressed Corning that he continued his experiments and widened its field of application in neurology, reporting his results in 1888. It is in his work on "Pain," that he records the definite results, for which I believe he should receive the credit of being the first to try medullary narcosis for therapeutic purposes; and by his results of anesthesia opened up the field for the possibilities of operating in or upon the analgesic areas. Five years elapsed after the last article of Corning, when the attention of the world was again called to this form of anesthesia by A. Bier, in 1899, in his original monograph. He experimented with it, and was able to obtain anesthesia sufficient to do any operation on the lower extremities. The first report of its use in obstetrics was made by O. Kreis in the *Centralblatt für Gynäkologie*, July 14, 1900. [A.B.C.]

2.—Brooks gives a general review of the modern teaching concerning the treatment of tuberculosis, especially recommending sanatorium treatment. [D.L.E.]

4.—Kime reports 3 cases of lupus which he treated by condensed light rays with success. He states that 5 other cases now under treatment are improving. Ordinary lupus requires from 4 to 20 weeks for successful treatment. In order to demonstrate the extent to which rays of the sun penetrate he publishes 2 photographs, one of which was taken through the chest of a well-developed man, and the other through the right hand of the writer. [D.L.E.]

Medical News.

October 6, 1900. [Vol. lxvii, No. 14.]

1. Internal Secretion of the Ovary. ARTHUR W. JOHNSTONE
2. Internal Antisepsis. REYNOLD WEBB WILCOX.
3. The Treatment of Consumption at Home. JOSEPH EICHBERG.
4. Iritis. J. H. McCASSY.
5. Meralgia Paresthetica. JAMES J. WALSH.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 995.

2.—Wilcox, after stating his belief in the future of **internal antisepsis** in internal diseases, discusses those in which it has been used with good results, particularly typhoid fever, in which chlorin is of great value; tuberculosis, in which creasote has proved of advantage; and those conditions of the elementary tract in which naphthol and similar drugs have diminished the activity of the process. Antiseptics may, however, be injurious, and are not to be preferred to surgical intervention, if the focus can be reached by this means. Among the few internal antiseptics, in addition to those mentioned, are the salicylates, silver, quinin, etc. The best form in which silver can be used, is the preparation of Credé. Wilcox believes that tribromo-phenalate of bismuth is a valuable drug in cases of intestinal infection. The most valuable urine antiseptic is hexamethylen-tetramine. [J.S.]

3.—Eichberg divides the **treatment of consumption** into 4 parts: the specific, the climatic, the dietetic, and the hygienic. There is no specific as yet discovered. As the great majority of consumptives are unable, for financial or social reasons, to leave their homes, climatic treatment is only applicable for the few. In this climate the patient should spend almost the entire 24 hours out of doors, even sleeping out of doors in the summer time. Food should be

abundant in quantity, and nourishing in quality, an effort being made to secure excessive assimilation. The patient should rest almost constantly, and all the surroundings should be as cheerful as possible. Drugs should be used to meet special indications, such as night-sweats, cough, etc. The patient should be encouraged, if improving, to take his temperature, and to weigh himself at stated intervals. [J.S.]

4.—McCassy runs over the subject of iritis in a general way, touching on the etiology, symptomatology, pathology, diagnosis, and treatment. [G.B.W.]

5.—Walsh reports a case of **meralgia parasthetica** occurring in a Polish Jew, 45 years of age. The symptoms were: an oval patch, 5 by 3 inches, on the outer side of the right thigh, in which the patient had painful or hot sensations, and which was almost anesthetic; in a corresponding area on the left leg there was slight hyperesthesia; the pain was always relieved by rest; it was always worse just before a rainstorm. He was neurotic; the kneejerks were slightly exaggerated, and there was some chronic gastrointestinal disturbances. Walsh considers the treatment hopeless. [Our own experience has been that nearly all cases can be relieved, and some cured by suitable measures. Operation is a last, but promising, resource in severe cases. J.S.]

October 13, 1900. [Vol. lxxvii, No. 15.]

1. Cocain Anesthesia by Lumbar Puncture. Two Cases of Hysterectomy. J. RIDDLE GOFFE.
2. A Consideration of Finger Infection, With Special Reference to the Joints and Tendons. ELLSWORTH ELIOT.
3. The Prevention and Treatment of "Colds." W. SCHEPPEGRELL.
4. Treatment of Rheumatism and Some Phases of Indigestion; Gouty Diathesis. CHARLES E. PAGE.

1.—The success which has attended the **intraspinal injection of cocain** for the purpose of producing analgesia of lower part of the body led Goffe to use it in a case of abdominal hysterectomy which he believes is the first instance of the kind on record. The patient was a woman of 51, suffering from hemorrhages due to multiple fibroids. One-third of a grain of cocain was injected in the third lumbar space; but as the analgesia was imperfect, 15 minutes later the needle was inserted in the second lumbar space, 22 drops of spinal fluid were allowed to escape and $\frac{1}{3}$ of a grain injected. Analgesia promptly appeared, reaching above the umbilicus. The operation occupied 40 minutes and the recovery from the cocain came so promptly that the last manipulations, the removal of sponges from the abdominal cavity and sewing of the wound, gave occasional twinges of pain. There was some nausea, vomiting, and headache afterward, the vomiting recurring on the second day. Aside from this the recovery was uneventful. Goffe says that what remote consequences may develop as the result of such interference with the spinal fluid as this method involves, can only be determined after more prolonged observation; but up to the present time no detriment to patient has attended the procedure, although observations have extended over a period of 2 years. [W.K.]

2.—Eliot says that the **infections of the finger** vary greatly in their severity from a superficial suppuration just beneath the skin to an extensive necrosis involving the deeper structures. The palmar surface of the finger is much more frequently involved than the dorsal. One of the more serious conditions is the involvement of one or more joints, which may take place either as the result of the introduction of the agents of infection through a wound penetrating the joint, or the germ may be carried from the original focus by a lymphatic vessel directly into the joint-cavity. Pathologic changes resulting from joint-infection may be divided into (1) the stage of joint distention; (2) the stage of joint-disintegration, and (3) the stage of repair. The advent of the third stage depends on the freedom of joint-drainage. The destructive process of the joint, consists essentially in necrosis of the end of the bone, and destruction of the capsular ligament. When the lateral ligament gives way there is preternatural mobility, which may be elicited usually without pain, and furnishes a pathognomonic symptom. The ultimate result may be either a fibrous ankylosis or in favorable cases the formation of a new capsular ligament enclosing a pseudoarthritic cavity. Treatment should consist in

the application of suitable dressings to the part, which should be elevated and put in absolute rest, and in the use of incisions which allow generous drainage, and thereby prevent the retention of any foul material in the area of inflammation. Eliot closes his article by reporting in detail four cases. [G.B.W.]

3.—Schepppegrell believes that overheated rooms and very warm clothing are more frequently responsible for coryza than exposure to low temperature. In order to guard against this disease, it is important that the nose should be normal and that nasal breathing exist. Of the various drugs commonly used, some, such as quinin, are of but little value, and others, such as cocain, are distinctly injurious. Perhaps the best treatment is douching the nose with a $\frac{1}{2}\%$ saline solution. [J.S.]

4.—Page believes that piperazin water is superior to the salicylates in the treatment of rheumatism and gout. He reports 2 cases—1 a woman of 66 years, 5 feet high, and weighing 223 pounds. She had incontinence of urine, and severe pains in the back, hips, knees, and ankles. The diet was restricted to whole meal bread and piperazin water; she rapidly lost weight, and gained strength, and was almost relieved from her pains. He also reports another case—a man 45 years of age, who had acute inflammatory rheumatism and was distinctly gouty. There was some fever, and all food was stopped; the piperazin water was applied internally and externally with excellent results. Page apparently believes that the autotoxemias, due to meat diet, are responsible for many of the ills to which we are heir. [J.S.]

Boston Medical and Surgical Journal.

October 4, 1900. [Vol. cxliii, No. 14.]

1. Remarks upon Obscure Nontraumatic Tumors of the Lower Abdomen Suddenly Appearing Where None had Previously Been Detected. MAURICE H. RICHARDSON.
2. A Case of Inflamed Peritoneal Cyst Simulating Ovarian Cyst with Twisted Pedicle. AGNES C. VIETOR.
3. Serum Therapy in Pneumonia. WILLIAM H. SMITH.
4. Case of Patent Foramen Ovale in Advanced Life. WILLIAM L. WORCESTER.

1.—Richardson calls attention to some **abdominal tumors of obscure origin**. The great emergencies of pelvic surgery attended by the sudden appearance of tumors are ovarian torsion and extrauterine pregnancy. Appendicitis and salpingitis might be included, but both these diseases, present such definite histories and physical signs that the tumor so invariably associated with them can hardly be called obscure or unsuspected. A full bladder, acute dilation of the stomach, and a dilated colon or sigmoid flexure are also suggested as possible causes of such tumors. In most of the tumors under consideration pain is the first, the most important and enduring symptom. The diagnosis of ovarian tumor with twisted pedicle is easy when a tumor is known to exist. When one has not been found previously it is very difficult. It depends upon sudden pain, with or without signs of hemorrhage. The tumor is elastic and tender. The signs of strangulation, gangrene, peritonitis, are often obvious. The diagnosis of ovarian tumor with twisted pedicle must always be suggested by those symptoms. The diagnosis of extrauterine pregnancy is usually easy. Pain in the course of irregular menstruation, with dribbling of blood from the uterus, always suggests it. With any other confirmatory signs of pregnancy it is about certain. Most cases of extrauterine pregnancy are unaccompanied by any tumor of considerable size. The tumor, if any is found, is small. In spite of difficulties of diagnosis the signs point the right way—towards surgical intervention. It matters little whether the diagnosis of extrauterine pregnancy is wrong if the surgeon is guided to the relief of ovarian torsion, or if, expecting torsion, he finds extrauterine hemorrhage; if, expecting ovarian tumor, he finds a dilated stomach; or if, expecting an internal strangulation or an intestinal obstruction, he finds a dilated and twisted sigmoid flexure. It does matter, however, if, expecting to find a serious lesion, he finds a full bladder, or a normal pregnancy. In all suddenly appearing tumors of the lower abdomen, however obscure they may be,

intervention is demanded if the symptoms are the least urgent. [M.B.T.]

3.—Smith discusses the various attempts that have been made to secure an efficient antipneumococcic serum. It is possible to immunize mice; but the effects in human beings are less decided. A number of cases have been reported by Lara, Pone, Wiesbecker, and others. He calls attention to the results of Washbourne's serum obtained from an immunized pony. He concludes that there is hope for the future. [J.S.]

4.—Worcester reports the case of a negro of 57, who had served in the army during the Civil War; he died of general paralysis, and at autopsy examination of the heart showed a patulous foramen ovale 2.5 by 2 cm. in dimension, and a small communication between the ventricles immediately below the right semilunar valve; the heart was moderately hypertrophied, the physical signs were a long, loud murmur, systolic in time, that, as long ago at 1890, could be heard over the entire chest. [J.S.]

October 11, 1900. [Vol. cxliii, No. 15.]

1. The Modification of Milk Laboratories. T. M. ROTCH.
2. Breast Feeding. A. WORCESTER.
3. Home Modification of Milk. CHARLES W. TOWNSEND.
4. Lesions of Chiasm; Temporal Hemiopia; Optic Atrophy; Probable Pituitary Tumor, With Gigantism and Defective Development (Preliminary Report). S. A. LORD.

1.—Rotch discusses some of the **difficulties of milk modification**. Errors may arise on account of the age of the milk, the number of bacteria it contains, and from carelessness in making the mixture; but the chief error is due to the variable percentage of the constituents; even slight variations in the per cent. of fat in the cream, for example, may give rise to considerable differences. A number of examples illustrating this, are given. Rotch, therefore, believes that the best solution of the problem is to be found in the well equipped and responsible laboratories that now exist in nearly all the large cities. [J.S.]

2.—Worcester gives an impassioned plea for the use of the **human breast in feeding infants**, believing that no substitute, however ingenious, can entirely replace it. It is particularly important to watch the mother and infant during the establishment of the nursing function. He believes that the nipples should be treated with unguents, and never with bad-tasting, so-called, cleansing solutions. [J.S.]

3.—Townsend is not entirely favorable to the milk laboratory for the artificial feeding of infants; he has 2 objections to it: (1) that by centrifugation the emulsion of the fats is broken up; (2) the excessive handling churns the milk, and also gives greater opportunity for bacterial infection; it is therefore necessary to pasteurize or sterilize the milk, especially in hot weather. He has devised a simple rule for **home modification**, as follows: Each ounce of 10% cream in a 20-ounce mixture, represents 0.5% of fat, 0.2% of albuminoids, and 0.2% of sugar; and each even tablespoonful of milk added to this mixture raises the percentage of sugar too. A 10% cream is obtained by allowing the milk to stand 6 to 8 hours, and pouring off the top layer. If it is desirable to increase the nutritive value of the mixture, raw white of egg may be added. He gives several illustrative cases of the benefits derived from modifications made according to this formula. Occasionally cereal waters are of advantage as diluents. [J.S.]

4.—Lord reports the case of a laborer of 32, nearly 6 feet high, with a very heavy skeleton. Three years before, he apparently commenced to grow nervous, had severe pains in the limbs, loss of appetite, and a year after the first symptoms, left amblyopia. Later, there was dryness of the skin, severe headache, and impairment of vision in the right eye. He lost considerable weight, and occasionally was dull and sleepy in the daytime. When examined, he was found to have temporal hemiopia in the right eye, the skin was dry, the hair thin, and the thyroid could not be palpated. The symptoms pointed to a lesion of the chiasm, probably a tumor of the hypophysis. The other symptoms of the case may be explained by ascribing them to glandular intoxications or degeneracy or to a disturbance of the chemic and physiologic equilibrium, resulting from a modified function of the thyroid gland. [J.S.]

Journal of the American Medical Association.

October 6, 1900. [Vol. xxxv, No. 14.]

1. Aseptic Minor Gynecology. With Demonstrations. AUGUSTIN H. GOELET.
2. Resection and Anastomosis of the Divided Ureter. HOWARD A. KELLY.
3. Lessons from a First Series of One Hundred Cataract Operations. F. T. ROGERS.
4. Yellow Fever: Its Nature and Cause. EUGENE WASDIN.
5. Demonstration of Home Milk Modifier. A. L. SHERMAN.
6. The Reefing Operation for Movable Kidney. EDWARD WYLLYS ANDREWS.
7. Acute Graves' Disease. JAMES R. ARNEILL.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1279.

2.— " " " " " " " 1280.

3.— " " " " " " " 1441.

4.— " " " " " " " 1264.

5.— " " " " " " " 1282.

6.—The following are the essential steps of the **operation for movable kidney** which Andrews calls the reefing operation: An incision is made at the outer border of the quadratus from the twelfth rib to the ilium. This is carried through the lumbar fascia and along the edge of the quadratus to the loose fat about kidney. The muscles are retracted and the fatty capsule split the whole length of the kidney. The 2 flaps thus formed are pulled outside, and the kidney thus held well up and back. Care should be taken that the lower pouch of this capsule is pulled high up. In cases of great prolapse, the fatty capsule will be found drawn into a long tube. Five or 6 inches of this fatty sac can sometimes be drawn up. The kidney will now lie snugly in the lumbar wound, and rise and fall in respiration. Probably it will be an inch or more below its normal place. This is an advantage, because it removes the pressure of the liver, and enables us to hold the entire organ, not merely its lower pole. The fatty capsule, and its enclosing, or Gerota's, fascia, already drawn outside are now held by an assistant or by long forceps, while the opening in the muscular wall is closed by a line of mattress stitches which transfix the fatty capsule. The real support is obtained by compression between the muscles. The flaps should now be cut off an inch or two outside the muscle, everted and stitched down, after which the skin can be closed. Primary healing is easily obtained. Andrews has tested the operation in several cases for over a year and reports excellent results. Brief histories of 7 cases are given. [M.B.T.]

7.—Arneill reports a case of acute Graves' disease occurring in a married woman of 33. The chief points of interest in the cases are as follows: Cessation of menstruation 1 year before death, the appearance of the goiter 7 months before death, the advent 3 months later of palpitation of the heart, tachycardia and nervousness, immediately after a profound emotional shock, the presence of diarrhea and vomiting, great loss of weight—nearly 70 pounds in 4 months—high pulse-rate and high temperature toward the close of the illness, the presence of delirium and the complete absence of any evidences of exophthalmos. From a study of the literature he finds that this affection is extremely rare, only 2 cases having been previously reported in America. A necropsy could not be obtained in this case, but from a study of the cases which have been reported Arneill concludes that the only pathologic lesion which is found constantly present in these cases is the disease of the thyroid which is usually hyperplastic. He believes that if the histories of many of the reported cases of this disease had been worked out carefully, that in the majority signs, though indistinct, of a preexisting incomplete Graves' disease could have been obtained. The fright, grief, or worry is simply an accidental factor, which has accentuated the signs present and hastened the development of others. The entire human family would be suffering from Graves' disease if fright, shock, and worry were sufficient causes. There is at this time either an unstable condition of the emotional nervous system, or the disease is present in its incipient stage. In the majority of acute fatal cases there is a history of uncontrollable vomiting and diarrhea, which soon exhausts the patient. [M.B.T.]

October 13, 1900. [Vol. xxxv, No. 15]

1. Pathology of Malarial Fevers, Structure of the Parasites and Change in Tissue. JESSE W. LAZEAR.
2. What Amount of Visual Defect Should Disqualify in Railroad Service? FRANK ALLPORT.
3. Operation for Secondary Cataracts. PETER A. CALLAN.
4. Systematic Cleansing of the Nasal Cavities Before Operations Which Involve Opening of the Eyeball. J. A. LIPPINCOTT.
5. A Case of Coloboma of Each Lens Without Coloboma of the Iris or Choroid. JAMES MOORES BALL.
6. A Study of the Inoculation Theory of Malarial Fever. ALBERT WOLDERT.
7. The Atrophic Pharynx. RALPH W. SEISS.
8. The Present Status of Our Knowledge Concerning the Bacteriology and Serum Treatment of Diphtheria. SAMUEL E. ALLEN.
9. Epithelioma. Report of Two Cases—One of Slow and the Other of Rapid Growth. CHARLES J. WHALEN.
10. Facts Regarding Criminal Abortion. DENSLOW LEWIS.
11. The Health and Wealth of Benguet Province, P. I. J. C. MINOR.
12. Cellulitis Succeeding Contusion of Leg; Extensive Sloughing; Skin Grafting; Recovery. HENRY SAWTELL.

- 1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1264.
- 2.—“ “ “ “ “ “ 1441.
- 3.—“ “ “ “ “ “ 1441.
- 4.—“ “ “ “ “ “ 1442.
- 7.—“ “ “ “ “ “ 1296.
- 8.—“ “ “ “ “ “ 1296.

9.—Whalen reports 2 cases of epithelioma of the face; one of these terminated fatally 21 years after its first appearance; in the other a rapidly growing tumor of only 3 weeks' duration was successfully removed.

Wiener klinische Wochenschrift.

July 19, 1900. [13. Jahrg., No. 29]

1. A Case of Typhoid Fever with Posttyphoid Suppuration of the Thyroid Gland. ANTON SCHUDMARK and J. ACH. VLACHOS.
2. The Knowledge of Spinal Cord Affections Combined with Severe Anemias. ORTO MARBURG.
3. The Etiology of Basedow's Disease and Thyroidism. ROBERT BREUER.

1.—The authors report a case of **typhoid fever** in which there was a slight enlargement of the thyroid gland at the beginning of the disease, which increased and eventually ended in an **abscess** of the gland. In this abscess the typhoid bacillus was found unaccompanied by any other microorganism. The blood was carefully studied. In the beginning there was leukopenia with a relative increase in the lymphocytes; later, when the gland began to suppurate, a distinct leukocytosis ensued. The authors made a number of animal experiments to demonstrate the pyogenic power of the typhoid bacillus and the influence of the suppurations thus caused on the number of leukocytes. They proved that the typhoid bacillus produces suppuration, and that this power is independent of its virulence, barring the very virulent forms which, on account of their fulminant effects do not give time for suppuration. The leukopenia in typhoid fever is due to the localization of the disease in the organs chiefly concerned in the formation of leukocytes, and bears no relation to the poison of typhoid fever, since the latter, when located peripherally produces a leukocytosis. [D.R.]

2.—Marburg reports a case of **pernicious anemia complicated with nervous symptoms** resembling those of tabes dorsalis. At the autopsy extensive anatomic changes were found, entirely out of proportion to the clinical symptoms. The posterior columns were especially affected; to a less degree also the lateral tracts, particularly in the cervical cord. Marchi's method revealed the degeneration very well, but also showed black deposits in the posterior roots, which the author views as artefacts. The spinal lesions in pernicious anemia have been described by some as a myelomalacia or softening of the spinal cord; by others as myelitis. But the author found no round-cell infiltration, although the bloodvessels were decidedly altered. Yet he believes that the condition is one of myelitis, rather than one of myelomalacia, and thinks that the absence of round-

cell infiltration is dependent upon the grave anemia and consequent lack of oxygen. It has been shown by Binz that oxygen is of great importance in the emigration of leukocytes. The localization of the lesions is connected with the distribution of the bloodvessels. [D.R.]

3.—The author reports a series of cases of **acute thyroidism** following the therapeutic use of iodine, and is of the opinion that the chronic iodine poisoning of older writers, which was observed particularly in cases of goiter subjected to iodine treatment, was nothing more than acute thyroidism. A woman of 56, with goiter, took for a few weeks about 13½ grains of sodium iodide per day. The thyroid gland became much smaller, but she lost flesh, was excitable, had tremor of the extremities, a hot skin, and rapid pulse. Under bromids and a milk diet the condition gradually subsided. In the second case a man of 69, with goiter, the use of sodium iodide had a similar effect. In the third case a woman of 58, with an old goiter, the use of potassium iodide for joint-pains brought on marked weakness, reduction in the struma, tremor, palpitation, rapid emaciation (particularly of the breasts), painless diarrhea, staring eyes, and von Graefe's sign, but no exophthalmus. The fourth case was that of a woman, 52 years of age, who had a slight enlargement of the neck. After the use of sodium iodide, taken on account of some ocular trouble, she developed weakness, emaciation, atrophy of the breasts, tremor, palpitation, and diarrhea. In none of these cases had there existed any symptoms suggesting exophthalmic goiter. In another series of cases (5) reported there have been mild symptoms of Basedow's disease, which were enormously aggravated by the use of iodine. In three of these cases this was employed in the form of an ointment; in one as a local application to the throat, and in the fifth, in the form of pills of potassium iodide. Another case is cited—that of a woman of 27, who had completely recovered from an attack of exophthalmic goiter—in which the application of iodine over a prepatellar bursa caused a return of the disease. Marburg believes that the iodine acts by causing an absorption from the gland of certain toxic substances contained in it. The reason that the toxic symptoms develop in only a small proportion of cases is to be found in individual idiosyncrasies. [D.R.]

July 26, 1900. [13. Jahrg., No. 30.]

1. Glycerin as a Constituent for Antiseptics. OSCAR V. WUNSCHHEIM.
2. Report of 22 Cases of Artificial Interruption of Pregnancy. JOSEF V. BRAITENBERG.
3. Concerning Ferropyrin as a Hemostatic Agent. E. TOFF.

1.—Considering the frequent use of **glycerin** as a means for applying various medicaments, Wunschheim considered the investigation of its antiseptic properties of importance. He tested the effect of glycerin on various forms of germs, alone and in combination with various antiseptic preparations. It has no special value as an antiseptic, and if used in combination with carbolic acid and other preparations the antiseptics must be stronger than if used with water. A concentration of 10% carbolic acid is about as effectual as a 5% solution in water; but if the glycerin be mixed with equal parts of water, the disinfectant value is equally as good as in the pure aqueous solution. [M.B.T.]

2.—Braitenberg reports 22 cases of artificial interruption of pregnancy at the gynecologic clinic at Innsbruck. These cases occurred during a period of 3 years and in a total of 7,472 births. In 8 cases the interference was with especial consideration for the life of the mother; in 14 cases for that of the child. The causes stated were: contracted pelvis, acute hydramnios, nephritis, uncontrollable hemorrhage, pyrogallie acid poisoning due to treatment with pyrogallie acid given the patient for psoriasis at the skin clinic, and flat, rachitic pelvis. Two of the patients died, 1 of septic peritonitis; one 2 months after delivery, of phthisis at the medical clinic. Six children left the clinic alive with their mothers. The various methods of producing abortion used were colpeuryesis, tamponing the cervix, inserting bougies, puncturing the membrane, and hot baths. [J.S.]

3.—Toff recommends **ferropyrin as a hemostatic agent** in severe nosebleed, incised wounds, etc., in which there is persistent oozing. It is a combination of chlorid of iron and antipyrin which has all the hemostatic properties of ferric chlorid without any of its caustic properties. [M.B.T.]

Berliner klinische Wochenschrift.

July 30, 1900. [37. Jahrg., No. 31.]

1. Surgical Opening of New Collateral Ways for the Blood of the Vena Porta. S. TALMA.
2. Concerning Hemolysins. P. EHRLICH and J. MORGENROTH.
3. Concerning Phenylhydrazin and Anemia. KAMINER and ROHNSTEIN.
4. The Question of General Infection in Urinary Diseases. POSNER and COHN.

2.—Ehrlich and Morgenroth publish another lengthy article on **hemolysins**. They point out the similarity between toxins and hemolysins. The hemolysins consist of complement and immune body (immunkörper). The immunkörper corresponds to the haptophorous group of the toxin, while the complement represents the toxophorous group. They take issue with Bordet and Buchner in regard to the nature and number of the alexins or complements. They maintain that there is a plurality and that the normal serum contains a large number of complements. They believe that in the normal metabolic processes of the cells a large variety of lateral chains are cast off, which either singly or in unison with others unfold specific action. They would designate all such lateral chains circulating in the serum as haptins. It is also possible to produce anticomplements in the blood by proper treatment of animals. When mixed with complements they suspend the action of the latter. The complements normally circulating in the blood of an animal are not capable of producing anticomplements in that animal's blood. [D.R.]

3.—Many attempts have been made to produce experimentally the clinical picture of **pernicious anemia**. Falquist used pyrocin, and the authors have employed **phenylhydrazin**. A large dose injected into animals produced death in 48 hours. During this time the erythrocytes sank to one million and even lower. Within 6 hours after the injection fragmentation of the red corpuscles and macrocytes were visible, but there was no poikilocytosis, although there was a moderate leukopenia. There was also a marked polychromasia of the red corpuscles in the stained preparations; some did not stain at all. Nucleated red corpuscles also appeared, chiefly normoblasts, but also megaloblasts. In these erythroblasts the granulation described by Piehn and Grawitz could not be observed. If the dose of poison injected was smaller a chronic anemia could be induced, consisting in a reduction in the number of red corpuscles and the appearance of large-sized macrocytes. No poikilocytosis was obtained. Nucleated red corpuscles were rare. The leukocytes were generally increased. Phenylhydrazin seems to act upon the leukocytes in a manner similar to that of toxins, acting in large doses as a negative chemotactic, and in smaller doses as a positive chemotactic agent. [D.R.]

4.—Posner and Cohn have made some experiments to discover whether bacteria injected into the lower part of the urinary tract enter the kidney and the general system. They laid bare the ureter and injected into the proximal end various kinds of bacteria. They found that the anthrax bacillus always led to a general infection. In the case of the Micrococcus prodigiosus 3 experiments were negative. The Bacillus coli always gave a negative result. The Staphylococcus aureus and albus and the Streptococcus gave positive results in 5 cases. The experiments produced, of course in a very exaggerated degree, the conditions obtained in the human body. In the ordinary pyelitis there is merely a local inflammation without retention of urine, which only sets in in late stages. They conclude, however, from their experiments that those forms of **pyelitis** which depend upon the **Bacillus coli** are less dangerous for the system from the standpoint of general infection than those caused by the ordinary pyogenic microorganisms. [D.R.]

Deutsche medicinische Wochenschrift.

July 19, 1900. [26. Jahrg., No. 29.]

1. Pasteur's Theory of Inoculation Against Hydrophobia. MARX.
2. Preparation of Antiplague Lymph from the Peritoneal Exudate of Infected Animals. CAMILLO TERNI and IVO BANDI.

3. Report of the Influenza Epidemic in February, 1900, in the Maternity Clinic in Greifswald. G. MÖLLER.
4. Experiments Concerning the Parasitic Nature of Eczema. W. SCHOLTZ.
5. Concerning Tetanus and Other Toxic Forms of Convulsions with Stomach Dilation. HANS URY.

1.—Marx has found that "virus fixe" is harmless when given to monkeys by intramuscular injection; also that when these animals are inoculated in the anterior chamber of the eye, they are infected, but not promptly, and not under the typical picture of hydrophobia. The fact that the passage of the hydrophobia microbes through rabbits modified the action of the virus in 2 forms of monkeys in such a way as to demonstrate that the virulence was weakened or the resistance of the microbes was decreased, demonstrates the possibility that the fixed virus in human beings may be a modified hydrophobia virus. This seems more probable when the absence of danger in the use of **antihydrophobia inoculations** is considered, and the explanation of the valuable effects of such prophylactic injections as being the result of such a modification of the virus seems very reasonable. [D.R.]

2.—Terni and Bandi have prepared an **antiplague lymph** from the peritoneal cavity of animals by injecting guineapigs with cultures of plague bacilli in Löffler's bouillon introduced into the peritoneal cavity. The animals died after 36 to 48 hours; immediately after death the fluid in the peritoneal cavity was collected under antiseptic precautions, was kept at 3° C, for about 12 hours and was then sterilized for 2 hours at 50 to 52° C, on 2 successive days; a mixture of carbolic acid 5%, sodium carbonate 25%, and sodium chlorid 75% solution were added in quantities determined by the thickness of the fluid and the amount of solid elements in it and this fluid then used for test purposes on monkeys, guineapigs and rats. It was found to be fully as effective as Haffkine's lymph, and it did not show the unfavorable after-effects and local irritation which are observed after using Haffkine's fluid. The dose can also be carefully measured. [D.L.E.]

3.—Twenty-one cases of **influenza** were observed in a maternity clinic during pregnancy and at the time of labor. Influenza had an unfavorable influence upon the early months of pregnancy. One case ended in abortion with high fever. In 10 instances the labor came on during an attack of influenza, and in 5 of these cases it was at the beginning of the ninth month. In the mild cases the course of the pregnancy and the condition of the child were apparently not influenced. The pains were energetic and the labor was short in many cases, but the uterus is likely to be readily worn out and its action must frequently be stimulated. Puerperal bleeding was common and the uterus reduced in size only slowly. [D.L.E.]

July 26, 1900. [26. Jahrg., No. 30.]

1. Two Cases of Tumor of the Cerebellum. SCHEDE.
2. Tetanus Poisoning. S. MIYAMOTO.
3. Experiments Concerning the Parasitic Nature of Eczema. W. SCHOLTZ.
4. Concerning Tetany and Other Tonic Forms of Convulsions with Stomach Dilation. HANS URY.
5. The Early Diagnosis of Intestinal Carcinoma. EUGEN HOLMÄNDER.
6. Are the Spontaneous Fracture of the Metatarsal Bones to be Considered as Accidental? GUSTAV MUSKAT.

1.—Schede reports 2 cases of **tumor of the cerebellum**. In the first case there was severe pain at first, confined to the occiput and back of the neck, but later spreading over the whole head. Disturbances of vision and hearing, accompanied by dizziness, gradually developed until he could scarcely hear at all, could only distinguish blue and white, the right eye showing $\frac{2}{7}$ and left $\frac{2}{10}$. The patient would fall if he attempted to turn while standing. The symptoms pointed towards a right-sided tumor, but at the operation a small, hard encapsulated growth, weighing 18 grams, was found on the surface of the left half. The tumor was easily removed with the finger, and as soon as its removal was accomplished the cerebral pressure, which had been intense, so relaxed as to allow the dura to be easily sutured. The result of the operation was most satisfactory, the patient being once more able to see and hear, while the

dizziness had entirely disappeared. The second case was a boy of 17, who had had headache for a year, beginning in the forehead and accompanied by severe tinnitus aurium and temporary disturbance of vision. The most marked symptom was the great disturbances of equilibrium, the patient being unable to stand at all, even with his eyes open. At the operation, a smooth-walled cyst, about the size of a walnut, was found near the median line. The contents of the cyst were evacuated and drainage established. The tumor in this case was thought to be a cystic sarcoma, so that a permanent recovery could not be hoped for. [G.B.W.]

2.—Miyamoto used for injection some old bouillon culture of tetanus-bacilli, which had been kept for 2 years, and which did not kill mice with symptoms of tetanus, but did cause death through general weakness; hence, the spasmin had largely disappeared. There was no tetanolysin present as it did not have any influence upon the blood-corpuscles of a defibrinated guineapig blood in sodium chlorid solution. Hence, the appearance in the animals injected of a **tetanus sine tetano** was not due to tetanolysin, but to a combination of some other poison contained in the fluid with the components of other organs than the central nervous system, and the changes which occur in this toxin must be considered to be the result of the production of a toxoid, together with a general destruction of the true tetanus toxin. [D.L.E.]

3.—Scholtz found in a large series of cases of **diseases of the skin** other than eczema, a mixed bacterial flora in which there were a few yellow staphylococci, but these organisms were never present in large number and did not penetrate into the deeper layers of the skin. In eczema the *Staphylococcus aureus* was present in practically pure culture in all cases and invaded the deeper layers of the skin. Hence, he thinks that eczema may be considered to be due to a staphylococcus infection. A routine treatment with antiseptics, however, is not called for, since there is always some preliminary cause, such as abrasion or friction, to give opportunity for the staphylococcus infection, and the infection itself is not so important as the inflammation of the skin which is caused thereby. Antiseptics which are not so irritating as to increase the actual skin inflammation are valuable, and these are commonly used in eczema and will be much more effective than any stronger antiseptics which will be likely to increase inflammation, though destroying the germs. [D.L.E.]

4.—Ury reports a typical case of **gastric tetany** which ended fatally, and another case of gastric trouble with tetanoid symptoms but without true tetany, which ended favorably. He considers that the case of tetany are probably always fatal, while the tetanoid cases are the ones which are reported as recoveries from gastric tetany. Paresthesias in the hands and arms are often observed in real tetany as prodromal symptoms of the onset of the attack. A repetition of an attack of true gastric tetany is always exceedingly dangerous and should be avoided if possible. In the true tetany he considers operation to be strongly indicated, while in the tetanoid cases the indication is not so strong. [D.L.E.]

5.—Holländer gives some interesting family histories from cases of **carcinoma of the intestine**, which show a most striking family tendency to carcinoma of some form, chiefly of the gastrointestinal tract. In the first case the husband and wife, who had indistinct history of carcinoma, and a son and daughter died of carcinoma; in the next generation 4 children died of carcinoma; in the next generation 2, and in the next generation, 3. In another instance reported, 1 case occurred in 1 generation; in the next generation, 4 cases; in the next generation 2 cases (generation in these instances being used in the sense of including the collaterals as well as the direct descendants). He considers such a family history of carcinoma a very important point in the diagnosis of carcinoma of the intestine, since it seems to be intestinal carcinoma in which such striking family history is most commonly met. Another point which he considers of much importance is the occurrence of skin changes, chiefly in 3 varieties: first, vascular changes; second, seborrheic warts, and, third, pigmented patches. The vascular changes consist in the appearance of large numbers of small spots, of the size of a pinhead to that of a pea, which have the appearance of small angiomas. The warts are likely to occur in very large numbers and may reach a very marked size. He had seen them as large as pigeon's eggs. The pigmented areas vary in appearance and depth of color, but

may involve practically the whole body. These signs he has found very common in intestinal carcinoma. [Pigmentation of the skin can scarcely be considered a very valuable sign of intestinal carcinoma as distinguished from other abdominal tumors. It is not infrequently seen in abdominal growths other than intestinal carcinoma. D.L.E.]

6.—Muskat says that the so-called **spontaneous fracture of the metatarsal bones** should be considered as an injury the result of accident and that the fracture occurs instantly on receipt of the fracturing force. The reason that the injury is not followed immediately by disablement and other symptoms of a broken bone is due to the accuracy with which the surrounding structures splint, as it were, the 2 fragments. Pain and loss of function follow after continued use of the parts which results in a separation of the fragments. These conclusions have been arrived at after a study of cases occurring in the army. [G.B.W.]

August 2, 1900. [26. Jahrg., No. 31.]

1. The Future of Medical Jurisprudence in Prussia. G. PUPPE.
2. A Cured Case of Diabetes Mellitus. ZAUDY.
3. The Quantitative Condition of Carbohydrate in Diabetic Urine. HEINRICH ROSIN.
4. Concerning Benzoyl ester and Carbohydrate in Diabetic Urine. FREIHERRN V. ALFTHAN.
5. Concerning Metatraumatic Alimentary Glycosuria. M. HAEDKE.
6. Usefulness of the New Saccharometer for the Quantitative Estimation of Grape-Sugar in Urine. A. SPAETHE.

2.—Zaudy describes the case of a man of 50 who was excessively fat, who excreted as much as 5 liters of urine in a day, which contained at times nearly 300 grams of sugar, and in which at various times they found acetone, diacetic acid, and a substance which was probably Beta oxybutyric acid. It was therefore a very pronounced case of **diabetes**. He had been rather seriously sick for ever 3 years. He was put upon antidiabetic diet and salol and the sugar disappeared after a time. The patient did not stay in the clinic long, but when examined about a year afterward it was found that upon fairly free diet he excreted no sugar, and there was no albumin, acetone, or diacetic acid in the urine, and the amount of urine was rather less than normal. The carbohydrates were not increased, however, for fear of bringing back the sugar excretion. It was after the use of salol that the sugar disappeared from the urine; after 2 days' use of this drug, in amounts of 4 grams a day, the sugar sank to a very low point, and on the fourth day it practically vanished; hence, it seemed to be distinctly effective, though no very decided statement is made by Zaudy. [D.L.E.]

3 and 4.—The work referred to by Rosin was a portion of that carried out by Alfthan; the 2 may therefore be considered together. The first point investigated was whether in **diabetes** unfermentable carbohydrates as well as the fermentable are increased in the urine. The former were determined quantitatively by Baumann's benzoyl chlorid method. It was found that in the normal person the amount of the benzoyl esters per day varied in grams from 1.5 to 5; in diabetes, on the contrary, the amount varied from more than 9 grams to over 20, and the amount stood in no direct relation to the amount of sugar in the urine. Evidently, then, there is in diabetes an increase of the carbohydrates in the urine which do not ferment, though whether this is true in all cases is of course not yet known. It is also a matter of interest, and perhaps of prognostic importance to learn whether these unfermentable carbohydrates reach the normal amount when sugar disappears from the urine in diabetes. The further study of the unfermentable carbohydrates is likely to make the knowledge of the metabolism of the carbohydrates much wider. It was also discovered that the amount of carbohydrates insoluble in alcohol was much greater in the urine that had not been fermented than in the urine which had fermented; hence, some of the carbohydrates insoluble in alcohol seem to ferment; also, a substance which showed the characteristics of Landwehr's animal gum was isolated and the curious fact was observed that this would reduce copper but not Nylander's reagent. This is probably due to the fact that a mixture of gum solution and sugar solution will, if the gum is present in excess, not reduce Nylander's solution, though it does reduce copper. A case of diabetes insipidus showed marked reac-

tion to a naphthol and sulphuric acid when diluted 30 times, while normal urine shows no reaction when diluted from 10 to 15 times; hence, it was probable that nonfermentable carbohydrates were increased in this case also, a fact which may prove of much interest in the question of the relation between diabetes mellitus and diabetes insipidus. [D.L.E.]

5.—Haedke examined a series of 25 cases in the surgical clinic, chiefly those who had some serious injury of the head and other parts of the body. He always excluded those who had been at all intoxicated at the time of the injury, and those who had any history of excessive use of alcohol. He also endeavored to exclude decided arteriosclerosis, lead-poisoning, and the like. He gave 100 grams of pure grape-sugar in watery solution. **Alimentary glycosuria** was observed in 15 of the 25 cases examined. This is a much larger percentage of cases than in others who have not been subjected to injury; in control investigations of 20 people who were all markedly alcoholic, Haedke found only 2 in which alimentary glycosuria was present. In none of the series of cases was he able to cause a glycosuria by giving starches, and in no case did a true diabetes follow upon the glycosuria. [D.L.E.]

6.—Spaethe has made a series of control investigations of the **saccharometers** devised by Einhorn, Andt-Fiebig and Lohnstein (the latter's having 2 forms). He finds that the improved Lohnstein saccharometer has not the points of error that are seen in the others and that it gives accurate results. It is also simple and readily used. [D.L.E.]

Münchener medicinische Wochenschrift.

August 7, 1900. [47. Jahrg., No. 32]

1. The Indications for Surgical Interference in Extrauterine Pregnancy. L. PROCHOWNICK.
2. Nervous Disturbances in the Region of the Brachial Plexus in Angina Pectoris. L. LOEWENFELD.
3. Xeroderma Pigmentosum. K. HERXHEIMER and R. HILDEBRAND.
4. Pathogenesis of Gout. O. HAGER.
5. Suturing of Arteries. RUDOLF SEGGER.
6. The Corset and Reform Dress. JUSTUS THIERSCH.
7. Remarks upon Starvation. HARTMANN.
8. Heinrich Bose. POPPERT.

1.—Prochownick testifies to the difficulty of always making a certain diagnosis of **extrauterine pregnancy**. Formerly he was an advocate of conservative treatment, but he now advises operation in many cases. He bases his change of opinion upon the results of his own experience and gives a comparative, tabulated statement of 139 cases, 47 of early operation and 92 of conservative treatment, in 40 of which surgical operation was the last resort. He usually prefers laparotomy, and adds that his observations have in the course of years verified the statement that a previous infection of the genitalia is very frequently the cause of extrauterine pregnancy, and induces tubal abortion and hematocele. [W.K.]

2.—Loewenfeld discusses the **nervous disturbances** in the **brachial plexus** occurring in **angina pectoris**. They are sensory, motor, and vasomotor. The inner side of the upper arm, the anterior surface of the forearm, the ring and little fingers, and the ulnar side of the hand, are most frequently affected. The motor disturbances involve exclusively the left arm and consist in a marked weakness. Occasionally there is a convulsive tremor of the left arm. The vasomotor phenomena manifest themselves as coldness and pallor of the left hand. The case is cited of a man of 52, who felt pains in the arms after carrying a knapsack. The attacks occurred periodically, and beginning in the shoulders radiated into the arms, especially the left, into the region of the sternum and the left side of the thorax; rarely into the right side. The heart was a little enlarged and the sounds feeble. During the attacks the left hand was pale and cold. In time the paroxysms in the left arm became excruciating, and in the intervals it was possible to produce pain by passive motion of the left arm and shoulder, and the brachial plexus was tender above the clavicle. Death occurred in an attack while the patient was at stool. The autopsy showed **calcification of the coronary arteries** and **atrophy and dilation** of both ventricles. Another case is cited in

which the pain in the precordia was slight compared with that in the arm, the patient also dying suddenly in an attack. Regarding the nature of the brachial symptoms, the view of the majority of authors is that they originate from the cardiac plexus, pass through the 2 lower cervical ganglia into the spinal cord, and thence out along the brachial nerves. This explanation does not seem quite suitable for those cases in which the paroxysm of angina start in the arm, or in which the brachialgia predominates. If the same theory is to apply we must assume that the irritation starting in the cardiac plexus is manifolded and intensified in its transit. The brachial plexus in the author's case showed on staining atrophy and sylerosis, and he believes on the strength of this that the neuralgic attacks in the left arm were due to a primary and independent disease of the brachial plexus. The angina was a complement or consequence of this neuralgia. The anginal attack may begin either in the cardiac or in the brachial plexus. The author's final conclusions are that the brachial neuralgia may be a consequence of angina or may exist as an independent concomitant affection. In the latter case the 2 have no causal connection, but have a reciprocal influence for the worse. He thinks that brachial neuralgia is due either to changes in the nerves or to the same cause as the angina pectoris, an organic heart-lesion. [D.R.]

3.—The author reports 4 cases of **xeroderma pigmentosum**, one in a man of 70, 2 in brothers, and one in a girl of 5 years. The points illustrated by the cases are that the disease is not necessarily fatal at an early date, as has been maintained, and that the early occurrence of malignant tumors is not of necessity a sign of particular malignancy on the part of the disease. [D.R.]

4.—A summary concerning the **pathogenesis of gout**. The author rejects the old view of Garrod that the essential element of gout is the deposit of uric acid in the joints, and believes that this deposit is only a symptom, as is also the increase of uric acid in the blood. The deposit occurs in the joints secondarily to a **necrosis** in the joint tissues. This necrosis is brought about by the irritating action of certain **alloxur compounds**, particularly adenin, circulating in the blood. It has been shown that before the outbreak of an attack of gout there is a retention of nitrogen in the system. This retention is not accompanied by an increase in weight and is to be credited to the presence of nitrogenous extractives of the alloxur or uric-acid group. The adenin is the most harmful, producing necrosis of the tissue-cells. Why it does so in certain particular organs or parts, like the joints, is not definitely known, but it probably depends upon anatomic conditions. The necrosis induces an extensive disintegration of tissue-cells, and the decomposing nucleins of the latter lead to an accumulation of alloxur bases and uric acid in the blood. The uric acid thus produced, or that existing preformed in the blood, is deposited in the affected parts as tophi. The recent theory of Luff, according to which the primary fault is in the kidneys, is rejected by Hager. [D.R.]

6.—Thiersch inveighs against the use of the **corset**, and also denounces the custom, much more prevalent in Germany than elsewhere, of wearing a large number of skirts suspended from the hips. [D.R.]

7.—In a man who had **starved to death** the principal lesions were complete emptiness of the digestive tract, except for the presence in the lower part of the descending colon of small, greenish-black, faceted scybala, the absence of blood from the organs, and moderate wasting of different viscera. In addition to these findings the diagnosis of death from starvation (the case was a medicolegal one) was based upon the statements of witnesses and upon the absence of all other efficient causes of death. Differing from previous observations, there was in this case not much wasting of the subcutaneous fat. [D.R.]

Centralblatt für innere Medizin.

September 15, 1900.

1. Is Strychnia Antidoted by Living Animal Tissue? S. J. MELTZER and G. LANGMANN.

1.—The authors have investigated further the statement of v. Czyhlarz and Donath (same journal, 1900, No. 19) that

when **strychnia** is injected into an extremity in which absorption is temporarily prevented by a tight ligature, the drug does not have a poisonous effect. Their work upon snake-poison in guineapigs and rabbits shows that the occurrence of death was postponed but never prevented when a tight ligature was placed upon the proximal portion of a limb and taken off 3 or 4 hours after the strychnia was injected. Snake-poison was not considered to be very demonstrative of any results, since it is not particularly poisonous in guineapigs at any rate. The same thing also occurred, however, if the limb was first ligated for several hours, the ligature then being removed and strychnia injected. Strychnia was used in frogs and rabbits because they show special sensitiveness to this drug. The results as to actually antidoting the strychnia in the ligated limb were negative in both frogs and rabbits. In guineapigs minimal doses were found to be much less violent in action, or the occurrence of convulsions was entirely prevented. These results they reduce to the statement that in guineapigs, which animals have but slight sensitiveness to strychnia, the application of a ligature prevents the absorption of this drug to some extent. That it is due to prevention of absorption and not to actual antidoting of the drug was shown by the fact that both extremities were ligated and double the minimal dose was injected. In these cases tetanus was produced without exception. Under these circumstances, then, each leg had absorbed sufficient to make the combined amount productive of poisoning. This was even more clearly shown when 3 extremities were ligated and in each one a minimal dose was injected. This gave a much larger space for absorption. As the authors anticipated, after the removal of the ligatures severe tetanus developed. They therefore attributed their results to the hindrance of absorption rather than to an antidotal effect. [D.L.E.]

Centralblatt für Gynäkologie.

July 28, 1900. [No. 30.]

1. Upon Vaginal and Uterine Dilation. BOSSE.

1.—Bosse presents an exhaustive resume of the advantages of **vaginal and uterine dilation** in obstetric practice. Of the various methods of dilation he prefers that by means of the colpeurynter, and says that Champetier's balloon is the instrument par excellence. The advantage of this method over dilation with bougies, is that the result is more certainly obtained in much less time; and, in general, it is especially adapted to cases in which artificial premature delivery is indicated, to cases of combined version on account of placenta prævia, or of severe eclampsia; or cases of pneumonia or heart-failure complicating pregnancy and labor. [W.K.]

August 4, 1900. [No. 31.]

1. The Question of Retention of Ovarian Remnant. ISIDOR FISCHER.

2. Face Presentation: Chin Posterior. MODEST POPESCU.

1.—Fischer says that but little is known as to the fate of a **fragment of ovarian tissue** left behind in operating. He reports a case in which a woman, aged 22, underwent an operation for tumor of the adnexa in which both tubes and ovaries were removed except a portion of the right ovary near the hilum about the size of a hazelnut, which seeming normal and healthy was permitted to remain. One year after the operation a cyst about the size of the fist had developed from this remaining ovarian tissue, which it was subsequently necessary to remove also. [W.K.]

2.—Popescu describes a case of **face presentation, chin posterior**, in which by means of forceps the head was turned, so that the chin was in the middle of the right pelvic wall, and the forehead in the middle of the left; and then the child was extracted. The operation was difficult and attended with much loss of blood and resulted in the mother's death the next morning. He thinks the lesson taught by this experience is, that in such cases it is better to abandon the life of the child and, in the interest of the mother's life, advance at once to the perforation even of a living child. He would therefore forbid the use of forceps, not only in the high transverse presentation of the face, but also in face-presentation, chin posterior. [W.K.]

August 11, 1900. [No. 32.]

1. Report of International Medical Congress in Paris.
2. Chinosol in Midwifery Practice. By H. TJADEN.

2.—Tjaden continues the discussion of the advantages and disadvantages of **chinosol** as a germicidal and disinfecting agent for sterilizing the hands of midwives in their obstetric practice. [W.K.]

Neurologisches Centralblatt.

September 15, 1900. [No. 18.]

1. Acute Disturbance of Motility, with the Characteristics of Cerebellar Ataxia, Developing in Alcoholics. VON BECHTEREW.
2. Further Communications Concerning the Narrowing of the Pupil that occurs upon Forcible Closure of the Eyes. J. PILTZ.
3. The Clinical Position of the So called Erythrophobia. A. FRIEDLÄNDER.
4. A Case of Paralysis of the Lower Portion of the Brachial Plexus, following Gunshot Wound. H. BRASSERT.

1.—von Bechterew calls attention to the peculiar form of ataxia that develops after excessive indulgence in alcohol, and following the subsequent coma or sleep. The patient suddenly discovers that he has difficulty in standing upright; there is a feeling of subjective vertigo, and occasional nausea or vomiting. In the course of time all symptoms excepting the ataxia disappear, but the latter may persist for an indefinite period. This ataxia is only observed when the patient stands upright, or attempts to walk; the movements of the individual limbs are normal. Occasionally there is tremor, or nystagmus, and sometimes inequality of the pupils; in a few cases epileptic attacks have preceded the condition. Treatment consists of baths, potassium iodid, strychnia. The symptoms are probably caused by a lesion in the cerebellum, although, as no autopsy has yet been obtained, this is still uncertain.

2.—Piltz, in continuation of his studies upon the pupillary reflexes, reports a remarkable case in which there was complete paralysis of the muscles of the eyeball, and a pupil that failed to react to light or accommodation. A vigorous closure of the eye caused, however, a distinct narrowing. He also reports 6 cases, in all of which closure of one eye, or attempted closure against resistance, caused narrowing of the pupil of the other eye. The diagnoses were: paretic dementia, 2 cases; tabes dorsalis, 1 case; precocious dementia, 1 case, and neurasthenia, 2 cases. He supposed that this is due to a transmission of energy from the facial muscles to both centers for the contraction of the pupils. He then gives an analysis of a considerable number of cases, including 32 of paretic dementia, and 31 of katatonia. He finds that among the former, contraction of the pupil upon forcible closure of the eye occurs more frequently than in normal persons, and in the latter, contraction upon attempted closure of the eye against resistance, although the light reflex is present. He gives a complicated explanation of this phenomenon. In conclusion he reports a case of traumatic paralysis of the iris, in which only the orbicularis reaction of the pupil was preserved. [J.S.]

3.—Friedländer gives a preliminary section of a paper upon the clinical position of erythrophobia, that is a morbid fear of blushing. The first case was observed by Casper in 1846. The name was first used by Boucher in 1890. [J.S.]

4.—Brassert reports the case of a man, 57 years of age, who at the age of 17 was shot through the breast, just below the right clavicle; this was followed by paralysis of the right hand, and disturbance of sensibility and pain in various regions; there was hypesthesia in the lower third of the arm, followed subsequently by wasting of the muscles of the hand. Forty years later the condition was as follows: weakness of the muscles of the shoulder and arm, atrophy of the flexors and pronators in the forearm, and atrophy of the thenar, hypothenar, interosseal and lumbrical muscles in the hand. There was mainengriffe, sensation was diminished in the ulnar region, and slightly in the median region, the degenerated muscles failed to react to electricity; there were no disturbances in the pupillary reflexes; there was some stiffness of the joints. The case represents the form of paralysis described by Klumpke. [J.S.]

Practical Therapeutics.

Under the charge of

A. A. STEVENS, A.M., M.D.

Atrophic Rhinitis.—Douglass (*Post-Graduate*, June, 1900) states that the complete removal of the scabs and the cleaning of the nares and pharynx constitute an important part of symptomatic treatment. Patients should be made to understand that the physician should see them every two days, or better daily; that all scabs can only be removed by cotton dipped in some solution and carefully applied to loosen. Every nook, furrow, and fold must be carefully searched. Patients realize only too well that the douche does not remove these scabs. The best results are obtained from the use of an antiseptic and deodorizing solution applied twice daily, followed by the medicant we may choose, and on alternate days these cases should be carefully cleansed at the physician's office. A spray of hydrogen peroxid (1 to 10, or 1 to 20) seems to soften and loosen scabs well, and is both an antiseptic and deodorizer. After complete spraying and a wait of a couple of minutes this should be washed out with warm normal saline solution, used in either the nasal syringe or douche-bag. This spraying and douching can be repeated until a quart of water has been used. When the odor is very offensive a solution of mercury bichlorid (1 to 10,000) may be used with the salt in the douche. The use of trichloroacetic acid (1% solution for home use and 2 to 5% solution for office use) sometimes acts favorably, but according to Douglass it is less satisfactory on the whole than other methods. With citric acid the author has had no experience. Ichthyol is a drug which gives the greatest relief. Nearly all laryngologists agree that it is the most valuable remedy for the relief of the disagreeable symptoms and the best stimulant for the mucous membrane. Douglass employs ichthyol in three ways: First, by means of a 10 to 20% aqueous solution applied on a large pledget of cotton and introduced into the nares upon the atrophied areas. As soon as the nares have been cleansed the pledgets are introduced and the patient allowed to sit in the outer office for 15 to 30 minutes, after which the pledgets are removed and the oily sprays are used to conclude the treatment. When there is ulceration, [or persistent flow of pus, ichthyol in full strength may be rubbed directly into the parts. Ichthyol on cotton wound on a probe is gently rubbed for 4 or 5 minutes into the atrophied mucous membrane. The third method of using ichthyol is by means of a salve:

R.—Ichthyol 40 grains.
Menthol 5 grains.
Vaselin 1 ounce.

To be used after cleansing the nostrils and at bedtime. The patient is directed to insert a piece as large as a bean and then to snuff it back. When the odor is intolerable, as arises from necrotic bone, orthochlorophenol in solution with glycerin of the strength of 10 to 25% seems to work well. In 10% solutions it is a strong stimulant. In solutions of 25% it is a decided cauterant, the great objection to its use being the odor of phenol which it possesses. It must be used with caution.

The Use of Morphin in Surgical Practice.—Edward Martin (*Therapeutic Gazette*, September 15, 1900) states that the general indications as to the employment of morphin in surgery may be summed as follows: 1. Morphin should be given hypodermically and in doses sufficient to accomplish the purpose for which it is given. 2. When surgical shock is attended by such severe pain as to cause uncontrollable restlessness, morphin should be given in doses adequate to relieve it. The same treatment is indicated for shock-restlessness without pain (usually due to hemorrhage) the appropriate general treatment for shock also being carried out. 3. Morphin is the best internal hemostatic in the treatment of hemorrhage; when the hemorrhage is complicated by restlessness morphin is absolutely indicated because of its quieting effect upon both mind and body. 4. When drunkards, or exceptionally neurotic patients, are to be anesthetized a preliminary hypodermic injection of morphin renders such anesthetization quicker, easier, and safer, and favorably effects the stage of recovery. Obstinate and exhausting

vomiting after ether is sometimes relived by morphin. 5. If in the first 24 hours after operation pain becomes so severe as to cause uncontrollable restlessness, this pain should be relieved by morphin. To this rule there are practically no exceptions; it applies to all operations regardless of the operative area. 6. When used in accordance with these indications the beneficial effects of morphin so overshadow its injurious effects that the latter are not demonstrable. To this rule there may be a very few exceptions.

Enemata for Use After Abdominal Sections.—Hunter Robb (*Cleveland Medical Gazette*, September, 1900) states nutritive enemata should not be given oftener than every 3 or 4 hours for fear of rendering the bowel intolerant of them. The bowel should be thoroughly irrigated every morning with warm, normal salt-solution, so that the nutritive enemata will be better absorbed. The following enema is suggested:

R.—Peptonized milk..... 1 ounce.
Whisky..... 1 ounce.
Whites of 2 eggs.....
Table salt 24 grains.

For the distressing thirst which sometimes develops after abdominal sections an enema of one pint of tepid water may be slowly administered. For unloading the bowels a high enema of one pint of soapsuds in warm water may be allowed to run slowly into the bowel from a funnel. If this enema does not prove effectual it may be repeated, or one like the following substituted:

R.—Warm water 1 pint.
Olive oil..... 2 ounces.
Turpentine..... 2 to 4 drams.

If preferred, from 4 to 6 ounces of warm olive oil or glycerin may be first injected in order to soften the fecal matter, and an enema of soapsuds and water given an hour or so later. Occasionally the addition of an ounce of Epsom salts to the pint of warm soapsuds and water will act when other enema have failed.

A Case of Anthrax Successfully Treated by Local Injections of Pure Carbolic Acid.—Fisher (*Therapeutic Gazette*, August 15, 1900) reports a case of anthrax in a man, aged 36, who had been employed as a card-stopper in a large woolen mill. The disease began 8 days before admission. When first seen his temperature was 104° F., he complained of headache and weakness, the tongue was heavily coated and the bowels were constipated. The affected arm was very painful and considerably swollen. On the day after admission 1 dram of carbolic acid (10%) was injected into and around the eschar on the forearm. On the following day his condition was slightly improved, and 1 dram of pure carbolic acid was now injected into, around and beneath the eschar. These injections of pure carbolic acid were given daily for the next 4 days, after which the symptoms had almost entirely disappeared. At no time was carbolic acid detected in the urine, although the patient had had one injection of carbolic acid (10%) and 6 injections of pure carbolic acid in dram doses daily. After 3 injections the temperature fell to normal, and after 5 injections the eschar ceased spreading. Jarnorsky has reported 72 cases of anthrax, all of which were cured by the local injection of carbolic acid.

Diphtheritic Paralysis and Antitoxin.—Ransom (*Journal of Pathology and Bacteriology*, No. 4, 1900) concludes: 1. Paralysis may certainly be expected after intoxication with not less than one-fourth of the minimal fatal dose of toxin; it may occur with doses between one-fourth and one-eighth, but not when the dose is below one-eighth. 2. Antitoxin given 15 to 22 hours after intoxication, with doses not greater than the lethal dose, exercises in large doses a modifying influence on the subsequent paralysis. Small doses of antitoxin have no evident effect in diminishing the paralysis. 3. Transferring these results to practice among human beings, we may expect liberal doses of antitoxin, given early in the illness, to influence favorably the subsequent paralysis, and this beneficial influence is likely to manifest itself, not so much on the local paralysis (soft palate, etc.), as on such symptoms as failure of the heart. Severe cases, are, however, likely to be followed by some paralysis in spite of even large doses of antitoxin.

Original Articles.

THE SURGICAL MANAGEMENT OF UMBILICAL
HERNIA WITH LARGE RING.*By E. D. FERGUSON, M.D.,
of Troy, N. Y.*Fellow Members of our Association and our Guests:—*

An umbilical hernia in its early history, when the opening through the aponeurotic covering of the abdomen is small and the contents of the sac can readily be returned, offers an opportunity for a relatively simple, safe, and satisfactory operation. In these early cases the simple denudation of the opposing surfaces of the small ring and the proper insertion of any form of coaptating suture usually secure a radical cure if done in an aseptic field. Even in these simple cases, however, it is probable that the operation will be best done by denuding the borders of the ring to the posterior level of the tendinous structures, after excision of the sac down to the ring, and then splitting vertically the edges of the ring so that the two layers of aponeurosis which enclose the rectus muscle may be separately closed by two layers of sutures. From the intimate adhesion of the peritoneum to the edges of the ring this expedient becomes a convenience, for in closing this posterior layer, if care in denudation has been taken it is manifest that the undenuded peritoneal surfaces can be approximated at the deeper layer of sutures by stitching through the denuded borders, while the upper layer will furnish opposing surfaces of pure fibrous tissue. The common difficulty found in dissecting the peritoneal sac free at the ring so as to preserve its integrity, renders the resort to denudation the easier method, and fully as satisfactory in cases with small rings. In closing the layers of the fascia in this way we have created as deep and strong a union in tendon tissue as can be made at that point, and if the healing of these tendinous layers proves to be aseptic, we may confidently expect a permanent cure.

It seems hardly necessary at present to restate the arguments in favor of suturing the separate layers of tissue entering into the hernial field so that like tissues only shall be approximated by the sutures, or to insist that the coaptation of fibrous tissue in the form of tendon, fascia, or aponeurosis, is the only curative expedient in our operations for hernia. It is well known that "through and through" suturing of a ring imperfectly denuded of its peritoneal covering is too frequently the course pursued even at the present time. In such cases the healing process is represented largely by the gluing together of the peritoneal borders of the ring without a welding of fibrous tissue,—a state of affairs quite likely to result in a recurrence of the hernia.

If failure to secure a permanent cure is the occasional result in cases of umbilical hernia with small rings, it is not surprising that in cases with large rings success should have proved the exception rather than the rule.

The mere fact that the hernia has a large ring implies the probable presence of certain conditions which add materially to the difficulties of the operation. In the first place it is probable that the hernia has existed for a long time and that more or less of the abdominal organs have formed adhesions to the inner surface of

the pouch. In fleshy patients it is difficult, if not impossible, to feel sure of a complete return of the contents of the sac prior to operation. I have several times been surprised to find considerable masses of omentum, or even loops of bowel fixed by adhesion well within the pouch where I had concluded from palpation of the ring, after the return of a large volume of hernial contents, that the sac was empty. This is readily accounted for by the broad or flat adhesion of omentum at the ring, or the collapsible state of the loop of bowel at that point, while the surrounding cushion of adipose tissue does not allow of the recognition of the omental mass of fat, or of the soft bowel which is free from the spring and resistance due to strangulation.

Then further, the puzzling relations of several loops of bowel imprisoned in a tangle of fibrous bands, ropes or honeycomb of omentum, and adhesions to the sac, offer problems which are often extremely embarrassing to the operator.

In cases in which the incarcerated content of the pouch is very large, not permitting a considerable reduction in the size of the hernia by rest in the dorsal position for several days, the patient is subjected to those risks which experience has shown to attend the sudden restoration of the contents of a large hernia to the abdominal cavity, a fatal result supervening in spite of careful and aseptic work. This class of cases is recognized for their operative difficulties and risks as well as for the tendency to relapse.

It is not my purpose, however, to dwell upon such elements of the procedure for the cure of umbilical hernia. My object is to exploit a method of closing large rings, and I shall only dwell upon the treatment of the sac and its contents in so far as it specially relates to that method. Neither will a strict definition of the size of a *large ring* be given, for in some instances a ring may be considered large when the distance is actually less than in one which cannot so be classed. The statement that the ring will admit two, three, or even four fingers, laterally placed, does not fully classify the cases, though giving a general idea of the actual size of the ring. *The essential feature of those rings which should be classed as surgically large, is the inability to approximate the borders of the ring by a vertical line of suturing without placing the parts thus sutured in a considerable and constant state of strain on the sutures.*

We cannot too strongly insist that any suture material at present available when subjected to considerable strain will either give way or so cut the tissues included in the sutures as to allow of a separation of the approximated borders before safe union has occurred. Who would expect an earring with its small wire to remain in the lobe of the ear if a constant weight of even a few ounces were suspended to the ring? And yet some of those large hernial rings are brought together by a force represented by several pounds, often breaking the silver wire in the process of coaptation, in the vain hope of securing a firm union. Separation of the apposed surfaces is practically inevitable in such cases, and the loop of wire, silkwormgut, or silk will be found on the side of the ring at which the individual stitch included a larger or stronger portion, as it would sooner cut through the opposite part. In this way I have found silver loops on opposite sides of the reopened ring, where the futile attempt had been made to hold forcibly by nonabsorbable material parts which were subjected to strain.

* The Presidential Address at the Meeting of the New York State Medical Association, October 17, 1900.

It seems to me that all procedures which are intended to secure permanent apposition of parts by nonabsorbable suture material are surgically wrong, for if union should not occur within the usual time, or if strain is to continue beyond the usual time of healing, or even to be considerable during that time, the sutures will so cut into the tissues as to defeat the attempt.

Any suture-material that remains much longer than is sufficient to allow firm union of the parts apposed by the sutures, becomes a foreign body with a liability to become the focus of irritative changes. Even absorbable sutures when overhardened by chromicising may remain so long as to give trouble, but such a result is an incidental factor and not a constant condition as with nonabsorbable sutures.

Before detailing the special operative expedient which it is my purpose to set forth in this paper, it will be well to recall the anatomic relations of the parts.

By reference to the diagram, Fig. 1, taken from Gray's Anatomy, showing a transverse section of the abdominal walls in the lumbar region, it is seen that the three muscles on the anterolateral aspects, namely the external oblique, the internal oblique, and the transverse,

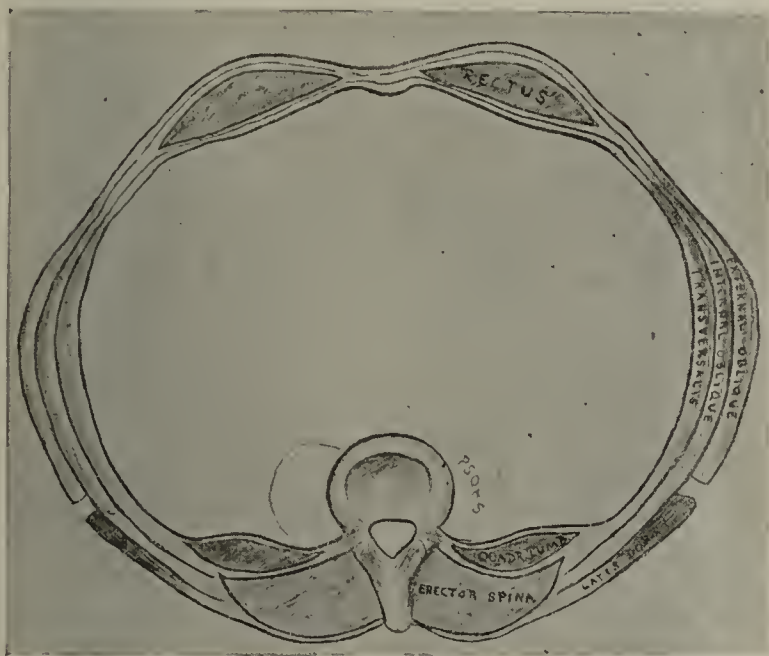


FIG. 1.—From Gray's Anatomy.

have three aponeurotic tendons so disposed that the tendon of the internal oblique is split at the semilunar line, one half of the tendon uniting with that of the external oblique and passing in front of the rectus muscle, and the other half uniting with the tendon of the transverse muscle and passing behind the rectus. Both divisions come together at the inner border of the rectus, and are there blended with each other as well as with the tendons of the opposite side so as to form the linea alba.

It is this division of the aponeurosis of the internal oblique and the blending of the divisions with the aponeuroses of the two remaining muscles in passing respectively in front and behind the rectus muscle that furnishes the condition which led me to devise the operation. This division is nearly constant and may usually be counted on in practice, but in one case I found the layer of aponeurosis behind the rectus quite defective, in fact scarcely stronger than the fascia transversalis, a structure which is of service as an aid in preventing hernia, but not in itself sufficient, for in fact it is usually included with the peritoneum in the first layer of suturing in abdominal operations, the operator

not distinguishing or separating the fascia from the peritoneum. This disposition of the aponeurotic tendons of the abdominal muscles does not extend the whole length of the rectus, but only for the upper three-fourths of that muscle. At about midway between the umbilicus and the pubes the muscle penetrates the posterior layer of its sheath, the aponeurotic margin bordering the upper and free fold being known as the semilunar fold of Douglas. This change in the relation of the aponeurosis is so generally found at the indicated level that we may regard it as practically constant, so that for the distance of three inches below the umbilicus we will find a strong lamella of aponeurosis behind the muscle, and one in front of it, an extent usually sufficient for the expedient that I adopted. Of course this arrangement of the lamellae extends from the umbilicus upwards into the epigastric region, though the sheath becomes less in size and its parts more blended as the ensiform and the rib cartilages are approached.

Opposite the umbilicus and at two points above, namely, just below the ensiform cartilage and midway between that point and the umbilicus, the rectus is partly divided by tendinous material which penetrates the substance of the muscle to a greater or less extent, usually from the anterior lamellae of the sheath. These lineae transversae enable the muscle readily to act in sections, but they rarely penetrate the muscle so completely or firmly as to prevent the separation of the anterior lamella of the sheath from the muscle. In some cases, however, if we are to leave a continuous stretch of muscle it will be necessary to proceed carefully in the dissection through these transverse lines, otherwise we shall either destroy the continuity of the muscle, or render thin, or even penetrate the anterior lamella of the sheath. If in reconstructing a continuous protective covering in the abdominal walls, the problem arises as to which is more important, the muscle or the aponeurosis, we should always proceed so as to preserve the aponeurosis intact rather than the muscle. Even if the separation through the lineae transversae goes so deeply as to endanger the local continuity of the rectus muscle, if we do not seriously weaken either the posterior or anterior lamella of the sheath we shall have available material which will be efficient in the repair of a hernial opening.

As is well known, the lamellae which constitute the sheath of the rectus muscle as they pass to the median line blend with each other and with those of the sheath of the opposite muscle in what is known as the linea alba. This union is narrower below the umbilicus than above, but throughout its extent furnishes an example of very firm blending of aponeurotic tissue.

In the development of the embryo a weak point in this line is left by the umbilical vessels there entering the abdominal cavity. At the point of entrance of these vessels we may usually count on a firm blending of the anterior and posterior layers of the sheath of the rectus on each side of the vessels, but blending of the borders of these sheaths after the atrophy of the umbilical vessels is rarely so perfect as to render that part of the abdominal wall as strong as either above or below that point; hence when lateral strain becomes strong in lifting, pregnancy, childbirth, or other cause of strain or distention, this weak spot may yield and a hernia result.

The influence of pregnancy is manifest in the greater frequency of umbilical hernia among parous women.

In the development of an umbilical hernia, the yielding is usually just at the point where the umbilical

vessels entered the abdomen, consequently, and on this point I wish to place emphasis, the hernial ring will be bounded by the linea alba at a narrow space at its upper and lower portions, and between these points on each side will be the blended borders of the two lamellae of the sheath of each rectus. This lateral blending of the two elements of that muscle-sheath is the key to the situation. It is usually a union of great strength, and even in cases where the ring has been quite freely excised and the borders approximated with through-and-through suturing, or other methods of closing the opening, should a relapse of the hernia occur, we may expect to find a strong union reestablished at the inner border of the rectus muscle between these two lamellae.

I wish to make my meaning clear on this point, for it is the key to the situation. At the center of the upper and lower portions of the ring the tendinous structures are blended in the linea alba, and in a way recognized by all as furnishing a union of great strength. On the lateral portions of the ring where the tendon in front of the rectus becomes blended with the tendon behind that muscle so as to make thus a tendinous border entirely around the ring, the strength of the union of the aponeurotic layers is not so generally recognized.

It is only necessary to open the sheath of the rectus opposite the ring of an umbilical hernia to recognize the strength of the union of the two layers at that point, at least in the great majority of cases. There is in addition a practical point of importance in our efforts to cure in these cases. In some of them we will find that one or more attempts have been made to effect a cure by denudation and direct approximation, and in such cases the denudation or *excision* of the ring will have diminished or even removed portions of this line of union between the two layers of the sheath, but as the sutures are usually applied so as to include these two layers, the new borders will be brought together anteroposteriorly, and as the strain in that direction will be small the two layers will probably remain together and result in a new and firm union, though the lateral strain prove too great to permit a firm union with those layers approximated from opposite sides of the ring.

With this exposition of anatomic and operative points as a basis, I will select the first case in which I applied the plan to be described. That case is selected as illustrative for the reason that it presented all the conditions in which any usual procedure would with nearly absolute certainty result in failure to cure, and the additional reason that the lapse of time as a test of cure is the longest I can offer, and still further an event in the progress of the case furnished some evidence of the efficiency of the plan and a more recent event one of the sources of failure.

The patient, a woman, 34 years of age, was admitted to the hospital April 20, 1899. She had given birth to five children, three of whom are living. Nine years after the birth of her first child she discovered an umbilical hernia, also a right inguinal hernia. The inguinal hernia, I found, had been cured by an operation, but several operations had been executed on the umbilical hernia, each of which had promptly resulted in failure to cure. She reported seven operations on the umbilical hernia, and as five of them were ascertained to have been made, credit may be given to the statement that seven attempts to cure were made prior to the operation undertaken by me.

The patient having illness not associated with the hernia and attended with fever, operation was deferred until June 13, 1899.

On that day, when the patient was under the influence of an anesthetic, the hernia, which was about the bulk of a large-sized cocoanut, was found to have a ring somewhat larger than a silver dollar, readily receiving three fingers placed laterally.

It was then and for the first time apparent that adhesions of viscera to the sac prevented complete reduction.

A vertical incision was made directly into the sac, when the adhesions of bowel and omentum to the sac were found extensive, intricate, and in many places very firm. These adhesions were separated so far as to release the bowel from any probable source of obstruction, and the sac was dissected free from structures outside of it well to the aponeurotic margins of the ring, and a portion of the pouch was then excised, leaving enough in extent and of proper shape so that what remained could be closed by a whip-stitch along the median line without tension on the suture. No

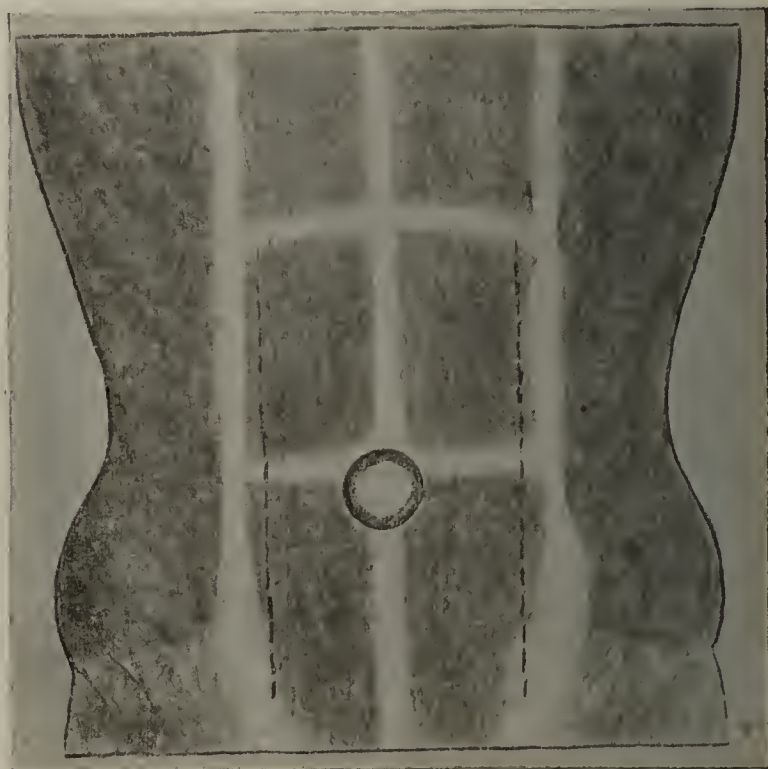


FIG. 2.—From Sappey's Anatomy.

direct measure intended to approximate the borders of the ring was undertaken, nor could it have been accomplished without such tension as surely to defeat the attempt to cure.

In dissecting the sac free from the parts outside of it, there was left a large surface of the sheaths of the recti muscles more or less uncovered. Attention was now given to a thorough uncovering of those sheaths from all overlying portions of fat or loose connective tissue for a space sufficient for the subsequent procedure. Having thus secured a surface of tendinous structure in a condition to allow securing easy coaptation and good union, a longitudinal incision was made in the sheath of each muscle near the external border. (Fig. 2.) Each incision was probably slightly more than 5 inches in length, with the middle point opposite the center of the hernial ring. The anterior layer of the sheath was then separated mainly by blunt dissection from the underlying muscle well to the borders of the ring, and for sufficient distance vertically to allow turning the flaps thus formed inwards, so that coaptation could be secured without tension. The diagrams will illustrate

this better than verbal description. But little trouble was encountered in this procedure in effecting a separation at the *linæ transversae*, though an occasional strand of fibrous tissue required the careful use of the blunt scissors or scapel.

That part of the dissection, however, needs to be made with care, the fascia being held under proper tension and sufficiently freed from blood to allow of full use of sight and touch in determining just what to do in order to secure an uninjured sheath of tendon. Between the transverse lines the sheath is free to any manipulation which the operator wishes to make after the vertical incision along the outer border is made. It seemed probable that sufficient sources of nutrition would remain to prevent death of any portion of this tendinous flap, *if no cross-incision were made*, and if tension through suturing were avoided, hence the flaps were made as long and broad as was practicable.

When the flaps were free they were turned to the middle line and sutured by the cobbler's stitch about $\frac{1}{4}$ inch from their free borders for a distance slightly in excess of the vertical extent of the ring, and then a

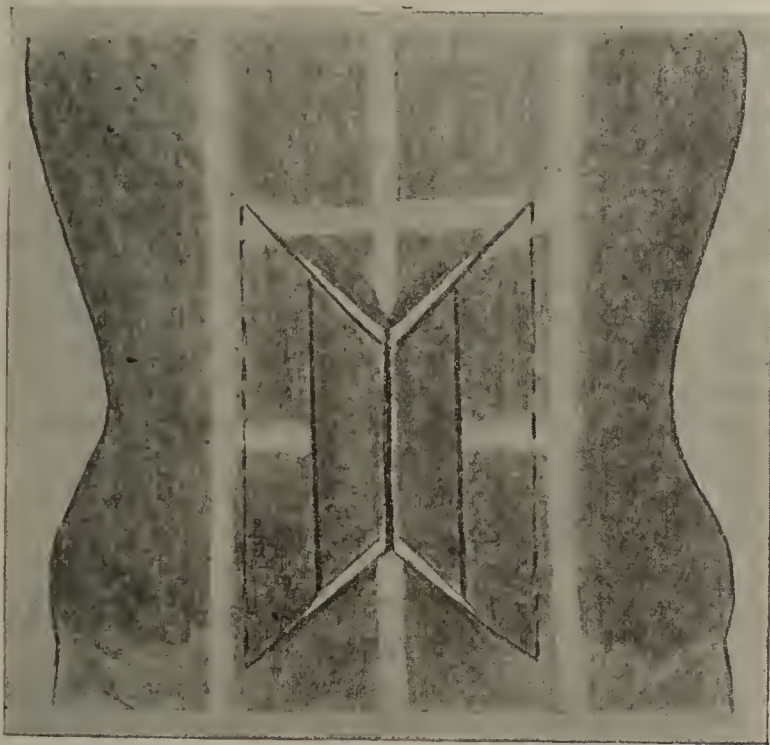


FIG. 3.—From Sappey's Anatomy.

loosely-placed whip-stitch was used to coaptate the free edges above the cobbler's stitch. (Fig. 3.) The *folded* and doubled portions of the flaps were then secured by somewhat loosely-placed interrupted sutures, placing a few of these stitches so as to fasten the flaps near the borders of the ring. These interrupted sutures were made to include as small portions of the tissues as possible, in order to reduce interference with nutrition to as small a degree as was practicable. The surfaces thus held by the interrupted sutures would not be under great strain, and, being broad and flat, coaptation could be secured without the probability of noteworthy tension on the sutures, even should vomiting occur. It seems probable that care in this part of the procedure will be necessary, in order to avoid serious interference with the nutrition of the flaps; but the tissues involved being constituted of strong elements, the sutures need include only such small portions as the dexterity of the operator will permit him to take.

The hernial ring having been closed in this way, the overlying skin was trimmed to proper dimensions and

proportions to allow closure without tension, when the skin and underlying tissues on the lateral portions of the wound were closed by running suture, to secure apposition and avoid "dead spaces" and the margins of the skin were closed by the use of a buried suture, kangaroo tendon being used in all the suturing. The wound was then sealed with collodion, and the waiting for the result was begun.

Nothing noteworthy occurred in the healing process, though the development of intercurrent illness 3 or 4 weeks after operation required that the woman should remain in bed longer than would otherwise be deemed necessary.

After the wound was closed I had noticed that some of the running stitches used to coaptate the skin to the underlying parts had penetrated so near the surface of the skin as to lead me to fear that they might become the means of infection, for experience had led me to believe that such infection could arise in two ways. In the first place the suture might penetrate a follicle containing a pus-forming bacillus, or, secondly, it might come so near to the surface that in the exfoliative changes or through attrition or abrasion just above the strand of suture it might be so exposed as to allow infection through contamination of the thread by external agents. The suspicious points, however, were so near the lateral portions of the field that my anxiety was not great, and as week after week passed without any sign of inflammation, all fear from that source subsided.

About the middle of August, however, signs of a mild inflammatory process were manifest at the seat of one of these offending stitches, but as it was evident that the bacillus was not of a virulent character, would tend to progress slowly, and sufficient time having elapsed to insure the thorough union of the tendinous structure, I allowed the process to continue several days before interference, but on August 19, *i. e.*, 2 months and 6 days after the operation, I opened the abscess. The suppurative process had proceeded along the subcutaneous suturing so as to separate the skin from the fascia and to explore the line where the two tendinous flaps had been joined, and I was pleased to note that the welding had become so complete that it was only by careful observation that I could discover where the coaptation had been made, the tendinous structures having blended into a continuous aponeurosis extending entirely over the space included in the former hernial ring.

It was several weeks before the abscess finally healed, but at no time has there been any sign of yielding at the site of the umbilicus, but when I saw the fascia at the bottom of the abscess it occurred to me that I had not been sufficiently careful in coaptating the reflected and underlying fascia below the ring where the strain would be the greatest.

In the description of the operation the fact that two silver sutures were found, one in each opposing margin of the ring, was omitted, but such was the case, and thus was added another instance in support of what seems to be a proper conclusion—that nonabsorbable sutures under strong tension are useless in operations for the cure of hernia, for here the tension had caused one stitch to cut through one margin of the ring, and the other through the opposite margin.

The operative procedure which I have endeavored to set forth is so far as I know a new one, for I have not been able to learn of its previous use, or description; but I have no pride in becoming the introducer of a novelty, and will feel no chagrin if I learn that I have

overlooked in our massive literature a similar story of surgical expedient.

Nor do I desire to take refuge behind a classification as a presidential address from any criticism of means or methods, but will gladly welcome any evidence which will show fault of technic, for thereby is the progress of medicine served, an object which should be more dear to each of us than the desire to be a discoverer.

THE GERM OF YELLOW FEVER.

BY LIEUTENANT COLONEL CHARLES SMART,

Deputy Surgeon-General U. S. Army.

THE identification of the germ of yellow fever has for the past twenty years been one of the principal objects of pathologic and bacteriologic investigators; for with the germ would be associated the antitoxin, the cure, and the prevention of this deadly disease. Truth is mighty and will prevail, but in medical matters its progress is slow. Those who have been laboring at this work know how little is effected by years of work and how many false steps have been made which have required years of patient research to remedy the evil and restore the *status quo*. Scientists, and medical scientists among the number, are generally and properly credited with an acceptance of new discoveries only when fully verified. The history of medicine fully illustrates this. The laboratory-workers have no reward before them except that which may come to them by virtue of earnest and good work truthfully recorded as throwing light upon causation, treatment, and prevention of disease. Occasionally a medical man scores a success in gaining a medal for a special essay on a particular subject. The money value is of no account, but the medical credit is great, and our young men aspire to be the recipients of such credit. This has a material value in the progress of medicine; but outside of this the rewards are only exceptional and appear to go by impulse and unscientific acceptance of asserted claims, rather than by well-considered results. Only in this way can we explain the \$10,000 award to Sanarelli for his claimed discovery of the germ of yellow fever—a discovery which had been asserted by half a dozen other workers in pathologic and bacteriologic fields before him. Four years ago Sanarelli announced the discovery of the germ of this disease, and this appeared to be accepted almost without question. Surgeon-General Sternberg, then at the International Medical Congress at Moscow, Russia, suggested that *Bacillus icteroides* of Sanarelli was no more the specific cause of yellow fever than his *Bacillus X*, which he recognized as resembling *Bacillus coli communis* in its morphology, although its pathogenic power was greater. Since his appointment as the head of the Medical Department of the United States Army, Surgeon-General Sternberg has been unable to make personal investigations in the bacteriologic laboratory, but fortunately his position has enabled him to suggest to other bacteriologists the line of work to be followed to bring forth the evidence on this important question. Drs. Reed and Carroll and Dr. Agramonte have followed up this question with the utmost care. The report of the former will soon be published in the *Journal of Experimental Medicine* (Johns Hopkins, Baltimore, Md.), while Dr. Agramonte's report has already been published in the *Medical News* (February 10 and 17, 1900). Agramonte's conclusions are that Sanarelli's *Bacillus icteroides* is no more concerned in

the production of yellow fever than are the common colon-bacilli which are frequently found in the blood and viscera of individuals suffering or dead from yellow fever. He isolated this bacillus from three cadavers in which death was not due to yellow fever. Reed and Carroll report Sternberg's *Bacillus X* as belonging to the colon group, and Sanarelli's *Bacillus icteroides* as a member of the hog-cholera group. We have seen a communication from Dr. Reed, under date of July 24, 1900, in which he states, in relation to the present outbreak of yellow fever at Pinar del Rio, Cuba: "Our laboratories are now in good working order. We have been able to study carefully seven cases since our arrival. Of these, one resulted in recovery (a severe case) and six were fatal. Neither during life nor after death have we been able to isolate *Bacillus icteroides*; but our sixth autopsy, which occurred day before yesterday, cannot be definitely reported upon as yet."

The July issue of the *Rivista d'Igiene e Sanità Publica*, published in Turin, contains a translation in Italian of Surgeon-General Sternberg's reply to Sanarelli, and in the same article is published a report of the researches made during the past two years by Dr. Adolphe Lutz, in the province of San Paulo, Brazil. Dr. Lutz, who is a corresponding member of the Academy of Medicine of Turin, is quite outspoken in his statements. The serum of Sanarelli has neither bactericidal nor antitoxic qualities for the bacillus used in producing it; and as regards the etiologic role, the bacillus cannot be found by known methods of research in more than half of the cases of yellow fever. He believes that those observers who report that they have found the bacillus in all cases, and that they can make the diagnosis by the agglutinating action of the blood, are the victims of gross errors of observation.

The details of these articles submitted beneath make it appear probable that the credit given to Sanarelli has been an assumption and that we have yet to learn what is the specific cause of yellow fever.

Letter from Dr. Adolphe Lutz on the Germ of Yellow Fever.*

SAN PAULO, January 12, 1900.

PROFESSOR PERRONCITO, *President of the Royal Academy of Medicine of Turin.*

In response to your request I send you a resumé of the researches made in my institute in 1898, which has just been printed. You will see that, in perfect accord with all unprejudiced observers, I consider that the serum of Sanarelli has not shown any favorable effect upon the sick who have been treated by this method. It is, besides, well known that its preventive action has completely failed in many cases in which the experiment has been made. I will say further that in our experiments made with the bacillus isolated at San Carlos, and recognized by Sanarelli as genuine, the serum has not succeeded in protecting the animals experimented upon against the effects of inoculation. When the cultures of San Carlos are tried with the serum of Sanarelli they are agglutinated in the proportion of 1 to 4,000, and even more. The bacillus does not develop in the pure serum, but mixed with one or two parts of bouillon it no longer prevents abundant development—only the bacillus grows agglutinated at the bottom of the tube, producing long chains very similar to those of the bacillus of Yersin. You can easily repeat this experiment, which was made by one of my assistants.

It results from all this—as I have already stated to a representative of the company manufacturing the serum—that this serum has neither bactericidal nor antitoxic power for

*Translated from the *Rivista d'Igiene e Sanità Publica*, Torino, 1^o Luglio 1900.

the bacillus used in producing it and that its employment should not be recommended.

As regards the etiologic role of the bacillus which was discovered and very well studied by Prof. Sanarelli, it seems to me that it is not entirely beyond doubt. Many epidemiologic facts accord very badly with the bacillary theory. The bacillus has never been found in an evident manner in the fresh tissues of 60 yellow fever cadavers which I have examined with the best staining methods. The blood, which is always sterile in the first part of the malady, rarely gives a frank agglutination. The bacillus cannot be found by known methods of research in more than half the cases. When it is present it is only obtained in rare colonies, the disease being characterized by the facility with which the organism is invaded by microbes which have nothing to do with the malady. It is possible that the presence of Sanarelli's bacillus is simply due to a secondary infection, which varies in frequency according to the season and locality at which the observation is made.

I have seen in the literature references to observers who found the bacillus in all cases and who believe they are able to make the diagnosis by the agglutinating action of the blood. But I am absolutely certain that their reports are the result of confusion and gross errors. If we admitted that the bacillus of Sanarelli is the cause of yellow fever there remains still much obscurity upon the transmission and mechanism of the malady; and certainly therapeutics has as yet gained nothing from this discovery. The prevention of the disease continues to be one of the most difficult tasks.

As corresponding member of the Academy of Medicine of Turin I feel myself obliged to make these declarations, as I have already done in my capacity as Director of the Bacteriological Institute, where the study of yellow fever has been carried on with much care during long years. Personally, I have seen more than 500 cases and about 100 autopsies, so that I am quite familiar with the malady. I have also visited 20 independent epidemic centers of the disease. If I have not published more upon this question it is because in my opinion it is still so far from being elucidated that it cannot be profitably discussed.

I terminate my letter with best wishes for the Academy and its members.

Very truly yours,

ADOLPHE LUTZ, M.D.

Reply to Sanarelli.*

By GEORGE M. STERNBERG, M.D., LL.D.,

Surgeon-General U. S. Army.

I SHALL not, at the present time, attempt to make a critical review of the evidence offered by Sanarelli in support of the specific etiologic relation of his *Bacillus icteroides*, nor to reply *in extenso* to his criticisms upon my previous communications relating to this subject. But in justice to myself I beg leave to call attention to the following facts:

In my paper read at the Twelfth International Medical Congress, and published in this journal (Band 22, No. 6-7), I did not make the *positive* claim that *Bacillus X* was identical with Sanarelli's, but gave reasons which led me to infer that this was the case. I say in this paper:

"Up to the present time the probability seems to be quite in favor of the view that Sanarelli's *Bacillus* is the same as my *Bacillus X*, and if this identity is not established the former can scarcely be the true cause of yellow fever, for I made in Havana, by the most approved methods, numerous cultures from yellow fever cadavers and carefully studied all bacteria found in these cultures. If *Bacillus icteroides* of Sanarelli was in the blood or in the tissues of yellow fever cases in Havana I certainly should have found it, for it grows readily in the culture-media used in my researches. But if it is not identical with my *Bacillus X* it was not present in the blood and tissues of the yellow fever cadavers which I studied in my extended researches in Havana. In the same paper I recognized my *Bacillus X* as being closely related to the colon-bacillus. I said:

"This bacillus resembles *Bacillus coli communis* (*Bacillus a*) in its morphology, although it is somewhat broader, and its colonies in gelatin roll-tubes are also quite similar,

especially so long as they are young. It is distinguished, however, from *Bacillus coli communis* by its pathogenic power when it is injected into the abdominal cavity of rabbits."

In my second paper (Band 22, No. 19), I say:

"In judging of cultural differences now existing it must be remembered that *Bacillus X* has been cultivated in artificial media for eight years. In the comparative study now being made in the pathological laboratory of the Army Medical Museum in this city, the peculiar seal-like colonies, to which Sanarelli attaches so much importance, have not been observed in cultures of *Bacillus X*. Again, *Bacillus X* causes gas-production in lactose bouillon, while Sanarelli's bacillus does so in less degree or not at all.

"In view of these facts identity in biologic characters can not be maintained.

"The next question which arises is whether the bacillus obtained by Sanarelli from yellow fever cadavers in Rio de Janeiro, and by me from yellow fever cadavers in Havana, are varieties of the same species. Comparative experiments are now being made under my direction with a view to determining this question.

"If *Bacillus X* and Sanarelli's *Bacillus icteroides* are not even varieties of the same species, the question will remain whether one, or the other, or neither, is concerned in the etiology of yellow fever."

In my third paper (Band 25, No. 13), I say:

"The experiments which have been made under my direction in the laboratory of the Army Medical Museum in this city (Washington) have convinced me that the bacillus of Sanarelli and my *Bacillus X* have permanent characters which distinguish one from the other and, consequently, that they are not varieties of a single pathogenic species. I am, therefore, obliged to admit that Sanarelli's researches give no support to the supposition, which for a time seemed to me to have a certain degree of probability, that my *Bacillus X* is the specific cause of yellow fever. On the other hand, my researches give no support to Sanarelli's claim. My *Bacillus X* was obtained by me, in small numbers, from about one half of the yellow fever cadavers examined by me in Havana. Sanarelli, using the same methods, found his bacillus in about the same proportion of cases and also, with one exception, in comparatively small numbers. Both bacilli are pathogenic for rabbits and guineapigs—Sanarelli's bacillus more so than my *Bacillus X*. But experiments upon these animals fail to give any satisfactory evidence that either bacillus is the specific cause of yellow fever. Both bacilli when injected into the circulation of dogs (5 cc.) produce vomiting, fever, a hemorrhagic gastroenteritis with bloody discharges from the bowels, albuminous urine, necrotic changes in the liver, collapse, and death in a certain proportion of the cases."

In a short reply to Sanarelli's paper published in the *Medical News* (December 9, 1899) I say:

"I gave some of my reasons in my article published in the *Medical News* of August 19, 1899, for maintaining a position of scientific conservatism as regards the etiologic role of Sanarelli's bacillus. His paper, which you are about to publish, adds nothing to the experimental data previously recorded, and, as I said in my paper above referred to, 'I have no time or inclination for controversial writing.' I have been unable to make any personal investigations since I was appointed Surgeon-General of the Army in 1893, but have followed with deep interest the researches of other investigators, and when the evidence is all in, hope to arrive at an unbiased opinion with reference to this important question. For the present I see no good reason for changing the opinion expressed at the conclusion of my previous communication, viz., that the etiologic relation of Sanarelli's bacillus has not yet been established. But, as I said in conclusion, 'if, however, the results reported by Drs. Reed and Carroll can be shown to be based upon erroneous observations, I shall be ready to revise my opinion. Truth is mighty, and no doubt in the end will prevail.'

"At some future time when the experimental evidence is all before us, I hope to make a critical review of the subject of yellow fever etiology, and if I arrive at the conclusion that the question has been definitely settled I shall be greatly pleased, for I am deeply interested in the advancement of scientific medicine. But the progress of science, in the past, has often been retarded by premature announce-

* Translated from *Centralblatt für Bakteriologie*, Bd xxvii, No. 20-21.

ments of discoveries, and by confirmation of alleged discoveries by prejudiced or incompetent investigators. A spirit of scientific conservatism is, therefore, very desirable if one would judge for himself of the merits of a question which can only be decided upon experimental evidence."

I have recently received detailed reports from Dr. Agramonte and from Drs. Reed and Carroll with reference to their latest experimental researches. Dr. Agramonte's report has been published in the *Medical News* (February 10 and February 17, 1900), and the report of Reed and Carroll will soon be published in the *Journal of Experimental Medicine* (Baltimore). Agramonte, as a result of his investigations made in the city of Havana during last summer, arrives at the following:

"2. *Bacillus icteroides* of Sanarelli, lately (1897) asserted to be the causative agent of yellow fever, is no more concerned in the production of this disease than the common colon bacilli which are frequently found in the blood and viscera of individuals suffering or dead from yellow fever.

"3. When approved bacteriologic methods are employed, the bacillus of Sanarelli does not, as a rule, appear in cultures from the blood of yellow fever patients.

"4. *Bacillus icteroides* may be and has been found present in the tissues of cadavers dead from other diseases, neither allied nor similar to yellow fever.

"5. The bacillus of Sanarelli, when subjected to agglutination tests, is not affected by the serum of yellow fever patients or convalescents.

"6. The serum of convalescent yellow fever cases affords absolutely no protection against infection by the bacillus of Sanarelli."

He says in his report:

"*Bacillus Icteroides* (Sanarelli). — *Bacillus icteroides* occurred in 7 autopsies out of 23 (Nos. 5, 6, 10, 11, 15, 16, and 23), making an average of 30.43%. Its frequency in the organs was as follows: In cultures from the liver and heart-blood of No. 5; from the liver and spleen of No. 6; from the liver and kidney of No. 10; from the kidney, blood, and urine of No. 11; from the liver and pericardial fluid of No. 15; from the kidney of No. 16; from the liver and spleen of No. 23. Hence it will be seen that it was present in the liver of 5 cases, heart-blood of 2 cases, spleen of 2 cases, kidney of 3 cases, and pericardial fluid of 1 case."

With reference to *Bacillus X* he says:

"*Bacillus X* (Sternberg) — Associated with the *Bacillus coli* in a large number of cultures, its presence being recognized in some instance only after passing through guineapigs, was *Bacillus X* of Sternberg. This organism presented peculiar motility in some cultures, while in others it occurred as a nonmotile bacillus. It was classified principally from its pathogenic action on guineapigs, which, when inoculated with pure cultures of *Bacillus coli*, usually recovered; when these cultures contained *Bacillus X*, a fatal result was the rule. It became deprived of its motility with great readiness sometimes within a period of a few days."

Agramonte reports that he has isolated Sanarelli's bacillus from three cadavers in which death was not due to yellow fever. See his paper in the *Medical News* of February 10, 1900, p 210-212.

The conclusions of Reed and Carroll are stated as follows:

1. *Bacillus X* (Sternberg) belongs to the colon group.

2. *Bacillus icteroides* (Sanarelli) is a member of the hog-cholera group.

3. The various channels of infection, the duration of the disease, and the gross and microscopic lesions in mice, guineapigs, and rabbits are the same for *Bacillus icteroides* and the hog-cholera bacillus.

4. The clinical symptoms and the lesions seen in dogs inoculated intravenously with *Bacillus icteroides* are reproduced in these animals by infection with the hog-cholera bacillus.

5. *Bacillus icteroides*, when fed to the domestic pig, causes fatal infection, accompanied by diphtheritic, necrotic and ulcerative lesions in the digestive tract, such as are seen in hogs when infected with the hog-cholera bacillus.

6. This disease may be acquired by exposing swine in pens already infected with *Bacillus icteroides*, or by feeding them with the viscera of infected pigs.

7. Guineapigs may be immunized with sterilized cultures of *Bacillus icteroides* against a fatal dose of the hog-cholera bacillus, and vice versa.

8. Rabbits may be rendered immune by gradually increasing doses of a living culture of *Bacillus icteroides* of weak virulence against a fatal dose of a virulent culture of the hog-cholera bacillus.

9. The sera of animals immunized with *Bacillus icteroides* and the hog-cholera bacillus show a marked reciprocal agglutinative reaction.

10. While the blood of yellow fever practically does not exercise an agglutinative reaction upon *Bacillus icteroides*, the blood of hog-cholera agglutinates this bacillus in a more marked degree, thus pointing, we think, to the closer etiologic relationship of this bacillus to hog-cholera than to yellow fever.

REPORT OF A CASE OF TETANUS WITH RECOVERY.

By ANDREW H. WHITRIDGE, M.D.,

of Baltimore, Md.

THE following case of tetanus occurred during my service at the Johns Hopkins Hospital in spring of 1899, and is interesting because the first symptom of the disease manifested itself on the thirteenth day, and 9 injections of tetanus antitoxin serum 10 cc. each were injected in the arms and thighs, followed apparently by no improvement. Morphia, $\frac{1}{2}$ grain, was given hypodermically every 4 hours, the dose being increased in a few days to $\frac{1}{4}$ grain, and showed most beneficial results in abating the spasms and irritability of the muscles. The patient made a perfect recovery and when seen one month after his discharge was entirely free from any tetanoid symptoms.

The patient was a young colored man, 28 years of age, a waiter by occupation, and was admitted to Johns Hopkins Hospital May 8, 1899, complaining of a burned foot. Family history was good, no tuberculosis, Bright's disease or insanity; personal history, had measles and no other diseases of youth. He always had been healthy. Eight years ago he had both feet badly frostbitten, and recovered with the loss of terminal phalanges of both feet. He had attacks of vertigo beginning five years ago which he claims was the result of an accident, falling three stories down an elevator shaft, striking his right forehead, after which he was unconscious for a few minutes, but soon got up and resumed his duties for that day, feeling perfectly well. Six months later the first attack of vertigo occurred. In these attacks he is dizzy and unconscious for a few seconds, but doesn't fall if he can catch hold of an object. These attacks come on during sleep. He denies that his muscles twitch before onset of vertigo, but has been told while he is talking with his friends he will suddenly begin to talk queerly and incoherently, and makes whining noises. He doesn't have any recollection of events during attacks, has never bitten his tongue, nor passed feces nor urine during a convulsion, and with the exception of present accident never injured himself. Such attacks come on three or four times in a year. He denies syphilis and gonorrhea; drinks only beer, not to excess.

Present illness: The accident occurred April 29, 1899, while the patient had an attack of vertigo. At the time of attack he was sleeping in a chair, and fell out and struck his foot against a red-hot stove, burning the dorsum of the foot badly. The pain kept him awake that night, and he walked around room to get relief, not using any precautions to protect sole of foot from being infected. Next day he applied linseed oil and lime-water to the burnt surface and then noticed that his ankle was swollen, also that the glands in the right groin were swollen and tender. During this day he constantly kept his foot on the ground, and walked around the room with aid of a cane. Next day he went to bed and remained there until his admission to the surgical side. Four days after the accident, he noticed that the skin over the dorsal surface of the foot had changed from black to greenish-yellow, and a fetid discharge was oozing from the abrasions in the skin.

Physical examination. Temperature on admission 98.6°. Patient is exceedingly well built man; thorax symmetrical and well developed; lungs and heart negative on percussion

and auscultation. Urine negative, no albumin or sugar. Over right temporal bone there is a small linear scar and on palpation depression of temporal bone is noticed. Covering the dorsal surface of right foot there is an extensive sloughing area covered by a dirty greenish-white necrotic tissue extending from the toes to the end of the os calcis. The slough gives off an exceedingly offensive odor and the whole epidermis is entirely destroyed. In places areas of necrotic tissue were surrounded by granulation-tissue. The ankle was swollen but not the leg. The glands in the right groin large and tender. No evidence of syphilis on physical examination.

May 12, four days after the patient was admitted to my ward, which was 13 days after accident, I noticed some stiffness in the muscles of the face when opening his mouth, and some difficulty when swallowing liquids, it caused pain in his throat and neck. Thinking at this time he had caught cold, I ordered liniment for him so that he could have his muscles massaged. The symptoms remained the same during all that day, with temperature 98.4°, pulse 80.

On May 13 the patient could hardly open his mouth. There were slight spasms in the masseter muscle. The masseter contracted at will and became hard on attempting to open his mouth. He had some difficulty in swallowing, complained of pains through chest and back, and there was marked stiffness and rigidity of the cervical muscles. The patient was then transferred to a dark room, put on liquid diet and kept absolutely quiet. On May 14 he complained of pains through chest and face and neck, and marked rigidity of the cervical muscles; had characteristic cervical opisthotonos, also trismus. Mouth could be opened only 1 cm. He had great difficulty in swallowing. When passive irritation was made, he had risus sardonicus, which is well shown by the accompanying photograph. Facies has a peculiar appearance, with slight ptosis of right eyelid, deepening of the nasolabial fold, raised eyebrow and wrinkled forehead. When he swallowed cocoa this morning he was thrown into convulsions. I began giving nutritive enemas of peptonized milk, 4 fluidounces, albumen of two eggs every 4 hours; 10 cc. of tetanus antitoxin was injected into the arm, followed apparently by no good result. Patient in the afternoon had several convulsions, which began by contracting the muscles of the face, causing risus sardonicus, then invaded the deeper muscles of the neck, causing excruciating pain with cervical opisthotonos to such a degree that his occiput touched the thoracic vertebrae. During the spasm his trunk and limbs were perfectly rigid and he had severe pain through chest, with great difficulty in retaining his breath. This convulsion lasted four minutes. An eighth grain of morphia was injected which quieted him for three hours. The temperature reached 100°. After the spasm was over the patient was bathed in profuse sweat. In the afternoon the patient received a second serum injection and was ordered morphia $\frac{1}{4}$ grain every 4 hours. Efforts to talk caused spasm. On May 15 there was great difficulty in retaining nutritive enemas, and marked restlessness of the body. In the morning he had a convulsion lasting three minutes. He received the third injection of tetanus antitoxic serum and morphia was discontinued. The temperature was 98°, pulse 88. May 16 he had two convulsions in the morning lasting over five minutes, which began by contraction of the muscles of the face and arms, the whole body finally becoming rigid, and opisthotonos in marked degree existing, the patient being held as in a vise, and breathing with the greatest difficulty. During the convulsions he foamed at the mouth and was bathed in profuse sweat. Fourth injection of tetanus antitoxin was given and a slight improvement in the symptoms was seen after injection, the temperature being 98.8°, and pulse 100. May 17, morphia still discontinued. The patient had frequent and severe tetanoid contraction of the pectoral muscles, which ascended to the cervical group, and some contraction of the extensor muscle of the leg. Both biceps muscles were contracted. During the spasm the patient was almost asphyxiated and could not speak. The temperature was 100°, and pulse 120, with spasms coming on every two to three minutes. He appeared more sensitive to noise today than usual. On account of irritability of patient it was thought best to continue the morphia, a $\frac{1}{4}$ grain every four hours was ordered which was soon followed by diminished irritability of the muscles. The fifth injection

of serum was given in thigh in the afternoon, but there was no noticeable improvement of symptoms after injection. May 18, he had frequent clonic momentary convulsions during which there was slight arching of the back, and flexion and adduction of the arms with closure of the fingers; with effort mouth could be opened to slight extent. The recti abdominals and erector spinae muscles contracted forcibly on the slightest irritation. The muscles of the extremities are easily thrown into spasms at the slightest touch. On swallowing some cold water patient had a convulsion, followed by rigidity of the body. The temperature was 102°; pulse, 125. He had slight convulsions in the evening, which were controlled by using chloroform. May 19 the patient talked irrationally several times during the night; on swallowing some milk was thrown into convulsion. Nutritive enemas were discontinued, as he was unable to retain any of them on account of loss of control of the sphincter muscle. The temperature was 102° and pulse 120. He was very weak. May 20 was a very comfortable day, the spasms being less frequent and not so severe. The temperature was 100.6° and pulse 128; no convulsions. May 21: The patient's foot has been out of bath for past 3 days; spasms are not so frequent. The dose of morphia was reduced to $\frac{1}{8}$ grain. The temperature was 99.2°, and pulse 104. May 22: There is marked evidence of irritability of muscles of the arms, abdomen, and



spinal group, which contract readily on passive irritation. The muscles of the extremities are easily thrown into spasms at the slightest touch. The patient had spontaneous irritative attacks, interrupted with momentary convulsions which threw him into convulsions of partial opisthotonos, the buttocks, however, not raised. Trismus was still marked. The sixth injection of serum was given in the thigh. The temperature was 99.2°, pulse 104. May 24 the spasms were less frequent. The seventh injection of serum was given in the arm, but no improvement followed after injection. There was noticeable improvement after an injection of morphia. On May 25 the patient had frequent spasms, the cervical and abdominal muscles being contracted. He complained of pain through the thorax, and great difficulty in retaining his breath, which has been a constant symptom throughout his illness. Trismus was less, and he could open his mouth 1.5 cm. The eighth injection of tetanus antitoxin serum was given. On May 26 he received his ninth and last serum injection. Morphia, $\frac{1}{8}$ grain every 4 hours, was continued for 2 days. On May 29, after morphia had been discontinued for one day, the spasms became more frequent, the cervical and abdominal muscles being rigid. Having no serum on hand, $\frac{1}{4}$ grain doses of morphia were renewed, which was followed by very noticeable improvement in severity of spasms and wider separation between the attacks. The patient continued to improve slowly, getting up in the wheelchair on May 30 for a half hour. After May 30 he got up

daily in wheel-chair, although he complained of contraction of the cervical and abdominal muscles, with pain through the thorax and abdomen. He was now put on soft diet, causing no new symptoms nor any increased frequency of spasms. On June 14 he said he felt very comfortable, although he still had the facies which were present during the convulsions, deepening of the nasolabial fold, slight ptosis, raised eyebrow, and wrinkled forehead. His jaw could be opened 2.5 cm. There is still considerable rigidity of muscles of back and arm. Kernig's sign was present, and the patellar and deep reflexes were quite active. His chief complaint is of pain through the chest and in the hamstring muscle. Morphia has been discontinued since June 1. On July 5 the patient was discharged as cured.

At this time there was still some stiffness in muscles of the back, but he could open his mouth 4.5 cm. and masticate food readily without any difficulty. The only complaint he had when leaving hospital was sensation of tightness through the thorax and the existence of diarrhea, 5 or 6 stools a day. While in the hospital, he was treated for diarrhea, taking a lead-and-opium pill every four hours for three weeks. This was an oversight, as I thought I had ordered the nurse to discontinue them. At the end of two weeks from his discharge from the surgical side the patient returned to the hospital, complaining of a pain of colicky character in the abdomen with some gastrointestinal disturbances. He was admitted to the medical side, where they discovered he was suffering with lead colic. He had a distinct blue line at the junction of the gums with the teeth, also had colicky pains in abdomen. These symptoms soon disappeared under treatment. He had never worked in lead, and when leaving the hospital July 5 went directly to his home where he took one lead pill three times a day. I think I am safe in drawing my conclusion that he got his lead-poisoning from the pills which I ordered in the hospital. On May 18 when the spasms were most frequent, and his foot had been treated for 10 days, Dr. Harris made a bacteriologic examination of pits of tissue removed from slough. A mouse was inoculated and died of convulsions, but no tetanus-bacilli were found on cover-slips or by cultures. The cultures proved to be of the bacillus of malignant edema and the *Bacillus aerogenes capsulatus* (Welch). Owing to the extensive surface which was covered by the slough there was only a mere chance that he got a bit of tissue in which the tetanus-bacilli had set up the infection, and on this account I feel confident if the area had not been so extensive we would have been able to isolate the tetanus-bacillus.

REPORT OF THE MILK COMMISSION OF THE PHILADELPHIA PEDIATRIC SOCIETY.*

THE Milk Commission of the Philadelphia Pediatric Society was appointed at a meeting held on January 10, 1899. Since then the Commission has made from time to time informal reports upon its work, but it has been unable to lay before the meeting any definite results until the present time. The reasons for this apparent delay are many. In the first place, the plan formulated by the Commission and approved by the Society differs in many respects from that adopted by other bodies, aiming at the improvement of the milk-supply for infants and for general consumption. So far as we have been able to find, there is no commission in any city with powers exactly similar to those with which

you have invested your Commission. Consequently, our plans had to be originated *de novo*, and consequently needed correction from time to time.

After consulting the available literature regarding similar work in other cities, and after considerable correspondence with those capable of giving the Commission information, the details of the plan were gradually evolved after many meetings and with repeated revision and corrections. After the general plan had been agreed upon, legal advice was sought as to our rights and powers, and in regard to what measures should be taken in order that successful applicants for our certificates might be protected from fraud upon the part of those not meeting our requirements. Numerous conferences were then held with various dairymen of approved standing, in order to determine whether our methods could be practically employed. It was not until these steps had been taken that the members of the Commission felt that their ideas were sufficiently well established to undertake the actual practical work devolving upon them. During the early spring of this year the Commission felt that it was prepared to offer to dairymen the opportunity for expert examination of their milk and cream. This was done by addressing printed circulars setting forth the objects and proposed methods of the Commission to a large number of milk producers. As a result of this many requests for information were received, and a considerable amount of correspondence was made necessary, especially in regard to the limit of fat in milk allowed by the Commission. The Commission heard the various suggestions made, and, while adhering to the essentials of their plan, made some slight modifications which they deemed advisable in order that the greatest number of infants should be benefited.

A summary of the articles of agreement with the dairymen is as follows: The Commission appoints experts to examine the dairy and its products in regard to the health of the cows, the cleanliness of the stables, milk-room and apparatus, and the health of the employes; also in regard to the chemical composition and purity of the milk, and the number and kinds of bacteria present. The Commission grants or refuses certificates in accordance with the result of the experts' examinations. These certificates are in such form that they can be handed to the consumer with each bottle of milk or cream. The dairyman agrees to abide by the decisions of the Commission and to pay for the examinations.

The procedures so far followed have been: First, that the agreements have been signed when the dairymen notified the Commission that they wished to have their dairy examined. The Commission, when so notified, instructs its experts to examine the dairy and its products. The experts then report to the Commission on blanks provided for that purpose, and, finally, where the examination has shown the proper conditions to be present certificates have been issued in accordance with the contract. So far the contracts have been signed by three dairies. The milk and cream of two of these have been found to attain to the standard set by the Commission. The other dairyman has so far failed to obtain a certificate, because the bacteria present in his milk exceeded in number the standard of 10,000 to the c.cm. when it has been examined by the experts of the Commission. This dairyman is, however, we understand, sedulously endeavoring to improve his methods in order that he may obtain our certificate. We hear

* Read at the meeting of the Society, held October 9, 1900.

from reliable sources that other dairymen have failed to apply for contracts, finding through their own experts that they cannot as yet fulfil in all respects the requirements of the Commission.

Our accomplishment so far is that we now have in Philadelphia two dairymen producing typically good milk for infant feeding, while others are being stimulated to improve their dairies so as to enable them to obtain the certificate of the Commission. It does not seem too much to hope that ultimately the whole milk-supply of the city may be improved, owing to the demonstration of the practicability of such improvement and to the demand for certified good milk that will surely follow the education of the public.

At the present time but two dairies have applied for and been successful in obtaining the certificate of the Commission. These are the dairy of the Walker-Gordon Laboratory Company at Plainsboro, N. J., which comprises 177 cows, the center for distribution in the city being 1721½ Chestnut street, and the dairy of F. A. Wills, at Abrams, Pa., which is composed of 16 cows, the town office for distribution being at the corner of Berks and Camac streets.

With this report the Commission have brought for your inspection the various circulars, contracts, blanks for experts' reports and certificates which they are putting in use at the present time. All of which is respectfully submitted.

FREDERICK A. PACKARD, *Chairman.*

J. P. CROZER GRIFFITH.

ALFRED STENGEL.

THOMPSON S. WESTCOTT.

ALFRED HAND, JR., *Secretary.*

The standards adopted by the Commission and set forth in the contract are as follows: The bacteriologist's examination shall find the milk to be free from pus or injurious germs and have not more than 10,000 germs of any kind or kinds to the c.cm. The chemical standards are a specific gravity of from 1.029 to 1.034, reaction neutral or faintly acid, not less than 3.5% to 4.5% proteid, 4% to 5% of sugar, not less than 3.5% to 4.5% fat (milk of a higher percentage to be so specified on each bottle); freedom from all contaminating foreign matter and from all additions of chemical substances or coloring matters; richness of cream in fat to be specified within 1% of the actual percentage; neither milk nor cream having been subjected to heat before the examination, nor at any time unless so announced to the consumer. The veterinary inspector examines "the cleanliness of the dairy in general, the care and cleanliness observed in milking, the care of the various utensils employed, the nature and quality of the food used, and all other matters of a hygienic nature bearing upon the health of the cows and the cleanliness of the milk, including as far as possible the inquiry into the health of the employes on and about the dairies; and . . . that the cows are free from tuberculosis or other diseases." These examinations are made approximately about once a month, without notice beforehand to the producer.

The report of the veterinarian concerns his examination:

- I. As to milking cows; hospital cows; dry cows; cows added since last report; cows in quarantine; cows recently calved; cows sick since last report. Total number of cows in herd, ———, of which ——— have been tested with tuberculin.
- II. Condition of milch cows.
- III. Food employed.

IV. Condition of stables; ventilation; heat; floors; troughs; cleanliness, etc; dimensions of stables; condition of other buildings.

V. Health of employes and of their families, so far as ascertained.

VI. Source and character of water in dairy and stables.

VII. The general precautions of cleanliness in milking and the care of the milk are satisfactory

The report of the bacteriologist relates to the number of bacteria per c. c. of milk in each sample of milk obtained; pathogenic organisms or evidence of purulent inflammation of the udder; the sealing of the milk-bottles as prescribed by the commission etc.

The report of the chemist is as to the following results: Total solids (by evaporation of weighed amount in platinum basin); fat (Leffmann-Beam method); ash (by burning off solids obtained as above); total proteids (Kjeldahl-Gunning method, factor 6.25); preservatives and added color; specific gravity, etc.

ANGIONEUROTIC EDEMA OF THE SALIVARY GLANDS.¹

By JAMES ELY TALLEY, M.D.,
of Philadelphia.

MRS. A., 34 years, Irish American, has been under my observation for 5 years. During that time she has suffered twice from septicemia due to retained membranes following neglected abortions, both probably due to a badly retroflexed uterus for the second of which she refused treatment; she also has a nephritis which dates from the first abortion. She is apparently unusually susceptible to poisons both microbic and medicinal, as the parenchymatous nephritis dates from the first attack of septicemia, during which attack three douches of mercuric chlorid, 1:8000 produced a marked ptialism, and two grains of quinin on two separate occasions produced a widespread and intense urticaria-like eruption with much subdermal edema. She had had a similar experience with quinin years before.

Three years ago the patient had her first attack of general urticaria which was hemorrhagic, and since then she has rarely been free more than a week or so at a time from hives. The rash varies from a few patches to a general profuse eruption, with here and there one that is hemorrhagic. She is always dermographic. Since the development of the nephritis 5 years ago, she has had 4 profuse hemorrhages, 2 nasal and 2 uterine. For two years she has suffered occasionally from nocturnal asthma.

At intervals of 7 years—thus antedating the nephritis and the first attack of urticaria—she has complained of spells of a peculiar swelling at the angle of the jaw, but it is only recently that I saw her in an attack and was able to determine their character. Two hours after the beginning of the attack the submaxillary and sublingual glands were enormously swollen and very tender. The parotids were apparently not so largely involved, though the lower part of these glands were also somewhat larger than normal.

These attacks come on every few months and reappear each morning from 7 to 8 o'clock for several days in succession. They begin with a "tickling in the ear and throat, a drawing of the tongue," pain and rapid swelling of the glands, which reaches its maximum in about 15 minutes, and is immediately followed by a profuse flow of saliva, which begins with a sensation as of "many little blisters bursting under the tongue," returning to normal in from 3 to 24 hours. The sensation of many blisters bursting is interesting when one remembers that the submaxillary gland discharges by one, and the sublingual by many ducts beneath the tongue.

At first this condition was always confined to the right side, but recently both sides are involved in the attack, which alarmed the patient and caused her to seek advice during an attack.

These spells are preceded by nausea, much belching and gastric distress, but no colic. So far as can be determined, neither the parents, nor brothers or sisters have had any such trouble. There has been no hemoglobinuria, nor do the attacks have any relation to the menses.

¹ Read before the College of Physicians, May 2, 1900.

The character of the swelling, the rapidity of its development, the lack of any evidence of salivary calculi, the preceding gastric distress and periodicity, especially when occurring in one who is so subject to urticaria and so dermatographic, would seem to indicate a case of angioneurotic edema of the salivary glands.

The points of special interest are that the salivary glands are involved rather than the lips, the labia or some other common seat of election, and that the secondary paresis of the vessels producing a hyperemia increases tremendously for a time the function of the glands, as shown by the outpouring of saliva.

TWO NEW PIECES OF LABORATORY APPARATUS: PETRI DISH FORCEPS; EXHIBITION TEST-TUBE STAND.

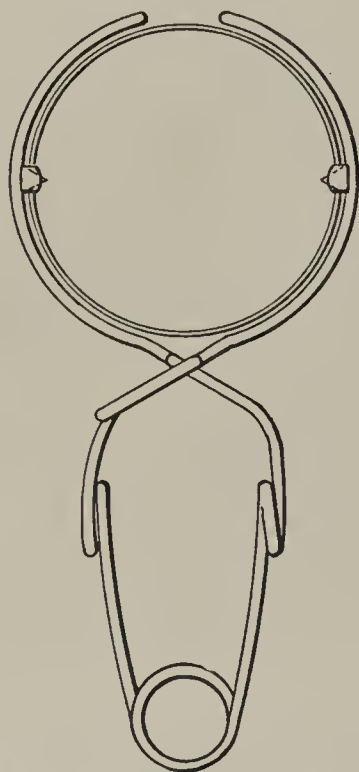
By RANDLE C. ROSENBERGER,
of Philadelphia.

Demonstrator of Bacteriology and Morbid Anatomy.

From the Laboratories of Jefferson Medical College Hospital.

WHEN a worker in the laboratory has a good many bacteria to study, and also a large number of plates to make, the rapid sterilizing of his Petri dishes is a question of moment. Or, when there is hurry, and a plate is to be made in a few minutes, rapid sterilization of the Petri dish again engages his attention.

To obviate the necessity of waiting from one-half to one hour for the sterilization of the Petri dishes in a



Petri dish forceps, showing a dish in the grasp of the forceps. Reduced to about one-third size. Drawing made by Mr. Philip A. Sheaff.

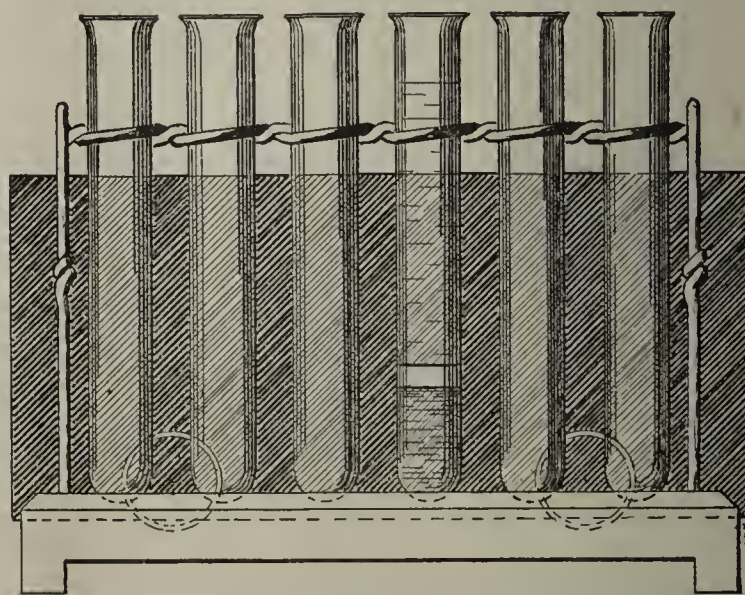
hot-air oven (which is the ideal method of sterilization), a pair of forceps has been devised, to facilitate instantaneous sterilization thereof. One pair of forceps grasps the upper dish and one pair grasps the lower. The forceps are made of heavy brass wire, have a good strong spring, and there is no fear of dropping the dish, when once in their grasp.

The dishes are now passed alternately through the bunsen flame, "inside downward," so the *inside* of the dish is sterilized by direct action of the heat. This maneuver repeated 8 to 10 times moderately slowly sterilizes thoroughly; the lower dish is laid on the table and the upper dish dropped over it.

This method of sterilization may also be resorted to when the worker has not access to a hot-air sterilizer. There is no danger of breaking the dishes if ordinary care is taken. The cut will illustrate how the dish is manipulated with the forceps.

The second apparatus consists of a modified test-tube rack, or, better, test-tube stand. It consists of a wooden base with depressions to hold the bottom of test-tube steady. Above (instead of the ordinary perforated wooden apparatus), and supported on each end, is a heavy brass wire, with spaces which exactly fit the test-tube. On the posterior portion of the stand are inserted 2 coils of wire, one at each end, between which a card can be inserted of any color.

This stand was at first intended to be one for the demonstration of chromogenic bacteria alone. The colored cardboards show off any particular colors of growth, and this can be more conveniently passed around a class or audience than the old wooden stands.



Test-tube stand, showing cardboard in the coil at the posterior portion of the stand, and one tube showing the ring in the albumin test. Reduced to about one-quarter. Drawing by Mr. Philip A. Sheaff.

Upon second thought, it will be of use to the general practitioner who examines urine in his office. By placing a black cardboard in the coil, he can perform several tests for albumin at the same time, simply placing the tubes in the stand and going ahead with others. This will do away with holding up of the test-tube against the coat sleeve, to get the typic white ring at the line of contact in Heller's and Roberts' tests for albumin.

Again, it is a much neater apparatus and a less bulky one than the old wooden stand. The illustration will demonstrate the apparatus probably better than I can describe it.

I wish to extend my thanks to Chas. Lentz & Sons, who so kindly aided me in the perfection of both these pieces of apparatus. Also, I owe my thanks to Mr. Philip Sheaff, undergraduate at Jefferson Medical College, for his kindness in making the illustrations for this article.

The Biennial Congress of Scandinavian Physicians met recently in Copenhagen. It was voted to publish a report of the proceedings in the *Nordisk Medicinisk Archiv* in the German language, as it was said that papers and abstracts published in French or English were more or less neglected by the foreign press, while those in German were much more likely to receive notice. The next congress will be held in 1902, at Helsingfors, under the presidency of Professor Runeberg.—[*Medical Record*.]

The Philadelphia Medical Journal

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The Etiology of Yellow Fever.—It is with exceptional pleasure that we lay before our readers in the present issue the most noteworthy paper of Dr. Reed and his coworkers upon the role of *Culex fasciata* Fabr. as the intermediate host of the germ of yellow fever.

Research in medicine has achieved in the last quarter of a century many important results. New stand-points and points of departure rivalled only by the doctrine of cellular pathology have, within the two or three decades now closing, arisen with startling rapidity. The demonstration of the germ-origin of disease, with its immediate application in antiseptic surgery and more remote result in the antitoxin mode of treatment, stands unrivalled in beneficent influence and fertility by any previous performance in medicine, and challenges the most important discoveries in art and science in its benign effect upon the progress of the human race. The space extending between Pasteur's historic researches on pébrine and charbon to the discovery of the long host of specific disease-germs now known to medicine is short in point of time but long in respect to results achieved. Today we stand on the threshold—perhaps indeed we may be considered to have passed that barrier—of the solution of the portal of entry into the human and animal body of the germs causing a group of blood-infections whose origin hitherto has been one of the dark chapters in medicine. It is now twenty years since Laveran's discovery of the malarial parasite in man. Great as has been the progress in diagnosis and treatment following his discovery, the mode of the origin of the infection and its prevention have received no explanation. With the discovery of the role of the mosquito in propagating and carrying the infectious agent, now no longer to be doubted, the next to the last chapter in the epidemiology of malarial fever in man has been completed. There still remains the problem, the solution of which is assured, of removing the offending anopheles from the environment of man, or of depriving it of infected blood-corpuscles as food.

That insects carry infectious agents is an old belief. Theobald Smith, in this country, had previously shown that the cattle-tick is responsible for the direct transmission of the organism of Texas fever of cattle. The relation of the mosquito-filariasis first pointed out by Bancroft and Manson has not only been confirmed, but through the recent studies of Low has been extended to

include the direct inoculability of the parasite into the blood of man! The list of disease-germs, whose portal of entry into the body has remained obscure, includes yellow fever. There has been, and there will continue to be, much skepticism with regard to the Sanarelli bacillus. If the observations of Major Reed are confirmed, even though the specific germ of yellow fever be not immediately discovered, there shall have been shed upon this most fatal disease a new flood of light that will lead to greater restrictions of its ravages and, perhaps, eventually its elimination from our Southern shores. All honor is due to the brave men who voluntarily submitted to the test of inoculation! That one, in his ardor to serve science and his fellow-men, should have succumbed to the experiment is one of those sad tragedies that the records of the art of medicine, no less than those of war, have only too frequently to note. Such an act of self-sacrifice will not be permitted to pass unrecognized and unrewarded. "Greater love hath no man than this, that he lay down his life for his friend."

Parasitic Hemoptysis.—Dr. Charles Wardell Stiles, zoologist of the Bureau of Animal Industry, presented at the last meeting of the Medical Society, District of Columbia, an outline of an interesting Government report he now has in press, regarding a parasitic hemoptysis in Asia, which has been introduced into this country. He called special attention to the fact that our troops returning from their Eastern service will bring a number of diseases home with them which are not common in this country. Among these maladies he referred especially to uncinariasis, filarial elephantiasis, parasitic hemoptysis, and probably Cochin-China diarrhea.

The parasitic hemoptysis has already been introduced, probably either by returning missionaries or Chinese laundrymen. Ward reported one case in the cat in Michigan in 1894, and Kellicott one case in the dog the same year.

Both Ward and Stiles at that time prophesied that the disease would probably spread. This prophecy has been fully verified, for the Bureau of Animal Industry has recently found over 50 cases in hogs in Ohio, and Dr. Stiles is of the opinion that the disease has probably spread to man, but has been confounded with tuberculosis. He states that it may first be expected

among the farming classes. The disease is due to a parasitic trematode worm, *Paragonimus Westermanii*, and is common to man, hogs, dogs, cats, and tigers. Ordinarily only the lungs are infected, in which nodules are found. Usually two parasites are encysted together in each nodule. Coughing and spitting of blood are the prominent symptoms. Diagnosis is made by finding the oval eggs in the fresh sputum by microscopic examination.

Occasionally the parasites or their eggs gain access to the brain, in which event Jacksonian (cortical) epilepsy results. There is no specific treatment, but patients may recover by being sent to noninfected areas. Dr. Stiles' article on the disease covers about 50 pages and treats of the disease from the zoologic, sanitary, and medical standpoints. It is illustrated with text-figures and plates, and includes full synonymy and bibliography, together with a complete review of the entire literature. It will appear in about two weeks as a part of the annual report of the Bureau of Animal Industry, U. S. Department of Agriculture.

A Grave Charge.—What appears on its face to be a grave charge is made by the Philadelphia *Press* of the 21st of October. This newspaper, after inspecting the examination papers of recent applicants for license to practise in this State, charges that thirty of these papers were regraded after the original grade had been placed upon them by the State Examining Board. In all these instances the grades had been raised high enough to allow the candidates to pass, although they had been graded below the required average by the Board. The *Press* does not hesitate to imply that the Medical Board has not been able to resist "pressure," and that this pressure has been brought to bear not only by politicians, but also by medical colleges, professors, benefactors, and kinsfolks of the unsuccessful candidates. The instances printed by the *Press* show that the averages were raised in cases in which the candidates failed by only a few points, to gain the requisite grade of 75. Thus one applicant had a grade of 72.14; another a grade of 68.85.

The charge implied in the editorial comment of the *Press*, that the State Examining Board is subject to "pressure," is a very ugly one, and should not be allowed to go unanswered. Possibly, as one member of the Board has stated in an interview, it is the custom of the Board itself to revise the papers of candidates who fail by a very few points, and to regrade them so as to give a higher average if this appears proper to the Board collectively. Such a revision and regrading by the Board itself before pronouncing its final decision in such cases may be clearly within its prerogative. A candidate who fails by an average of 74.50, possibly by reason of an exceptionally low grade in only one branch, might well deserve a careful reconsideration of his case before being finally rejected on such a narrow margin.

As we have already said, the implied charge of fraud should be met by the Board. We must know whether this is really a fraud or only a mare's nest.

The "Hall of Fame" farce should give an excellent subject for some opera bouffe writer. It is plain that the judges have not been chosen for their fitness, have not taken their work seriously, have not been guided by a high and dignified ideal, but have been ruled by class prejudices, local prides, and fantastic superficiality. They have thought of the word famous as indicating the person the most talked about, most read, or that has happened to get himself before the popular attention. Hardly one judge seems to have asked himself who has best deserved fame, not one has inquired who has done the most good to his fellow men. The name of no woman is thought worthy of a place.

Then consider the blundering crudity itself of wishing for a "Hall of Fame." The affair can have but one effect, that is, to inspire the young and ambitious to secure fame by the same means as these famous men have done. But the ethics, the religion of all noble action is not to seek to do that which will bring human applause and renown, but that which will be right, prevent evil, and better human life.

Not a physician is to have his name in the New York Hall of Fame,—and it is a matter of congratulation! And yet there have been a thousand physicians who have done a thousand times more good to their fellow men than many that are likely to be included, for instance, Edgar Allen Poe or Daniel Boone.

Newspaper Notoriety.—Some physicians seem to be born newspaper doctors; some achieve this sort of greatness; and some undoubtedly have it thrust upon them. It is sometimes hard to decide in which class a man belongs, but there is a growing conviction on the part of the profession that, when a man's exploits, operations, health, goings and comings, his opinions on medical subjects, etc., appear habitually, and for years in the papers, sure it is, despite his protests, by his wish and will. As we know to our disgust, many newspaper reporters have not a spark of honor, and their promises are made in order to be broken. Not all, however, are liars. Still it is best never to talk with them. Even if they are honest they are usually incapable of reporting any professional thing correctly. When a medical fact or a physician's opinion goes through a newspaper office, it generally comes out a sorry mixture of untruth, error, and distortion. To a man of character and scientific attainment, a sprawling interview, or an account of an operation in reportorial English, with photograph to prove it, is a most harmful and deplorable thing. That it may be wholly without his consent and against his desire we know from a recent instance of which several correspondents complain. That it may

be schemed for, we know in another case in which the advertiser fearing his portrait might not be asked for, or that an old stereotype might be used, spontaneously sent his most recent photograph to the "City Editor." It is so easy to stop the whole procedure if one sincerely wishes to stop it, that, as we have said, when it continues a long time, we may be sure the "correspondents" do not wish the abuse to cease. We have found the great majority of editors and city editors of newspapers have no desire to disobey a simple written request by a physician that in no case is his name to appear in the paper without his written consent. The few wretched sensational papers that refuse to act upon such requests may be ignored. Why do not those opposed to the practice have their medical societies pass a resolution to that effect and transmit it to the newspapers with a list of the members? There seems to be a deal of useless botheration and exaggerated difficulty in checking a folly that persists because it is secretly desired, and because a simple request is not made.

The Definition of the Words, *Ptomain* and *Toxin*.—A correspondent with reason complains that there is a lack of clearness in the definitions given by textbooks and dictionaries of the words *Toxin* and *Ptomain*. As others may also have noticed the fact we append definitions which seem to give the distinctions:

Ptomain (πτῶμα, corpse). A basic nitrogenous compound, resembling the alkaloids, produced by the action of bacteria on organic matter. As they are usually formed in putrefactive processes, ptomains have also been termed putrefactive alkaloids. Some are poisonous, many are not.

Toxin (τοξικόν, poison). 1. Any poisonous nitrogenous compound produced by animal or vegetable cells. 2. Any poisonous substance, proteid in nature, produced by animal or vegetable cells; also called toxalbumin.

The true nature of the latter is unknown; although most of them give the reactions of albumoses or other proteid bodies, they have never been isolated in a free state. They are uncrystallizable, are soluble in water, are dialyzable, and are destroyed by heat. Some of them behave as if they were of a ferment or enzyme nature.

Toxin, animal.—One produced by the metabolic activity of animal cells, as snake-venom.

Toxin, bacterial.—One produced by the metabolic activity of bacteria, as diphtheria-toxin.

Toxin, extracellular.—A bacterial toxin elaborated by a microorganism and thrown off into the surrounding medium. The majority of the best known toxins are extracellular.

Toxin, intracellular.—A bacterial toxin contained in the bodies of the bacteria themselves.

Toxin, vegetable.—1. Any toxin produced by vegetable cells. 2. Specifically, one produced by higher plants, as ricin (produced by the castor-oil plant), abrin (produced by the jequirity plant).

The Duty of the Public to Itself.—The Philadelphia *Press*, which, in its editorial utterances at least, often stands for good ethics and common sense in medical matters, has again been prodding the medical profession to be up and doing to suppress quackery and illegal practice in this State. The *Press* seems to think that the burden of this work should fall upon physicians, since, from its point of view, they are the ones

most directly interested in abolishing christian scientists and all other charlatans. While we do not aim in this JOURNAL to absolve the medical profession in the slightest degree from any of its public duties, we think it worth while to point out that the public itself, and not the profession, is more nearly interested in this matter. It is the public, and even sometimes the more intelligent portion of it, that is responsible for the prevalence of quackery, and pays the price for it. Not physicians, but the people, are they who sacrifice health and life to this modern juggernaut. It is not our children, but theirs, who thus suffer and die. The medical profession is never weary of proclaiming this truth, and of doing what it can to avert its consequences, even though in so doing it is usually accused of acting from selfish motives and purely to protect its trade interests. The first duty of an enlightened and liberal profession is doubtless to instruct the public, but it is not so obviously its duty to do police work to protect that same obstinate public from itself, or to lobby in the State Legislature for repressive legislation. It has never shrunk, however, from taking a hand even in these matters, but it is not willing to let the lay press put upon it the entire onus of the responsibility for suppressing organized quackery. When all lay journals, not only in their editorial but also in their advertising pages, recognize fully their own responsibility to the public in this matter—when, in other words, they lead a crusade against charlatans and refuse at the same time to advertise their wares, they will be in an admirable position to recommend a policy to the medical profession.

Only recently it was reported that the Governor of New Hampshire met Mrs. Eddy in state at the public fair grounds, where this false prophetess was received by the city and State authorities, and escorted by a troop of mounted police and a mounted aid from the Governor's own staff. Will the *Press* kindly tell us whether it is the duty of the medical profession in New Hampshire to repress the Governor of the State? He evidently should be repressed by somebody.

Increase in Juvenile Crime.—Mr. Franklin Matthews, in a paper just published in *Harper's Weekly*, seeks to prove that there has been a large increase in juvenile crime in New York City in recent years. Mr. Matthews asserts that the records of that city are, from political motives, kept so imperfectly that it is difficult to compile accurate statistics, but he claims that he has access to a private record which shows that the number of arrests of youths for robbing has increased enormously. A few years ago it was rare to find more than four or five youths, under twenty-one, in the Tombs at one time, awaiting trial for burglary or grand larceny, but recently almost two-thirds of the boys awaiting trial are charged with these crimes. The ratio is about 15 out of 25—or 60%. In one week there were 36

boys in the Tombs awaiting trial, of whom 22 were charged with burglary, 7 with grand larceny, and only 5 with misdemeanors. The rate of increase in thievery among juveniles is, according to Mr. Matthews, simply appalling. This increase is largely in the East side of the city. One boy was arrested six times in eight months for stealing. Mr. Matthews does not hesitate to charge that the present political conditions in New York are largely responsible for this prevalence of crime. He even intimates that the police are in collusion with these delinquents, and gives an instance in which an overcoat that was stolen could not be recovered until money was paid for it.

Children are heavy sufferers in other ways, according to Mr. Matthews, from the political depravity of the metropolis. Little children are put on exhibition for shocking displays in some of the saloons, and the most inhuman and depraved crimes against children, of a quite unmentionable character, are prevalent. From the standpoint of social science it may be too much to hold the administration of any large city wholly responsible for the prevalence of any form of crime, but Mr. Matthews' indictment against the government of New York is a very terrible one. He shows at least that something is lacking in the present administration of the metropolis since such a state of things can exist.

In favorable contrast with this report from New York is the statement which comes from Chicago about the working of the Juvenile Court in that city. This is a tribunal that takes cognizance especially of juvenile delinquents and attempts to rescue and reform children instead of graduating them in crime. The journal known as *Charities*, for October 6th, has a paper on this subject in which it shows the efficient working of this Court. This tribunal is devoted to saving children, and it seems to be effecting its object in innumerable instances. A similar court both in New York and in Philadelphia would be a godsend to these cities.

Vascular Changes in the Eye in Connection With Albuminuria.—An ophthalmoscopic examination will sometimes detect vascular changes in the eye indicative of what may be called the prealbuminuric stage of albuminuria. In such cases the general fibrosis of the arteries and accompanying high tension has not proceeded to such an extent as to cause extensive kidney disease, with consequent albuminuria, although progressive vascular changes may be noted in the fundus oculi. The first account of the changes found by the ophthalmoscope in cases of high arterial tension was given by Mr. Marcus Gunn in a brief note in 1892,¹ which was followed by a longer paper in 1898. Recently the subject of albuminuric retinitis is taken up, and illustrated by case reports, by H. B. Grimsdale,² who also refers to Gunn's papers.

In the prealbuminuric cases the arterial reflex is narrow and bright, compared by Gunn to a bright copper wire, and the whole artery is of a lighter color. It is seldom that the coats are sufficiently thickened to be much visible, not infrequently the indication of coats at the disc can be traced in cases of high tension for some considerable distance beyond the margin, and very occasionally distinct white lines along the edge of the blood-column show the presence of greatly altered and thickened coats.

The most characteristic of these early signs of high tension is, as Gunn points out, afforded at the crossing of veins by arteries. In the earliest cases the vein appears to be pushed back by the artery into the retina, and as a result the light reflex is lost for a short distance on each side of the crossing, because the surface of the vein no longer lies in a plane at right angles to the incident light. In a later stage the vein seems pushed on one side by the artery in the direction of the flow of blood in the latter. In still later stages the vein is more obstructed by the artery, and appears much narrowed where the crossing occurs. The distal portion of the vein is larger than the proximal, owing, no doubt, to the partial damming of the flow by the hard artery which lies across it.

With this condition there are often to be seen hemorrhages in the retina, either superficial and tracking in amongst the nerve-fibers, the so-called "flame-shaped" hemorrhages, or deeper in the molecular and nuclear layers, the "glandular" hemorrhages. In both these cases the outlines of the hemorrhages are irregular, and their extent is small. A less usual form is very much larger, and has a perfectly sharp outline, approximately semicircular below, and bounded by a straight line above. These were called D-shaped or "subhyaloid" hemorrhages, as it was thought that here alone would the extravasations of blood track with sufficient freedom to maintain such sharp margins. Actual anatomical examination has shown that this is not the case, and the blood may be in the retina. In no instance has the blood ever proved to be really subhyaloid, *i. e.*, between the retina and the hyaloid membrane.

Vision is as a rule not greatly affected by the hemorrhages. Even if they occur at the macula the thin layer of blood is to some extent transparent, and a considerable fraction of vision may persist, though objects are spoken of as "seen through a red veil" in many cases. This symptom may very well give rise to the suspicion of hemorrhage, but it must be remembered that hemorrhage is not the only cause of erythropsia. However, if the effused blood sets up a retinitis, vision may be seriously impaired, and if the general condition is not properly treated there is danger of relapses, which, however, though leaving large spots of degeneration in the retina, may have surprisingly little permanent effect on the visual acuity.

Less commonly, in connection with albuminuria

¹ Transactions of the Ophthalmological Society, U. K., 1892.

² *Treatment*, London.

apart from the changes which have been described, disease of the walls of the veins results in thrombosis of the central retinal vein or one of its larger branches. This gives rise to a formidable fundus-picture not easily forgotten, and as the retinal elements are seriously damaged, vision is greatly reduced. Hemorrhages may also occur into the optic nerve behind the globe, giving rise to a form of retrobulbar neuritis, with much less striking ophthalmoscopic evidences.

The prognosis of albuminuric retinitis is very grave. Few patients live over two years. So long as the changes are slight and there are no hemorrhages, we have no reason to suspect that the vessels in the brain are more diseased, and may regard the chance of their giving way as not very great. There is, however, no certainty about this, as the vessels of the brain are not necessarily at the same stage of the disease as those of the retina. The presence of great change and of multiple hemorrhages gives rise to a much graver prognosis, and we must regard the probability of cerebral hemorrhages as not remote. Obviously, any cause likely to increase the local arterial pressure must be avoided, and all measures taken to keep this pressure within or below normal limits.

The Overcrowded Medical Profession.—In common with the other professions, that of medicine is overcrowded. This condition is not a new one, but it is worse than it was and it is continually growing worse. We doubt whether it is within the province of any man to point out a sure and certain remedy for bad sociologic conditions; but it is within the province of any of us to note a few of the factors that contribute to existing evils and by avoiding them in the future to lessen to some extent the evils of which we complain.

Medicine invites the allegiance of many who imagine that they see in its practice an easy method of making a respectable living without going to much expense in preparation. This class was especially appealed to by the formerly existing short courses of study with the absolute certainty of graduation at the end of two years. To-day, being shut out of most reputable medical colleges, the same class is taking up the various branches of quackery, such as osteopathy, hypnotism, christian science, and kindred short cuts to good incomes. The "institutes" of various kinds which now advertise instruction in the various "healing" fads make a special point of dilating upon the certainty of making a good living by these means in a very short time. It is evident that a "good living" for these frauds is a smaller annual income than is requisite for the reputable physician with his necessarily large expenditures every year for books, instruments and remedies. The fact that these charlatans have come and have come to stay, should be recognized. We cannot lessen the evil, no matter how much we deplore it. Irregular practitioners of various sorts now monopolize more than half of the

medical practice in regard to minor illnesses—the kind that would eventually get well without treatment or in spite of it—and which formerly contributed a very respectable annual sum to the average doctor's income. The genuine medical profession still does as much work as ever in serious diseases, but gets less pay for it.

It may thus be seen that even without an annual influx of new men, there is less work today for the average doctor than there was twenty years ago. Preventive medicine is still further lessening the amount of routine work for the general practitioner. Typhoid fever was formerly the standby for steady income in many communities. Four or five cases of that disease continually on hand made a very fair bulk of the general practitioner's outside work. The prevalence of this illness is constantly decreasing; some day it will be practically eradicated. So it is with diphtheria; so it is in some parts of the country with malarial diseases. Altruistic medicine is lessening its own work and diminishing its own income.

With these and kindred facts in mind, is there not some legitimate way to lessen the number of doctors who have to do the work? Should not every physician and especially every college professor, do his best to keep the incompetent, the ne'er-do-wells and certain failures from entering our ranks? No young man should be encouraged to take up the study of medicine unless he possesses natural qualifications of an exceptionally high order. Good drug clerks, good barbers, good carpenters, and good school teachers should not be urged to abandon occupations for which they are suited and in which they make probably as fair an income as they will make in medicine for at least ten years. Every professor in some colleges feels that it is duty to secure at least one student each year for the class; sometimes he goes out into the highways and byways and compels them to come in. Only too often the recruits thus obtained are neither desirable from the standpoint of intelligence nor pleasant associates from the standpoint of personal character.

We plead for more care in the selection of medical students; we plead for less enthusiasm in urging young men to take up the study of a science for whose practice their personal qualifications do not fit them; we plead for a less crowded profession by raising the standards of admission into that profession.

A Warning Concerning a Man Representing Himself as Our Agent.—The Business Manager of the PHILADELPHIA MEDICAL JOURNAL requests us to warn physicians, especially in New England, concerning a man named Dr. J. Steinberg. At one time he was an authorized subscription agent of the JOURNAL, but was dismissed because he did not report collections he had made. He is still continuing this practice. Physicians will confer a favor by telegraphing us where the man may be found.

Correspondence.

A VISIT TO THE FINSSEN INSTITUTE.

By GEO. G. HOPKINS, M.D.,
of Brooklyn, N. Y.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

THE Finsen Institute, which I have come all this distance to see, is one of the most interesting clinics I have ever at-



FIG. 1.

tended. At present Prof. Finsen has under treatment about 200 cases. These cases are of all forms of lupus, from very mild to the most severe. The accommodations are somewhat limited and they can only treat 16 patients at a time, by electric light, and by the sun about 12. The sun-treatment is by a lens, 8 inches in diameter, fitted into a band of metal closed on the other side by a plain piece of glass, making a chamber which is filled with water colored with sulfate of copper. The sun lenses are of glass, not rock crystal, as are the lenses used with the electric light.



FIG. 2.

I was most fortunate at my first visit (though I considered myself very unfortunate), in finding the Crown Prince Frederick there looking over the cases. I sent in my card to Dr. Finsen, and prepared for a long stand. But the doctor asked if I might be presented, to which the Prince very graciously assented and invited me to accompany him in his inspection. My good fortune was in the fact that the Prince speaks perfect English and Dr. Finsen does not understand any.

For more than an hour we inspected 50 or 60 cases, and he translated my questions and gave me the answers.

My results at home were very encouraging, but the results here indicate that this treatment is certainly one of greatest of medical discoveries of the century just closing. The most difficult cases to treat are those that come during adolescence, from 15 to 22 years of age. All proliferation, they claim, is more active during this period than at any other period of life, and therefore the disease advances much more rapidly.



FIG. 3.

In children it is very speedily eradicated. After 30 years of age, with each decade, the response to treatment is the more rapid. Patients that have been subjected to cureting respond to the treatment very slowly.

I inclose with this the photographs of 5 unpublished cases which Dr. Finsen very kindly gave me. There are two pictures of each case, showing the condition before and after treatment.

No. 1.—The patient came under treatment April 1, 1898.



FIG. 4.

and was discharged cured April 6, 1899. She had 55 sun treatments and 151 electric light treatments.

No. 2.—This patient came under treatment April 6, 1899, was discharged cured June 16, 1900. She had 145 electric light treatments and 34 sun treatments.

No. 3.—Treatment began August 22, 1898; the date of discharge was mislaid. She had 53 sun treatments, and 175 electric light treatments.

No. 4.—Treatment was begun January 10, 1900; patient was discharged cured June 29, 1900. She received 126 electric light treatments. No sun treatments.

No. 5.—Treatment began January 19, 1900; the patient was discharged cured March 25, 1900.

The strange feature of these cases is that they are largely women. Among the hundred and more cases that I saw in the several days I was at the institute, there were probably not more than ten men, and these were all young men. There was a uniform improvement in every case that I saw under treatment.



FIG. 5.

The Government is constructing a more commodious building for the institute. It is really what we term a free dispensary. Dr. Finsen is now turning his attention to the treatment of such cancers as can be reached by the knife, and afterwards by the light. I saw one case of a large fungating cancer of the neck at least 5 inches in diameter. The photograph represented it in appearance like a large sunflower. This was removed by the knife, and the base treated with the decomposed light, and the patient has as healthy a cicatricial tissue, where the growth was removed, as could be asked for. I examined it carefully and believe that he has accomplished a cure in this case.

THE METHOD OF TEACHING PHYSIOLOGY.

By JOHN C. CARDWELL, M.D.,

Instructor in Physiology in the Long Island College Hospital, Brooklyn, N.Y.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

MANY of the ideas expressed in an article recently published in this JOURNAL so nearly accord with my own, some of which were put into practice during last college year, that I am anxious to express my appreciation of that article.¹ The mass of scientific knowledge concerning the phenomena intimately associated with living matter and living things which is called physiology, has accumulated as the result of observation, experimentation and reasoning. Why not use the same means in the teaching of it? Why not at least direct and encourage the student of medicine to acquire his basis-knowledge of it by these means?

As Prof. Porter reminds us, "physiology deals with phenomena, not with words." And it is only by the actual observation of these phenomena that the facts of physiology can really be acquired. The teacher who describes, or en-

deavors to describe, these phenomena is not imparting to his pupils a knowledge of them, but rather his own conception, or interpretation, of them, which has itself been derived, in small part, perhaps, from individual observation, but largely from the writings of others who may or may not have actually observed the phenomena of which they write. "Too often in our medical schools," writes Prof. Porter, "information is mistaken for knowledge." This remark is full of truth and significance. Not many decades ago most of the courses in physiology given in the medical schools of this country consisted of didactic lectures "illustrated" by an occasional experiment. The idea of introducing an experiment in order to "illustrate" some remark or assertion of the lecturer seems strange indeed—inasmuch as his *very* assertions have been directly or indirectly derived from observation and experiment. The order and proportions should be reversed; the facts of the science should be presented to the student by means of experiments, and the remarks of the lecturer confined to the grouping, discussion, and interpretation of these facts.

An experiment shown in the usual manner during the course of a lecture does not bear its full value. The student should see each experiment from beginning to end; should, in fact, in every instance in which it is practicable, personally conduct it—under the supervision of course of an instructor who has himself performed it over and over again. He should not be told what to expect, but required to record what he sees, hears, feels, or in any way becomes cognizant of. From such observations his data should be constructed—his matter-of-fact knowledge obtained. The experiments should be selected and arranged in such serial sequence that, as the groups of facts accumulate, the student is naturally led—with but little assistance from his instructor—to derive from them those inferences which constitute the minor generalizations of the science. He should be encouraged not merely to observe, but to reason for himself upon what he observes.

From what little experience I have had in the practical use of this method I am able to say that in some departments of physiology at least it can be actually carried out. Having thus acquired some real knowledge of his subject the student is prepared to listen to, or read, what others have learned about it, and to grasp the broader conceptions, hypotheses and theories of physiology. In this the instructor can give substantial aid, by performing for him experiments too difficult for him to conduct or requiring special apparatus, and by bringing together scattered points of evidence or such data as have been derived from experiments which require more time in their carrying out than can be afforded in the course.

If this method is followed the student gains a more or less adequate conception of "fact," "generalization," "hypothesis," and "theory," as these terms are used by students of science, and of their relative values and interrelations; he becomes familiar with many of the methods used in the study of the phenomena of living things; he learns to appreciate the greater knowledge-value of what he himself observes as compared with what he is told, or reads; and while at work he is cultivating a mental habit which will prove of far greater value to him and to others with whom he may as a practitioner or teacher have to do, than will any amount of mere "information" taken at the word of his instructor. In the course of his work, too, he will come upon points that have not been completely worked out, or face to face with unsolved problems, and in this way will gain some conception

¹ Porter, Wm. Townsend, PHILADELPHIA MEDICAL JOURNAL, Vol. vi, 379-84.

of the borderland and present limits, of physiology. Not only is this method valuable as a means of mental training—a point which Professor Porter justly accentuates—but it is also, I think, more valuable than the methods in vogue as a means of acquiring a substantial knowledge of physiology—such a knowledge as can be turned to account in the actual practice of medicine. The fact that physiology is one of the fundamental branches of medical science must not be lost sight of in the teaching of it.

The method should be followed not only in our colleges and medical schools, but in high schools and academies as well—wherever, in fact, physiology is taught.

In the very lowest grades—of even our public schools—many facts of physiology could be learned by simple observation of living animals without resort to vivisection, and even in the intermediate and higher grades, much could be taught by the same simple means. In the colleges and medical schools, vivisection is, of course, quite indispensable. Not only in the teaching of physiology is the method commendable, but also in the teaching of physics, chemistry, pharmacology,—indeed, any of the branches of physical science. It is a matter of prime importance that all students, of whatever age, be impressed with the fact that, however useful books may be as aids in the acquirement of knowledge, that sort of knowledge of the objects and phenomena about us which goes by the name of natural science is not directly obtainable from books.

The method itself is not essentially new. Many men of science have long admitted its value, and, in greater or less degree, applied its principles in their teaching, yet it has not been universally or even generally adopted.

Let us hope that Prof. Porter's able exposition of it, and the care with which it has been developed and applied at the Harvard Medical School will encourage other teachers to give it fair trial.

553 Halsey Street, October 6, 1900.

THE INJECTION METHOD OF TREATING INTERNAL HEMORRHOIDS.

By R. D. MASON, M.D.,

of Omaha, Neb.

Professor of Rectal Surgery in the Creighton Medical College.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

AFTER reading an article in your JOURNAL of September 24, 1900, on "Hemorrhoids, Etiology, Pathology, and Treatment," I cannot refrain from adding a few words in defence of the injection-method. The author says:

"I am grieved to say that it still find advocates among men whose medical education should be a guarantee of intelligence." Also that "sloughing and great destruction of tissue are perfectly natural consequences, and fistulas, abscesses, and strictures are common results, while violent hemorrhage, pyemia, and death are not rare."

Now, while I agree with the sentiments of most of the paper, I believe the foregoing statements are too radical. I have made a special study of rectal diseases for the past 10 years and I think that I am endowed with at least ordinary intelligence, and I am sure there are cases in which this method is not only useful, but the best that can be devised. Four years ago I read a paper before the Medical Society of the Missouri Valley in which I took the ground that this method was suitable in "well-selected cases," which I described in the following words. I have since had no reason to change my opinion:

"Patients suffering from internal hemorrhoids do not, as a rule, consult a physician until the tumors have been formed for some time. They may have existed for a long time before their presence is known by the patient; but after an unusual amount of exertion or a protracted period of constipation or too liberal indulgence in food or spirituous beverages they suddenly begin to protrude at stool. Now when this occurs they will nearly always be highly irritated and in a badly inflamed condition. Should the sufferer come to you at this time he would not be a suitable subject for the injection-plan of treatment. But most of these cases buy some patent medicine to use until the acute exacerbation is over and then go along pretty comfortably until another attack occurs, and each one proves a little worse than the one which preceded it until the tumors get so they protrude at each stool. They generally remain more or less irritated and sore with the sphincter muscle highly sensitive. But occasionally, in a case of long standing, they will lose their soreness and the constant friction and congestion will induce an induration of the tumor-wall with a plastic exudation into the connective tissue between the different coats of the bowel and a somewhat hard semifibrous tumor is the result. The constant protrusion of these tumors causes the sphincter to lose to a considerable degree its contractile power and they protrude very easily. The sphincter also loses its sensitiveness and tendency to spasmodic contraction which is so painful. In many of these cases the tumors are out of the body most of the time. These are the ones that are suited to the injection-plan of treatment."

I will describe a typical case which is only one of many that I have treated.

Mr. H., a farmer, aged 50, had suffered from piles for several years. He easily forced into view several large solid tumors. There was no pain or soreness of any kind. The spincter was greatly relaxed and the tumors were cut most of the time. I will not ask space to describe treatment except to say that I used a 50% solution of carbolic acid. He never complained of a particle of pain or inconvenience and was not confined to his bed an hour because of treatment. Those tumors have not been seen or heard from since, although this was 5 years ago.

I have patients under observation who were treated eight years ago and I have never had one patient in whom there was a return of the disease. I have had patients return for further treatment after a year or more, for this reason: When one or two tumors have been treated they feel that they are well, and although assured that there are more that need treatment they often will not submit to further treatment, with the result that six months or a year later these tumors begin to show and there is an apparent return of the disease. This is not a return of the piles, but is simply due to the fact that the tumors were not all operated upon. A patient may of course have a return of his piles after a few years have passed even if operated upon by the ligature, although this does not usually occur.

As to the dangers described I admit that there are some things that cannot be foretold to a certainty, but they are of a minor character. The first is pain. This is sometimes more severe than expected, although seldom more than a few doses of morphin are required. This is often, in fact generally, needed in ligature or clamp operations. Second, there is occasionally sloughing and a discharge of pus, although this is very rare indeed. Third. We cannot tell positively just how long it will take to effect a cure. These are objections, I admit, but there are objections to all operations, and when it is remembered that this operation is generally done in old persons who cannot take a general anesthetic the objections raised are really of minor importance. As for fistulas and abscess I do not believe the danger is worth considering.

The author states that "violent hemorrhage, pyemia, and death are not rare." I have never heard of an in-

stance in which any of these things occurred, and if this author will kindly give the name of a reputable surgeon who has had them occur it will be a favor not only to me but to the profession. I am taking it for granted that this is done only by men who know how and not by persons to whom it has been *farmed* out. I know that when this method first became known there were many accidents as reported by Andrews, but this was by inexperienced men, and the same is true of any new procedure. The first operations for the radical cure of hernia were nearly all failures, now they are nearly all successful. So it is not fair to compare this method as now done by reputable physicians with results obtained ten or even five years ago. My only object in writing this is to place this treatment before the profession in its proper place, and show that there is *some* good in it. I think it has a field of usefulness, although a very limited one, and that in certain cases where a general anesthetic would not be safe it may be used with the happiest results. I have used this treatment I believe more than one hundred times and with only the best results except in a few of my earliest patients, where it was used in improper cases and even in these with no serious result. Neither do I believe that there is any more danger of serious result if done by a competent person than in using the ligature. Some of our leading surgeons have lost patients when operating with the ligature, and only recently I saw a bad stricture caused by the clamp and cautery done by one of our very first surgeons. Within the past three months I nearly lost a patient from hemorrhage following an operation for fistula. These accidents may and do occur in any operation and with the very best surgeons, but is this any reason why the operation should be abandoned? My operations for hemorrhoids are nearly all done with the ligature and I consider it the ideal method, although but little if any better than the clamp and cautery, but because I prefer these methods I am not ready to entirely condemn the injection method.

PRESERVATIVE INJECTION FOR THE EMBALMING OF HUMAN BODIES.

By A. HEWSON, M.D.,
of Philadelphia.

Demonstrator of Anatomy, Jefferson Medical College.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

I DESIRE to call the attention of the profession to a preservative injection which I have used for several years and which is the outcome of investigation carried on in the mortuary of the Jefferson Medical College. The system as used is based upon the fact that the body can be filled to repletion by use of two gallons and a half of this fluid; there are of course variations more or less according to the height and weight of the body. It has been the effort to present anatomical material to the student in as lifelike a condition as possible, and in order to further this condition the various schools have instituted from time to time various processes, the last being the cold storage, which in every instance it was found necessary to accompany by the use, first, of a preservative. The pathologists have also in the Keiserling fluid endeavored to present pathological conditions in as near the condition found immediately after death as possible. This fluid, from my experience, does all and more than that done by the Keiserling solutions and merely requires immersion of the specimen, as the brain, for instance, therein. The parts are slightly hardened but retain their normal color perfectly.

The process is very simple and merely requires in the preservation of the entire body that an artery be opened and the fluid injected. When there is a large amount of blood, as in death from an acute disease, it is best to empty the venous channels. This is simply done by allowing the contents of the veins to run out.

The fluid is as follows: Sodium arsenate, 2 kilos (equivalent to $4\frac{1}{2}$ pounds) is dissolved in 7,850 cc. of boiling water. The arsenate is dissolved by boiling, or a saturated solution is made, as sodium arsenate is soluble in a proportion of 1 to 4 with cold water and very soluble in boiling water. When this solution is made, and even while hot, 2,000 cc. of pure glycerin is added to help hold the arsenate in solution, and also to make soft the body when embalmed.

Finally there is added from 100 to 150 cc. of formaldehyd. The solution is now allowed to cool and the excess of sodium arsenate is precipitated.

All bodies injected with this fluid are preserved in the usual manner, by being thoroughly greased, covered with paper, and then bandaged and placed in cold storage, at a temperature not exceeding 25°. The first effect of this injection is to render the mucous membrane more lifelike, the skin becomes red as in life, and the whole appearance of the body changes within 15 minutes. In the next 24 hours, if there is an excess of formaldehyd, as when 200 cc. was used, there would appear upon the face a darkened condition mixed with the red already described.

On opening the body the student finds the parts are just as they existed in life, in color and consistency. The brain, however, should be removed as soon as possible and placed in the fluid and allowed to remain three or four weeks, or sometimes less, according to its condition at the time of preservation. It will be in good order, with its color perfect, the consistency slightly hardened. If, however, specimens in bulk, as organs, are to be preserved, they can be immersed in the fluid and will retain their natural color and consistency, the latter depending upon the viscous.

I can recommend this fluid most heartily, as in my hands, when injected into the body by hydrostatic pressure, it has given the most thorough satisfaction. Hewson's solution:

R.—Sodium arsenate.....	2 kilo.
Aq. bul.	7,850 cc.
Boil until complete solution, then add	
Glycerin.....	2,000 cc.
Formaldehyd.....	100 to 150 cc.

CAN A COAL-MINER SELECT HIS DOCTOR?

By BAYARD HOLMES, M.D.,
of Chicago.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

It is perhaps worth while for the medical profession to consider one of the causes of complaint put forth by the striking coal-miners of Pennsylvania. Among other things they demand the privilege of selecting their own doctors. If medicine is to remain a profession, the medical man must be paid, if paid at all, by his patient. If he is paid by anyone else, he considers the interests of his paymaster rather than the interests of his patient. This is illustrated by a conversation which I once had with a Sunday-school superintendent, the son of a missionary, who had formerly been claim-agent for an international railroad entering St. Paul. This pious moralist claimed to be well acquainted with medicine and medical practice, and among other things he remarked that his railroad management found it advantageous to transport all of their surgical cases injured along the line to St. Paul, to

be treated in the hospitals there, as the recoveries were fewer than when treated without transportation, the maximum claim in case of death being \$5,000, while the claim for damage in the case of injury and recovery was practically unlimited.

Many corporations require their physicians and surgeons to act as confidential claim-agents and detectives, whose principal duty is to obtain evidence for the law department, and whose secondary duties are of a medical and surgical nature. It is unnecessary to illustrate this fact, which has become notorious in the experience of every reputable surgeon and practitioner. Natural selection under such circumstances as these provides railway companies, factories, and mining companies with men suited to their work. It is a case of survival of the fittest—*i. e.*, the meanest. It would not be difficult for anyone acquainted with "company doctors" to find some noteworthy exceptions to this rule. Some of these men are not only thoroughly equipped, but they work with a spirit which is worthy of the commendation of the profession. Such instances, however, are not the rule, and from the very nature of the case they cannot be. The best of men can scarcely survive the pernicious influence of the claim department, and the unnatural relation to their patients which corporate interests require. It is one and the same demand that the striking miners make when they ask that they be allowed to select their own storekeeper and escape the truck-store, and choose their own doctor and escape the espionage of the company doctor. In this last demand they ought to receive the united support of the medical profession, but up to this time the writer has failed to notice any action favoring this demand of the strikers voiced by any medical journal or any medical society. Ought we not to come out and say that the dearest interests of medicine require freedom in selecting the medical attendant, and that the accident of being an employe ought not to interfere.

In the not very distant future I believe a struggle will be made in the representative medical societies to exclude with the osteopaths and christian scientists, the club doctor, and the company doctor. If this is not done, and if medicine is commercialized by their habits, customs and overpowering influence, then our profession sinks to a trade lower than the barber's from which it sprung. The natural consequence will be compensation in proportion to the honor in which the medical man is held. Now with high educational and social standing and a code of ethics far eclipsing that of the lawyer or the minister in the manner in which it is observed, the economic position of the doctor is all that can be asked for. He lives as well as his neighbors whom he serves. If the profession sinks to business standards none but a quack can survive. The doctor will be paid for his attention no better than the barber and the masseur.

This process has already begun. The larger life-insurance companies are getting their examinations made for \$1.50 down to 60 cents each, and many manufacturing concerns are paying 50 cents to 25 cents for prescriptions or dressings for their employees. Even the contractors of such public works as the Chicago Drainage Canal had scandalous medical and surgical service, and sent scurvy and wound-infection into the County Hospital to be cared for at public charge. The conditions under which "hired-men doctors" must do their work removes them from all personal responsibility or obligation as professional men. With the osteopath the advertising hernia and varicocele doctor, the spectacle doctor, and Indian doctor, the company doctor ought to take his place wholly outside scientific, professional medical society.

BATHING BABIES.

By J. FRED. CLARKE, A.M., M.D.,

of Fairfield, Iowa.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

I HAVE a neighbor who has 8 children ranging in age from 2 to 16 years. Since the birth of the first child, except in the capacity of an obstetrician, this mother has not had a doctor in the house a dozen times to treat the children, and then only for scarlet fever, tonsillitis, or some such complaint. The children are all strong and types of healthfulness. They as babies are not merely fat, but the muscles are firm and well developed. Their complexions are excellent and they all have quiet dispositions, not being at all nervous or quarrelsome. I have carefully observed the family and I believe the chief factor in this remarkable record of good health, aside from the mother's ability to nurse the babies and her sensible ideas about food, lies in her art of bathing the children. From the age of two weeks to two years, Mrs. L. gives her baby each morning a cool bath with massage in the following manner: With the baby on her lap in a warm room, she sits by a bowl of tepid water and uncovering one part (a limb or the chest or back) at a time she dips her hand in the water (and with no soap), thoroughly wets the baby's skin and then gives it a vigorous rubbing with her hand until it is nearly dry, finishing with a Turkish towel.

The water applied is cool, the time spent at the bath is from one half to one hour. The skin after the massage is in a glow and the baby always, immediately after the bath, falls into a refreshing sleep. These baths delight the babies. They never cry and seem to thoroughly enjoy the whole process. Mrs. L. assures me that if for any reason she is unable to bathe the child for a few days, she notices a difference in the firmness of the muscles. "The muscles become flabby." Once a week she gives the children a hot bath with soap.

A visiting mother with a baby not at all strong allowed Mrs. L. to bathe her child for a week and I saw in 8 days a marked improvement in this child's condition.

Incidentally I learned from Mrs. L. that her children frequently go two, three, and often six days without a bowel movement. The health never seems to suffer and, without treatment, the bowels finally move naturally and without pain. The mother is not at all worried at these times and rarely gives her babies a laxative. I feel confident from my observations that the cool baths with massage have a most excellent effect on children before the age when active exercise is possible, for before a baby learns to walk, its movements are not such as to give it good general exercise. It also seems probable that the common constant use of laxatives with children is to be condemned. It is a very common practice for mothers to give laxative syrups almost daily to their children.

Foreign University Intelligence.—Adjunct Professor Oeller, of Munich, has been appointed full professor of ophthalmology and director of the eye hospital at Erlangen. Dr. Samson Gemmell has been appointed professor of clinical medicine at Glasgow University.

The Shah of Persia, while in Budapest, is reported to have consulted an eminent specialist, and was informed that he was affected with heart disease, and that the condition of his kidneys would grow serious, unless strict dieting was observed. The Shah remarked that he had consulted four doctors in France, three in England, several in Austria, and one in Germany, and that not one of them had told him the truth as to his condition.

Society Report.

NEW YORK STATE MEDICAL ASSOCIATION.

THE seventeenth annual meeting of this Association was held in the Academy of Medicine, New York, on the 15th inst., and three following days, the president, Dr. E. D. Ferguson, of Troy, occupying the chair. The first day was devoted entirely to executive business.

SECOND DAY'S PROCEEDINGS.

Upon calling the Association to order, the president took occasion to state that it was their good fortune to be visited by Sir James Grant, of Ottawa, Canada, and that it was an honor to introduce so distinguished a practitioner from over the border.

SIR JAMES GRANT was received with hearty applause. He accounted for his presence in a way that at the outset seemed political. "I have come to New York," he said "in the interests of annexation. In fact, my son is about to annex in marriage one of the fairest of the daughters of your city, and this will be but one more tie added to the many strong ones which already knit me to the United States." In a brief address he spoke of his investigations recently reported in Canadian and English medical journals into the nature of muscular rheumatism. This, he had proved to his own satisfaction, is no more than the manifestation of abnormal electricity in the body. If this fact is recognized and treatment followed in conformity therewith, the muscular rheumatism can be got rid of in 5 or 6 minutes, instead of as many months. He has found that the use of ten or a dozen fine No. 8 needles, piercing the muscle-tissue, will serve to discharge the surplus electricity, the muscles become soft and pliable and the pain vanishes.

The president's address was published in full in the PHILADELPHIA MEDICAL JOURNAL of last week.

DR. F. H. WIGGIN, for the Committee on Arrangements, of which he was chairman, reported in detail the plans which had been formulated for the entertainment of the members. Owing to the enforced absence of Dr. Alvin A. Hubbell, of Erie County, his paper on the **Relation of migraine to epilepsy**, was read by title.

DR. A. DROCKWELL, of New York City, read a paper on the **Analogy between nervous conductivity and electric conductivity and their relation to functional neuroses**. To compare nerve current and electric current it is necessary to become familiar with the coherer used in wireless telegraphy. When the neurons are studied in the light of this analogy, the most striking resemblances are discovered, and a new explanation of many of the neuroses is seen. SIR JAMES GRANT discussed this paper which he characterized in the most complimentary terms. As a healthy neuron differs from a diseased neuron, it is found that electricity, to be of value, must be applied before the stage of paralysis is reached.

Cocainism was the subject of a paper by DR. THOMAS D. CROTHERS, of Hartford. After comment upon its prevalence and rapid increase, he said of the addiction to cocaine, that it is characterized in its habitues by mental exaltation, great volubility of words without point or purpose, and without logical conclusion, the style being smooth and continuous; this may be recognized in fiction, poetry, and even in medical journal articles; there is frequently a mania for the writing of many letters. The conclusion of the paper was a warning against the use of cocaine under circumstances which might lead to the formation of the habit.

DR. JAMES J. WALSH, of New York City, finding the end of the session close at hand, gave a rapid recapitulation of the more salient points of his paper on **Heart complications in rheumatism**. He gave a digest of the more important conclusions on the subject, which were presented at the International Medical Congress in Paris.

Symposium on Obstetrics.—The afternoon session was devoted to a symposium on obstetrics. It was opened by PROFESSOR EDWARD P. DAVIS, of Philadelphia, who read a paper on the treatment of the patient during the weeks preceding the expected confinement. He emphasized the importance of examining the different organs and also the urine and solid excreta. The diet should also be carefully

attended to. It should be largely a milk diet. Tea and coffee should be avoided. Alcohol was not indicated, but on the contrary was likely to be injurious. Fruit should be stewed or baked. The body should be regularly sponged, the residence kept well aired, and gentle exercise taken in the open air. In cases of insomnia it was a mistake to give bromids; chloral or some derivative from it gave the best result. It was well to catheterize the patient under some circumstances under an anesthetic. In looking for sepsis, the possibility of syphilis should not be overlooked, and this also applied to gonorrheal affections; when traces of either of these diseases were discovered they should be treated locally as well as constitutionally. DR. AUSTIN FLINT, JR., of New York, followed with a paper in which he discussed the **Management of labor**, including the use of forceps. The proper management of these cases, he said, was more far reaching in its importance than the mismanagement of a few abnormal cases. Statistics showed a gratifying improvement in the success with which these cases were treated, and it was found that the less interference of any kind that was practised the less was the percentage of accidents. He advocated the careful examination of the patient at the end of the eighth month with the view of avoiding septic conditions. It was better to make one long and complete examination than a series of short ones. Undue delay in completing the delivery was almost as dangerous as undue haste. It was better in many cases to use forceps than to wait too long. The third paper was by DR. GEORGE W. JARMAN, of New York, and dealt with the **After-treatment of the mother in normal cases**, while the fourth, by DR. BERNARD COHEN, of Erie County, referred to the **Treatment of the child**. DR. JOHN E. WEEKS, of New York, described the **Pathology, prophylaxis, and treatment of ophthalmia neonatorum**, quoting statistics to show the large percentage of children whose eyes were affected by the gonococcus of Neisser or other bacteria, for the treatment of which it was usual to use a solution of silver nitrate. DR. EDWARD REYNOLDS, of Boston, discussed the **Major obstetrical operations** from the standpoint of a general practitioner, calling attention to the great advances that had been made in this branch of surgery, and maintaining that general practitioners must either get into the way of performing them themselves, or be prepared to call in an expert when a major operation appeared to be desirable. DR. WM. R. R. PRYOR, of New York, brought the symposium to a close by reading a paper on **puerperal sepsis**, its pathology and treatment.

A **symposium on the blood** engaged the attention of the association at an evening session, DR. EDWARD K. DUNHAM, of New York, dealing with the **Technic of blood-examination**; PROFESSOR JOSEPH C. BLOODGOOD, of Johns Hopkins University, with **Leukocytosis**; PROFESSOR ALFRED STENGEL, of the University of Pennsylvania, with **Pernicious anemia**; PROFESSOR C. Y. WHITE, of Philadelphia, with **Leukemia**; DR. T. LE WALD, of New York, with **Parasites in the blood**; and DR. C. H. GORDINIER, of Rensselaer County, with the **Value of blood-examination in the diagnosis of trichinosis**.

THIRD DAY'S PROCEEDINGS.

Necessity for Further Organization on the Part of Medical Men.—DR. C. A. L. READ, President of the American Medical Association, being introduced by the chairman, was received with applause. He said he accepted the cordial greeting as a mark of fealty to their great national association. He had peculiar pleasure in meeting the members of the New York State Medical Association because he discovered in their charter a proclamation of principles which appealed to him with particular force. These principles were the cultivation of their humane science, and the promotion of an *esprit de corps* among its members, the maintenance of the honor and character of the profession. Were not these sufficient to commend the organization to the enthusiastic regard of every practitioner in the great Empire State? They had also provisions of a beneficiary character which he understood they were holding under consideration, and which must appeal to every man who had a sympathetic bosom and understood the mutability of fortune. It was the irony of experience that he who needed succor was often the Samaritan himself. This feature of their organization might well be imitated by every State organization in the country.

On the present occasion, however, it was the fourth plank in their platform that particularly interested him. He referred to that plank which announced as one of their fundamental principles, the promotion of harmony, or, as the charter had it, "the establishment and furtherance of cordial professional relations and fellowship between the medical profession of the State of New York and the medical profession of other States of the United States and of foreign countries through the medical associations and societies of such States and countries." Criticism of this clause must exhaust itself in commendation. It breathed the spirit of harmony. That spirit of harmony was abroad in the profession, not alone in the State of New York, but the country over. This clause, if it meant anything, as it assuredly did, meant the union of their local profession. This clause meant that every member of their State organization should become a member of the American Medical Association, and he was delighted to know that already many bore that relation. If it meant anything, it meant, as it should mean, that they stood consecrated to the idea, over and above all other ideas, of the unity and solidarity of their great national profession. He knew of no object more worthy of their zealous devotion. It simply meant that this movement was one on their part that would command the cordial cooperation of the great national body of the profession, not only as represented by the American Medical Association, but of the great independent portion of the profession as well, and if they stopped to think of what that independent body consisted, they would appreciate its magnitude. With their splendid success as a State organization, unparalleled as it was among such organizations, notwithstanding the existence of another State organization in the same field, the fact remained that out of a total of about 10,000 regular practitioners, there were only some 2,000 within the fold of organization, while in the United States, out of a regularly qualified profession of nearly 100,000, only 10,000 were enrolled in the ranks of the American Medical Association. There was therefore a large work before them if they were to aim at the real consolidation of the profession. Still, as he said, the spirit was abroad in the land. It would brook no opposition, and it must work in the direction of union and harmony. The sentiment was deeply graven on the minds of the general profession that to make its influence effective at the State capitals and in Washington the profession must stand together, man to man and shoulder to shoulder. It ought to take but little effort to accomplish a change which was already accomplished in the sentiment of those most concerned. There was not much occasion for the rescinding of resolutions or for the modification of by-laws or constitutions. Some memories of past differences might well be effaced, and some resolutions which had served their purpose might with advantage be modified or revoked. These were subsidiary matters, and could be left to take care of themselves. What was important to remember was that he who interposed authority, prerogative, or prejudice to delay the movement for unity and harmony would be regarded as the enemy of progress. He looked with confidence to that great and efficient organization to help on the good work, and he assured them that from the remotest districts of the country they would find coming back to them words of true encouragement and cooperation. He believed—and he had reason for the faith that was in him—that the medical profession the country over was ready to take any necessary and advisable step in this direction with the end that it might present a united front to the dawning century. (Applause).

Diphtheria and Milk-Supplies.—In a paper on this subject DR. CHAUNCEY P. BIGGS, of Tompkins County, said strong circumstantial evidence had frequently been brought against milk-supplies as being the source of infection in epidemics of diphtheria. There was, however, usually one missing link in the chain, but it had been supplied in an outbreak which had taken place at Ithaca in the beginning of the year. The milk supply of all the families affected was traced directly or indirectly to one dealer. On his farm being inspected no insanitary conditions were found, nor was there any trace of the disease in the household. It was elicited, however, that he bought some of his milk from another farmer, and on the latter's homestead being visited, it was found that several of the family, including those who attended to the cows, were suffering from sore throats, some of the cultures from which were examined, and found to be

diphtheric. The wholesale milkman was prohibited from selling milk for a time, and no other cases developed except such as could be traced to primary infection.

PROFESSOR VERANUS A. MOORE, of Cornell University, read a paper on the **Management of diphtheria** in small cities from a bacteriologic point of view. In the Ithaca case the previous freedom of the city from the disease made laymen and physicians alike skeptical as to the new methods adopted. Several members of the profession had no faith in antitoxin, the fact being that they had never had occasion to test it. The board of health, nevertheless, took drastic measures, making early cultures from suspicious cases, establishing a rigid quarantine and not removing it until a negative diagnosis was made, and then carrying out a thorough system of disinfection. The result was that the epidemic was promptly stamped out.

The tonsils as portals of infection was the subject of a paper by DR. JOSEPH ULLMAN, of Erie County. He especially referred to septic disease as malignant endocarditis, and said he regarded rheumatism as a mild form of pyemia, in which the staphylococci and other organisms became much attenuated. He also spoke of the relation to chorea and tuberculosis borne by affections of the tonsils.

DR. MARCEL HARTWIG, of Buffalo, presented a communication on the **Present status of Jonnesco's operation**, in which he contended that neurectomy of the cervical sympathetic ought to be called by Jonnesco's name.

DR. CLARENCE G. CAMPBELL, of New York, read a paper on the treatment of **Pulmonary tuberculosis** with special reference to the climate of Arizona.

The afternoon session was devoted to a **Symposium on tuberculosis**. It was opened by PROFESSOR VICTOR C. VAUGHAN, of the University of Michigan, who dealt with the general etiology, pathology, and prophylaxis of the disease. Starting with the assumption that the bacillus of Koch was the sole exciting cause of tuberculosis, he proceeded to show that much as has been done in recent years much more still remained to be attempted. He discussed the question whether the bacteria of the disease could exist and multiply outside of the animal body, and came to the conclusion that they could not, except when removed for experimental purposes, and then they only lived for a limited period. There was a pseudo-tuberculous bacillus, but there was no evidence to support the theory that it could change into the bacillus which caused disease in the human body. He contended that no dairyman should sell milk without a license, and that all milk cows should be tested with tuberculin. Tuberculosis, so long as it did not become a mixed infection, was not likely to become malignant. It always began as a local disease, but it had a predilection for the lungs, where it was more likely to become mixed than elsewhere. He advocated the establishment of hospitals and other measures, and said that if this were done there was no reason why the present generation should not eradicate tuberculosis as their ancestors had succeeded in eradicating leprosy. If it was correct as some supposed that the germs differed greatly in virulence, it was important that those already affected should be protected from those who had more malignant germs. He also showed the importance of improving the condition of the poor, among whom the rate of mortality from tuberculosis was far above that among the better off classes. DR. JONATHAN WRIGHT, of Brooklyn, presented the next paper, which was on the **Pathology, diagnosis, special prophylaxis and treatment of tuberculosis of the nose and throat**. It was important, he said, to distinguish between syphilis of the larynx and laryngeal tuberculosis, and he disclaimed the ability to do this without making a thorough examination. In making a diagnosis they should always think of syphilis, and keep on thinking of it. The ideal method of dealing with laryngeal tuberculosis was local and constitutional treatment under climatic change. It was doubtful if a radical cure was ever affected; but much could be done in the way of palliating the dreadful symptoms and prolonging life. He favored intratracheal injections. **Tuberculosis of the eye**, its differential diagnosis, pathology and treatment, was discussed by DR. CHARLES STEADMAN BULL, of New York, and he was followed by DR. SEYMOUR OPPENHEIMER, of New York, whose branch of the subject was **Tuberculosis of the ear**. The latter laid stress on the fact that change of climate, diet and general constitutional treatment were as essential in tuberculosis

of the ear as in ordinary tuberculosis. Surgical measures were contraindicated except in rare cases. PROFESSOR MAURICE H. RICHARDSON, of Harvard, in a paper on **Tuberculosis of the lymphatic glands of the peritoneum**, said the propriety of having recourse to surgery in many cases of this kind seemed unquestionable. The surgical treatment of **Urinary and urogenital tuberculosis** was the specialty treated of in the paper of DR. SAMUEL ALEXANDER, of New York. This form of the disease, he observed, did not differ materially from other tuberculosis, except in the respect that it was more often complicated by pus-infections. There were both primary and secondary infections, and it was strange how little positive knowledge we have in regard to the former. He urged the importance of cooperation between clinical observers and pathologic experimenters with the view of discovering more about the etiology of the disease. The usual remedy was to remove the whole focus of the infection. He believed that generally the epididymis was the original seat of the disease. **Tuberculosis of the bones and joints** was discussed by DR. E. H. NICHOLS, of Boston, and tuberculosis of the skin and superficial fascia, by DR. JOHN A. FORDYCE, of New York. PROFESSOR JOHN G. CLARK, of the University of Pennsylvania, was to have completed the symposium by reading a paper on **Tuberculosis of the female pelvic organs**, but he was unable to be present.

FOURTH DAY'S PROCEEDINGS.

DR. HIRAM N. VINEBERG, of New York, read a paper on the **Differential diagnosis of ectopic gestation**, with special reference to early abortion. He commented on the frequency with which extrauterine gestation was mistaken for ordinary abortion, and maintained that every case of apparent abortion should be looked upon with suspicion, and the patient should be anesthetized, so that a thorough examination could be made, with a view to possible surgical interference. In the course of a short discussion which followed, the president said an examination should never be made without the surgeon being prepared for an abdominal section.

The resources of modern minor gynecology were discussed by DR. A. H. GOELET, of New York. He protested against the growing tendency to regard gynecology as a purely surgical subject. The resources of minor gynecology were much greater than they were 15 years ago, and yet even before them many cures were effected without surgical intervention. Among the modern resources which were of great value in this species of work, he mentioned the vaginal speculum, the uteroscope, and the cystoscope, sponge tents, etc., besides various anesthetics, electricity, and numerous therapeutic agencies.

DR. JULIUS H. WOODWARD, of New York, read a paper on **Strabismus and its management**. He described the pathology and symptoms of paralytic and nonparalytic strabismus, gave a recapitulation of the differential diagnosis, and pointed out the psychologic and sociologic significance and their relation to eye-strain.

Investigations upon **Specific corporeal gravity**, and upon the **Value of this factor in physical diagnosis** were reported upon by DR. HEINRICH STERN, of New York.

DR. DOUGLAS AYRES, of Montgomery County, read a paper on **Aseptic minor surgery**. He gave a retrospect of the preaseptic period, reviewed the instruments of olden times, and traced the thoughts and provings which gradually led up to the present greatly improved technic. The importance of cleanliness in every detail in preparing for all operations was strongly dwelt upon, and a sketch given of an ideal office.

Amputation at the Hip-joint.—DR. JOHN A. WYETH read a paper descriptive of this operation, and giving a report of 247 cases, in which the author's method of hemostasis was employed. He said, it had always been considered one of the greatest and most difficult of surgical operations, and it was only within a recent period that it had been recognized as justifiable. He then proceeded to show the simplicity and safety with which it could be performed under his methods, and adduced statistics to show that it had reduced the death-rate from such operations to a very large extent, the percentage of those who died in the 247 cases reported being 21, of whom the larger number died from other causes, while under older operations the percentage was 40 and 50, and even higher. Several speakers bore testi-

mony to the success which had attended operations in which the method referred to had been adopted.

DR. JOHN F. ERDMANN, of New York, submitted a report on 3 cases of **Intestinal obstruction due to Meckel's diverticula**. He called attention to the similarity in the symptoms of all three cases to the symptoms of appendicitis, and also to the difficulty of making an early diagnosis between these two conditions.

Intraspinal cocainization for the production of surgical anesthesia was discussed in a paper by DR. S. ORMAND GOLDAN, of New York, which will appear in our next issue. In the course of the discussion which followed, DR. J. RIDDLE GOFFE said he had had the good fortune, while in Paris recently, to accompany Tuffier to the hospital and see him operate. Tuffier was very enthusiastic about the method, which he had been using for about 2 years. He had followed it in about 200 cases, and was perfectly satisfied as to its safety. Several of the other speakers dwelt on the danger of infection and of the cocain reaching the brain, etc., the consensus of opinion evidently being that it was necessary to await further investigations before adopting the method.

Papers on the **Technic of bloodless work**, by DR. ROBERT H. M. DAWBARN, of New York, and **Operative treatment of symblepharon by the use of the Thiersch grafts**, by DR. WILBUR B. MARPLE, of New York, were afterwards read, and the program brought to an end by the reading by title of a paper by DR. EDWARD H. SQUIBB, Jr., of Brooklyn, containing brief comments on the materia medica, pharmacy, and therapeutics of the past year.

New Office-Bearers.—President, Dr. John A. Wyeth, of New York; vice-president, Dr. Alvin A. Hubbell, of Erie County; secretary, Dr. F. H. Wiggin, of New York; treasurer, Dr. Edward H. Squibb, of Brooklyn.

Floating Spleen.—Stephen Smith Burt (*New York Post-graduate*, September, 1900) reports the case of Mary S., aged 27, who appeared at his clinic complaining of discomfort following the lifting of a heavy washtub; there was a circumscribed area of flatness over the center of the abdomen into the right lower quadrant, which proved to be a movable tumor, free from tenderness. On turning this tumor edgewise the smooth, rounded surface, the sharp edge, and the hilum of the spleen were discovered; the organ seemed to be somewhat enlarged. In the proper location for the viscus, there was tympanitic resonance. On restoring the organ to its place the resonance disappeared, but the spleen slowly wandered out of position again. The patient was ordered an abdominal support, but when she returned it was found that the spleen was held firmly in the middle of the abdomen instead of in position; but as this afforded all the relief the patient required, further intervention was not considered advisable. [G.C.C.H.]

Acute Intestinal Obstruction.—Parker (*Cleveland Journal of Medicine*, September, 1900) concludes that palliative treatment in this condition can rarely be justified. Intussusception and volvulus in children, and impactions low down in the intestine, do occasionally happily right themselves, and abdominal massage and taxis may in these conditions be of some aid; in all others they are dangerous. A most important step in the operation is the careful inspections of the parts while they are in position, before they have been disturbed by any handling. In this manner a collapsed portion of the bowel, or one overdistended and discolored, may point to the seat of the lesion at once. When found, the lesion should be treated radically if the condition of the patient permits, otherwise it should be rendered harmless, as for example an artificial anus should be established which can afterwards be closed; bands must be loosened; strangulations and intussusceptions reduced and twists unrolled. Puncture or aspiration of the distended coils of intestine to facilitate their manipulation and return to the abdominal cavity, Parker has found very unsatisfactory, as only a small portion of the distended gut is relieved, and as many punctures are necessary in order to produce any decided relief. The prognosis in all forms of acute obstruction is unfavorable unless immediate surgical relief is secured. The gravity of the case increases with every half-day of delay. Obstructions due to impactions, bands and intestinal hernias result more favorably than those due to intussusception, volvulus, etc. When gangrene of the bowels has taken place, and general infection is present, the death-rate is high. [G.C.C.H.]

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Calendar of Meetings of Philadelphia Medical Societies for the week ended November 3, 1900:
Thursday, November 1.—Obstetrical Society.

The Medico-Legal Society of Philadelphia will meet on Tuesday, October 30. Dr. John B. Roberts will read a paper on *Physicians' Fees*.

St. Vincent's Home and Maternity Hospital of Philadelphia reports having the care, during the past year, of 963 children under 7 years of age, 401 of which still remain in the institution.

Poisoned by Toadstools.—As a result of eating some poisonous variety of mushrooms, 14 persons were recently made seriously ill at Reading, Pa. Of this number 5 are not expected to live.

Ambidexterity in Schools.—It is reported that the Board of Education in Philadelphia is about to undertake to train school children to be ambidextrous through a regular course of exercises to be carried out in the schools.

Smallpox.—Last week 3 new cases of smallpox were reported in Philadelphia. All are white, which is unusual, every case since spring having been colored. The patients have been removed to the Municipal Hospital. The disease is mild but well developed.

St. Luke's Hospital at Bethlehem has recently received a gift of \$10,000 from former president E. P. Wilbur, of the Lehigh Valley Railroad, for the support of a children's ward, and a new \$20,000 operating ward will be erected by Samuel Thomas, of Hokendauqua. Plans for the ward are already in the hands of the contractors.

Typhoid fever is prevalent in Westmoreland Co., there being 200 cases in the town of Boliver, and many in the surrounding country. The epidemic is attributed to impure well-water. The 7 cases of typhoid at Ambler, Pa., are said to have been caused by using water from a condemned well, and not from the public supply which is unusually pure.

Vital Statistics of Philadelphia for the week ended October 13, 1900:

Total mortality	336
Disease.	Cases. Deaths.
Inflammation of appendix 3, brain 5, bronchi 6, kidneys 8, heart 2, nerves 1, lungs 22, pericardium 1, spine 1, peritoneum 9, pleura 2, stomach and bowels 12	72
Lungs—tuberculosis of 54, congestion of 1, hemorrhage of 1	56
Marasmus 33, debility 4, inanition 19	56
Heart—disease of 19, fatty degeneration of 1	20
Bright's disease 7, uremia 9, diabetes 1	17
Carcinoma of bladder 1, clavicle 1, liver 3, penis 1, stomach 6, sarcoma of omentum 1, tumor of abdomen 1, brain 2	16
Paralysis 4, apoplexy 11	15
Casualties	14
Diphtheria	13
Old age	10
Cirrhosis of liver	7
Puerperal convulsions	7
Typhoid fever	59 6
Cholera infantum	6
Suicide—drowning 1, illuminating gas 1, hanging 2, shooting 1	5
Softening of brain	3
Obstruction of bowels	3
Cyanosis	3
Whooping-cough	3
Dropsy—brain 1, chest 1	2
Scarlet fever	30 1
Alcoholism 2, asthma 2, anemia 1, atheroma 1, burns and scalds 2, carbuncle 1, membranous croup 2, drowned 2, gallstone 1, senile gangrene 1, leukemia 1, locomotor ataxia 1, pyemia 1, rheumatism 2, septicemia 2, suffocation 1, syphilis 1, teething 1, ulceration of stomach 1, dysentery 1, unknown coroner's cases 2	

Charities Receive Legacies.—An adjudication was filed in the Orphans' Court of Philadelphia recently of the account of the Trust Company of North America, trustee for William S. Stewart, under the will of Sarah T. Stewart, deceased. Distribution was made of \$14,871.94, one-fifth to each of the following: Philadelphia Home for Incurables, the House of the Merciful Saviour for Crippled Children, House of Refuge, Presbyterian Orphanage, and Pennsylvania Industrial Home for Blind Women.

Druggists Fined.—War against druggists of the State who have not been complying with the statutes is waged by the State Pharmaceutical Examining Board. It is reported that about 200 informations have been made in Pittsburg; the defendants in the cases disposed of pleading guilty and paying a fine and costs. They will be followed by prosecutions on more serious charges, where the penalties will be imposed by the criminal courts. Out of about 4,000 druggists examined by agents of the State Board, only a small percentage have been found blameless.

University of Pennsylvania.—A bust of Dr. George B. Wood, who was a professor and trustee of the University, will soon be placed in the library. Dr. Wood, uncle of the present Dr. H. C. Wood, died in 1879. He gave his services freely to the University, being a professor in the medical department, trustee and president of the Board of Managers of the University Hospital. The auxiliary faculty of medicine and the Peter Hahn ward of the hospital were founded by him. The pedestal is of granite and has inscriptions on the front telling of his connection with the University and the services he has rendered it.

NEW YORK.

Manhattan State Hospital, Central Islip, L. I.—Dr. William B. Savage, of East Islip, N. Y., has been appointed consulting surgeon.

Coroner's Jury Abolished.—New York State has passed bills, abolishing coroner's juries and putting coroners on salaries instead of fees, except in first-class cities.

Yellow Fever.—Another case was brought to New York from Havana on the *City of Mexico*, October 16, and was sent to the hospital at Swinbourne. The disease was of a mild type.

Galveston Orphans.—A bazaar for the benefit of the homeless Galveston orphans was held recently at the Waldorf-Astoria, New York. It is estimated that the profits will amount to \$30,000.

Appointments.—Albert M. Roehrig has been appointed temporary hospital steward and assistant chemist for duty at Immigration Depot, New York, and W. F. Schlaar has been reappointed senior hospital steward.

Walter B. Duryea has returned to Brooklyn with his broken neck still in a plaster-of-paris frame. He has been under treatment at the sanatorium in Danesville, N. Y., since June. He completed the journey in fine condition.

Suit for Damages.—As the result of using a patent remedy advertised to take off the hair without the use of a razor, a citizen of New York is reported to have lost not only his beard but a large amount of the skin of his face. He is suing for \$2,000 damages.

Typhoid in Training School.—Typhoid fever has broken out in the Boys' Disciplinary Training School of Brooklyn. It is said that the building is in bad condition, and is extremely dangerous to health. The Board of Estimate has been asked to appropriate \$150,000 for a new building.

Plague Serum from Paris.—Dr. A. H. Doty, health officer of the Port of New York, when the plague appeared in Glasgow, ordered a quantity of plague serum from the Pasteur Institute at Paris to be used at Quarantine in the event of the plague being brought to this country. The serum arrived a few days ago and is now in the Quarantine laboratory.

New Bath-houses.—A new, free, public, winter bath-house was opened in New York recently in the crowded East Side quarter. It has marble floors and porcelain tubs, and will accommodate 100 persons at a time. Other free bath-houses will be built in the tenement-wards during the coming year.

Röntgen Society of the United States.—The first regular meeting of this society will be held in the Academy of Medicine, New York City, December 13 and 14, 1900. Membership is open to physicians and to others interested in the general subject. The president of the society is Dr. Heber Roberts, of St. Louis, Mo.

Hospital for the Tuberculous.—The trustees of the Hospital for Tuberculous Individuals have selected 100 acres of land at Big Clear Lake as the site for the hospital, but their action must be confirmed by the Forest Preserve Board and the State Board of Health. Some members of the Legislature favor the placing of the hospital near Clinton State Prison, at Dannemora, where a site is offered free of cost, and where advantage could be taken of the labor of the State Prison convicts. The Big Clear Lake property would cost about \$20,000.

The Craig Colony's Seventh Year.—The Board of Managers of the Craig Colony for Epileptics at Sonyea, Livingston County, N. Y., held their seventh annual meeting at the Colony, October 9. The Board organized for the following year by reelecting Dr. Frederick Peterson, of New York, president, and Mr. H. E. Brown, of Mt. Morris, secretary. This is the seventh time Dr. Peterson has been honored by his colleagues of the Board by being elected president. The report of the medical superintendent, Dr. William P. Spratling, showed that there were 612 patients in the Colony, October 1, 1900. A gain of 234 was made during the past year, the largest number received in any one year since the Colony was opened. The total capacity of the Colony at this time, including the new buildings nearly ready for occupancy, is 840, and it is expected that the Colony will have that number by July 1, 1901. The managers decided to ask the coming legislature for \$169,000 for new buildings and other improvements, and for \$125,000 for maintenance. Of the money asked for for special purposes, \$98,000 will be used for dormitories for patients. The superintendent called attention to the fact that 36 out of 612 patients at the Colony are suffering from tuberculosis in some stage, and he strongly recommends that suitable wooden barracks be constructed as soon as possible, in order that these patients may be isolated. It is possible to do this at the Colony on account of the vast size of the Colony estate. The report of the superintendent also calls attention to the great necessity for providing better means of transportation on the Colony. As transportation is now carried on by the use of horses and wagons, it is quite expensive, the estate being so large and the buildings so separated. Dr. Spratling advocates the construction of a trolley system, the power for which already exists at the Colony. The *per capita* cost for "maintenance" during the past 3 years was as follows: 1898, \$300; 1899, \$216; 1900, \$172. It is noted that, as the number of patients increases, the *per capita* cost proportionately decreases. It is believed by the management of the Colony that when its capacity reaches 1,200 to 1,400, the annual cost for maintenance will not exceed \$100 a year. A resident pathologist, at \$2,500 a year, with maintenance, will soon be appointed. A laboratory has been built and equipped.

NEW ENGLAND.

The Philadelphia Dental Alumni Association of New England was formed at the recent meeting of the Northeastern Dental Association at Providence, R. I. All graduates of the Philadelphia Dental College are eligible. Dr. James McManus, of Hartford, was elected president, and Dr. Johnstone, of New Haven, secretary.

Smallpox in New Bedford.—Another case of smallpox has been reported in New Bedford, Mass. The child is 13 years old, and is said to have been sick 3 weeks. The epidemic was supposed to be well under control. Recently, 21 patients were discharged as cured from the Clark's Point Hospital, leaving but 23 patients in the hospital.

The Union Hospital Corporation, of Fall River, Mass., will build a large union hospital on a site deeded to the corporation by the Hon. John S. Brayton. The new hospital will cost over \$100,000.

Medical Course at Bowdoin.—On the recommendation of the faculty of Bowdoin College the Board of Overseers, at its latest annual meeting, voted that the work in the first year of the Medical School in physiology and anatomy should be allowed to count as 4 courses each toward the degree of A.B. in the college. Conversely, work in the college in chemistry and biology will, without doubt, soon be allowed to count as courses in the Medical School. Although this movement is in line with the 3 years' degree agitation in the universities, it is noteworthy in the policy of Bowdoin. When, a year ago, the course in the Medical School of Maine was lengthened to 4 years, it was soon found that a combination of the academical and medical courses must be so arranged as to offer completion in 7 years.—[*Medical News*]

CHICAGO AND WESTERN STATES.

The Western Surgical and Gynecological Association will meet in Minneapolis, Minn., December 27-28, 1900.

The Portland (Ore.) Crematory Association has secured a site and will at once erect a crematory at an expense of \$35,000.

The Chicago Eye, Ear, Nose, and Throat College.—The capital stock of this institution has been increased from \$10,000 to \$25,000.

Hospital for Students.—A hospital has been established at Berkeley, Cal., for the purpose of taking care of students at the University of California who may be sick or injured.

Woman Physician for Napa Asylum.—The Board of State Hospital Managers at Napa, Cal., confirmed the appointment of Dr. Myrtle A. Alpin, of San Francisco, as fourth assistant physician at the Napa institution.

Dr. George W. Webster, of Chicago, has been appointed a member of the State Board of Health of Illinois, to succeed Dr. R. F. Bennett, who has succeeded Dr. Stoker as superintendent of the Southern Hospital for the Insane at Anna.

The Southwest Missouri Medical Society met in Springfield, October 13, for a 2 days' session. The president of the organization is Dr. F. B. Fuson; vice-president, Dr. H. J. Rowe; recording secretary, D. C. B. Fulton; corresponding secretary; Dr. J. W. Live; treasurer, Dr. H. C. Shuttee.

Dr. Samuel O. L. Potter has resigned from the board of trustees, and from the chair of theory and practice of medicine and clinical medicine in the College of Physicians and Surgeons of San Francisco, and has severed his connection with that institution, of which he was one of the incorporators.

St. Joseph's Hospital.—The Senn room in this institution in Chicago, endowed for \$10,000 by Dr. Nicholas Senn, has been formally opened. The room is completely furnished by its donor, and the endowment fund will remain intact for its perpetual maintenance. The furnishings include a library of 500 volumes.

No Need of Physicians.—It is reported that the public school principals of Chicago almost uniformly agree that the 50 medical inspectors of schools are of little or no value to the schools, and it is thought the money expended for their salaries, \$2,500 per month for 2 or 3 visits per week, had better be expended for Kindergartens.

The Chicago Gynecological Society held its twenty second annual meeting, October 19. The new officers elected are: Dr. Reuben Peterson, president; Dr. L. E. Frankenthal, first vice-president; Dr. Henry Banga, second vice president; Dr. W. H. Rumpf, secretary; Dr. A. H. Foster treasurer; Dr. C. S. Bacon, editor; and Dr. Emil Ries, pathologist.

Indiana State Board and Medical Colleges.—A new State law in effect this fall provides that first-year students who do not possess a literary degree, a diploma from a high-school, or a teacher's life certificate, must pass an entrance examination before a representative of the board of medical registration, who must not be in any way connected with any medical college.

A Dangerous Wound.—James A. Howell, an Arizona ranchman, is at the Pasteur Institute in Chicago undergoing treatment to prevent hydrophobia from a skunk bite, received recently while camping. So far as is known, no one has ever recovered from the bite of the peculiar species of *Mephitis Americana* common in Arizona, and the case is therefore one of unusual interest.

Dealers in Horse Meat.—It is reported that Health Commissioner Reynolds of Chicago is considering the advisability of licensing dealers in horse meat. Inspectors have discovered that a large amount of the product is being disposed of in the city markets. The facts have been laid before Dr. Reynolds, who has been asked to set aside the prejudice against horse flesh by allowing its sale under proper regulations.

The Mississippi Valley Medical Association will hold its next meeting at Put-in-Bay, Ohio, September 10, 11, 12, 1901. The following is a list of the officers: President, A. H. Cordier, Kansas City, Mo.; vice-presidents, C. F. McGahan, Aiken, S. C., Charles L. Minor, Asheville; secretary, Henry E. Tuley, Louisville, Ky.; treasurer, Dudley S. Reynolds, Louisville, Ky.; chairman of committee of arrangements, J. C. Culbertson, Cincinnati, Ohio.

Emergency Ration Test.—Captain Fountain and Captain Foster, of the Emergency Ration Board of the War Department, who have been in Kansas City for several weeks preparing the rations for an actual test, will leave for Fort Reno, I. T., soon with a troop of cavalry. The ration is put up in an elliptical can 8 inches long. Each day's food weighs a pound, and each can contains 3 cakes of sweet chocolate and 3 cakes of a food preparation composed of meat and grain compound. The effect of the food on the men will be carefully noted. They will be weighed every day and their condition carefully observed by a physician. The test will probably last 2 or 3 weeks.

An experimental air-washer in the Chicago Public Library promised so well that the authorities have decided to install a plant capable of purifying sufficient air for the entire building. It is a simple process. The air is drawn into a box through a system of water sprays and over a series of metal plates. The sprays take out all the shavings, bits of straw and paper, filaments of cotton and wool, etc., which float out of a drain at the bottom of the box. The damp air is then forced over another series of plates by a great fan. These plates are set at slight angles to each other and have flanges which, as the air passes around them, catch the dirt. It is said that if a person's hand is inserted in this compartment it will quickly become black with dirt. In summer the air which emerges from the ventilators is cool, but dry, while in winter it will be warmed by first passing over steam pipes. Injury to the books and to the mural decorations prompted the plan for the cleansing of the air, but patrons of the library will profit quite as much as the books and the paintings. Not only does the apparatus remove the dirt, but the odors as well, and, presumably, many germs.

SOUTHERN STATES.

A nurses' training school for colored girls is to be established at Jacksonville, Fla., by the Methodist Woman's Home Missionary society.

The Southern Surgical and Gynecological Association will hold its thirteenth annual meeting in Atlanta, Ga., November 13, 14, 15, 1900.

The Episcopal Eye, Ear, and Throat Hospital of Washington, D. C., reports that since the opening of the hospital, 3½ years ago, 23,325 visits have been made to it by 5,007 patients, and 799 operations have been performed.

Twins and Triplets.—It is reported from Huntingdon, W. Va., that twin sisters who had married twin brothers, recently gave birth to triplets within an hour of each other.

New Orleans boasts of being the healthiest town in the country with the lowest mortality among the large cities. The death-rate in August was 14.05 per 1,000, the lowest recorded in any large city, and the lowest ever known in New Orleans for a month.

From Washington to Manila.—Hospital Steward Alfred Bauer and 50 privates of the hospital corps at the Washington Barracks, D. C., have been ordered to duty in the Philippines. They will embark on the transport *Buford*, which will leave New York for Manila early in November.

Fatal Horse Disease.—Cerebrospinal meningitis has broken out for the second time within the past year among horses in Southern Maryland. It is estimated that about 1,000 have died. Appeals for assistance have been received at the Maryland Agricultural College and Dr. Samuel Buckley has been sent to investigate the matter. He has been making extensive experiments with a serum, with which by inoculation he hopes to prevent the spreading of the disease.

The Freedmen's Hospital, D. C.—The annual report of this hospital by the Surgeon-in-chief, Dr. Curtis, shows quite a large increase in the number of patients with a percentage of about 85% of those cured or improved, and a mortality of 6.37%. The relatively large number of cases of cancer in the gynecologic department is noticeable, since the prevailing opinion has been that the descendants of the African race were rarely affected with this disease. The training school for nurses connected with the hospital has been admitted to the American Association of Nurses. Dr. Curtis holds that the institution should remain intact and under the supervision of the Interior Department, as Freedmen's Hospital is a national hospital for the use and benefit of the indigent sick from all sections of the country. The percentage of nonresident patients treated in this institution is far in excess of the resident class. The report urges a number of new buildings and other improvements.

Richmond, Va.—The testing of the eyes of the pupils in the public schools has, in spite of frequent and decided opposition, made some headway in this city. DR. ALFRED C. PALMER, after a great deal of work on the school board, inaugurated, last session, a systematic examination of the children's eyes, but strange to say his work was confined to the pupils of the High School, beginning, of course, at the wrong end; but a start had to be made somewhere. He found about 30% of the pupils had more or less defective vision. This session the examinations will be conducted in all of the 19 schools. Dr. Palmer meets the teachers of each school, furnishes them with test-cards and thoroughly instructs them in their use. They make the preliminary tests, the cards are then returned to the oculist, and all the children whose vision falls below $\frac{20}{200}$ are carefully examined by Dr. Palmer, who then sends a notice to the parents advising them to consult some reputable oculist. Poor children are treated at the eye clinics in the dispensaries free.

Medical Society, District of Columbia.—DR. W. W. JOHNSTON read the history and showed the specimen of a very large **thoracic aneurysm**. The patient was a male, 35 years of age, who reported an old specific history. The aneurysm first showed itself in the Philippine Islands 18 months ago. The tumor grew rapidly in the right infraclavicular region until it extended from the right shoulder and axilla to the sternum. He was brought to Washington in June, 1900, after having been treated by glycerin injections for some weeks in Hongkong. Twelve inches of **silver wire were introduced** into the aneurysm and a current run through the wire from an electric battery for an hour, the latter part of June. The patient died from hemorrhage the last of September. On autopsy the aneurysm measured 9 inches transversely and 7 inches in the antero-posterior diameter and came off from the ascending aorta very near the heart. The entire aneurysmal sac was filled with a large laminated clot in which the silver wire was imbedded. The greater portion of the wire was coiled at the base of the aneurysm directly in the blood current. From

postmortem appearance it is difficult to understand how blood escaped to cause the patient's death, unless it found its way around the surface of the clot, between the clot and the sac, which, however, appeared to be in close contact.

MISCELLANY.

Soldiers From Manila.—On October 16 the transport *Logan* left Manila for San Francisco with 273 sick, and 10 insane soldiers on board.

In Hawaii the only direct effects of the plague were that the quarantine restrictions prevented, for a time, the use of Honolulu as a port for the transport service. None connected with the military service contracted the disease.

A Sanatorium at Manila.—A correspondent at Manila says Luzon is to have a sanatorium shortly, which will place the city of Manila on the same footing as other capital cities in the Orient, and have manifold advantages. Plans are now under consideration for the establishment of this very important requisite for dwellers in the tropics, and the locality has been selected.

Physician as Diplomat.—Dr. Eduardo Wildo, the new minister from Argentina to this country, at the time of his appointment held the post of president of the National Department of Hygiene. He planned most of the colleges and hospitals throughout Argentina, and is an author of distinction in medical science. His first diplomatic work was the negotiation of the sanitary convention between Argentina and Uruguay in 1872.

Yellow Fever is still raging in Cuba. General Lee says that heretofore it has been confined to small, narrow streets, and places lacking in sanitation, but now it appears in places where it was never known before. The winter there does not get cold enough to eradicate the disease before January. General Lee says: "The sanitation is first class in all places where the disease is raging, and has been for months. The doctors are beginning to say that there is nothing in sanitation after all. The sanitation laws have been carried out strictly since the military authorities of this country assumed charge in the island."

The American Red Cross Society has begun its work in behalf of the sufferers from the famine in India. The work for the present is in the direction of accumulating funds. As soon as a sufficient amount of money has been received, the Red Cross agents will be sent to India. The plan of relief will be the same as that so successfully operated in Cuba. Men and women will not be gratuitously supplied with food and clothing. Work will be demanded of them, and the society will make an effort to have the farms again worked and return persons to their chosen paths of trade and industry.

Improvements at Quarantine.—The State Quarantine Board has decided to increase the efficiency of the station at Marcus Hook by erecting a detention barracks there to accommodate 400 patients. The board also has decided to provide a tug for boarding vessels, and to construct a large disinfecting plant. An important resolution has been adopted to facilitate the operation of the new line of steamers to Savannah. It provides that the quarantine regulations on coasting vessels from points north of St. Mary's River, Fla., shall be lifted from November 1 to March 31.

Health of Troops in Puerto Rico.—The report of John Van R. Hoff, chief surgeon of the Puerto Rico Division of the Army, contains an important passage which deals with the prevalence of syphilis. It says: "Venereal diseases still maintain their unenviable prominence, the annual rate being 506 per 1,000, against 467 last year. It is interesting to observe that these diseases are quite as prevalent among the Puerto Rico Volunteers as among the regular troops, which supports the position taken in my latest annual report that the people here are syphilized." A number of the worst cases were discharged "without honor." This action was not sustained by the War Department. In malarial diseases the Puerto Rico Volunteers show proportionately a much larger number of cases than the regular troops.

Obituary.—FRANKLIN SMITH, of New York City, October 9, aged 76.—WILLIAM B. WILSON, of Cape Girardeau, Mo., October 18, aged 69.—JOHN W. ELSTON, of Kansas City, Mo., at Barela, Col., October 12, aged 56.—WILLIAM R. LARKIN, of New York, October 15, aged 42.—BENJAMIN HUSSEY WEST, of Neponset, Mass., October 11, aged 86.—JOSEPH L. CUTLER, of Bolivar, N. Y., October 12, aged 71.—HENRY MORTON, of New York, October 20, aged 93.—W. T. NEWTON, of Indianapolis, October 21.—JOHN W. ROBINSON, of South Lyons, N. Y., October 21, aged 51.—JACOB ISZARD, of Glasboro, N. J., October 20, aged 55.—EDWIN S. THOMAS, of Philadelphia, October 17, aged 72.—WILLIAM FRANK REILLY, of Carlisle, Pa., October 19, aged 48.—LOUIS LE SASSIER YOUNG, U. S. Navy, at Denver, Col., October 6, aged 35.—W. H. STURGEON, of Uniontown, October 16, aged 74.—J. L. CORBLEY, of Newburg, W. Va., October 16.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended October 19, 1900:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
KENTUCKY:	Lexington . . . Oct. 6-13 . . .	1	
LOUISIANA:	New Orleans . . . Sept. 30-Oct. 13 . . .	1	1
MINNESOTA:	Minneapolis . . . Oct. 6-13 . . .	2	
NEBRASKA:	Omaha Sept. 30-Oct. 6 . . .	1	
OHIO:	Cleveland Oct. 6-13 . . .	9	
UTAH:	Salt Lake City . . . Oct. 6-13 . . .	10	
WEST VIRGINIA:	Wheeling Sept. 30-Oct. 6 . . .	1	

SMALLPOX—FOREIGN AND INSULAR.

BRAZIL:	Rio de Janeiro . . . Aug. 1-Sept. 15 . . .		57
ENGLAND:	London Sept. 22-29 . . .	2	
FRANCE:	Paris Sept. 22-29 . . .		6
INDIA:	Bombay Sept. 6-18 . . .	3	3
"	Calcutta Sept. 1-15 . . .		17
PHILIPPINES:	Manila Jan. 1-Sept. 8 . . .	35	1
RUSSIA:	Moscow Sept. 8-15 . . .	4	
"	Odessa Sept. 22-29 . . .	9	4
"	St. Petersburg . . . Sept. 15-22 . . .	9	4
SCOTLAND:	Dundee Sept. 22-29 . . .	1	

YELLOW FEVER—UNITED STATES.

NEW YORK:	New York Oct. 9	1 case on SS. "Havana," from Havana.
	Quarantine	

YELLOW FEVER.—FOREIGN AND INSULAR.

BRAZIL:	Rio de Janeiro . . . Aug. 1-Sept. 15 . . .	10
CUBA:	Havana Oct. 5-12 . . .	76
MEXICO:	Progreso Sept. 15-30 . . .	3
"	Vera Cruz Sept. 30-Oct. 6 . . .	10

CHOLERA.

INDIA:	Bombay Sept. 6-18 . . .	224
"	Calcutta Sept. 8-15 . . .	20
"	Karachi Sept. 1-16 . . .	24
"	Madras Sept. 1-14 . . .	133
JAPAN:	Yokohama Sept. 1-8 . . .	1

PLAGUE.—FOREIGN AND INSULAR.

CHINA:	Amoy Aug. 11-Sept. 8 . . .	90
		Estimated.
INDIA:	Bombay Sept. 4-18 . . .	155
"	Calcutta Sept. 1-15 . . .	100
JAPAN:	Osaka Sept. 16-23 . . .	12
PHILIPPINES:	Manila Jan 1-Sept. 8 . . .	215
SCOTLAND:	Glasgow Aug. 31-Oct. 6 . . .	29
		8

U. S. Army Report.—Surgeon-General Sternberg in his recent report for the fiscal year ended June 30, 1900, says: "The *Medical Department* consists, at present, of 192 officers, a number which barely sufficed for the needs of the Army before the outbreak of the late war with Spain, and which proved utterly inadequate in number, notwithstanding the earnest efforts of its members to form a satisfactory basis of organization for the large increase made to our military forces during the progress of that war. Similarly since the close of the war it has been impossible for the Medical Department, without professional assistance from civil life, to provide for the sanitary and medical work at the large number of new posts and stations that have been established at home for coast defense, in Cuba, Puerto Rica and Hawaii for garrison duty, and for the military operations in the Philip-

pine Islands. Excellent assistance has been obtained by contract with civil physicians, so far as concerns the professional care of the sick and wounded, but much experience is required to fit these medical men for the sanitary work of their position and to familiarize them with Army methods. *United States Volunteers.* At the end of the year there remained in service 34 surgeons with the rank of major, 11 of whom were captains in the regular establishment. On June 30, 1900, there were 78 *regimental surgeons and assistant surgeons* in the service, 25 majors, 13 of whom were captains in the Regular Army, 27 assistant surgeons with the rank of captain, and 26 assistant surgeons with the rank of first lieutenant. In the service 462 acting assistant surgeons are under contract." All contract surgeons now in service have been examined by boards of medical officers to determine their fitness, physical and professional, for the discharge of their duties. A board of medical officers was appointed to meet at one of the general hospitals in or near Manila, P. I., for the purpose of studying tropical diseases as they occur in those islands. Another board was appointed to meet at Camp Columbia, Quemados, Cuba, for the purpose of pursuing scientific investigations with reference to the infectious diseases prevailing on the Island of Cuba. The number of *hospital corps men* in service June 30, 1900, was 167 hospital stewards, 381 acting hospital stewards, and 3,543 privates; a total of 4,091. The number of female nurses in the *Army Nurse Corps* has remained approximately constant during the year, there having been 187 in the service July 1, 1899, and 210 on June 30, 1900; 165 contracts were made and 149 were annulled. The movement of troops to the Philippines has occasioned a corresponding movement of nurses, and 122 are there now against 33 at the beginning of the year. Female nurses have recently left Honolulu and the hospital-ship "Relief," but are serving in increasing numbers on the Army transports in the Pacific. The organization of the Army Nurse Corps has been steadily improved and its adjustment to the Army made more satisfactory in details. The work of the nurses continues to be highly appreciated and their services are in demand at almost all hospitals of importance. During the past year modern hospitals were completed at Fort Adams, R. I., Madison Barracks, N. Y., Fort Slocum, N. Y., and Fort Banks, Mass. New hospitals are being erected at Fort Terry, N. Y., Fort Preble, Me., Fort Williams, Me., Fort Strong, Mass., Fort Leavenworth, Kans., Fort Ontario, N. Y., Fort Howard, Md., Fort Dupont, Del., and an important addition is being made to the hospital at Washington Barracks, D. C. A general hospital or sanitarium for the treatment of officers and men of the Army suffering from pulmonary tuberculosis has been established at Fort Bayard, New Mexico. Besides the special hospitals at Hot Springs, Ark., and Fort Bayard, N. M., there are now in the service in the United States only 2 general hospitals; one at Washington Barracks, D. C., and the other at the Presidio of San Francisco, Cal. The one supplies the needs of the troops serving in the eastern part of the country and is utilized as a training school for recruits for the hospital corps. The other receives sick men from organizations en route to the division of the Philippines and patients sent from the hospitals in Manila for the benefit of the home climate. During the calendar year 1899 there were 229,885 admissions to the sick report recorded in a mean strength of 105,546 regulars and volunteers. The death-rate from all causes was equal to a loss of 29.93 men per thousand of strength during the year, but only 11.80 of this was caused by disease. In the Army, regulars and volunteers, during the calendar years 1893 and 1899, there were reported on the monthly reports of sick and wounded 347 cases of insanity and 202 of these cases were committed to the Government Hospital for the Insane. Of the commitments 135 recovered in an average period of 3.9 months, 13 were improved, 6 died, and 49 remained unimproved. Of the 347 cases, 96 were reported on the monthly reports of troops serving in the Pacific Islands, and 32 of these were sent to the Government Hospital for the Insane. Of those committed 17 recovered in an average period of 3.6 months, 13 were improved, 2 died, and 11 remained not improved. The Surgeon-General says the exposures, fatigues, and excitements of a prolonged campaign are responsible for the large sick report and the relatively large death-rate among the troops in the Philippines. However, the opinion is prevalent among our medical officers that in time of peace and doing

only garrison duty, the sick-rate of the Army in the Philippine Islands would be no higher than it ordinarily is in the southern United States. The latest reports received from the chief surgeon, division of the Philippines, dated August 15, 1900, show a percentage of 8.47 sick for the command, which on that date had a strength of 60,554. The subsistence allowance of 40 cents a day has proved ample at all posts to give the sick and wounded the special diet which they require.

Changes in the Medical Corps of the U. S. Army for the week ended October 20, 1900:

- LATIMER, CHARLES H., acting assistant surgeon, will report at First Reserve Hospital, Manila, P. I., for duty.
- POWELL, Major JUNIUS L., surgeon, is relieved from duty in the department of Northern Luzon and assigned to duty as commanding officer of the Second Reserve Hospital, Manila, P. I.
- ARMSTRONG, Major SAMUEL T., surgeon, is relieved from duty in the department of the Visayas and will report to the commanding general, department of Southern Luzon, for assignment to duty.
- DAVIS, Major JOHN G., surgeon, is relieved from duty in the department of Southern Luzon and will report to the chief surgeon of the division of the Philippines for instructions.
- GRAVES, ALONZO, acting assistant surgeon, recently appointed, now at San Nicholas, province of Pangasinan, Luzon, will report by letter to the commanding general, department of Northern Luzon, for assignment to duty.
- DE NEIDEMAN, Major WILLIAM F., surgeon, is relieved from duty at First Reserve Hospital, Manila, P. I., and will report to the commanding officer, Thirtieth Infantry, U. S. Volunteers, for duty as surgeon with that regiment.
- BLAKE, JOHN C., hospital steward, is relieved from duty at hospital No. 3, Manila, P. I., and will report on the transport "Stephens," scheduled to leave on August 30, to San Francisco, Cal., for duty on that vessel while en route, reporting to the commanding general, department of California, for instructions to return to the division of the Philippines.
- MANSFIELD, ELMER E., acting assistant surgeon, now on duty with the Twenty-fifth Infantry, is assigned to the Twenty-fourth Infantry, to relieve Acting Assistant Surgeon Wharton B. McLaughlin, on account of sickness in the latter's family.
- McLAUGHLIN, WHARTON B., acting assistant surgeon, on being relieved, will proceed to the Presidio, for temporary duty awaiting transportation to the Philippine Islands.
- HARVEY, L. S., acting assistant surgeon, is granted leave of absence for 1 month, with permission to leave the limits of the division of Cuba, and to apply for an extension of 1 month.
- GODFREY, Captain GUY C. M., assistant surgeon is relieved from further duty in the division of Cuba, and will comply with par. 25, S. O. 185, c. s., H. Q. A., proceeding via New York City.
- BURKART, JOHN L., acting assistant surgeon, is assigned to temporary duty on the transport "Leelanaw" during the voyage of that vessel to the Philippine Islands. Upon arrival at Manila, he will report to the commanding general, division of the Philippines, for assignment to duty.
- SCHLAGETER, H. J., acting assistant surgeon, is granted leave of absence for 1 month, with permission to apply for an extension of one month.
- CARROLL, JAMES, acting assistant surgeon, is granted leave of absence for 20 days, on surgeon's certificate, with permission to go beyond the limits of the division of Cuba.
- MUNSON, Captain EDWARD L., assistant surgeon, is granted extension of leave of absence for 15 days on account of sickness.
- BALCH, Major LEWIS, surgeon, is honorably discharged from the service, to take effect November 7, his services being no longer required.
- PILCHER, Captain JAMES E., assistant surgeon, will report at Fort McHenry for examination by a medical officer at that post as to his physical condition, and upon the completion of the examination will return to the place of receipt by him of this order.
- GODFREY, Captain GUY C. M., assistant surgeon, now in Brooklyn, N. Y., en route to San Francisco, Cal., under par. 25, S. O. 185, August 8, is relieved from further operation of the order specified, and will report about November 7 to the commanding general, department of the East, for assignment to duty with recruits en route to the Philippine Islands on the transport "Kilpatrick." Upon his arrival at Manila and the completion of his duty with the recruits he will report to the commanding general, division of the Philippines, for further orders.
- ANDERSON, JOHN B., hospital steward, Army General Hospital, Presidio, will be discharged from the Army, by way of favor.
- GARLINGTON, JOSEPH C., acting assistant surgeon, now in Washington, D. C., will proceed to Fort Mott, for duty, to relieve Acting Assistant Surgeon Thomas D. Ingram.
- INGRAM, THOMAS D., will proceed to Washington and report to the Surgeon-General of the Army for annulment of contract.

Changes in the Medical Corps of the U. S. Navy for the week ended October 20, 1900:

- DEER, E. C., medical inspector, is detached from the Navy Yard, Portsmouth, N. H., on reporting of relief, and ordered home to wait orders.

STEPHENSON, F. B., surgeon, is ordered to the Navy Yard, Portsmouth, N. H., October 25.
ODELL, H. E., assistant surgeon, order to the Asiatic Station, modified; to take passage on the "Solace."
STEPHENSON, F. B., medical inspector, is commissioned medical inspector from May 31, 1900.
DUNN, H. A., assistant surgeon, is detached from the "Dorothea," and ordered to the "Frolic."

Changes in the U. S. Marine-Hospital Service for the week ended October 18, 1900:

GASSAWAY, J. A., surgeon, is granted leave of absence for four days from October 15, under provisions of paragraph 179, Regulations, M. H. S.
STONER, G. W., surgeon, granted 3 days' extension of leave of absence. October 16.
STONER, J. B., passed assistant surgeon, granted leave of absence for 22 days from October 30. October 12.
YOUNG, G. B., passed assistant surgeon, granted leave of absence for 1 day. October 12.
CURRIE, D. H., assistant surgeon, to proceed to Indianapolis, Ind., in charge of the laboratory exhibit of the service to be shown at the meeting of the American Public Health Association. October 12.
SCOTT, E. B., hospital steward, granted leave of absence for 20 days from October 22. October 13.
ROHRIG, ALBERT M., appointed temporary hospital steward and assistant chemist for duty at immigration depot, New York, N. Y. October 13.
SCHLAAR, W. F., reappointed senior hospital steward. October 13.
Board convened to meet at the purveying depot, New York, N. Y., on Wednesday, October 24, for the purpose of revising the official supply table of the service.—Detail for the board: Surgeon G. W. STONER, chairman; Surgeon C. E. BANKS.

Foreign News and Notes.

GREAT BRITAIN.

Sanatorium.—A new sanatorium has been begun near Frodsham as an accessory to the Liverpool Hospital for Consumptives.

Sanitary Ice Cream.—The premises where ice cream is manufactured in Plymouth are registered and supervised by sanitary authority.

Death Rate.—The death-rate in London during September equaled an annual rate of 16.5 per 1,000. In Dublin the rate was 25 per 1,000.

Medical Students Fined.—The medical students who were arrested in London, for breaking up the meeting of John Alexander Dowie, the divine "healer" of Chicago, were fined.

"The Tale of a Field Hospital."—A work under the above title will soon be issued. It is written by Mr. Frederick Treves and is a record of his experiences in South Africa.

King's College Laboratories.—The new science laboratories of King's College, London, will be opened October 30. The new buildings and equipment have cost over £20,000.

Medical Members of Parliament.—Among those selected are Sir Michael Foster for the London University and Sir J. Batty Tuke for the Universities of Edinburgh and St. Andrews.

Objectionable Pamphlets.—Efforts are being made to stop the sending of certain pamphlets through the mail by druggists. Some are sent from America and contain testimonials from British physicians.

Lunacy in Ireland.—The inmates of the various hospitals, January 1, 1900, was 20,863, as compared with 20,304, January 1, 1899. There was an increase in district asylums, and a decrease in private asylums and workhouses.

Unqualified Practice.—A Mr. Pleavin of Birkenhead was recently before the Coroner charged with causing the death of a child by illegally practising medicine. The gentleman "swore that he was a doctor of medicine of Ohio, Buffalo; United States of America."

Seaweed as a Test for Sewage.—Experiments with the *Ulva latissima* has shown that this plant flourishes only in water that is contaminated by sewage. This was proved after noting the large quantities of hydrogen sulfid given off by the plant when washed up at Dublin and Belfast.

The Sanitary Institute.—Examinations in practical sanitary science for inspectors of nuisances will be held in many cities during 1901. There will also be an examination in hygiene for school teachers in London and Bradford. Practically the same work is carried on in Sydney, Australia.

Sick Soldiers in Steerage.—The fact that the British Admiralty was sending home in the steerage 12 Australian soldiers sick with enteric fever aroused indignation in London and a charity fund has been wired to Gibraltar, where the troopers have been recuperating, to insure their transfer to the second cabin.

Lunacy Scandal.—A patient in the Manchester Workhouse was "quietened" by an attendant by twisting a towel around his neck by means of a poker. The patient died, and post mortem showed fracture of the cartilages of the larynx and of the hyoid bone. The attendant has been held on the charge of murder.

Drunkenness.—The Royal commission presided over by Lord Peel recommend that drunkenness *per se* in public should be considered an offence. It is estimated that if the law now in force in Russia, that of arresting all intoxicated persons found on the streets and in public places, were enforced in London, at least 10% of the population would be in gaol.

Record for Insanitation.—Eight years ago the report to the local Government Board stated that "in almost everything which is needed to make a town healthy Kilkenny (Ireland) is deficient." The town still maintains this distinction. It has had 300 cases of diphtheria during the past year and an epidemic of enteric fever. A private individual has impeached the sanitary authorities for neglect of duty.

Hospital Abuse.—Attention is being called to a new form of this fertile topic. It is that of persons conducting a large business, who make a charitable contribution to a hospital, and then send all their employes there for the treatment of all manner of injuries and sickness. It is asserted that not a single hospital in London will reject the employes of a large subscriber to their funds, even though they be able to pay for medical attendance.

Infectious Diseases in London.—The report for 1899 shows that the number of notified cases was 42,285. Of these, 68% were admitted to the Board's hospitals. The average residence of scarlet fever patients was 70 days, and of diphtheria cases 59 days, while the enteric fever average reached 58 days. A noticeable feature is the steady decrease in mortality among scarlet fever patients, while still greater is that in diphtheria—from 23% in 1895, when antitoxic serum was introduced, to 14% in 1899. London still continues to enjoy immunity from smallpox, 28 patients being sent to the hospital during the year, and of these only 10 really had the disease. The cases of mistaken diagnosis numbered 4% in scarlet fever, 7% in diphtheria, and 17% in enteric fever.

The Glasgow epidemic of plague is under control. One fatal case occurred at Cardiff, October 4. The Public Health Committee of the London County Council have recommended the use of several properties as isolation houses if the plague invades London. Professor Zabolotny, of St. Petersburg, who has been at Glasgow, recommends preventive inoculations of serum. Extraordinary precautions are being taken by the authorities in Glasgow and in London to prevent further outbreaks or invasion. For the bacteriologic examination of suspected cases instructions are to send a sample of blood from a finger after venous congestion has been produced, fluid from a discharging bubo, and expectorated material. The sanitary condition of Dartmouth has been found bad, and there is no isolation hospital or arrangements for disinfecting. Dr. Gairdner insists that suspected cases be reported even if no diagnosis has been made.

Inspection at Glasgow Inadequate.—Dr. William T. Jenkins, Commissioner of the New York Board of Health, is reported to have said when referring to his visit to Glasgow, that in his opinion a few ounces of timely prevention would have saved all the trouble over the bubonic plague there. He asserted that England was in no respect in advance of the American system of municipal hygiene, adding that the system of inspection in Glasgow was wholly inadequate for such an important port.

CONTINENTAL EUROPE.

Medical Students in Italy.—During the past year 6,648 students attended the various universities. Naples led with 2,009.

The new Pasteur Institute at Kasauli, India, is thriving in spite of petitions and indignation meetings of antivivisectionists.

Methodic Treatment of Epilepsy.—Professor Gilles de la Tourette has published his treatment of epilepsy. Bromids only are employed.

Tropical Medicine.—M. Le Dantec is to give a course of lectures on this subject at the University of Bordeaux. Dr. J. H. Kohlbrugge lectures on the same subject at the University of Utrecht.

Leprosy in Germany is said to be increasing. In Prussia, in the district of Memel, close to the Russian border, 21 cases have been discovered so far. At Hahmburg 10 cases have been found, and in Mecklenburg-Schwerin one.

Another Tuberculosis Cure Futile.—An establishment founded in Belgium 3 months ago for the raw meat treatment of tuberculosis has closed its doors. The manager declared the method was of no value, though the medical press wonders how he arrived at this conclusion in so short a space of time.

Microbe light is the latest Paris invention. A French chemist, Raphael Dubois, is said to have found a way of nourishing phosphorescent germs in glass vessels, which soon emit a light about as bright as the moon. He expects to increase its intensity, and believes that its being entirely free from heat will give it a scientific value.

Professional Secrecy.—The Court of Appeal of Toulouse has allowed a remarkable exception to the law that professional secrecy is absolute. The trial was as to the disposition of some property, and the Court received the evidence of the physician as good, because it contained 2 classes of facts—those which the medical man obtained as a friend, and those concerning the complaint of the deceased, which were common knowledge after his death.

Dr. Yersin and the Plague Serum.—From Marseilles comes the report of an interview with Dr. Yersin, famous as the discoverer of the antiplague serum, who arrived there recently from Tong-King. He described the large laboratory which he has organized in that country, where 30 horses serve for the culture of a new and improved serum, which can be used indifferently for persons or animals. He is highly satisfied with the results everywhere obtained where the serum has been administered under normal conditions. The terrible epidemic that raged among the herds of Indo-China has been almost entirely stamped out, thanks to the efforts of this laboratory. Horses employed there do not suffer at all from the treatment, and when other horses come to take their place, can be easily utilized for field work. Dr. Yersin is somewhat surprised at the news of the appearance of the plague at Glasgow, and regards it as an isolated case. He says that the scourge is necessarily losing force.

Patent Medicine Ethics.—At the meeting in Aachen of the Society for the Advancement of the Natural Sciences, H. His, Jr., advanced the following points regarding the endorsement by physicians of newly discovered medicaments. 1. The relations between the manufacturers of and the endorsers for pharmacological and medical products ought to be adjusted and regulated by some central institution. 2. The signing and endorsing of such products should be for the personal information and benefit of the manufacturer, but

never for publication by him. 3. Physicians should never recommend in the public lay prints newly-discovered medical products or food preparations. 4. There should be greater conservatism in the matter of subscribing to the merits of a new drug, and the publishing of such endorsement should be reserved exclusively to the technical publications and medical press. 5. The articles appearing in the medical journals should be protected as far as possible against reprint for purposes of advertisement. 6. To demand or receive pecuniary benefits from signatures, recommendations, endorsements or publications regarding new preparations is inadmissible. 7. Physicians whose inventions are set up for sale are responsible for the manner of advertising them. [Medical News.]

MISCELLANY.

A Hospital is to be founded at Su San in Corea, in memory of Rev. W. N. Junkin of New Jersey.

Convicted of Procuring Abortion.—A physician in Sydney, Australia, has been sentenced to 5 years penal servitude for unlawfully causing abortion.

Sydney Hospital.—The honorary medical staff have protested against the appointment of an honorary anesthetist. Between 1892 and 1899 anesthetics were administered 11,408 times with only one death.

Chirata as a Cure for Drunkenness.—This plant has been used in India for many years as a cure for drunkenness. The cure is only temporary and must be taken from time to time.

Medical Missionaries.—One of the difficulties encountered by medical missionaries in China is that patients, after receiving gratis a bottle of medicine, are apt to sell it to some one else for a trifle.

Cholera Increasing in Japan.—It is reported that cholera is increasing to such an extent in Japan that steamers thence have been quarantined. The dispatch adds that there have been a number of deaths on board of steamers coming from Nagasaki.

Hospital Statistics from South Africa.—Three months' work in the Irish Hospital at Pretoria gave a mortality of 11.6% in enteric fever cases. At the Bloemfontein section hospital the mortality was 12.6. The Volks hospital at Bloemfontein (Boer) shows an enteric mortality of 85. This difference is stated to be due to less strict methods in classifying fevers.

Colonial Medical Officers.—The *Lancet* contains a complaint from a physician that the colonial medical officers on the west coast of Africa are not paid as much as they should be, and that their quarters are not fit for Europeans in a tropical climate. Of 6 items mentioned 5 are "considered repellant when applied to such an unhealthy climate." The other item, which is considered just, is 6 months' leave for every 12 months' service.

Physician and Poisoned Arrows.—In the recent fighting in Nigeria, West Africa, out of the British detachment a colonel, 2 captains and 15 privates were wounded with the poisoned arrows used by the natives, the poison of which has been known to prove fatal in a few minutes. Dr. Thompson, the surgeon of the expedition, as soon as the officers were wounded, sucked the blood from the wounds and with it the poison. He then gave the same treatment to the privates and all recovered. The doctor himself experienced no ill effects from his action.

Obituary.—JOHN FREDERICK FRANCE, of London, October 30.—BENJAMIN JONES MASSIAH, of Didsbury, September 30, aged 53.—CHARLES BOWMAN WILSON, of Liverpool, October 9, aged 73.—ROBERT STRAFFORD SMITH, of Belfast, October 5.—ODED LOWSLEY, of Reading, October 4, aged 62.—RICHARD HENRY WILSON, of London, October 9, aged 63.—ALEC STEVENSON, of Glasgow, September 3, aged 31.—A. E. LOVITT, of the China Inland Mission.—ARTHUR DE NOE WALKER, of Chelsea, aged 71.—VISHRAM RAMJEE GHOLAY, of Poona.—RUDOLF ARNDT, of Greifswald, aged 66.

The Latest Literature.

British Medical Journal.

October 6, 1900. [No. 2075.]

1. The Huxley Lecture. LORD LISTER
2. An Address on Some Problems of Tropical Medicine. WILLIAM MACGREGOR.
3. A Discussion on Subdiaphragmatic Abscess. RICKMAN J. GODLEE, W. BRUCE CLARKE, LEONARD A. BIDWELL, STANLEY BOYD, E. B. FULLER, IRVING H. CAMERON, CHARLES F. CUTHBERT, RUPERT C. CHICKEN, K. G. LENNANDER, and NOBLE SMITH.
4. Pyloroplasty for Cicatricial Contraction of the Pylorus and for Gastric Ulcer. LEONARD A. BIDWELL.
5. The Causes and Treatment of Non-Malignant Stricture of the Rectum. FREDERICK C. WALLIS.
6. A Case of Obstructive Jaundice due to Gummatous Infiltration. H. BETHAM ROBINSON.
7. A Discussion on the Methods at Present Available for the Treatment of Simple (Subcutaneous) Fractures. WILLIAM H. BENNETT, CHARLES B. KEETLEY, ROBERT JONES, FREDERIC EVE, JONATHAN HUTCHINSON, and F. FRANCOIS BURGHARD.
8. On the Best Method of Removing Large Stones from the Bladder, with Notes of a Case. S. H. BURTON.
9. On 53 Operations for Stone in the Bladder. P. J. FREYER.
10. Section of Ophthalmology: A Discussion on the Treatment of Chronic Glaucoma. F. RICHARDSON CROSS, JOHN HERN, HENRY W. DODD, KARL A. GROSSMANN, ERNEST D. BOWER, GEORGE A. BERRY, C. DEVEREUX MARSHALL, and W. ARTHUR BRAILEY.
11. The Etiology of Phlyctenular Affections of the Eye. SYDNEY STEPHENSON.

1.—Lister in his **Huxley Lecture** goes over, in quite a thorough manner, the various experiments which he has made in relation to **coagulability of the blood**; especially in its relation to pyemia. Lister says that the accumulation of the blood-corpuscles, both red and white, in the vessels of an inflamed area, is due to a tendency on their part to adhere to each other and to the walls of the vessels. This adhesiveness or viscosity is not manifested at all when the vessels are in a perfectly healthy condition. An interesting phenomenon discovered while experimenting on bloodvessels of a frog's foot, was noticed in the changes of the arrangement of the pigment of the epithelial cells, evidently resulting from the irritant. The pigment which in the healthy part was seen in small round dots, changed as the result of the irritant to a delicate black network, causing an extremely dark appearance. In this changing, the form of the cell remained unaltered, but the pigmentary constituents were transferred from place to place. This change Lister claims is due to a prostration for the time being of the vital energies of the tissues acted upon by the irritant. Another interesting experiment was done with the ciliated epithelium from the frog's tongue. It was found that when warmth was applied, the cilia waved very rapidly, but suspended their action if the heat was increased. If the heat was removed in time, the cilia again began to move. This demonstrated the fact that a destructive agency used to a degree, just short of that which is lethal, may increase the vital functions of the tissues acted upon. In severing the sciatic nerve, only temporary dilation of the bloodvessels was noticed. To obtain complete paralysis of the bloodvessel walls, it was necessary to sever the spinal cord, and if a single filament was left intact, the bloodvessels would regain their tone. If with a fine needle the severed medulla was pricked and irritated, tetanic contraction of the bloodvessels was noticed. This seems to argue for the reflex theory of inflammation. That this **reflex inflammation** is possible, was demonstrated by an experiment on the eye of a rabbit. A small bit of thread was inserted just beneath the conjunctiva, and on killing the rabbit 48 hours afterward, marked congestion and inflammation of the posterior portion of the eyeball was found. Regarding the coagulability of blood, Lister found that a quantity of blood could be retained in a fluid state for 48 hours, in an excised jugular vein taken from an ox just

after being knocked down. The blood from this vein was carefully drawn into a glass tube, with both ends sealed. The greater part of the blood in the tube was found to be fluid, after 24 hours and there was a clot about $\frac{1}{2}$ of an inch in thickness crusting the interior of the tube. This result seems to be of itself sufficient evidence that blood requires no action of the living vessels to maintain its fluidity. [G B W.]

2.—In an address delivered at the opening of the session of the London School of Tropical Medicine, MacGregor refers to the way in which new diseases are distributed among new races. Typhoid fever was introduced into Fiji by the British. The Lini Islanders introduced tinea imbricata to Fiji and contracted yaws; while the Solomon Islanders contracted some form of venereal disease. Venereal disease was taken to the Pacific Islanders and to the Papuans by Europeans. Fiji was a center for the distribution of measles in 1874. The epidemic that resulted destroyed between $\frac{1}{3}$ and $\frac{1}{4}$ of the whole population. Europeans introduced dysentery to Fiji, and this disease now causes more deaths than any other in tropical countries. Water examination is very important in the tropics, since it is a factor in the continuation and spread of malaria, as well as of other diseases. [J M S.]

3.—Godlee says that **subphrenic abscess** is not an isolated abscess of its own account, but rather caused by some other phenomena, and most probably the symptoms of the disease which caused it will be the prominent ones. For this reason it is almost impossible to isolate the symptoms of some subphrenic abscesses, and this becomes all the more obvious when you consider the varieties, shape and size which this form of abscess may assume and the different positions it may occupy. Subphrenic abscess may be defined as follows: Any collection of pus or pus and gas, the whole or part of which is between the diaphragm and the structure or organs normally in contact with it. Therefore, a knowledge of the subdiaphragmatic anatomy is essential to a proper comprehension of abscess of this region. There are no pathognomonic symptoms of this abscess. In the early stages there are generally hiccup, pleuritic stitch in the side, and friction-sounds. Later on it may give rise to dulness at the lower part of the chest on either side, accompanied possibly by a very considerable displacement of the heart. This dulness may be differentiated from a pleural effusion by the following signs,—(1) the movements of the chest are not impaired; (2) the upper limit of the dulness is not so sharply defined; (3) the breath-sounds may be heard below the level of the dulness; (4) when the pleura is not involved, in emaciated persons, the lower border of the lung may be seen rising and falling with respiratory movements, especially on the right side; and (5) in cases where gas is present, there may be a great extent of tympanic resonance. The cause of these abscesses is legion, arising either from the stomach, the intestines, the cecum, appendix, or from a general peritonitis, hydatids from the liver and bile ducts, from the kidney, subcutaneous wounds, metastasis, necrosis of the ribs, or various other causes. The article was thoroughly discussed. [G B W.]

4.—Bidwell reports 4 cases of **pyloroplasty for cicatricial contraction of the pylorus**. In 2 of these cases the stenosis was due more to spasm than to the formation of fibrous tissue. The result in all 4 cases was most satisfactory, especially in the last 2. The change from emaciated and debilitated patients to persons of practically normal health, was most pleasing. Pyloroplasty is eminently suited for nonmalignant stenosis, and in such cases is greatly superior to either gastroenterostomy or to Loreta's operation, since in these operations there seems to be a great tendency to recurrence of the dilation due to contraction of the opening. [G B W.]

5.—Wallace says that the most common cause of **rectal stricture** is septic ulceration, and the next most common cause is probably protracted labor. Syphilis and dysentery, though thought by some to be very common as a cause for rectal stricture, are responsible for comparatively few. He says that most of the operations undertaken for relief of this most distressing condition, are of little avail. He recommends the following operation as promising great relief. A preliminary colotomy is done first, so as to enable the surgeon to wash the bowel out, and in this way keep free from fecal contract any ulceration which may be in existence above the stricture so that it may have a chance to heal.

The operation consists of dilating the sphincters, then in making a circular incision around the mucocutaneous margin and separating the gut from the sphincters and freeing it in an upward direction by dissection. Slight traction is made until healthier gut appears at the anal opening and the loosened portion of the rectum may be excised. In the 2 cases reported in which this operation was done, the patients made perfect recoveries. [G.W.B.]

7.—Bennett concludes his article on **simple fractures** briefly in the following conclusions: He says that fractures today are treated too much upon lines which are traditional rather than rational, and that the use of splints for long periods is disadvantageous to early movements of joints below and above the fractures of long bone. The legitimate scope of operative treatment of simple fractures should be confined to those cases which are not otherwise manageable, such for example as certain spiral and oblique fractures, mainly of the tibia, and certain fractures near joints in adults, notably the elbow. The operative treatment of recent fracture of the patella is by no means so generally satisfactory or so free from risk as published cases would tend to show. The immediate use of massage and passive movements, in the majority of cases, affords the best means of effecting a rapid and useful recovery. Marked displacement of the fragments, provided that it is not rotary, is not necessarily followed by disability, especially if care be taken by use of early movements to prevent any matting of the parts around the fracture. He further says that the disability which follows in certain cases, in which the position of the united fragments is not ideal, is due, not to the bony deformity, but to the adhesiveness of the soft parts around them, and which is easily preventable. [G.B.W.]

8.—Burton says that for the **removal of large stones from the bladder**, the 2 operations to be thought of are suprapubic lithotomy and perineal lithotripsy. The advantages of the former are, that the bladder can be freely opened and examined fully in an almost bloodless manner, and a stone of any known size extracted with the least disturbance to the patient, and in cases of enlarged prostate, these advantages are accentuated. The disadvantages are that the wound may be long in healing, and the occurrence, probably from faulty stitching, of a phosphate crust on the scar reproducing another stone. The advantages of perineal lithotripsy are that the bladder-wall is not cut, and the neck of the bladder is incised only enough to admit the finger. The disadvantages of this method are the bruising of the neck of the bladder, and of the mucous membrane; the impossibility of examining in case of deep pelvis, and the difficulty of manipulating the instrument where there is a large prostate, and the danger of acute pyelitis and nephritis which is increased in proportion to the amount of manipulation. Burton concludes, therefore, that suprapubic operation is by far the best for large stones. [G.B.W.]

10.—Cross says that there are two forms of **glaucoma**. First, the chronic inflammatory, in which immediate operation by sclerotomy is imperatively demanded. Second, simple glaucoma in which some physicians believe in medical treatment and postponement of operation, but progressive simple glaucoma will sooner or later be complicated by atrophy, and if the operation is to be of service, it should be done before the limitation of vision approaches dangerously near the center of the field. The operation of choice is iridectomy, and though improvement is not always immediate, it will ultimately take place. Sclerotomy is of service only in early stages. The paper was earnestly discussed. [G.B.W.]

11.—Stephenson sums up his remarks on **phlyctenular affections** of the eye, briefly as follows: Phlyctenular disease is remotely due to a tuberculous diathesis and immediately to eruption of eczema upon the surface of the eyeball. [G.B.W.]

5. A Case of Acute Albuminuria (Acute Renal Congestion) with Uremia; Recovery. F. C. EVILL. With Two Similar Cases and Comments. SAMUEL WEST.
6. A Case of Anthrax. EDWARD F. N. NEAVE.
7. On the Limits of the Heart Dulness in Cases of Anemia and Chlorosis. R. WYBAUW.
8. Case of Suprahepatic Hydatid Cyst. GEORGE W. DAVIS.
9. A Case of an Unusual Form of Intussusception. HERBERT W. CARSON.
10. A Case of Cæsarean Section in a Primipara on account of the Pelvic Cavity being Blocked by a Fibroid Tumor of the Uterus; Recovery; Child Living. LLOYD ROBERTS.

1.—**Lister calls attention** to the fact that his father deserves the credit for raising the compound microscope from little better than a scientific toy to an important instrument in medical diagnosis. He recounts some interesting experiments which he began as a student to determine the nature of pyemia and which he continued in later life. These researches to a considerable degree influenced him in adopting local measures to diminish the risk of communicating contagion from one wound to another. He first employed the sulphite of potash internally, following the recommendation of Polli. This drug was supposed to have antiputrescent qualities. Later he freely employed antiseptic washes. But he tells us that his efforts were abortive, for at that time he believed, with most chemists, that putrefaction was caused by the oxygen of the air. And it was not until Pasteur's demonstrations that he found that the problem of surgery was not to exclude oxygen from wounds, but to protect them from the living causes of decomposition. [M.B.T.]

4.—Morris describes two varieties of **aneurysm of the renal artery** following injuries. Small sacciform aneurysms, the walls of which are formed by some or all the coats of the artery, and large false aneurysms, the walls of which are composed of condensed fibrous tissue developed around extravasated and coagulated blood. He discusses the literature of the subject of aneurysms of the renal artery thoroughly, giving abstracts of all cases which have thus far been reported. The aneurysms of nontraumatic origin are of much the same form as the traumatic aneurysms. He has succeeded in collecting in all 19 cases of renal aneurysm; 7 were spontaneous and 12 traumatic. Of the traumatic cases 10 were in men, occurring mostly during the period of active life; of the spontaneous cases all the patients were over 40 years old. The traumatisms causing this condition were of various kinds, mostly from injuries to the loin of the side of the diseased kidney. Of the spontaneous cases, multiple embolisms, calcareous degeneration of the coats of the arteries and nephritis are mentioned as possible etiologic factors. As long as a sacciform aneurysm remains unruptured it does not produce pathologic changes in the kidney. It may burst, causing hemorrhage into the pelvis of the kidney or true hemonephrosis. By pressure it may cause partial or complete atrophy, or by infiltration beneath the capsule of the kidney it may cause stripping up of the capsule and possibly rupture. In some cases the kidney becomes extensively adherent to neighboring structures. The contents of the sac are usually blood-clot. Unruptured sacciform aneurysms give rise to no symptoms; false aneurysms, whether traumatic or spontaneous, nearly always cause hematuria. Among other symptoms are mentioned tumor, which was detected in 14 out of 19 cases during life. Pain which is not generally severe nor is the tumor usually tender on pressure or at the seat of acute pain. Discomfort or dull aching sometimes is felt if the tumor attains great size. Hematuria is a very common symptom next in importance to tumor. Pulsation is usually absent. Few observations have been made as to the presence of bruit and it has not been usually detected. Except for the presence of blood the urine is usually normal. There may be dysuria and frequent micturition when blood-clots are passing. The general symptoms are due to loss of blood and the effects of pressure. A diagnosis is absolutely impossible except by exploratory operation in case pulsation is absent. The prognosis is most unfavorable in false aneurysms, all the patients which have not been operated upon having died. Profuse hemorrhage is usually the cause of death. The only prospect of saving life is by nephrec-

THE LANCET, LONDON, OCTOBER 6, 1900. [No. 4023.]

1. The Huxley Lecture on Early Researches leading up to the Antiseptic System of Surgery. LORD LISTER.
2. Science and Practice. GEORGE VIVIAN POORE.
3. Future of the Medical Student. H. STANSFIELD COLLIER.
4. Aneurysm of the Renal Artery. HENRY MORRIS.

tomy. The operation is in most cases begun as an exploratory incision. A lumbar incision, if made, must be prolonged considerably afterwards and if the tumor is very large transperitoneal operation is preferred. The whole pedicle should be secured or at any rate the renal artery should be ligated before attempting to remove or empty the sac. The risks of operation are from hemorrhage, shock and adhesions. When tough adhesions are present entire separation of the cyst should not be attempted. As much as possible of the sac should be removed and the rest left and drained. [M.B.T.]

5.—West reports the case of a man, aged 36 years, who was suffering from insomnia, dyspnea, and acute headache. His father had died from Bright's disease. Three weeks before West saw him, the patient had what he thought was influenza. At the commencement of the attack his face, neck, hands, and wrists were puffy. There was no ascites nor edema of the legs or of the body. The pulse was 84 and small, and the arteries were soft and compressible. The urine was smoky, blood and casts were present, and about $\frac{1}{2}$ of albumin was apparent on boiling. The quantity of urine in 24 hours did not exceed 20 ounces. Later the patient was suddenly seized with a violent **uremic fit** which lasted about 15 minutes, and left him in a semicomatose condition. Under diet, digitalis, spirit of nitrous ether, solution of citrate of ammonia, pilocarpin, venesection, and oxygen inhalations, the patient gradually recovered. The oxygen inhalations were originally given to relieve dyspnea, but they were continued after the symptom had disappeared, because they seemed to act as an antidote to the toxins in the blood. [J.M.S.]

6.—Neave reports the case of a man who died from **anthrax**. The source of infection is supposed to be bone-dust that the patient was using for manure in his grain field. The case pursued a very rapid course, death taking place on the fourth day. The temperature did not rise above 100°. The lesion was situated in the left side of the chest and had evidently been produced by scratching. These was no pain connected with the disease and no severe constitutional symptoms. There was also absence of mental distress. [J.M.S.]

7.—Wybauw is of the opinion that in **chlorosis the increased area of cardiac dulness** may be due to a true dilation of the heart as well as to displacement of that organ by upward pressure of the diaphragm. When dilation exists the apex beat is displaced downward and outward. On the other hand, when there is displacement only, the apex beat is pushed outward and upward, so that it may be felt in the fourth interspace. [J.M.S.]

8.—A case of **hydatid cyst of the liver**, with a capacity of 25 ounces, is reported. A remarkable symptom was diminished urination. There was also swelling of the legs and passage of blood by the bowel, probably because of obstruction of the portal vein. The cyst was emptied by crucial incision, syringed out and drained. [M.B.T.]

9.—A case of **intussusception** is reported occurring in a female child, 5 months old. The child had been ill for 5 days with abdominal tumor and a history of passing blood and mucus by the stool. Her general condition was good. The intussusception was in the lower part of the descending colon. It was double, the ileum entering the upper end and the rectum the lower end. Attempts at reduction were unsuccessful until the bowel was opened by a longitudinal incision. [M.B.T.]

10.—Roberts reports a case of **cesarean section** upon which he remarks as follows: Cesarean section was performed in this case because the pelvic cavity was blocked by a fibroid tumor of the uterus so that the conjugate diameter was reduced to $1\frac{1}{2}$ inches, rendering even cephalotripsy impracticable. The tumor sprang from the posterior wall of the uterus, and it was intended to remove it at the time of the operation, but it was found to be so firmly adherent to the rectum and the sigmoid flexure as to prohibit any further interference. The uterus was not drawn through the abdominal wound until it had been opened and emptied of its contents. This procedure allows of more easy manual compression and thus prevents hemorrhage; it also facilitates accurate suturing of the uterine wall and a thorough cleansing of the abdominal and pelvic cavities. The sutures used were of silk and they were passed through the peritoneum, the uterine muscle, and the mucous membrane. No abdominal or pelvic drainage was adopted, but the uterus

was packed with gauze through the vagina. The acute sepsis which occurred was, in his opinion, benefited by the injection of antistreptococcus serum. The patient's temperature was not normal throughout the day until about 6 weeks after the operation, after which she steadily improved. The uterus shrunk to a hard mass quite fixed in the pelvis. The child was fed artificially and is healthy. [W.K.]

New York Medical Journal.

October 20, 1900. [Vol. lxxii, No. 16.]

1. The Medical and Surgical Treatment of Acute and Chronic Lymph Nodes of the Cervical Region. H. HORACE GRANT.
2. The Present State of our Knowledge Concerning the Cause, Nature and Treatment of Asthma. WALTER A. WELLS.
3. Electrolysis in the Treatment of the Lachrymal Passages. L. L. MIAL.
4. A Combined Aspiration and Injection Instrument for Subarachnoid Cocainization. GEORGE RYERSON FOWLER.
5. Bullous Enlargement of the Middle Turbinate Bone (Concha Bullosa). J. PAYSON CLARK.
6. Disturbances of Gastric Motility and their Significance. ANDREW MACFARLANE.
7. The Subarachnoid Injection of Cocain. J. E. MASSEY.

1.—Grant concludes his article on the treatment of acute and chronic inflammation of the lymph nodes of the cervical region as follows: The cause of tuberculous **adenitis of the cervical region** is almost always local, and takes place through the buccal cavity. A suppurating gland is always dangerous, and should be removed *en toto*. Small groups or single, slowly growing glands are likewise to be removed. Nature will provide a new and equally perfect protection against external invasion, to take the place of the glands that are lost by operative procedures. [G.B.W.]

2.—As a result of his studies on the **cause, nature, and treatment of asthma**, Wells concludes: 1. That asthma has so many points of resemblance with migraine, angina pectoris, and epilepsy that the suspicion may reasonably be entertained that they all have a similar pathology. 2. That of the theories that have been advanced to explain the pathogenesis of the asthmatic paroxysm, no one of them so well harmonizes all the facts as the vasomotor theory; and this only when we admit that the disturbance is essentially that of arterial contraction, rather than dilation. 3. That there is always present in asthma a morbid constitutional state, affecting especially the sympathetic nervous system and giving rise to a certain nutritional aberration, whose most salient feature is the increase of uric acid and the urates. 4. That asthma occurs as a reflex neurosis from diseases of different organs, but especially often from those directly supplied by branches of the vagus nerve. The nasal trouble, which is the most frequent reflex cause, is not necessarily an obstruction, and may be very inconspicuous and difficult to detect. 5. That nearly all cases of asthma show evidences of a pronounced psychic element, as in the curious variety of exciting causes of the attack, in the capriciousness of its course and behavior, and its dependence upon emotional states and suggestion. 6. That in the treatment of the paroxysm of asthma, a strict individualization needs to be observed. The best remedies are those that overcome arterial spasm, such as morphin, nitroglycerin, atropin, and chloral. 7. That treatment in the intervals of the attacks must be directed, in the first place, to the removal of the cause, and in the second place, to the institution of sound hygienic and prophylactic measures in relation to the mind, diet, air, and exercise. 8. That medicinal treatment should be addressed to the improvement of the constitutional state, for which the best remedies are piperazin, potassium iodid, and the other iodids, the alkalies, and general tonics. [J.M.S.]

3.—Mial says that **electrolysis** is the most useful procedure in cases of stricture of the lachrymal passages. In regard to the technic, it seems useless to slit up the canaliculus, as a fine conical electrode can, in almost every instance, be introduced into the punctum. The chief indication in lachrymal obstruction is to get the passages open and keep them open. Electrolysis does this speedily, painlessly, and without hemorrhage, and, furthermore, is antiseptic in its action. The strength of the current should not exceed 3

milliamperes. The positive pole is best placed at the back of the neck. Frequent and short sittings, less than 2 minutes, are preferable to longer ones a week apart. [G.B.W.]

4.—Fowler has invented a combined aspiration and injection instrument for **subarachnoid cocainization**, which consists essentially in a double needle, the inner one of steel, and capable of being projected beyond the outer one of platinum. A glass bulb can be readily attached, and into this the cerebrospinal fluid can be readily drawn by means of a vacuum induced by a rubber bulb. The glass bulb is easily detached and a glass syringe put in its place for the injection of the cocain solution. The inner needle can be readily withdrawn and in case of clotting or other obstruction is easily cleaned. The cerebrospinal fluid entering the glass bulb readily announces the entrance of the inner needle into the subarachnoid space. [G.B.W.]

5.—Clark reports 2 cases of **bullous enlargement of the middle turbinated bone**. The symptoms in the first case were headache, some loss of smell, and nasal obstruction. The turbinate was removed by a cold wire snare and the patient was greatly improved. Four months after the operation nasal respiration was clear, there were no headaches, and the sense of smell was much more acute. An examination of the bone removed showed the cavity lined with several layers of columnar epithelial cells, some of them ciliated. There were no signs of inflammation. In the second case, the symptoms were occasionally headache of a neurasthenic type, which had lasted for several years; lately they had increased to severe pains in the side of the face, which remained unrelieved by correction of refractive errors of the eye and general medication. After removal of the bullous turbinate the symptoms continued apparently unabated for a week, and then began to diminish rapidly and in a week more had disappeared. [G.B.W.]

7.—Massey reports a case of **cocainization of the spine** in which 30 minims of a 2% solution of cocain were injected in the subarachnoid space, and 12 minutes later operation begun. The operation was for the cure of hemorrhoids and was done by ligation. It lasted 1½ hours and 10 double and 20 single ligations were used in tying off the hemorrhoids, and the margin and floor of an ulcer in the rectum was lightly touched with lunar caustic. During the whole of the operation the patient said he experienced no pain and the total anesthesia of the lower abdomen and extremities lasted 3½ hours after the operation was completed, making 5 hours in all. Nine days after the operation the patient was walking around free from pain. [G.B.W.]

Medical Record.

October 20, 1900. [Vol. 58, No. 16.]

1. Some Conservative Jottings Apropos of Spinal Anesthesia. J. LEONARD CORNING.
2. The Treatment of Necrosis of the Entire Shaft of a Long Bone; with Report of a Case. J. SNETON HORSLEY.
3. Treatment of the Patient During the Weeks Previous to Expected Confinement. EDWARD P. DAVIS.
4. Some Applications of Static Electricity in Dermatology. HENRY G. PIFFARD.
5. Observations on the Surgery of the Gall-Tracts. WILLIAM JONES.
6. The Soldier's Ration in the Tropics; Its Use and Its Abuse. LOUIS L. SEAMAN.

1.—Corning mentions his experiments in **spinal anesthesia**, the first ever done in that line, and published in the *New York Medical Journal*, October 31, 1885. This he believes entitles him to the credit of priority for this discovery. The following are some points mentioned as essentials in technic in this method of producing anesthesia: The needle, 3½ to 4 inches in length, should be fine, not overtempered, bevelled, short, so that it will not require to penetrate the membranes far, to insure deposit of the solution within them. The needle may be made of gold or platina, which being bendable is not liable to break, even when the caliber is small. A movable nut which may be fixed with a set screw regulates the depth of puncture. When the needle is thrust in, and a few drops of the cerebrospinal fluid emerge, this nut is slid down till its lower aspect rests upon the skin. It is then fixed by tightening the screw, and a further entrance of the

needle into the spinal canal effectually prevented. A syringe of glass, graduated up to 30 minims or more, provided with an asbestos packing, is best because so easily sterilized. Many of the needles recently employed are too large. The puncture which they make in the membranes allows too much cerebrospinal fluid impregnated with the anesthetic to flow out, after withdrawal of the needle. Special care as to antisepsis and asepsis of everything connected with the operation is enjoined. A 2% cocain solution which may be sterilized is usually preferred as an anesthetic. To make the injection: If possible the patient should be placed in a sitting posture, inclining forward so as to bend the spine, and separate the vertebrae. Puncture between the second and third lumbar vertebrae is recommended. The needle should be introduced slowly, the direction being slightly from without inward and from below upward. Any obstruction of its lumen may be cleared with the stylet. The outflow of a few drops of cerebrospinal fluid will tell of the penetration of the membranes. The syringe may now be attached, and the injection made. Even though the needle be small it should not be withdrawn immediately after the injection has been made; but should be maintained in place till the advent of anesthesia. By so doing the opening made by the needle in the membranes is effectually plugged, and hence the anesthetic cannot possibly flow out till it has done its work. Plunging hither and yon and sawing with the needle are to be avoided. Better withdraw the needle and begin anew, than risk the tearing of the membrane. At present from 10 to 15 minims of a 2% solution of cocain at a dose seem to give satisfaction. When the heart's action is feeble or irregular, a small dose of strychnin, nitroglycerin, and digitalin may be exhibited hypodermically a short time before the cord is anesthetized. In spite of the greatest care in technic the anesthesia is sometimes unsuccessful. Corning cautions against expecting too much from the method; he does not believe that general anesthetics will be displaced by it and thinks there may be possible remote disastrous results from its use. [M.B.T.]

2.—Horsley reports a case of **necrosis of the entire shaft of the tibia** in a female child 20 months old. The sequestrum was removed, slow recovery resulted and a useful but slightly bowed leg has resulted. [M.B.T.]

3.—Davis advises a close observation of a **patient's condition** during the weeks **previous to confinement**, and a careful study of the clinical symptoms of toxemia with chemical examinations to ascertain the state of the excretory processes. If these processes are defective, he thinks no drug so efficiently influences the throwing out of solid waste in the body as calomel. In doses of ½ grain, night and morning, or in smaller doses, ⅓ grain, 3 times daily, it is most successful. It is sometimes necessary to supplement this by salines, while others do as well upon this drug only. Under its use the percentage of solids in the urine increases, the percentage of urea is distinctly increased, the pulse-tension is lessened, the patient's symptoms are much improved, and her condition is very greatly benefited. If the patient complains of insomnia, restlessness, and headaches, this treatment is far preferable to the use of anesthetics, and gives more permanent relief. The physician should assure himself that there are no indications of infection of any kind, and if such infection exist, there should be thorough disinfection with green soap, mercurial or bichlorid solutions, or lysol, or carbolic acid. The presence of a serious heart-lesion in the patient, of advanced kidney-disease, and of any condition seriously interfering with the circulation of the blood through the abdominal viscera, predisposes to hemorrhage in the later months of pregnancy, and must put the obstetrician on his guard. [W.K.]

4.—Piffard has used the **tertiary current** in the treatment of **chronic eczema** with infiltration, acne rosacea, local pruritus, pityriasis capitis, localized seborrheic eczema and seborrhea oleosum. In this condition he found that resolution of the lesions took place more rapidly than under any other treatment previously used. He describes the instrument which he has had made for use in treating skin diseases. [D.L.E.]

5.—Jones emphasizes the following points regarding the **surgery of the gall tracts**: The diagnostic value of the point of maximum tenderness over the gallbladder at or near the costal margin of the ninth rib. This point in disease of the gall tracts he thinks corresponds in importance with

McBurney's point in disease of the appendix. The diagnostic value of the presence of bile in the urine during or immediately after brief obstruction of the common duct. The fact that disease of the gall tracts is of very common occurrence, and is liable to be mistaken for other troubles which it closely imitates. He urges the importance of these troubles and of their early recognition. The physician should familiarize himself thoroughly with their symptomatology, and train himself to recognize them promptly. The time is not remote when it will be as much a matter for censure to fail to recognize the presence of disease of the gall tracts as it now is to overlook that of the appendix. [M.B.T.]

6.—Seaman states that in his opinion most of the **diseases affecting soldiers in the tropics** are the result of rations excessively rich in meat and other foods that aggravate gastroenteric disturbance, together with the use of too large quantities of food. He states that the energy of the rations in caloric units averaged about 4,448, while the rations of the British soldier in temperate climates is only about 2,800 caloric units. In his postmortem examination he found in almost all cases congestion of the liver, a great deal of thick, tenacious mucus, over the surface of the stomach and intestine, the mucosa was hypertrophied, often ulcerated, the glands frequently atrophied. A comparison of the United States ration with that of natives of the tropics shows that it contains an excess of nearly 6 grams of nitrogen, nearly 180 grams of fat, and of over 1,500 caloric units, while there was a deficiency of over 80 grams of carbohydrates. Seaman recommends that fresh meat, being perishable, should be largely replaced by dried and smoked meats, which are to some extent stimulants and disinfectants of the gastroenteric tract. Salt and tinned meats are objectionable. Carbohydrates should be used as largely as possible, as they easily yield their energy. Fats are not well tolerated in large quantities as a rule. The value of sugar is great, and is not yet thoroughly appreciated. Tea can easily be transported, and if taken in weak infusion is not harmful, is refreshing, and furnishes a pleasant means of taking large quantities of sterilized water into the system. A ration which Seaman suggests is 10 ounces of fresh meat or an equivalent amount of dried or smoked beef, 2 ounces of bacon, 12 of flour, 4 of rice, lentils or maize, 14 ounces of succulent green vegetables, 2 ounces of dried fruit, 4 ounces of sugar with chocolate, and also tea and condiments, the whole representing about 15 grams of nitrogen, 83 of fat, 540 of carbohydrates, and yielding about 3,300 caloric units. If the men are on the march the bulky carbohydrates could be entirely replaced by sugar. It is always best to have the men frequently indulge in fresh fruits and vegetables en route if possible. [D.L.E.]

Medical News.

October 20, 1900. [Vol. lxxvii, No. 16.]

1. Some Remarks on the Pathology and Surgical Treatment of Urinary and Urogenital Tuberculosis. SAMUEL ALEXANDER.
2. Progressive Pernicious Anemia. ALFRED STENGEL.
3. Treatment of Typhoid Fever. STEPHEN SMITH BURT.
4. Increasing the Therapeutic Value of Cod-Liver Oil by the Addition of Free Iodin and Free Phosphorus. LOUIS J. LAUTENBACH.

1.—**Tuberculosis of the urogenital tract** may be either secondary to a tuberculous focus in the lung or other portion of the body, or it may be seemingly primary, affecting some part of the genitourinary tract from the outset. In this latter form it is generally chronic and is of especial interest to the surgeon. As to the etiology, the tubercle bacillus may gain access to these organs by an ascending infection, but in the majority of cases the disease is of hemic origin. It is possible for a tuberculous epididymitis to exist alone, but usually it is associated with more or less involvement of the prostate or of the prostatic urethra. Infection of the bladder is almost always secondary to a primary focus in the kidneys. In case of tuberculous epididymitis it is probably best, when the epididymitis alone is the seat of the disease and even in cases where there seems to be slight involvement of the prostate, to be conservative in our operating, provided the testicle itself be healthy. When the

testicle proper is the seat of the tuberculous process, castration with the removal at the same time of the seminal canal is the only operation to be considered. Primary tuberculosis of the prostate does occur and is far from infrequent. In these cases, the diseased portion of the prostate should be removed as completely as possible. [G.B.W.]

2.—Stengel gives a general discussion of **progressive pernicious anemia**. This he regards as a disease resulting from the rapid destruction of the blood-corpuscles, which the blood-making function cannot replace. The gastrointestinal tract is evidently a source of the hemolytic agent. It is possible that in some cases the hemogenetic function of the bone-marrow is perverted. Stengel admits that, strictly considered, pernicious anemia is not a disease, but merely a systematic disorder of the blood. He quotes with approval the description given by Addison, adding a few points that have been noted since, particularly the fever and the gastrointestinal disorders. He does not agree with Ehrlich, that the presence of megaloblasts in association with megalocytes are sufficient proof of the nature of the disease, having observed the same condition in 2 cases of leukemia during the aleukocytotic intervals. There is no pathognomonic symptom, and each case must be diagnosed after a careful consideration of all its features. Usually the reduction of the red corpuscles to less than 1,500,000 per cubic millimeter, and a proportionate reduction of the hemoglobin, in conjunction with other suspicious symptoms, is strong presumptive evidence. The prognosis, as far as regards recovery, is hopeless; all patients ultimately die of the disease, but almost complete remission, sometimes lasting for long periods, may occur. Curious alterations in the number of blood-corpuscles that have been observed may be explained by ascribing them to variations in the distribution of the corpuscles. [J.S.]

3.—Burt believes that **typhoid fever** should be treated **individually**, and not according to fixed rules. Absolute rest in bed is essential, the food should be light, preferably fluid. The best stimulant is alcohol, but it should be given with discrimination. Sponging is usually preferable to tubing; any form of treatment requiring subsequent stimulation being bad. The Woodbridge treatment is inefficient, and the coal-tar antipyretics are dangerous. [J.S.]

4.—Lautenbach, with the aid of a pharmacist, has devised a preparation of **cod-liver oil** which contains 95% of the oil, and in each ounce, $\frac{1}{4}$ grain free iodine and $\frac{1}{50}$ grain of free phosphorus. This preparation keeps well, but in the course of time undergoes hydroxylation. It is said to be particularly beneficial as a tonic, and superior to the ordinary preparations. [J.S.]

Boston Medical and Surgical Journal.

October 18, 1900. [Vol. cxliii, No. 19.]

1. Suppurative Pericarditis and Its Surgical Treatment. The Surgical Anatomy of the Pericardium. Conclusions. CHARLES B. PORTER.
2. Hydrotherapy in Pneumonia. SIMON BARUCH.
3. To What Extent Does "Rheumatic and Gouty Diathesis" Enter Into Traumatic Joints (Sprains and Bruises), Septic and Gonorrheal Joints, Acute Articular Rheumatism, Neuropathic Joints, Arthritis Deformans (Osteoid, Rheumatoid), as an Etiologic Factor? What is the Scientific Basis for Such a Term? WILLIAM H. PORTER.
4. Septic and Gonorrheal Joints. CHARLES A. PORTER.
5. Neuropathic Joints. SIDNEY A. LORD.

1.—Porter states that 3 methods of operation for suppurative pericarditis have been proposed and practised: By trephining the sternum, by incision through an intercostal space, and by epigastric incision. All of these he thinks should be discarded, because of the danger of wounding the pleura or diaphragm. The ideal operation should avoid opening the pleural cavity; open the pericardium opposite the point where drainage will remain good after the sac has contracted, and secure permanent free drainage. He recommends the following operation as fulfilling these conditions: An incision is made from the middle of the sternum outward over the fifth costal cartilage to its junction with the rib. The soft parts are cleaned off with a periosteal elevator and the

cartilage is divided from the rib and sternum with bone forceps. The internal mammary vessels are exposed and should be ligated in 2 places. If fat is encountered, careful dissection with a director exposes the pericardium. An aspirating needle should be introduced to establish the diagnosis and the pericardium then opened by incision obliquely downward and outward, beginning close to the excised border of the sternum. The edges of the pericardium are stitched to the soft parts. Irrigation should always be employed to remove masses of fibrin. Drainage is best provided by 2 rubber tubes, one reaching the bottom of the sac and a short tube just entering the sac. As the discharge diminishes, one tube may be removed and finally gauze drainage inserted. When thick or flocculent fluid is present the tubes are the only adequate means of drainage. Daily irrigation is practised. The subsequent treatment consists in forced feeding and free stimulation. Porter discusses the literature of the subject in a thorough manner and mentions a case in which he operated. He believes that **pericardotomy** is indicated in all cases of suppurative pericarditis. Because of the uncertain and varying relations of the pleura and of the anterior position of the heart, aspiration is more dangerous than open incision. Incision may be quickly and safely performed by resection of the fifth costal cartilage in many cases under local anesthesia. In many cases of serious effusion, open incision without puncture will offer less risk and speedier cure than aspiration. [M.B.T.]

2.—Baruch believes that the application of a **cold pack in pneumonia** meets the 4 chief indications: it fortifies the nervous system, sustains the heart, promotes the elimination of the noxious products arising from the action of the diplococcus, and renders the patient more comfortable by reducing the temperature, deepening respiration, allaying pain, and producing sleep. The technic is very simple; the compress is made of 3 folds of old coarse linen wrung out of water at 60° F. These are wrapped around the chest from the clavicle to the umbilicus, a slit being made to accommodate the shoulder, and it is then covered with a larger layer of thin flannel. The chief variation depends upon the degree of fever; if this is lower (100° to 102°), the compress should be thoroughly wrung out; if the temperature is high, it should be more thoroughly soaked, and the water used may be 65°; if the patient complains of chilliness, the compress may be allowed to remain longer without changing, becoming in time, a sort of poultice; if there is cyanosis, or other indications of a depressing effect, treatment should be modified, or even suspended, although it is desirable not to do the latter if possible to avoid it. The only unfortunate effect, if it can be called such, is the prolongation of the period of resolution. [J.S.]

4.—Porter discusses the bacteriology and pathology of septic and **gonorrheal joints**; also their symptomatology and course and reports several cases. He believes that the gonococcus alone is capable of causing arthritis which may be purulent. This may occur not only in acute gonorrhea but in chronic or latent stages which persist much longer than is commonly believed. The signs of chronic infection are often slight and disregarded or overlooked. In consequence not a small proportion of cases are diagnosed as articular rheumatism. In the treatment of this affection, irrigations of the urethra with mild antiseptic solutions are recommended together with the continued use of ice bags or dry heat, preferably with a hot oven. When pus can be demonstrated by fluctuation, edema and redness or aspiration of the joint or tendon sheaths, then only should operation be resorted to. Incision, irrigation, immediate suture without drainage is advised. As relatively few pure gonorrheal infections lead to suppuration the treatment by immobilization and early passive motion is safer for general adoption. [M.B.T.]

5.—Lord discusses the **arthropathies of tabes and syringomyelia** which occurred in from 5% to 10% of all cases of this disease. There are 2 varieties, the atrophic and the hypertrophic. It is difficult or impossible to separate these conditions from fractures of the ends of the bones; in fact, some people believe that they are entirely due to this cause; the effusion can then be explained by ascribing it to hemorrhage. The fractures can be supposed to be caused by the violent movement of the limbs in consequence of the ataxia, and it is also possible that there is some special atrophic disturbance in the joint which tends to render the

bones more friable. These cases are ordinarily very readily diagnosed. Other forms of this disease are observed in neuritis and in hemiplegia. The osteoarthropathy of pulmonary origin described by Marie is really an osteoperiostitis of toxic origin. The acroarthritides of Hutchinson in which the terminal joints of the fingers assume the tabetic deformity is possibly due to disturbed circulation. In the treatment of various forms of arthropathy little can be done. Orthopedic measures should be employed if the deformity is excessive, and surgical measures if suppuration occurs. [J.S.]

Journal of the American Medical Association.

October 20, 1900. [Vol. xxxv, No. 16.]

1. Report of the Committee on Tuberculosis.
2. State Provision for the Treatment of the Consumptive Poor. BENJAMIN LEE.
3. Overcrowding and Tuberculosis. S. A. KNOPF.
4. Climate for Tuberculosis. NORMAN BRIDGE.
5. Tuberculosis—Its Zoologic and Geographic Distribution. W. A. EVANS.
6. Tuberculosis in Pennsylvania. GUY HINSDALE.
7. Municipal Regulation of the Spitting Habit. ELMER B. BORLAND.
8. Hereditary Factors in Tuberculosis. J. M. ANDERS.
9. Tuberculosis and Insurance. E. FLETCHER INGAIS.
10. United States General Hospital for Tuberculosis at Fort Bayard, N. M. D. M. APPEL.
11. The Advantages of the Sanitarium Treatment of Tuberculosis When Change of Climate is not Possible. F. S. OLIVER.
12. The Sanitarium for Consumptive Sailors Established by the United States Marine-Hospital Service at Fort Stanton, N. M. J. O. COBB.
13. The Diagnosis of Pulmonary Tuberculosis. ROBERT H. BABCOCK.
14. Notification of Tuberculosis. ARTHUR R. REYNOLDS.
15. Necessity of Examination of the Sputum in the Diagnosis of Pulmonary Tuberculosis. C. M. WOOD.
16. The Right of the State to Provide Hospitals. FINLEY SCRUGGS.
17. Treatment of Pulmonary Tuberculosis. JOHN M. LISLE.

2.—Dr. Lee urges the importance of the establishment of State hospitals for the treatment of the consumptive poor. [M.B.T.]

4.—The needs of the tuberculous patient are several, and apart from special medication include: Rest from work; change of work and cares, so as to shift the load from parts that have borne it to those that are fresh; painstaking attention to digestion and feeding and nutrition of the body; long hours of sleep; outdoor life, much sunshine, and fresh air every hour; a change of surroundings for novelty and pleasure, and to help shift the load, and finally, a change of climate, to a better one if possible, but a change anyway. Change of climate helps or ensures some of the others, but not all, and, great as climate is, it is not everything. [M.B.T.]

6.—Hinsdale gives a chart which shows that the deaths from tuberculosis in Pennsylvania in 10 years exceed 27,000, about equaling the combined deaths from diphtheria, typhoid fever, apoplexy, scarlet fever, smallpox, and inflammation of the stomach and bowels. Between 1870 and 1897 there was a constant fall in the number of deaths from pulmonary tuberculosis in proportion to the population, but the proportion rose slightly in 1899. In 15 years the percentage of deaths from pulmonary tuberculosis has fallen from 14% of all deaths to only 10%. This has been a great gain and a showing of which the State may well be proud, but Hinsdale believes that a still greater reduction in the rate will continue. [M.B.T.]

7.—During the past year Boland has been in communication with the boards or bureaus of health of 22 principal cities of the United States to determine what measures they are taking to regulate the spitting nuisance. He finds that special laws have been enacted in one-half of these cities, and about one-fourth are regulating partly or wholly under their general nuisance acts. These ordinances empower bureaus of health to abate or prohibit anything of an unsanitary character; indiscriminate spitting is included. He urges the importance of this reform. [M.B.T.]

8.—After making due allowances for all modifying circumstances, particularly accidental infection, including infected homes and prolonged contact with tuberculous subjects, Anders entertains no doubt that a predisposition to tuberculosis may be inherited, and this tendency is more unfailingly transmitted through the mother than the father. This increased susceptibility, which we note in a limited number of families, is dependent on a lack of resistance of the animal-cell and the latter condition in turn on a faulty metabolism or nutrition. [M.B.T.]

Wiener klinische Wochenschrift.

August 2, 1900. [13. Jahrg., No. 31.]

1. Total Exclusion of the Intestines. ERWIN PAYR.
2. A Case of Paraphenylendyamin Poisoning. EMIL POLLAK.
3. The Treatment of Necrotizing Acne with Seasalt Solution. FRIEDRICH LUTHLEN.

1.—Payr believes that it has been generally decided that **total exclusion of the intestine** is not a justifiable operation. Those who have been its advocates have been forced by later clinical experience or experimental work on animals to abandon it as a procedure for general use. However there are conditions in which it may be of use. A case of psoas and iliacus abscess is reported which was opened by an incision along the crest of the ileum and Poupart's ligament. Tuberculous pus was evacuated. A few days later an intestinal fistula developed in the abscess-wall from the cecum. This continued for 3 months. Ileocolostomy was undertaken with the hope of relieving the condition. A month later the fistula was still secreting as before. A third operation was undertaken and about 40 cm. including the entire ascending colon and a portion of the ileum was shut off from the general fecal circulation. The ends of the ileum and colon were closed by double rows of continuous sutures and end-to-end anastomosis of the ileum and transverse colon was made. Eight months after the operation the patient is in a very much improved condition and there is no evidence of any untoward symptoms. This operation was undertaken in this case because the feeble condition of the patient made it inadvisable to do a more extensive operation. [M.B.T.]

2.—**Paraphenylendyamin** is a poisonous substance used in the preparation of certain hair dyes, particularly one known in Europe as Phoenix. The author's patient had used it for the purpose of dyeing gray hairs. After the third application she developed an extensive eczematous eruption of the scalp and forehead, lachrymation, injection of the conjunctiva, and edema of the eyelids. Subcutaneous injection of paraphenylendyamin into rabbits produced symptoms similar to those seen in the woman; but in some of the animals the acute symptoms subsided and a chronic form of poisoning developed, characterized by vomiting, diarrhea, and hematuria, followed by clonic or tonic spasms ending in coma and death. The test for paraphenylendyamin is that of Lauth; by the oxidation of the substance in an acid, hydrogen sulfid containing solution with chlorid of iron, Lauth's violet—a greenish-black, iridescent powder—is produced. This powder is soluble with difficulty in cold water, but readily soluble in boiling water, with a development of a violet color. [D.R.]

3.—The author has had success in 2 cases of **inveterate necrotizing acne** with applications of sea-salt in the form of compresses (1.2% solution) and ointments of similar strength. In addition full baths in sea-salt water were taken. [D.R.]

August 9, 1900. [13. Jahrg., No. 32.]

1. Additional Cases of Traumatic Tetanus, which were Treated with Subcutaneous Injections of Brain Emulsion. ANTON KROKIEWICZ.
2. The Hot Springs of Monfalcone. E. LUDWIG and TH. PANZER.
3. Total Exclusion of the Intestine. ERWIN PAYR.

1.—The unsatisfactory results which have followed from the serum treatment of traumatic **tetanus** led Krokiewicz to try the results of **brain emulsion** in such cases. He reports 2 cases which were satisfactorily treated in this way. An emulsion made from an entire rabbit's brain was injected

subcutaneously, the injection being repeated in the first case 4 times. Krokiewicz believes that the results thus far from the injection of brain emulsion in cases of tetanus are more favorable than after most other methods of treatment. Thus far 8 recoveries and 2 deaths have been reported and in all of these cases suitable drugs had been tried without result. He believes that the emulsion deserves wider application. [M.B.T.]

3.—**Total exclusion** of the intestine is a rare operation, but Payr believes that in some cases it offers the only way to make life bearable for certain patients. Salzer has given 3 indications for the operation: Fecal fistulas after injuries and acute and chronic diseases of the intestine; intestinal fistulas resulting from inoperable tumors or erosion of the intestine in consequence of suppurative processes within the abdominal cavity; stenotic processes in and about the intestine in which it is impossible to resect or to form an artificial anus. He reports a case which was operated upon for the second indication—a suppurative process within the abdominal cavity. After careful search of the literature he finds no case in which this indication, which was given theoretically, has been practically applied before this. The patient had received a gunshot wound in the right inguinal region, causing an intestinal fistula. There also developed secondarily chronic osteomyelitis of the ilium, probably of tuberculous nature, with an abscess in the right inguinal region. Removal of the projectile, incision of the abscess, and extensive plastic operations were undertaken without result. Erosion of the intestine was produced. In the first operation a communication between the cecum and the abscess-cavity was closed. Later, lateral ileocolostomy by means of sutures was carried out with a fairly satisfactory result. [M.B.T.]

Berliner klinische Wochenschrift.

August 6, 1900. [37. Jahrg., No. 32.]

1. Reality and Significance of Ganglion-cell Changes Especially in Psychoses. E. MEYER.
2. Observations on Diabetes Insipidus. H. REBENSBURG.
3. Bacteriology of Whooping-cough. G. ARNHEIM.
4. An Idiopathic Passing Disturbance of Consciousness. PLACZEC.
5. Primary Sarcoma of the Stomach. W. MINTZ.

1.—Meyer has studied the brain in a number of **psychoses** both acute and chronic. Portions of the central convolutions were hardened in formol-Müller and stained with thionin on neutral red. His conclusions are that **changes in the ganglion cells are not constant** and may be absent even in those that are characterized by fulminant symptoms. The changes found are practically the same, regardless of the nature of the mental disease, nor are they to be distinguished from those observed under entirely different conditions; in other words, specific cell changes are not demonstrable in insanities. [D.R.]

2.—A lengthy report of 2 cases of **diabetes insipidus**. No remedy seems to be of any value, but some amelioration was observed, which could be attributed to an improvement in the general health, outdoor life, and a moderate restriction, without coercion, of the amount of fluid ingested. [D.R.]

3.—Arnheim in a considerable number of cases of **whooping-cough** was able to demonstrate, both in the sputum and, in fatal cases, in the lung, the **pole-bacteria** described by Czaplewski. He was not able by means of pure culture to produce whooping-cough in the lower animals, but the organism proved pathogenic to white mice, particularly after intraperitoneal inoculation. [D.R.]

4.—A woman of 40 years, while conversing with a relative suddenly began to wring her hands and to moan, saying that she had lost her memory. She asked a number of strange questions, complained of a torturing anxiety, saying that if she at that moment should commit murder she would be guiltless, as she did not know what she was doing. After about 6 hours her mind became clear, but there was a total amnesia regarding the peculiar attack. Twenty-four hours later a severe migraine developed. On the day on which the mental disturbance took place the patient's menses set in and (upon which she laid considerable stress) there was a thunderstorm. There were no hysteric stigmata. The second case concerned a fireman on a locomotive who, while

returning from an excursion, suddenly began to resist the entrance of his friends into the railway compartment and was angry and insulting, but gradually became quiet, although refusing to answer any questions. On his return to his home he had no knowledge whatever of what had taken place immediately before. He had not been drinking. The interpretation of these cases is difficult, but Placzek does not think that epilepsy or hysteria can be drawn upon for their explanation. He considers them as **idiopathic, transitory disturbances of consciousness**, and cites a few analogous cases from literature. [D.R.]

5.—The subject of **sarcoma of the stomach** is discussed and brief abstracts are given of 5 cases which have been reported since Schlesinger collected 36 cases of this disease. A case is reported occurring in a man of 30 who had been suffering from severe pain in the abdomen, vomiting, rapid loss in strength and weight for about a month. A large tumor was felt in the epigastrium. For the relief of his symptoms gastroenterostomy was performed. The vomiting did not cease, however, and the patient died 6 days later. At the necropsy the pylorus was found to be occupied by a hard tumor about the size of the fist. This extended into the anterior and posterior wall of the stomach. The lymph-glands of the lesser curvature were considerably enlarged. There was also metastasis in the testicle and cord. [M.B.T.]

Deutsche medicinische Wochenschrift.

August 9, 1900. [26. Jahrg. No. 32]

1. Does Alcohol Operate as a Food or as a Poison? KASSOWITZ.
2. A Form of Typhoid-like Disease Caused by Germ Resembling the Typhoid Bacilli. SCHOTTMÜLLER.
3. To the Knowledge of Right Hand and Left Hand. ADOLF HECHT and LEO LANGSTEIN.
4. Remarks on Polyneuritis Puerperalis. MINKIEWICZ.
5. The Physico-chemical Analysis of Mineral-water. HANS KÖPPE.

1.—Schottmüller has carried out a series of bacteriologic investigations of the blood of typhoid patients, and mentions from his general results the fact that in 50 cases examined he found in 40, *i. e.*, 80%, typhoid-bacilli in blood taken from the arm during life. A case especially reported in this paper ran a course which would have been considered typhoid fever had it not been for the bacillus which was found in the blood. The onset was somewhat irregular. The man had an erysipelas-like eruption on the left hand which did not disturb his general health at first, but a few days later caused a rise of fever suddenly to 40° C., which was accompanied by catarrhal symptoms of the nasal, ocular and pharyngeal mucous membranes. There was no exudate in the throat. The subsequent course was like typhoid fever, and accompanied by an eruption of rose-spots, by enlargement of the spleen, by fall of temperature, by lysis, and the pulse was slow in relation to the fever; the bacillus isolated from the blood, however, at about the middle of the attack, showing decided differences from the typhoid-bacillus. The patient's blood-serum did not agglutinate the typhoid-bacilli in a dilution of 1 to 20, while it did agglutinate the bacilli isolated in a dilution of 1 to 50, and later in a dilution of 1 to 100. The bacillus caused gas evolution in a glucose-bouillon medium also. The nature of the bacillus was not definitely known. The author, however, considers that so-called sporadic cases of typhoid fever should be carefully investigated bacteriologically as they may prove to be other forms of infection closely related to typhoid, but not true typhoid. [D.L.E.]

3.—Hecht and Langstein have made a large series of investigations with the Gaertner tonometer. It is known that the blood-pressure is somewhat higher normally in the right hand than it is in the left. They have found this to be the case in all those examined who were right-handed. In left-handed people, however, they found the pressure higher in the left hand than in the right. Curiously enough they found in one soldier who had learned with difficulty to do the major part of his work with his right hand, and had used his right hand for years, but was naturally left-handed, that blood-pressure was still higher on the left than on the right.

The increase of blood-pressure seems to be in direct relation with the existence of **right-handedness or left-handedness**. Perhaps it is in some way causative. [D.L.E.]

4.—The case reported was that of a woman who in the latter half of pregnancy showed vomiting, and gradually developed the signs of a general polyneuritis of rather mild degree, chiefly affecting the arms. Gradually a complete cure was brought about. The disease did not become fully developed until after the occurrence of labor, and from time to time the symptoms increased between the onset of the disease and its full development, the increase being rather paroxysmal. Since it began in the course of pregnancy it should rather be called a **neuritis of pregnancy** than puerperal neuritis. There seemed to be no possibility of an infection through the genital tract in this case. [D.L.E.]

Münchener medicinische Wochenschrift.

August 14, 1900. [47. Jahrg., No. 33.]

1. The Coating of the Tongue in the Well and the Unwell. JOHANNES MÜLLER.
2. The Fitting Up of Sanatoriums for Tuberculous Children. ADOLF BAGINSKY.
3. Foreign Body in the Left Bronchus. HECKER.
4. The Treatment of Typical Pachydermia Laryngis with Salicylic Acid. JOHANN FEIN.
5. A Case of Liver Echinococcus with Rupture Into the Gall-Passage. W. ALTHAUS.
6. The Indications for Surgical Interference in Extrauterine Pregnancy. L. PROCHOWNICK.
7. The Suturing of Arteries. RUDOLF SEGGER.

1.—The coating of the tongue in health depends principally upon the degree of development of the brush-like terminations of the filiform papillae, and a true deposit plays but a small role. The development of the ends of the papillae varies greatly in different individuals, and is subject to alterations at different epochs of life. In very young children a coated tongue is rare. It is more common in older children and in adult and middle life. There seems to be a certain parallelism between the degree of development of the ends of the filiform papillae and other epidermal structures, such as the hairs and the thickness of the skin. **Coating of the tongue in disease** is more common in acute affections, whether they involve the digestive tract or not. If the tongue is scraped with a horn spatula it is found that in diseased persons a much more abundant quantity of fluid and morphologic elements is obtained than in health. In cases of cancer of the stomach and tuberculosis of the lung the author found an unusual number of leukocytes in the scrapings. The coating of the tongue in disease depends upon various factors: 1. The mechanic influence; normally the tongue is cleansed by the ingestion of solid food. In disease the tongue is more quiet than in health. 2. In some diseases there is a sort of desquamative catarrh of the tongue. In the production of this microorganisms play a part. It is probable that disturbances of the gastrointestinal tract modify the condition of the saliva, the blood-supply to the mouth, and other factors, which in turn influence the bacterial flora and produce a desquamative catarrh of the epithelium. 3. A thick coat in disease is most likely to occur in those who naturally have excessively long papillae. In the pathologic coating it is always possible to scrape off more epithelium than in the normal condition. Regarding the **therapy**, it follows from what has been said that it is useless to attempt the removal of a normal coating by scraping and scratching. Only a pathologic deposit can be removed. For the latter purposes a soft toothbrush is best. The chewing of calamus root also serves to cleanse the tongue. [D.R.]

2.—Baginsky eloquently advocates the **establishment of special sanatoriums for tuberculous children**. Cases of local tuberculosis of the skin, superficial glands, and bones, do remarkably well at the seashore; but for children with tuberculosis of the lung a quiet, dust-free woodland region is preferable. Regarding the **frequency of tuberculosis** among children, Baginsky found in 16,163 patients treated in the Kaiser und Kaiserin Kinderkrankenhaus in Berlin, 933 with tuberculosis. Of these, 543 (88.19%)

died, 335 of them of miliary tuberculosis. Of the 933, 515 had tuberculosis of the lung; 120 (12.19%) had intestinal tuberculosis. Baginsky believes in the **pavilion system** of sanatorial construction, and gives details regarding size of rooms, etc. Up to the age of 10 years the sexes can be kept together; after that, separately. Provision should be made in the sanatoriums for instruction and for the dwellings for teachers and janitors; also for gymnastic exercises. A diet list is also given. [Both in Italy and in Germany a number of public-spirited organizations have been formed for the purpose of establishing children's sanatoriums. It is to be hoped that America will not be outdone in this good work. D.R.]

3.—Hecker reports an interesting case of **foreign body lodging in the left bronchus** of a boy, 6½ years of age. The history of the case showed the child was struck a severe blow on the chest which was followed by temporary dyspnea and later by fever. At times, however, he seemed perfectly well except for pain in the left side of the chest. Almost a month after the accident the child was brought to the hospital when he presented symptoms which led to the diagnosis of chronic pneumonia, complicated by a localized empyema shut off from the general pleural cavity by adhesions. The patient in spite of all treatment grew rapidly worse, the symptoms being characterized chiefly by their great variety, until finally the development of pulmonary edema brought about death, 3 weeks after the patient's entrance into the hospital. The postmortem revealed the true state of affairs. The right lung, except for a few spots of catarrhal pneumonia and edema, was normal. The left lung, however, was gangrenous in parts and showed an interstitial pneumonia and in the supplying bronchus was found a pointed piece of lead pencil about 21 mm. long. The patient evidently had this piece of pencil in his mouth at the time of the accident and when struck had made a strong inspiratory effort which drew the foreign body down into the lung. [G.B.W.]

4.—Fein has had good success in the treatment of **pachydermia laryngis** with the local application of **salicylic acid**. He uses a solution of salicylic acid, 1 gram in 5 grams each of distilled water and alcohol. [D.R.]

5.—When first examined this patient presented symptoms resembling cholelithiasis with an acute swelling of the liver. The diagnosis was by no means certain and the discovery of a deep fluctuation in the epigastrium did not make things more clear. The patient improved, however, to such an extent as to be able to resume work, but within 3 months he was taken with another similar attack. This time there was a decided mass in the epigastrium and after a few days he passed by the rectum a number of **echinococcus** cysts as proved by the microscope. From this time on the liver began to lessen in size and the patient to improve in health. The most probable path by which the echinococcus gained access to the intestine was the gall-duct, the only other possibility being a rupture of the cyst directly into the intestine. [G.B.W.]

6.—Prochownick, in concluding his article upon the **indications for operative interference in extra-uterine pregnancy**, says that all his observations of the last few years have more and more convinced him that an early and radical abdominal operation is the best and wisest conservatism; that in cases of an intact fetal sac with probable tubal abortion and considerable hematocele, or if after a pause a secondary hemorrhage sets in, he would advise an early radical operation; or if fever is associated with the extrauterine pregnancy he would urge an operation quite energetically, preferring the abdominal section, as it promises a better oversight of the technic, a more radical cure, while the danger is no greater than by the other way. But if consent cannot be obtained for the radical operation, or if the patient has not come under one's care at a suitable time, the further procedure must depend upon the course of each case. In general, he prefers a conservative course, as he thinks secondary operations give little satisfaction to either patient or physician. Here, then, lies the field for incision and drainage by the vaginal route. [W.K.]

7.—Seggel reports a case of incised wound of the carotid in which he successfully **reunited** the cut walls of the **artery by sutures**. The wound had resulted from an attempt at suicide with a razor. The artery was cut transversely, only part way through, and it was quite easy to pass a small curved needle through the adventitia and media

without harming the intima. To reinforce the suture a flap of connective tissue was stitched over the artery and the wound was then packed. On removal of the packing a diffuse pulsation was observed and it was thought that possibly a traumatic aneurysm had developed. There was no bruit present, however, and in the course of time the pulsation disappeared and the wound healed by granulation. During the whole of the healing process the peripheral arteries supplied by the carotid, pulsated freely, as far as could be ascertained. [G.B.W.]

Neurologisches Centralblatt.

September 21, 1900.

1. Experiments upon Staining the Neuroglia and a New Staining Method. BENDA.
2. A New Method for the Fixation of Footprints in the Study of the Gait. MÖNKMÖLLER and KAPLAN.
3. What Significance have Tabetic Symptoms in Children Suffering from Hereditary Syphilis for the Etiology of Tabes? GOMPERTZ.

1.—Benda, having become convinced that **Weigert's neuroglia method** is too uncertain and unsatisfactory, has made a series of experiments in the staining of this substance with the object of discovering some better method. He agrees with Weigert that the tissue should be fresh, and prefers to harden it, cut in small pieces, in 10% formalin, sometimes even in pure formalin. He believes that Weigert's mordant consisting of chromalaun, copper acetate, and acetic acid is exceedingly desirable, and leaves the pieces in it at least 2 days at incubator temperature. He employs as an additional mordant a 0.5% aqueous solution of chromic acid. The tissue is then washed 24 hours in water, dehydrated in alcohol, imbedded in paraffin, and the sections fastened with albumin water. The sections after the paraffin has been removed are mordanted for 24 hours in some iron salt, preferably a 4% solution of iron alauun, washed in water for a few seconds, and then stained with a weak solution of sodium sulfalazarinate followed by a 1% aqueous solution of toluidin-blue. They are then washed in 1% acetic acid, dried, dehydrated, and differentiated in creasote. This gives excellent results. The neuroglia tissue is stained a deep blue, apparently by replacing the alizarin stain, which therefore acts as an adjuvant. In addition the granules and nuclei of the cells and certain other bodies are also stained but are readily discriminated. Another method that Benda has found to give good results consists of placing the specimens after mordanting for 24 hours in a pale aqueous solution of hematoxylin, then in 30% acetic acid, and after washing staining again with anilin water, gentian violet solution, or oxalic acid methyl violet. The tissues are then treated as in Gram's method and the results are again very satisfactory. Finally excellent results are also obtained by treating the sections stained in hematoxylin with van Geisen's mixture of picric acid and acid fuchsin. [J.S.]

2.—The method consists in having the patient wear thin stockings which are saturated with a 10% solution of iron chlorid. They walk upon a roll of paper which is subsequently treated with the following solution: ammonium sulphocyanate 25, alcohol 100, and ether sufficient to make 1,000 parts. The footprints are dark reddish-brown in color. The objection to the method is that the patients walk in their wet stockings in a rather abnormal manner. A number of tracings are given of various conditions, and the authors conclude that **recording the footprints** has, among other advantages, the demonstration of certain obscure phenomena which renders them more readily studied, enables the observer to apply direct measurement of the various disturbances of gait, and corrects errors of observation. [J.S.]

3.—Gompertz reports a case of a child, 9 years of age, suffering from **hereditary syphilis**. He had hypotonia in both legs, loss of the left patellar reflex, and incontinence of urine. There was no disturbance of gait or station. There was an old chronic keratitis, but apparently no pupillary disturbance. The author is not certain that Bydinski is correct in believing this complex of symptoms is necessarily an indication of tabes, and is rather inclined to ascribe it to syphilis of the spinal column. [J.S.]

Original Articles.

THE ETIOLOGY OF YELLOW FEVER.

A Preliminary Note.¹

By WALTER REED, M.D., Surgeon, U. S. A.,

AND

JAMES CARROLL, M.D., A. AGRAMONTE, M.D., JESSE
W. LAZEAR, M.D.,² Acting Assistant Surgeons, U. S. A.

THE writers, constituting a board of medical officers, convened "for the purpose of pursuing scientific investigations with reference to the acute infectious diseases prevalent on the Island of Cuba," arrived at our station, Columbia Barracks, Quemados, Cuba, on June 25 of the present year, and proceeded under written instructions from the Surgeon-General of the Army, to "give special attention to questions relating to the etiology and prevention of yellow fever."

Two of its members (Agramonte and Lazear) were stationed on the Island of Cuba, the former in Havana, and the latter at Columbia Barracks, and were already pursuing investigations relating to the etiology of this disease.

Fortunately for the purposes of this board, an epidemic of yellow fever was prevailing in the adjacent town of Quemados, Cuba, at the time of our arrival, thus furnishing us an opportunity for clinical observations and for bacteriologic and pathologic work. The results already obtained, we believe, warrant the publication, at this time, of a Preliminary Note. A more detailed account of our observations will be submitted to Surgeon-General Sternberg in a future report.

The first part of this Preliminary Note will deal with the results of blood-cultures during life and of cultures taken from yellow-fever cadavers; reserving for the second part a consideration of the mosquito as instrumental in the propagation of yellow fever; with observations based on the biting of nonimmune human beings by mosquitos which had fed on patients sick with yellow fever, at various intervals prior to the biting.

In prosecuting the first part of our work, we isolated a variety of bacteria, but of this we do not purpose to speak at present. It will suffice for our purpose if we state the results as regards the finding of *Bacillus icteroides*, leaving the mention of other bacteria to our detailed report.

The cases studied during the Quemados epidemic had been diagnosed by a board of physicians, selected largely by reason of their familiarity with yellow fever. This board consisted of Drs. Nicolo Silverio, Manuel Herera, Eduardo Angles, and Acting Assistant Surgeon Roger P. Ames, and Jesse W. Lazear, U. S. Army.

Those studied in Havana were patients in Las Animas Hospital, and had been diagnosed as such by a board of distinguished practitioners of that city.

An examination of Table I will show the character of the attacks. The milder cases studied, few in number, were attended by jaundice and albumin in the urine.

I.

Bacillus Icteroides (Sanarelli) as the Cause of Yellow Fever.—The claim of Sanarelli for the specific character of *B. icteroides* as the causative agent in yellow fever, has excited such wide attention, since the publication

of his observations, that it seemed to us of the first importance to give our undivided attention to the isolation of this microorganism from the blood of those sick with yellow fever, and from the blood and organs of yellow-fever cadavers.

A. *Cultures taken from the Blood during Life*.—The method followed was that ordinarily used in an attempt to isolate bacteria from the circulating blood; viz., from a vein at the bend of the elbow, a sufficient quantity of blood was taken with an hypodermic syringe, made sterile by boiling, and after careful cleansing of the skin with soap and water, followed by equal parts of absolute alcohol and ether, and 1:2000 bichlorid solution.

Exceptionally the blood withdrawn was plated on agar, but, as a rule, it was immediately transferred to sterile bouillon tubes (10 ccm.) in quantities of 0.5 ccm. to each of several tubes. These were then incubated at from 35° to 37° C. for a period of one week. They were examined daily and if growth was observed, plates in agar or gelatin, or both, were made and the colonies carefully studied by transference to ordinary laboratory media.

Eighteen cases have thus been carefully studied; of these 11 were designated as "severe" cases of yellow fever with 4 deaths; three as "well-marked" cases with no deaths, and 4 as "mild" cases with no deaths.

From these 18 cases, blood-cultures were made, as shown in the following table:

TABLE I.
BLOOD-CULTURES DURING LIFE.

DAY OF DISEASE.	CHARACTER OF ATTACK.	NO. OF CULTURES.	NO. OF BOUILLON TUBES INOCULATED.	BACILLUS ICTEROIDES.
1st	Severe.	3	4 (3 agar plates.)	Negative.
"	Well marked.	1	4	"
"	Mild.	1	3	"
2d	Severe.	6	18	"
"	Well-marked.	1	2	"
"	Mild.	1	3 (6 agar plates.)	"
3d	Severe.	7	18 (6 agar plates.)	"
"	Mild.	2	4	"
4th	Severe.	5	14	"
"	Well-marked.	2	6	"
"	Mild.	1	1	"
5th	Severe.	5	12 (3 agar plates.)	"
"	Well-marked.	1	3	"
"	Mild.	1	1	"
6th	Severe.	4	6	"
"	Well-marked.	1	2	"
7th	Severe.	1	2	"
"	Well-marked.	1	2	"
8th	Severe.	2	6	"
"	Well marked.	1	2	"
9th	Severe.	1	2	"

Number of cultures 48
Number of bouillon tubes inoculated 115
Number of agar plates 18

It will be seen that of 48 separate cultures made from the blood on various days of the disease and representing 115 bouillon inoculations and 18 agar plates,

¹ Read at the Meeting of the American Public Health Association, held in Indianapolis, Ind., October 22-26, 1900.

² Died of yellow fever at Camp Columbia, Cuba, September 25, 1900.

we failed to find *Bacillus icteroides* in any of our tubes or plates.

The results of cultures taken in 18³ cases of unmistakable yellow fever, on various days of the disease, and in some cases on every day from the onset to death or recovery, would seem to exclude the presence of *Bacillus icteroides* in the blood of these cases during life.

It will, therefore, be seen that while Wasdin and Geddings, taking cultures from the ear-lobe (Report on the Cause of Yellow Fever, 1899), record that "in the blood of yellow fever cases extracted during life *Bacillus icteroides* has been found in 13 of the 14 cases, with 1 negative," (92.85%), we, by withdrawing the blood from the veins of 19 patients, have to record 100% of failures.

We have already stated that we will reserve for a later report a description of the bacteria isolated from the blood in these cases. We now remark that but few organisms were obtained and that, as a rule, our blood-cultures gave no growth whatever.

B. Cultures from Yellow Fever Cadavers.—We tried to obtain autopsies very soon after death, and sometimes succeeded in doing so. Tubes containing about 10 ccm. of flesh-peptone bouillon were generally used for the first inoculation direct from the blood and organs. As soon as the laboratory was reached, agar plates were made from these inoculated bouillon tubes, the former as well as the latter being then incubated at from 35° to 37° C. In nearly every case gelatin plates were also made from the recently inoculated bouillon tubes and kept at a temperature of 19° to 20° C.

If colonies were found in the agar or gelatin plates, on the following days, the corresponding bouillon tubes were also plated on agar and gelatin. The bacteria thus found in our plates were carefully isolated and studied upon the usual nutritive media, so as to enable us to identify them, if possible. We will here content ourselves with giving the results as regards the presence of *B. icteroides* only.

much surprised at the absence of this bacillus in cultures from cadavers sectioned in or near Havana, during the present year. In 2 of the 11 cases we had reason to believe that from the appearance of colonies seen in gelatin plates, we would be able to isolate *B. icteroides*. These colonies, however, when transferred to other media and carefully studied, did not prove to be this bacillus. We wonder whether other observers have occasionally relied upon the appearance of colonies in gelatin plates, without further study. We only mention this as a possible explanation of the large percentage of positive results recorded by some observers.

Portier, of New Orleans, La., only succeeded, however, in isolating *B. icteroides* in 3 out of 51 autopsies (*Journal of American Medical Association*, April 16, 1898), and, if we remember correctly, Veazie, of New Orleans, has recently reported that during the epidemic of 1899 in New Orleans a pure culture of *B. icteroides* was not isolated in any case of yellow fever.

Lutz (*Revista d'Igiene e Sanita Publica*, xi, No. 13, July, 1900, pp. 474-475) says as the result of his extensive observations on yellow fever that *Bacillus icteroides* cannot be found by present laboratory methods in more than half of the cases of yellow fever, and that when present, the colonies are few in number. It is possible that our future autopsies may give more favorable results as regards *B. icteroides*.

II.

The Mosquito as the Host of the Parasite of Yellow Fever.—Having failed to isolate *B. icteroides*, either from the blood during life, or from the blood and organs of cadavers, two courses of procedure in our further investigations appeared to be deserving of attention, viz., first, a careful study of the intestinal flora in yellow fever in comparison with the bacteria that we might isolate from the intestinal canal of healthy individuals, in this vicinity, or of those sick with other diseases; or, secondly, to give our attention to the theory of the propagation of yellow fever by means of the mosquito—a

TABLE II.

NO. OF CASE.	DAY OF DISEASE.	TIME OF AUTOPSY.	SOURCE OF CULTURE.	B. ICTEROIDES.
1	Seventh.	2 hours after death.	Blood, liver, spleen, kidney.	Negative.
2	Sixth.	13 hours after death.	Blood, liver, spleen, kidney.	"
3	Fourth.	8 hours after death.	Blood, liver, spleen, kidney.	"
4	Eighth.	2 hours after death.	Abdominal, cavity, blood, liver, spleen, kidney, bile, duodenum.	"
5	Fourth.	4 hours after death.	Blood, liver, spleen, kidney, bile, duodenum.	"
6	Sixth.	6½ hours after death.	Abdominal cavity, blood, pericardial fluid, lung, spleen, kidney, liver, bile, duodenum.	"
7	Sixth.	50 minutes after death.	Blood, lung, liver, spleen, kidney, bile, jejunum.	"
8	Sixth.	½ hour after death.	Blood, lung, liver, spleen, kidney, urine, small intestine.	"
9	Fourth.	2 hours after death.	Liver, spleen, small intestine.	"
10	Fifth.	7 hours after death.	Liver, kidney, spleen, small intestine.	"
11	Third.	½ hour after death.	Liver, kidney, spleen.	"

Our failure to isolate *B. icteroides* in these 11 autopsies of yellow-fever patients was a result which we had not anticipated. One of us (Agramonte), who, at Santiago, Cuba, during the epidemic of 1898, succeeded in finding *B. icteroides* in 33% of his autopsies, has been

³ Cultures from the blood during life had been taken by Dr. Lazear in 3 other cases of yellow fever, but, owing to the death of our colleague, the necessary data as to the day of the disease on which cultures had been taken cannot be ascertained. These cultures were negative as regards the finding of Sanarelli's bacillus.

theory first advanced and ingeniously discussed by Dr. Carlos J. Finlay, of Havana, in 1881 (*Anales de la Real Academia*, vol. xviii, 1881, pp. 147-169).

We were influenced to take up the second line of investigation by reason of the well-known facts connected with the epidemiology of this disease, and, of course, by the brilliant work of Ross and the Italian observers, in connection with the theory of the propagation of malaria by the mosquito.

We were also very much impressed by the valuable observations made at Orwood and Taylor, Miss., during the year 1898, by Surgeon Henry R. Carter, U. S. Marine-Hospital Service (*A note on the interval between infecting and secondary cases of yellow fever, etc.*, Reprint from *New Orleans Medical Journal*, May, 1890). We do not believe that sufficient importance has been accorded these painstaking and valuable data. We observe that the members of the yellow fever commission of the Liverpool School of Tropical Medicine, Drs. Durham and Meyers, to whom we had the pleasure of submitting Carter's observations, have been equally impressed by their importance (*British Medical Journal*, September 8, 1900, pp. 656-7).

to us to the presence of an intermediate host, such as the mosquito, which having taken the parasite into its stomach, soon after the entrance of the patient into the noninfected house, was able after a certain interval to reconvey the infecting agent to other individuals, thereby converting a noninfected house into an "infected" house. This interval would appear to be from 9 to 16 days (allowing for the period of incubation), which agrees fairly closely with the time required for the passage of the malarial parasite from the stomach of the mosquito to its salivary glands.

In view of the foregoing observations we concluded to test the theory of Finlay on human beings. According to this author's observation of numerous inocu-

TABLE III.
INOCULATION OF NONIMMUNE INDIVIDUALS THROUGH THE BITE OF MOSQUITOS (CULEX FASCIATUS).

NO. OF CASE.	AGE.	NATIVITY.	DATE OF INOCULATION.	CHARACTER OF ATTACK AND NUMBER OF PATIENTS BITTEN.	DAY OF DISEASE.	TIME BETWEEN INFECTION OF MOSQUITO AND INOCULATION.	NO. OF MOSQUITOS.	RESULT.	REMARKS.
1	. .	United States.	August 11.	Mild, 1.	Seventh.	5 days.	One.	Negative.	
2	. .	United States.	" 11.	Very mild, 1.	Fifth.	5 "	One.	"	
3	24	United States.	" 12.	" " 1.	Fifth.	6 "	One.	"	
4	20	United States.	" 12.	" " 1.	Fifth.	6 "	One.	"	
5	24	United States.	" 14.	" " 1.	Fifth.	8 "	One.	"	
6	34	United States.	" 16.	" " 1.	Fifth.	10 "	One.	"	
7	22	United States.	" 18.	Severe, 1.	Second.	3 "	One.	"	
8	20	United States.	" 19.	Very mild, 1.	Fifth.	13 "	Two.	"	
				Severe, 1.	First.	3 "			
9	28	United States.	August 25.	Fatal, 1.	Second.	6 "	One.	Negative.	
				Mild, 1.	First.	4 "			
				Severe, 1.	Second.	2 "			
10	46	England.	August 27.	Severe, 1.	Second.	12 "	One.	Positive.	Severe attack of yellow fever.
				Mild, 1.	First.	6 "			
				Severe, 1.	Second.	4 "			
				Mild, 1.	Second.	2 "	One.	Positive.	Well-marked attack of yellow fever.
11	24	United States.	August 31.	Fatal, 1.	Second.	12 "			
				Mild, 2.	Second.	4 and 10 "			
				Severe, 2.	Second and ninth.	2 and 8 "	One.	Positive.	
				Severe, 3.	First, second and second.	2, 8 and 16 "			
				Mild, 2.	First and second.	6 and 10 "	One.	Positive.	
				Fatal, 1.	Second.	12 "			
				Severe, 1.	First.	2 "	One.	Positive.	
				Mild, 3.	First, second and second.	4, 6 and 10 "			
				Severe, 3.	All on first.	2, 4 and 8 "	One.	Positive.	
				Mild, 1.	Second.	6 "			

The circumstances under which Carter worked were favorable for recording with considerable accuracy the interval between the time of arrival of infecting cases in isolated farmhouses and the occurrence of secondary cases in these houses. According to Carter, "the period from the first (infecting) case to the first group of cases infected, at these houses, is generally from two to three weeks."

The houses having now become infected, susceptible individuals thereafter visiting the houses for a few hours, fall sick with the disease in the usual period of incubation, 1 to 7 days.

Other observations made by us since our arrival confirmed Carter's conclusions, thus pointing as it seemed

lations in 90 individuals, the applications of one or two contaminated mosquitos is not dangerous, but followed in about 18%, by an attack of what he considers to be very benign yellow fever at most.

We here desire to express our sincere thanks to Dr. Finlay, who accorded us a most courteous interview and has gladly placed at our disposal his several publications relating to yellow fever, during the past 19 years; and also for ova of the variety of mosquito with which he had made his several inoculations. An important observation to be here recorded is that, according to Finlay's statement, 30 days prior to our visit, these ova had been deposited by a female just at the edge of the water in a small basin, whose contents had

been allowed to slightly evaporate; so that these ova were at the time of our visit entirely above contact with the water. Notwithstanding this long interval after deposition, they were promptly converted into the larval stage, after a short period, by raising the level of the water in the basin.

With the mosquitos thus obtained we have been able to conduct our experiments. Specimens of this mosquito forwarded to Mr. L. A. Howard, Entomologist, Department of Agriculture, Washington, D. C., were kindly identified as *Culex fasciatus*, Fabr.

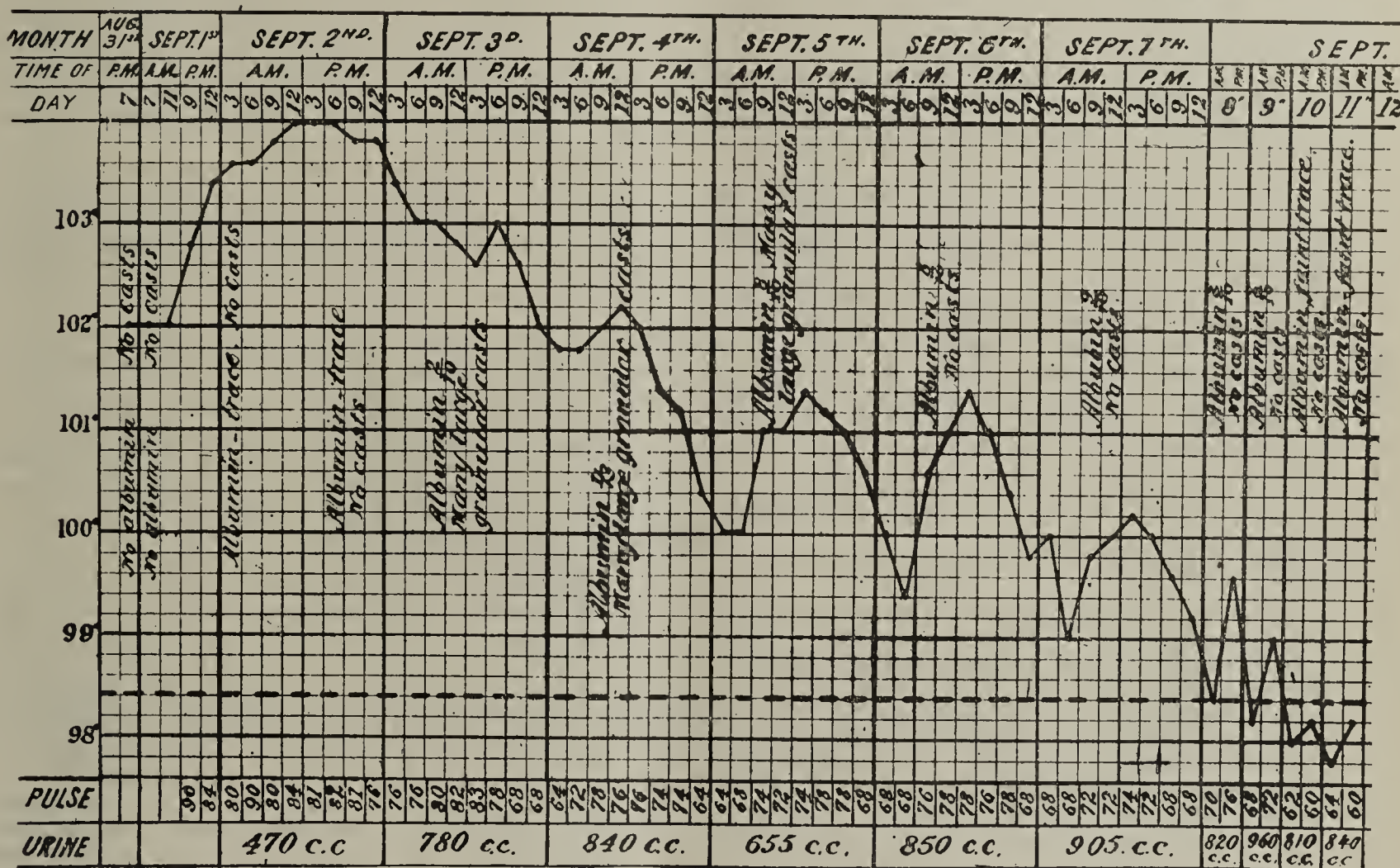
In this preliminary note we have not space to refer, at length, to the various interesting and valuable contributions made by Finlay to the mosquito theory for the propagation of yellow fever. In addition to the paper already quoted, his most valuable contributions

by the author of this theory, we believe that he has not, as yet, succeeded in reproducing a well-marked attack of yellow fever, within the usual period of incubation of the disease, attended by albumin and jaundice, and in which all other sources of infection could be excluded.

The experiments made by us on 11 nonimmune individuals are embraced in the preceding table (III), which should be carefully studied. The mosquito used in all cases was *Culex fasciatus* Fabr.

It will be seen that we record 9 negative and 2 positive results. It is, we think, important to observe that of the 9 failures to infect, the time elapsing between the biting of the mosquito and the inoculation of the healthy subject varied in 7 cases from 2 to 8 days (Nos. 1, 2, 3, 5, 7, and 9) and in the remaining 2 from 10 to 13 days (Nos. 6 and 9).

Chart I. Yellow fever following, within the usual period of incubation, the bite of an infected mosquito (*Culex fasciatus*).



to this important theory are to be found in the articles designated as follows:

Estadística de las Inoculaciones con mosquitos contaminados, etc., Reprint, Havana, 1891; *Fiebre Amarilla*, *Estudio Clínico Patológico y Etiológico*, Reprint, Havana, 1895; and *Yellow Fever Immunity—Modes of Propagation—Mosquito Theory*, 8th Congress of International Hygiene and Demography, Budapest, 1894.

His present views on this subject may be stated in his own language:

"First, reproduction of the disease, in a mild form, within 5 to 25 days after having applied contaminated mosquitos to susceptible subjects. Second, partial or complete immunity against yellow fever obtained even when no pathogenic manifestation had followed these inoculations." (*Medical Record*, Vol. 55, No. 21, May 27, 1899.)

Without reviewing the cases regarded as mild forms

Five individuals out of the nine who failed to show any result (Nos. 2, 3, 4, 5 and 6) were inoculated by mosquitos that had bitten very mild cases of yellow fever on the fifth day of the disease, and one individual by a mosquito that had bitten a mild case of yellow fever on the seventh day of the disease. (This latter patient was discharged from the hospital three days later.) To this fact may possibly be attributed the negative results. Of the remaining three negative cases (Nos. 7, 8 and 9) and which had been inoculated by mosquitos that had bitten severe cases of the disease, the interval between the bite and the inoculation varied from 2 to 6 days.

In the two cases (Nos. 6 and 8) where the interval was respectively 10 and 13 days, the inoculations had been made with mosquitos that had bitten very mild cases of yellow fever on the fifth day of the attack. No.

8 was also bitten by a mosquito which had been infected by a severe case of yellow fever 3 days before.

We refrain from commenting further at this time upon the 9 negative cases, preferring to record the results obtained rather than to indulge in speculation.

Of the 2 cases which we have recorded as positive in Table III, we now propose to speak at greater length.

CASE 10.—Dr. James Carroll, Acting Assistant Surgeon U. S. Army, a member of this board, was bitten at 2 P.M. August 27, 1900, by *Culex fasciatus*. This particular mosquito has bitten a severe case of yellow fever on the second day of the disease 12 days before; a mild case of yellow fever, on the first day of the attack, 6 days preceding; a severe case of yellow fever, on the second day of the attack 4 days before and a mild case of yellow fever, on the second day of the attack 2 days before inoculation.

Dr. Carroll remained well until the afternoon of the 29th, when he states that he felt tired and for this reason, when on a visit to Las Animas Hospital the same afternoon (29th) some time between 4 and 6 P.M., after visiting a few patients, he left the wards and waited outside on the porch, while his companions remained in the wards.

August 30. During the afternoon, although not feeling well, Dr. Carroll visited La Playa, about one and a half miles from Columbia Barracks, and took a sea-bath.

August 31. A.M. Dr. Carroll realized that he was sick and that he had fever, although he refrained from taking his temperature, but did visit the laboratory, distant about 140 yards, for the purpose of examining his blood for the malarial parasite. The examination was negative. During the afternoon he was compelled to take to his bed. At 7 P.M. temperature was 102° F. He had no headache or backache; only a sense of great lassitude. His eyes were injected and his face suffused.

September 1. At 7 A.M. his temperature was 102°. Blood was again carefully examined by Dr. Lazear with negative result. At 11 A.M. temperature was 102°.

The case having been diagnosed as one of yellow-fever, Dr. Carroll was at noon removed to the yellow fever wards. At 9 P.M. temperature was 102.8°, pulse 90; at 12 o'clock midnight temperature 103.4°, pulse 84.

On September 2, at 3 A.M., temperature was 103.6°, pulse 80. A trace of albumin was not found in the urine. The subsequent history of the case was one of severe yellow fever. Jaundice appeared on September 3.

The accompanying chart, No. 1, contains all of the necessary data.

The question of diagnosis having been clearly and easily established, it now becomes important to follow Dr. Carroll's movements for a period of ten days preceding the mosquito inoculation, and during the period elapsing from the bite of the insect until the commencement of the attack.

On August 21, 22, and 23, Dr. Carroll was at Columbia Barracks, outside of the epidemic zone. On August 24th he visited the autopsy-room of Military Hospital, No. 1, which is situated on Principe hill overlooking the city of Havana. He was present in the autopsy-room while an autopsy was made by Dr. Agramonte on a case of pernicious malarial fever. Dr. Carroll only took cultures from the blood and organs as the section proceeded. He was there about half an hour, and then returned to Columbia Barracks. Subsequent microscopic study of sections of the liver and spleen showed that the case autopsied on the 29th was really a case of pernicious malarial fever.

It should be stated that although cases of yellow fever are not admitted to Military Hospital No. 1, an English sea-captain had been admitted to its wards a few days before, whose case developed into one of yellow fever with fatal results, and autopsy had been held upon the body by Dr. Agramonte in this death-room on the day preceeding Dr. Carroll's visit to it. According to Dr. Carroll, the room was by no means in a cleanly condition. As Dr. Carroll's visit to this room was made on August 24, and as he began to complain on August 29, about the average period of incubation of yellow fever, there is a possible chance for infection in this way. We must call attention, however, to the fact that Dr. Agramonte, whenever he performs an autopsy in this room, is always attended by a young soldier of the Hospital Corps, U. S. Army, who is detailed for that purpose, and whose

duty it is to assist and afterwards to tend to the cleaning of the autopsy table. This soldier, a nonimmune American, was present when Dr. Carroll was there, and remained afterward to attend to his duties. He has not contracted yellow fever by his duties in this room from day to day. Our own experience would seem to accord with others, viz., that attendance upon autopsies and the handling of portions of organs of yellow-fever cases removed to the laboratory is unattended with danger. Certainly the three nonimmune members of this board, up to the time of these mosquito inoculations had, during the past three months, come in close contact with the dead bodies and organs of yellow-fever cases, freely handling and examining these organs, including the small intestine, even kept at thermostat temperature for 24 hours, without contracting the disease. We have, of course, never neglected to cleanse our hands with disinfectants.

Dr. Carroll, upon his visit to the before-mentioned dead-room, only used the platinum loop for taking cultures, and did not come in contact with the autopsy table.

The only other opportunity for infection in his case would appear to have been during his visit to Las Animas Hospital, situated in the suburbs of Havana, as yellow-fever patients are admitted in large numbers. We have already pointed out that Dr. Carroll was complaining of lassitude at the hour of his visit, which was about 50 hours after his inoculation with the contaminated mosquito. We have also called attention to the fact that he remained, for the greater part of his visit, outside of the hospital, on the piazza. This would appear to cast doubt upon his visit to Las Animas as the source of his infection.

We do not wish to be understood as unnecessarily seeking to lay too much emphasis upon the exclusion in this case of other sources of infection than the mosquito, as we fully appreciate that Dr. Carroll had been on two occasions within the epidemic zone during the week preceding his attack of yellow fever. His movements on these occasions we have already given.

We will again refer to Dr. Carroll's case, after we have given the history of Case No. 11, which we have designated as our second positive result.

CASE 11.—X. Y., aged 24, white, American, a resident of the military reservation of Columbia barracks, was bitten during the forenoon of August 31, 1900, by the same mosquito that had bitten Case 10 (Dr. Carroll) four days before, and which in the meantime had bitten a mild case of yellow fever (first day) two days before being applied to X. Y.

X. Y. was also bitten by a second mosquito that had been applied to a fatal case of yellow fever (second day) 12 days before; and to two mild cases (second day) 4 and 10 days previously; also, by a third mosquito that had bitten a fatal case of yellow fever (second day) 12 days before; a severe case first day) 2 days before, and three mild cases (first, second, and second day) 4, 6, and 10 days before; finally by a fourth mosquito that had bitten three severe cases of yellow fever (all on first day) 2, 4, and 8 days previously, and one mild case (second day) 6 days before. (Vide Table III)

It will be seen that X. Y. was bitten by four mosquitos, two of which had bitten severe (fatal) cases of yellow fever 12 days previously; one of which had bitten a severe case (second day) 16 days before and one which had bitten a severe case 8 days before.

X. Y. began to experience a sense of dizziness and disinclination to work. This was just five days from the time of the mosquito inoculation; 24 hours later he was still dizzy and light-headed in attempting to move about. During the afternoon (sixth day after inoculation), he had chilly sensations, followed by fever and restlessness during the night.

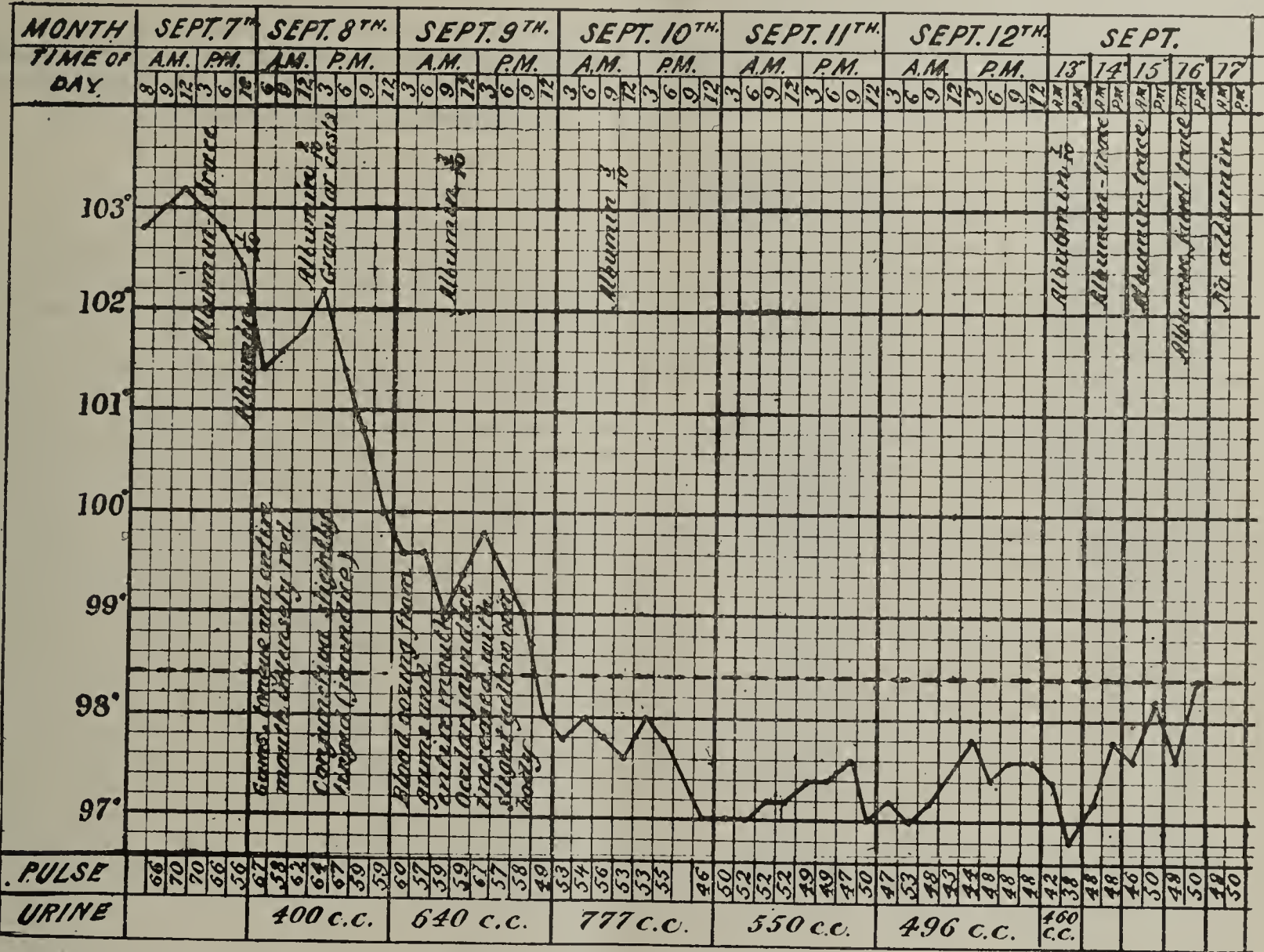
On the following day (seventh day after inoculation) 8 A.M., temperature was 102.8° F., his eyes were slightly injected, and his face suffused. The patient was removed to the yellow fever wards; at 9 A.M., temperature was 103° F., pulse 66. A trace of albumin was found in the urine during the afternoon (third day of the attack). This increased during the following days. The conjunctivæ were slightly jaundiced on the fourth day of the disease, which was more distinct and could be plainly seen on the anterior aspect of the chest on the fifth and following days. Bleeding from the gums was noticed on the third and subsequent days after admission. Repeated examinations of the blood failed to show any malarial parasites.

The course of the fever, the appearance of albumin in the urine, with jaundice and hemorrhage from the gums, together with the slow pulse, all pointed distinctly to the diagnosis of yellow fever. His attending physician, Dr. Roger P. Ames, U. S. A., an expert in the diagnosis and treatment of this disease, did not hesitate to diagnose X. Y.'s attack as one of "well pronounced yellow fever." Dr. Ames was not cognizant of the method of inoculation in this case. (Vide Chart II).

from May, 1900, the average monthly population of this station, including civilian employes, has been 1,400, nearly all of whom are young nonimmunes

There have occurred amongst this nonimmune population from May 1 to October 13, 1900, 16 cases of yellow fever, all of which have been easily and readily traced to a visit to within the boundaries of the epidemic zone, except cases 10 and 11 of Table III., and one other case of which we shall presently speak. These cases have been distributed as follows:

Chart II. Yellow fever following, within the usual period of incubation, the bite of an infected mosquito (*Culex fasciatus*).



The diagnosis, therefore, not being in doubt, we must follow this patient's movement's during the 10 days preceding the bite of the mosquitos and from this time until 5 days later, when the attack began. It so happens that we can follow X. Y.'s movements for a much longer period. Fifty-seven days prior to his inoculation, he spent a day and night in the City of Havana; 16 days before the inoculation, he rode on horseback with 6 other nonimmunes a distance of about 1½ miles towards the seashore and returned to his dwelling, without in the meantime dismounting from his horse. From this time until his complete convalescence was established, he had remained within the immediate vicinity of his home. So that it may be positively stated that X. Y. had not absented himself from the Military Reservation of Columbia Barracks during a period of 57 days prior to his inoculation (with the exception above stated) nor between the date of his inoculation and the establishment of convalescence.

Let us now inquire whether the military reservation of Columbia Barracks is outside of the epidemic zone of yellow fever. To this we answer that since the commencement of the present epidemic of yellow fever in Havana, dating

May 24.....	1	July 29th	1
June 10th....	1	August 11th.....	1
“ 17th.....	1	“ 12th	1
“ 19th.....	2	“ 16th	1
“ 21st.....	1	“ 31st	1
“ 29th.....	1	September 7.....	1
July 9th	1	“ 19.....	1
“ 26th.....	1		
Total,			16 cases.

Ten of these cases have occurred amongst an average monthly military population of 1,295 men and six cases in an average civilian population of 105. Whenever these cases have occurred, as soon as the patient has been removed to hospital, most careful measures of disinfection have been immediately carried out by a trained sanitary squad, under the personal supervision of a medical officer. These measures have consisted of destruction by fire of mattresses, the disinfection of bedding and clothing with 1 to 500 bichlorid solution, and the application of the same solution freely to the ceiling, walls, and floors, by means of a force pump.

We repeat that no case has ever been connected with a

preceding case, but that the source of infection has been readily shown to have occurred during the individual's visit to Havana, 6 miles distant, or to some other nearer Cuban settlement.

We now invite attention to the fact that from August 17 to October 13, a period of 57 days, *only 3 cases* of yellow fever have occurred amongst this population of 1,400 nonimmune Americans, and we consider it very important to note that *2 of these had been bitten within 5 days of the commencement of their attacks, by contaminated mosquitos.*

Taken in connection with Case 11, in which we have been unable to find any other source of infection than the bite of an infected mosquito, five days preceding the attack, the case of Dr. Carroll (Case 10, Table III) becomes strongly confirmatory of the same origin.

We will now briefly give the history of the third case of yellow fever that has occurred at Columbia Barracks during the period August 17 to October 13, 1900.

In the light of Cases 10 and 11, we consider this case of sufficient importance to be here included, especially as it is one that might be possibly designated as a case of accidental infection by a mosquito.

CASE 3.—Dr. Jesse W. Lazear, Acting Assistant-Surgeon, U. S. Army, a member of this board, was bitten on August 16, 1900 (Case 3, Table III) by a mosquito (*Culex fasciatus*) which 10 days previously had been contaminated by biting a very mild case of yellow-fever (fifth day). No appreciable disturbance of health followed this inoculation.

On September 13 1900 (forenoon), Dr. Lazear, while on a visit to Las Animas Hospital, and while collecting blood from yellow-fever patients for study, was bitten by a *Culex* mosquito (variety undetermined). As Dr. Lazear had been previously bitten by a contaminated insect without after-effects, he deliberately allowed this particular mosquito, which had settled on the back of his hand, to remain until it had satisfied its hunger.

On the evening of September 18, 5 days after the bite, Dr. Lazear complained of feeling "out of sorts," and had a chill at 8 P.M.

On September 19, 12 o'clock noon, his temperature was 102.4°, pulse 112; his eyes were injected and his face suffused; at 3 P.M. temperature was 103.4°, pulse 104; 6 P.M., temperature 103.8° and pulse 106; albumin appeared in the urine. Jaundice appeared on the third day. The subsequent history of this case was one of progressive and fatal yellow fever, the death of our much-lamented colleague having occurred on the evening of September 25, 1900.

As Dr. Lazear was bitten by a mosquito while present in the wards of a yellow-fever hospital, one must, at least, admit the possibility of this insect's contamination by a previous bite of a yellow-fever patient. This case of accidental infection therefore cannot fail to be of interest taken in connection with Cases 10 and 11.

For ourselves, we have been profoundly impressed with the mode of infection and with the results that followed the bite of the mosquito in these three cases. Our results would appear to throw new light on Carter's observations in Mississippi, as to the period required between the introduction of the first (infecting) case and the occurrence of secondary cases of yellow fever.

Since we here, for the first time, record a case in which a typical attack of yellow fever has followed the bite of an infected mosquito, within the usual period of incubation of the disease, and in which other sources of infection can be excluded, we feel confident that the publication of these observations must excite renewed interest in the mosquito-theory of the propagation of yellow fever, as first proposed by Finlay.

From the first part of our study of yellow fever, we draw the following conclusions:

1. The blood taken during life from the general ven-

ous circulation, on various days of the disease, in 18 cases of yellow fever, successively studied, has given negative results as regards the presence of *B. icteroides*.

2. Cultures taken from the blood and organs of 11 yellow-fever cadavers have also proved negative as regards the presence of this bacillus.

3. *Bacillus icteroides* (Sanarelli) stands in no causative relation to yellow fever, but, when present, should be considered as a secondary invader in this disease.

From the second part of our study of yellow fever, we draw the following conclusion:

The mosquito serves as the intermediate host for the parasite of yellow fever, and it is highly probable that the disease is only propagated through the bite of this insect.

RESTITUTION OF THE CONTINUITY OF THE TIBIA BY TRANSPLANTATION OF THE PATELLA INTO AN EXTENSIVE OSTEOMYELITIC DEFECT.

By N. SENN, M.D., PH.D., LL.D.,
of Chicago.

Professor of Surgery, Rush Medical College.

THE restoration of the continuity of any of the large long bones of the body after extensive permanent traumatic or pathologic defects always presents great and sometimes insurmountable difficulties. The absence of osteogenetic tissue resulting from injury or disease explains very satisfactorily the defective callus formation and its inevitable result—nonunion. The two tissue elements which take the most important part in the production of callus are the osteoblasts of the periosteum and the myeloblasts of the medullary tissue. Delayed union and nonunion are therefore most liable to occur in cases in which the periosteum and myeloid tissue have been extensively destroyed by injury or disease, and in persons in whom the bone-producing cells which they contain are defective in number, or lack the necessary degree of reproductive power. The vegetative capacity of the tissues is not infrequently taxed to its utmost in the repair of simple fractures and limited osteomyelitic defects, and in extensive traumatic and pathologic defects it often falls short in restoring the continuity of the bone. It is in such instances that implantation of bone from the lower animals has been attempted, and for which the most complicated autoplasmic operations have been devised and practised. The former procedure has been studied experimentally on a very large scale, the result of which, as well as a large clinical material which has accumulated, combine to demonstrate its utter uselessness in effecting bone-repair in man. Such operations have invariably proved a failure. Experimental research has established the fact that in the lower animals the transplantation of bone from one species to another is uniformly followed by a similar negative result. The transplantation of small pieces of bone from one human being to another has been performed repeatedly with success, but such opportunities are seldom presented, so that the surgeon has usually to rely on autotransplantation in furnishing the material for the repair of large bone-defects. In limited defects of the long bones the space between the fragments can be filled in with chips of bone removed with chisel and hammer from the surface of the bone-ends which are implanted into the gutter between the vivified fragments. I have performed this operation in a number of cases with signal success. In the technic of the operation it is

important to preserve the periosteal envelope with the most pedantic care, and this is utilized as a covering for the implanted bone-grafts over which it is sutured with buried absorbable suture-material. If the wound remains aseptic, every one of the grafts will retain its vitality and take an active part in the subsequent process of repair. In the treatment of extensive defects it becomes necessary to transplant larger pieces of bone with vascular connections; hence the material must be taken from a place sufficiently near the seat of implantation to insure an adequate blood-supply. The case reported here serves to illustrate in a most convincing manner the nonfeasibility of resorting to implantation of bone from the lower animals in the repair of bone-defects in the human being, as well as the value of autotransplantation of large pieces of bone with preservation of their vascular connections. It is a case in which undoubtedly the patella was utilized, for the first time, in the restoration of a large osteomyelitic defect of the tibia.

Restitution of the Continuity of the Tibia by Implantation of the Patella into an Extensive Osteomyelitic Defect.—The patient, a Chicago newsboy, 11 years of age, free from any hereditary tendencies to disease, when in his usual health and without any premonitory symptoms, was taken suddenly ill July 20, 1893. The violent febrile disturbance which characterized the disease for the first few days was diagnosed and treated as typhoid fever, as the local affection was entirely overshadowed by the general symptoms. In a few days a rapidly increasing swelling made its appearance which involved the upper part of the left leg and the adjacent knee-joint. Ten days from the beginning of the attack a large abscess formed below the knee-joint and over the inner aspect of the tibia, which was incised and drained by the family physician. The evacuation of a large quantity of thin, sanious pus had little or no influence in abating the septic condition, so that on July 30 the patient was sent to the Presbyterian Hospital with the expectation that an amputation of the thigh would be performed in an attempt to ward off a speedy fatal termination from sepsis. When the patient came under my care at that time as a clinical patient he presented all the symptoms of progressive sepsis. The tongue was brown and dry, pulse 120 to 140, and the temperature ranged from 102° to 104° F. A low muttering delirium, profuse sweating, and a marked abdominal tympanites completed the picture of profound septic intoxication. The swelling now involved the entire leg; the skin over the upper part of the leg over the tibia was red and very edematous, the knee-joint enormously distended, and edema extended over the greater portion of the thigh. It was very evident from the general and local symptoms that the patient was the subject of a diffuse osteomyelitis of the tibia complicated by suppurative inflammation of the knee-joint and that limb and life were in imminent danger from septopyemia. I decided to make an attempt to save the limb and guard against fatal sepsis by removal of the shaft of the tibia and free incision and drainage of the knee-joint. The operation was performed in the clinic of Rush Medical College the day after his admission into the hospital, July 31. The patient was anesthetized and an incision was made over the crest of the tibia from the upper to the lower epiphysis. The shaft of the tibia was found denuded of periosteum and beginning epiphyseolysis at both ends. The entire shaft of the bone was removed, the limb immobilized

in a suspension splint, and the large wound was freely drained and subjected to frequent antiseptic irrigations without disturbing the fixation-dressing. Thorough drainage of the knee-joint was established by the insertion of two large tubular drains, one transversely, the other in an anteroposterior direction. The operation was followed promptly by a decided improvement in the general condition of the patient. Although this energetic treatment proved successful in limiting the progressive infection, suppuration continued profusely for weeks, and the temperature at irregular intervals occasionally reached 102° F. During this time no appreciable indications of repair were discernible. In March of the following year a subacute osteomyelitis made its appearance very insidiously in the right humerus near the upper epiphysis which terminated in abscess-formation. The abscess was incised and drained and later a small sequestrum was removed. After this



FIG. 1.—Osteomyelitic defect of the tibia and external incision for transplantation of the patella.



FIG. 2.—Lower fragment impacted into the upper border of the patella. Wound sutured.

the patient's general health commenced to improve very slowly and suppuration of the operative wound over the osteomyelitic defect gradually diminished, but callus formation failed to take place. Owing to the absence of the shaft of the tibia, the upper articular end of the fibula gradually became displaced, at least an inch, in an upward direction. During the year 1895 limited bone-production from the epiphyseal extremities became noticeable, and as suppuration had become reduced to a minimum, and the general condition of the patient seemed to warrant operative intervention for the purpose of restoring the continuity of the tibia, implantation of the tibia of a young rabbit was resorted to on two occasions with an interval of about six months. Both operations were performed in a similar manner under the influence of a general anesthetic. In the first operation, after clearing the frag-

ments on each side, the space between them was found to measure at least five inches. The fragments were tapered, the ends not larger than a goosequill. (Fig. 1.) The articular surfaces of the tibia of the rabbit were removed and the bone implanted between the fragments. Both operations proved a complete failure. After the first operation the implanted bone was eliminated spontaneously after three weeks. The wound



FIG. 3.—Impaction of upper fragment with the upper patellar fragment.

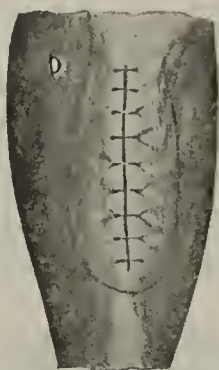


FIG. 4.—Suturing of external wound.

after the second operation healed, with the exception of a small fistula which was enlarged ten weeks later, and the implanted bone, which had become partly absorbed, was removed. The knee-joint in the meantime had become ankylosed, and I decided to utilize the patella, which had become functionally useless, in restoring the continuity of the bone.

After clearing out the infected granulations between



FIG. 5.

the fragments with a sharp spoon, and making thorough disinfection of the wound, the gutter for the reception of the patella was deepened by a vertical incision. The patella and its ligament with the overlying skin were included in a horseshoe-shaped incision with the concavity directed downward, and the flap including the patella was transplanted into the gap between the two fragments in such a manner that the upper border of the patella was brought in contact with the lower frag-

ment (Fig. 2). It was found that the patella was not long enough to span the gap, hence the upper border was perforated with a drill and the lower fragment was impacted into the perforation, which left a space between the lower border of the patella and the upper fragment. (Fig. 3.) The wound healed faultlessly, largely by primary intention. This operation was performed March 31, 1896. The patella united with the lower fragment by bony union. A few months later the patella was exposed by a vertical incision, divided obliquely, and the upper fragment was mobilized sufficiently to be brought in contact with the upper end of the tibia, which was impacted into a perforation made with a drill. (Fig. 4.) The patellar fragments were united by two strong catgut-sutures (Fig. 4), and the external incision sutured without making any provision for drainage. This wound again healed slowly by primary intention, and the transplanted upper patellar fragment became a part of the upper fragment, but



FIG. 6.—Remote result after operation for restoring the continuity of the tibia after extensive osteomyelitic defect of tibia by transplantation of patella.

a pseudoarthrosis formed between the patellar fragments. On May 20, 1898, the pseudoarthrosis was exposed by a vertical incision, the fibrous union was excised, and the vivified surfaces united by silver-wire suture. The wound healed with the exception of a fistulous opening which led down to the silver-wire suture, which was removed in July, 1898, after which the wound closed. A number of weeks later the x-ray demonstrated bony union between the patellar and tibial fragments. (Fig. 5.)

A photograph of the limb taken recently (Fig. 6) shows that it is in a useful position. The patient walks about with the aid of a cane, and there is every prospect that he can soon dispense with this mechanical support. As has been stated before, this case demonstrates most conclusively that we cannot rely on transplantation of bone from any of the lower animals in the restoration of bone-defects, on the one hand, as well as the value of autotransplantation on the other.

THE INTERRELATIONSHIP BETWEEN CARDIOVASCULAR DISEASE AND RENAL DISEASE, WITH PARTICULAR REFERENCE TO THE DIAGNOSIS AND TREATMENT.*

By ALOYSIUS O. J. KELLY, A.M., M.D.,
of Philadelphia.

Instructor in Clinical Medicine, University of Pennsylvania; Assistant Physician to the University Hospital; Visiting Physician to St. Mary's and St. Agnes' Hospitals, etc.

THAT disease of the cardiovascular system and disease of the kidneys are frequently concomitant conditions in the same individual has long been recognized; that the one is sometimes the forerunner of the other and vice versa is also well established. On the other hand, that this mutual interrelationship is sometimes overlooked when it exists; that, in the event of widespread disease, disorder of one organ only—the heart, the kidneys, or the bloodvessels, as the case may be—is detected; and that the primary affection often remains undetermined, are equally certain. These latter facts, as also the circumstance that it has lately been my fortune to have observed a number of cases illustrating the mutual relationship in disease between the kidneys and the cardiovascular system, serve as motive for my remarks.

That the diagnosis of chronic nephritis—I refer particularly to chronic interstitial nephritis or cirrhosis of the kidney—is a matter of extreme importance cannot be gainsaid. Such, however, are the protean and varying manifestations of the disease, and such is the insidiousness of its course, that it may remain for years entirely unsuspected. Indeed, in the majority of cases, the early stage of the affection are altogether overlooked, unless it be discovered accidentally by the routine examination of the urine, as, for instance, for life insurance, or for patients ill with other diseases. When finally after a number of years it does produce symptoms sufficiently obtrusive to attract the attention of the patient or his physician, these are of such a nature that they are likely, for a time at least, to be attributed to disorder of some organ other than the kidneys. Thus, while the patient may present himself with the idea that he is suffering with diabetes on account of the large quantity of urine that he voids, he is just as likely to complain of dimness of vision, the consequence of albuminuric retinitis; of one of the many manifestations of uremia, such as dyspnea or asthma; of gastrointestinal derangements, such as gastric catarrh, gastric ulcer (that is, copious hematemesis, of which I have recently observed an interesting instance), or diarrhea; or of headache, hemicrania, tinnitus aurium, or vertigo; of neurasthenia, pains in the muscles or joints, or eczema; of palpitation of the heart and precordial distress; or the patient, in apparent good health, may suddenly develop a severe and even fatal attack of cardiac failure, pass into uremic coma or convulsions, or he may suffer an apoplexy and die. It is thus apparent that only careful inquiry and patient investigation will enable one to establish the correct diagnosis in some cases. All factors that assist in the consummation of this end, therefore, must be utilized to their fullest extent.

In the first place must be mentioned the careful, systematic, and painstaking examination of the urine, and hardly in the second place, because it is not less import-

ant, the careful investigation of the cardiovascular apparatus. The examination of the urine must include not only the examination for the presence of albumin, which is of the greatest importance, but also the careful determination of the specific gravity, the total daily quantity of urine voided, the total daily excretion of solids, and a microscopic examination. The latter must not be omitted even if the chemic tests fail to reveal the presence of albumin, for casts may be present without albumin, and the latter may be absent from some specimens of the urine and present in others. It may be absent for days, weeks, or months at a time; it may be missed in the early morning urine and present in that voided later in the day; and it may be present only after exercise, emotional or other excitement, or after eating. But of the common concomitants of chronic interstitial nephritis and such as may serve for diagnosis even in the absence of positive indications on the part of the urine, are those referable to the cardiovascular apparatus. It may be said that from the very inception of the disease, the heart and bloodvessels, in response, shall it be allowed, to excessive functional demands, suffer more or less; they reveal more or less deviation from the normal. These alterations are continuously present and may be recognized whether or not the urine reveals the presence of albumin and casts. Their diagnostic importance, therefore, cannot be overestimated; their importance from a prognostic and therapeutic standpoint will appear later.

The lesions of the heart characteristic of chronic interstitial nephritis involve the muscle and find their expression in hypertrophy. With this there is at times associated some interstitial myocarditis with increase of the intermuscular fibrous trabeculae, especially in the neighborhood of small obliterated coronary arterioles. In some instances, especially late in the disease, fatty degeneration of the heart-muscle also may be detected. Valvular lesions are extremely uncommon. Those that are found in association with renal disease are either an antecedent condition (of which mention will be made later), or they are the consequence purely of mechanic causes—the result of dilation of the cavities of the heart. The lesion in these cases is one of relative insufficiency, the valve leaflets, in themselves normal, being incapable of closing the abnormally enlarged orifices. The mechanic consequences of this defect, however, are similar to those produced by valvular lesions due to endocarditis.

The hypertrophy of the heart is predominately a lesion of the left ventricle. In the majority of cases the left ventricle alone is affected; in the remainder of cases both ventricles are involved; the right ventricle is never implicated alone. Simple hypertrophy of the left ventricle is the first event; later this may be associated with some dilation—eccentric hypertrophy. The longer the nephritis continues (the longer the patient lives) the more certain the development of consecutive enlargement of the right ventricle—the increased pressure in the left ventricle gradually leading to the same condition in the right ventricle. Here the hypertrophy is also of the eccentric variety. Predominating dilation of either or both ventricles is an unusual event until toward the termination of the disease; its development is of ominous moment—it usually presages a fatal termination. It has been claimed by Senator and others that the hypertrophy of the primarily contracted kidney or renal cirrhosis is of the simple variety, whereas that associated with the secondarily contracted

* Read by title at a meeting of the Medical Society of the State of Pennsylvania, held at Wilkesbarre, September 18, 19, and 20, 1900.

kidney or chronic parenchymatous nephritis and with the arteriosclerotic kidney is of the eccentric variety—hypertrophy with dilation.

This hypertrophy of the heart is found in association with all forms of nephritis, but not with all cases. In none of the varieties, however, does it so dominate the clinical picture as it does in the primarily contracted kidney or chronic interstitial nephritis. It may be expected from the time of the contraction or atrophy of the kidney, be it of the primary or secondary variety. Thus it arises early in the primary form, but its occurrence may be much delayed in the secondary variety. It may, however, occur in chronic parenchymatous nephritis without contraction or atrophy, and it has been noted also in acute nephritis in a considerable proportion of the cases—particularly in the acute nephritis following infections, such as scarlet and typhoid fevers, etc. In some of the chronic cases in which it would naturally be expected, for some more or less inexplicable reason it is missed. These cases, however, are of relative infrequency. The absence of the hypertrophy may be due to faulty nutrition—the heart being insufficiently well nourished to enable it to hypertrophy; to arteriosclerosis of the coronary vessels; to the vicarious action of one of the emunctories removing those excrementitious products ordinarily eliminated by the healthy kidney; and to the fact that minor grades of hypertrophy are sometimes overlooked at necropsy, although during life there were present sufficient clinical evidence to warrant their diagnosis.

Of the signs of the cardiac disease in chronic nephritis that which will immediately arrest the attention of the observant clinician is displacement of the apex beat. This is one of the most valuable signs of hypertrophy of the left ventricle, as it is of disease of the heart in general. Such is its importance that it may with truth be asserted that in the great majority of cases that heart is not seriously disordered whose apex beat is in the normal situation. The displacement of the apex beat characteristic of hypertrophy of the left ventricle is downward and outward. It may be found in the sixth, seventh, or eighth interspace outside of the nipple line, even as far as the midaxillary line. In addition, unless there be much dilation or degeneration of the heart, the apex beat is heaving in character, and fairly well circumscribed, though it is broader than is normal. However, it does not approach in width that found in hypertrophy of the right ventricle. This dislocation of the apex beat may be encountered early in the course of the disease; and it usually proceeds further downward and outward as the disease of the kidney progresses.

Further evidence of hypertrophy of the left ventricle—as also of increased tension in the arterial system—is found in the marked accentuation of the aortic second sound of the heart. This is the second of the cardiovascular manifestations of chronic nephritis, but it is hardly secondary in importance to that of the other physical signs of hypertrophy of the left ventricle. Indeed, in many instances it can be clearly appreciated when enlargement of the cardiac dulness and displacement of the apex beat are at most problematic. Such is its importance that, in the absence of other causes to account for it, it is extremely suggestive of chronic nephritis. The latter is even its most common cause. When heard it should always awaken the suspicion of nephritis, and even in the absence of albumin in the urine the probability of such kidney disease must not

be abandoned until the accentuation of the second sound be otherwise adequately accounted for, and until long-continued and patient observation determine the nonexistence of nephritis. It is often the first indication of the insidiously developing chronic nephritis, and may be heard in many instances before enlargement of the heart or increased tension of the radial pulse can be determined.

The latter, increased tension, which may be appreciated in the radial as well as in other arteries, is one of the most valuable signs of chronic interstitial nephritis. It may be expected from the commencement of the disease. The pulse of high tension is quite characteristic—it is hard and resistant to the palpating finger, it remains persistently full even between beats, and it requires considerable pressure with the fingers to completely arrest the pulsations. The sphygmographic tracings are also quite distinctive. This increased tension of the pulse is, of course, found in some other conditions, and in establishing a differential diagnosis, these, of course, must be eliminated. The conditions with which it is most frequently found associated are often themselves the cause of chronic nephritis, such as lead, gout, arteriosclerosis, etc. Thus the sign is of value as indicating the operation of a cause which may lead to chronic nephritis if it has not already done so. It is also found in connection with plethora, contraction of the arterioles, as by a chill, some cases of hysteria, diabetes, mitral stenosis, etc.; but these conditions are readily discriminated. Of such importance and significance and so distinctive is this increased tension that some clinicians have asserted their ability to recognize cirrhosis of the kidney from it alone.

The existence of these cardiovascular alterations, as also the kidney changes, may for a long time remain entirely unknown to the patient and be entirely unsuspected by the physician. Whatever be the exact cause of their production (and many theories have been advanced, but as yet the correctness of none has been conclusively demonstrated), it is certain that they arise in response to excessive demands on the part of the general economy. So long as the heart continues to perform its augmented work well no symptoms arise. Inquiry, however, in some cases will elicit the information that for years possibly, excitement and exertion have been provocative of breathlessness and palpitation of the heart; but having an obvious cause they were regarded as insignificant. As the disease advances, however, the nutrition of the heart no longer keeps pace with its enlargement, degenerations ensue, and evidences of embarrassed circulation result. It is now that symptoms referable to the cardiovascular system dominate the clinical picture. To the hypertrophy of the heart, if it have been simple, there supervenes dilation, and to disease of the left ventricle are added similar alterations of the right. There result cardiac asthma, congestion and edema of the lungs, bronchitis, gastrointestinal disturbances, diminution in the daily quantity of urine secreted, and generalized edema. The symptoms referable to the heart and lungs at first transitory and nocturnal become permanent, the other symptoms narrated are added, and if relief be not afforded, death ensues with cardiac failure or uremia dominating the final scene. Toward the end, the pulse which had been of high tension, loses somewhat in this particular, the second aortic sound becomes less accentuated, the second pulmonary sound becomes accentuated with embarrassment of the right heart, the

signs of dilation are manifest, and galop rhythm, always of serious moment, supervenes.

From a diagnostic point of view the importance of the cardiovascular alterations in chronic nephritis cannot be overestimated. They are among the earliest clinical manifestations of the disease, and they may be detected even in the absence of positive indications on the part of the urine. Such is their double import, that in the event of the suspicion of chronic nephritis they should be diligently sought for, and in the event of their accidental detection in the course of the routine examination of a patient, the presence of an unsuspected or latent renal cirrhosis must be persistently borne in mind until these signs be otherwise adequately accounted for. These cardiovascular alterations may be expected in all cases of chronic interstitial nephritis; in a few cases, as already intimated, they will not be found. From the very nature of the disease, one of its first consequences is augmentation of the arterial pressure. This, while it may possibly exist for a short time unaccompanied by alterations in the heart-muscle, if long continued is speedily followed by hypertrophy of the left ventricle. This, then, it may well be urged, is a part of the disease. Chronic interstitial nephritis then is not merely a local disease affecting the kidneys only; it is in many instances a widespread disease affecting in addition the entire vascular apparatus,—the heart and arteries especially, but sometimes also the veins. This is well appreciated by the separate recognition of a special form of nephritis—the arteriosclerotic form of contracted kidney. But is not also the ordinary form of renal cirrhosis a widespread disease? In the majority of cases the disease doubtless commences in the kidneys but it speedily implicates other structures; sometimes even analogous lesions have been found in organs as remote as the liver, etc. In some cases, however, it is extremely likely that the lesions commence simultaneously in the kidneys and the cardiovascular apparatus.

In the stage of cardiac compensation, the diagnosis of renal cirrhosis is sufficiently evident from an inquiry into the antecedents of the patient, the special etiologic factors in the case, the course of the disease, the various clinical manifestations, and an examination of the urine and the cardiovascular apparatus. Indeed a diagnosis based upon increased tension of the pulse, accentuation of the aortic second sound of the heart, and the other physical signs of hypertrophy of the left ventricle, will rarely be wrong.

It is, however, when lack of cardiac compensation occurs that diagnostic difficulties may arise. The clinical picture in these cases much resembles that of an affection primarily cardiac and secondarily renal. Given a patient with evident lack of cardiac compensation; with signs of hypertrophy and dilation of the heart, but with such dilation that it may be well nigh impossible to determine accurately which side of the organ is especially involved; with or without murmurs; with albumin and casts in his urine—does he suffer with a condition primarily cardiac and secondarily renal, or vice versa? is the affection one of a primary heart lesion with secondary congestion or cyanotic induration of the kidney, or is it one of a primary kidney lesion with secondary hypertrophy and dilation of the heart? The question is extremely difficult to settle off hand. But be it the one or the other, the close interrelationship between the heart and kidney in disease is well illustrated. In either case the general condition

of the patient is much the same; there are the general and local evidences of embarrassed circulation, and the urine is diminished in quantity, increased in coloring matter and specific gravity, and contains albumin and casts. The presence or absence of murmurs is not definitely diagnostic unless it be possible to accurately localize them and refer them to positive valvular defects. We will remember that if there be marked cardiac debility, a murmur of some valvular defect may be temporarily absent; on the other hand, in renal cirrhosis, if the cardiac dilation be sufficient there may arise a relative mitral incompetency, and a murmur not heard previously becomes audible. Thus murmurs complicate the situation. In the majority of cases, however, the diagnosis can be made by bearing in mind that in congestion of the kidney, the casts are usually hyalin only, and that the quantity of albumin, which may be considerable, varies from time to time with the state of the cardiac activity—it increases or decreases in amount with impairment or improvement in the condition of the heart. Again, in renal congestion we endeavor to ascertain the cause, by reference to the past history of the patient, and by noting that the kidney lesion is but part of a general condition which finds its expression also in congestion of the liver and spleen, effusions within the several serous cavities, anasarca, etc. If, however, the urine remains albuminous despite the subsidence of signs of congestion in other portions of the body, if the specific gravity of the urine lessens, and if in addition to hyalin, even a few epithelial casts are discovered, maybe also some erythrocytes, it is evident that in addition to the congestion of the kidney there exists a nephritis. Whether or not this is a condition long standing or the final result of long-continued congestion remains to be decided by reference to the past history of the patient. It is in these cases that the therapeutic test is of the greatest diagnostic utility. It is in these cases that digitalis is urgently indicated. If, as sometimes happens, the exhibition of the digitalis is followed by marked improvement in the condition of the patient, with final absence of casts and albumin from the urine, the condition is definitely determined to be one of renal congestion. If, however, with improvement in the cardiac condition, albumin and casts do not disappear from the urine, we are then confident of the existence of nephritis, and this opinion will be further confirmed by the examination of the cardiovascular apparatus, now that compensation has been more or less restored.

Not only does the condition of the cardiovascular apparatus dominate the diagnosis of chronic interstitial nephritis, but it likewise assumes a commanding position in the prognosis and therapeutics. In the very early stages of the condition, in the stage when the condition is accidentally discovered before there are any clinical evidences of its existence, the prognosis is not bad with regard to life-expectancy. The patient, however, should be warned of his affliction and advised to lead a hygienic, moral, and abstemious life. In the later stages the factors that most influence prognosis are the condition of the cardiovascular system, the quantity of urine excreted daily, the manifestations of uremia, and the presence or absence of secondary inflammations, particularly of the serous membranes. With embarrassment of the circulation, the prognosis becomes very bad. Compensation when it once fails, is sometimes never recovered; with judicious treatment, however, the patient may be tided over the critical

period and live, if careful, for a number of years. It is especially important to watch the quantity of urine excreted daily. Diminution in the quantity of urine often presages the onset of uremia, which, however, may be averted by timely interference. The importance of the condition of the heart is here again brought into evidence, as failure of the cardiac power has as a consequence diminution of the quantity of urine. This lessening of the quantity of urine is especially a cause for concern if associated with headache, and both demand immediate attention.

In referring especially to the treatment of the disease it is to that stage of the affection when it is generally recognized that I wish to allude,—to the stage of cardiac hypertrophy. It is here again that the cardiovascular alterations dominate the situation. The dangers most to be apprehended are cardiac failure, rupture of the smaller arteries, especially those of the brain, and the development of uremia. The first two depend entirely upon the condition of the heart and bloodvessels; the last named in part only. When the patient presents himself complaining of the passage of large quantities of urine and of dyspnea on exertion, the nature of the affection should be recognized after careful examination of the urine and the heart and bloodvessels. It is now, appreciating our inability to definitely cure the patient, that we must be alert to the dangers that threaten him. He must be cautioned not to expose himself to the inclemencies of the weather, he must avoid all excessive muscular exercise, and if possible, all mental worry; he must keep his bowels regular and in every way favor the action of the skin, so that as little work as possible may be thrown upon his diseased kidneys, heart and bloodvessels. The skin, though a poor substitute for the kidneys, is still capable of performing considerable excretory work, and its action should be facilitated as much as possible,—by wearing underclothing suitable, and by a daily tepid bath. Hot baths may be given, but not indiscriminately; they are contraindicated if they increase blood-pressure to such an extent as to cause unpleasant throbbings. The diet is of the utmost importance, and probably the duration of life depends as much upon discretion in eating and drinking as upon any other factor. It is advisable in many cases to try a more or less exclusive milk diet for a while. If the patient be obliged to take to bed, this is all the more indicated. After a while fruits and vegetables should be added, and at all times large quantities of pure wholesome water should be taken. Whether or not albuminous food be allowed must be decided in the individual case. In some cases it will be well to withhold it entirely for a time at least; in others moderate quantities may be permitted with good effect. Large quantities are certainly injurious. And it is equally certain that in many cases the exclusion of proteids from the dietary is not followed by good results. A wise rule is to permit some of the lean and easily digested meats to be partaken of once a day. Eggs are also very suitable, and will be found of exceeding service when taken raw. Tea and coffee in moderation are permissible; alcoholic beverages, however, should be strictly prohibited. In many cases, the above with an occasional saline purge for its depletive effect and its tendency to lower blood-pressure, will suffice to produce amelioration of all symptoms. If such be the case, no medicines should be given. There will come a time when they will be required, and that the best results be obtained they should be withheld until required.

When, however, the heart begins to flag, to be no longer equal to the demands, medication is called for, and under these circumstances I know of no better remedies than nitroglycerin and caffeine. It so happens that the patients that I have seen of recent years have done better when given both remedies in conjunction, than they have on nitroglycerin alone. The nitroglycerin may be given in tablets of $\frac{1}{100}$ grain each, or in one minim doses of the 1% solution, three or four times a day. This dose may be gradually increased until the desired results be obtained. The caffeine is best given in three-grain doses at the same time. More than three grains will rarely be indicated. Nitroglycerin not only lowers the high arterial tension, but at the same time it favors the reduction in the amount of albumin excreted, and permits the heart, still in itself capable of performing its work, to do so, unhindered by the excessive pressure against which it formerly worked. It is not necessary to give nitroglycerin to the extent of producing unpleasant symptoms; sufficient reduction of the arterial tension is usually produced before this. We have to bear in mind that it is not advisable to reduce the pressure to that of the normal individual. A certain amount of increased tension is desirable in renal cirrhosis; for unless there be increased tension, the quantity of urine excreted falls, the uremia is a likely event. I believe also that the gentle stimulus to the heart produced by the caffeine, as well as its diuretic action on the kidneys, tend for good in this disease. Certain it is that really remarkable benefit follows the administration of these remedies in many cases. But each case must be studied individually. In some instances the dose of nitroglycerin must be greatly above that I have mentioned to produce the desirable effect. But the proper dosage being obtained, marked amelioration and complete cessation of the dyspnea, vertigo, headache, compression in the head, etc., frequently follow. Even in advanced cases, when dyspnea is so pronounced as to prevent sleep, I have seen several days of this medication productive of such relief that refreshing sleep was obtained. It is well to continue this treatment for four to six weeks, and then to interrupt it for a week or ten days, if the patient's condition does not demand a return sooner. The nitrite of sodium or potassium may be substituted for the nitroglycerin, as its action is similar. I have had less experience with these, but I believe them hardly as efficacious as nitroglycerin. It is well to remember that the nitrites interfere somewhat with the oxygenating power of the blood, and for this reason, if no other, their continuous administration should not be persisted in too long.

This treatment by nitroglycerin and caffeine will also be found efficacious in warding off an attack of uremia that shows its imminence in headache, restlessness, foul breath, coated tongue, vertigo, diarrhea, etc. In this condition it is well to restrict the diet to milk, and to give large quantities of water, as well as to add saline cathartics, and alkaline diuretics. The treatment of the more severe attacks of uremia hardly enters within the scope of this communication.

When there is no marked cardiac debility there are several drugs that I believe should not be given. Of these digitalis should be mentioned first. The routine habit of administering digitalis whenever there arises indications of some interference with the heart's action is much to be deprecated. Digitalis in this stage of the disease does more harm than good, and should be withheld. The routine administration of iron because a

patient has nephritis is also not to be commended. In this form of nephritis there is, as a rule, little anemia, and iron is not called for; on the other hand, it is contraindicated on account of its astringent action, its tendency to constipate, and it doubtless also tends to augment the headache. In the late stages of parenchymatous nephritis it is a good remedy, but I believe it is not so useful in renal cirrhosis. When anemia develops, as it does sometimes late, it may be given with hope of good results.

When marked cardiac dilation arises and there occur the signs of lack of compensation, the time has arrived for the administration of digitalis. This should be given in large doses, and if good results be not obtained within four days, it should be discontinued, as it is likely not to prove of utility. Strophanthus should be substituted. After several days of intermission, if the symptoms continue urgent, digitalis may be tried again, and will often be followed by the desired results. Even if it prove efficacious in the first instance, it is well to discontinue its administration after 10 days or thereabouts. After the lapse of a similar period if indicated it may be given again. Strychnin also is a most efficacious remedy and may be given with expectation of happy results in any stage of the disease. It is of value not alone for its general tonic effect, but it proves especially useful to that heart that shows the slightest embarrassment. It may be given for long periods and either alone or in conjunction with other remedies. It is extremely useful in the acute dilations of the heart when the symptoms are always urgent. Under these circumstances it may be given hypodermically. Hypodermics of camphor in olive oil are also useful in this condition.

There are several other remedies, such as the iodids and mercuric chlorid, for which great virtues have been claimed in the treatment of renal cirrhosis. It is even asserted that low specific gravity of the urine and high arterial tension are direct indications for the administration of the iodids. I believe, however, with many others, that little good follows their use in the advanced stages of the disease; in the early stages, particularly if there be considerable arteriosclerosis, their use may be attended by much good. It is even possible that their exhibition over long periods may operate to retard the progress of the disease. There are many other details of the treatment of renal cirrhosis including the various manifestations of uremia, that are as interesting as they are important. But lack of time and space forbid their consideration.

A CASE OF PROGRESSIVE PERNICIOUS ANEMIA.

By L. M. VAN METER, M.D.,
of Philadelphia, Pa.

Resident Physician to the Pennsylvania Hospital.

THE following case of progressive pernicious anemia, occurring in the service of Dr. Arthur V. Meigs at the Pennsylvania Hospital, is interesting because of the high grade of anemia which it presents.

John F., white, of German birth, married, by occupation a wagon-driver, was admitted to the hospital March 5, 1900, with the following history:

Family history, negative. His previous health had generally been good, the only illness which he recalls being measles at 9 years of age, and, one year ago, an attack similar to the present, accompanied by weakness, fatigue, breathlessness

upon slight exertion, and, as he terms it, a yellow color of the skin. He suffered no pain and noticed no edema. He was not prostrated by this attack; but continued at light work, and gradually returned to something like his normal condition. He had never been addicted to the use of alcohol, and denied venereal infection. Eight weeks before admission he began to feel tired and easily exhausted. He had been exposed in his occupation of driver, and felt as though he had taken cold. He had no pain nor especial distress, and the pulmonary symptoms were slight; but he grew steadily weaker and wasted in flesh. His skin, he asserts, turned "yellow." Two weeks before coming to the hospital his feet and legs became edematous. The flow of urine increased, so that he arose three or four times during the night. His appetite was poor and his bowels loose; sleep was sound, but not refreshing. Hearing and vision seemed unimpaired.

Physical examination showed the patient to be a man of large frame and good muscular development, with a moderate degree of emaciation, and slight puffiness of the lids and face. The skin was dry, scaly, exceedingly pale, and of a light lemon tint, with superficial areas of brownish pigmentation distributed here and there over the body. The hair was dry and brittle; tongue, lips, and conjunctiva blanched and bloodless; sclera of pearly whiteness. His teeth were in an extremely bad condition, 10 of the molars and premolars being in an advanced stage of carionecrosis, and all of the rest being dark, soft, and more or less necrotic. This fact is interesting in connection with the recent investigations of William Hunter.¹

There was nowhere any enlargement of the lymphatic glands. The pulse was small, quick, and compressible; vessels soft and elastic. Examination of the heart revealed the apex-beat in the fourth interspace, about one inch internal to the left mammillary line. The impulse imparted to the touch was feeble, quick, and jerky. Upon auscultation, the action was rapid, and the sounds booming. There was a soft, systolic murmur heard over the left base, less distinctly at the apex, and in the great vessels of the neck. Slight epigastric pulsation was also noted. The chest was full and well developed. Physical examination of the lungs was negative save for impairment of resonance over the bases with feeble breath-sounds and a few crepitant rales. The liver-dulness began at the sixth rib in the parasternal line and extended two inches below the costal border, where it offered resistance to palpation, though the border could not be distinctly defined. The abdomen was concave and otherwise negative.

Examination of the urine showed: color, amber; reaction, acid; specific gravity, 1.012; no albumin nor sugar. Microscopically, the sediment was negative.

The blood-examination, three days after admission, by Dr. J. Alison Scott was as follows:

Red cells	880,000 per c.mm.
White cells	3,000 " "
Hemoglobin	15%

Megalocytes existed in profusion and a marked poikilocytosis, some cells being polychromatic. A differential count was not made at this time.

A second blood-examination made 19 days after admission showed:

Red cells	390,000 per c.mm.
White cells	2,000 " "
Hemoglobin	14%

and a differential count:

Polynuclear neutrophiles	31%
Small lymphocytes	53%
Large and transitional	11%
Eosinophiles	4%
Myelocytes	1%

Four normoblasts and 15 megaloblasts were seen in counting 200 whites.

A third count made 26 days after admission revealed:

Red cells	896,000 per c.mm.
White cells	4,000 " "
Hemoglobin	33%

Differential count:

Polynuclear neutrophiles]	52 3/4%
Small lymphocytes	36 %
Large lymphocytes	4.7%
Eosinophiles	3 %
Myelocytes	4 %

¹ *Lancet*, January 27, February 3 and 10, 1900.

There were 17 normoblasts and 13 megaloblasts per 1,000. There has been a slight elevation of temperature since admission, varying between 97° and 102.6°.

The patient's condition has been comfortable, except for an otitis media of the left ear of slight severity, accompanied by moderate pain, and a slightly higher temperature-range. He has been kept in bed upon simple, nourishing diet, and given iron and arsenic. Upon this regimen he has shown a marked improvement. An ophthalmoscopic examination has recently been made, showing in one retina a small striated hemorrhage, and in the other, a larger one of similar character, each located some distance to the temporal side of the optic disk. The lemon tint has disappeared from the skin, and the lips are becoming pink. There has been no hemoglobinuria.

THE SIGNIFICANCE OF DIACETIC ACID IN THE URINE.¹

By C. K. JOHNSON, M.D.,
of Burlington, Vt.

DIACETIC or ethyl-diacetic acid (C-6, H-10, O-3,) is a colorless, strongly acid liquid. On heating to boiling, it decomposes into carbondioxid and acetone, hence the necessity of making tests previous to boiling the urine. It gives a dark red color with a solution of ferric chlorid. There are certain other substances which may give the ferric chlorid reaction. The urine of patients who have taken salicylic acid, carbolic acid, or antipyrin may give the reaction. The red color, however, from the presence of diacetic acid, disappears upon boiling, or is not produced if the urine be previously boiled, while that due to the other substances is unchanged by boiling.

Diaceturia is always pathologic and may usually be regarded as a serious symptom. It is of least serious significance when occurring, as is not uncommon, in acute febrile conditions in children. In these cases recovery usually follows. In adults it is a more serious symptom. Purdy states that in diabetes mellitus the occurrence of diaceturia may be looked upon as a very probable prelude to coma, which usually terminates quickly in death. Some writers claim that diabetic coma is due to the presence of diacetic acid in the blood, and propose to call it diacetic coma. Diaceturia is sometimes accompanied by such symptoms as vomiting, dyspnea, and restlessness, which may shortly end in death without other discoverable lesion.

Detection may be accomplished as follows: first, take a recently voided sample of urine and add a few drops of ferric-chlorid solution to it. If the phosphates are precipitated filter them off, and to the filtrate add a few more drops of the ferric-chlorid solution. If a dark red color is produced diacetic acid is probably present. Second, the above color disappears on boiling or is not produced if the urine be previously boiled. Third, acidify the urine with sulphuric acid and shake with ether, next shake the removed ether with very dilute ferric chlorid, and the water color becomes claret-red.

The exact relation between diacetic acid and acetone is not perfectly understood. Acetone, however, may be found in the urine under normal conditions, and is

greatly influenced by the character of the diet. Whenever the carbohydrates are withdrawn the quantity is rapidly increased and reaches its maximum in 6 or 7 days. If carbohydrates are again added to the diet the acetone soon diminishes. This result does not follow if fats are substituted for the carbohydrates.

Some writers state that the amount of acetone stands in direct relation to the intensity of the disease, increasing towards the fatal end. This, however, is still an open question.

The threatening symptoms already alluded to, viz., vomiting, restlessness, and dyspnea, with tendency to coma, will often disappear when carbohydrates are administered in large amounts. Diabetic coma is more apt to occur when the old-fashioned plan of excluding carbohydrates entirely is adopted.

A very simple explanation of this would be as follows: As previously stated, diacetic acid on heating breaks up into acetone and carbon dioxid; following this theory the excess of acetone in diabetic urine would unite with the free CO₂ normally found in urine to form diacetic acid; hence, when carbohydrates are added to the diet causing a reduction of acetone, the formation of diacetic acid is prevented.

Acetone may be detected by the following method: To a recently voided sample of urine add Lugol's solution carefully until a brown color is produced; then add liquor sodae, until the urine becomes clear, when iodoform will be precipitated as a yellow powder, a distinct odor of iodoform will also be produced if acetone be present.

The following is a report of a case of diabetes in a girl 12 years old. The first symptom of an abnormal condition was frequent micturition, especially during the night. A physician was first consulted February 9, 1900. At this time she was somewhat restless and often complained of headache. She was passing about four quarts of urine in 24 hours. An examination showed a high specific gravity with a large amount of sugar. No quantitative analysis was made. The case first came to my notice March 4. The child then showed marked restlessness, but was fairly well nourished. Upon examination of the urine I found a specific gravity of 1.038, sugar 4%, urea 7 grains to the ounce. Both diacetic acid and acetone were present. Microscopic examination showed a few granular casts, few squamous and renal cells, and a few leukocytes. The child continued to grow more restless, not being inclined to play until March 16, when she was taken with vomiting. This continued at intervals until the following day, when she felt somewhat relieved. On March 18 she became comatose and remained in this condition until 10 o'clock on March 19, when she died.

The point which I consider this case to illustrate is simply this: that the presence of diacetic acid in the urine of a diabetic patient is a grave symptom and may usually be looked upon as a very probable prelude to coma, which usually terminates quickly in death.

Famine in India.—The Viceroy of India, in a speech before the Council at Simla, recently said the famine had affected a quarter of the population of India, and that even now two millions of people were receiving relief. He expressed the hope, however, that in a month these would return to their homes. He said that half a million deaths were traceable to the famine, and that the failure of the crops involved the loss of fifty millions sterling, plus some millions for loss of cattle.

¹ Read before the Burlington Clinical Society.

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GEORGE M. GOULD, M.D., *Editor*

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Patriotism and the Zeitgeist in Medicine.—We congratulate our readers upon the presentation of the newer methods of anesthesia set forth in the noteworthy contributions of the foregoing issue. But there is one too mortifying conclusion: Medical attention and practice is sadly subject to waves of popular opinion. The work of Corning led to few or no practical results with American surgeons, until the method was taken up by European operators. Then and not till then did it strike our attention! But if it was valuable when recommended by Tuffier, then it was valuable when recommended by Corning. Worse than the neglect is the fact that the American originator of the method was not only forgotten, but the credit was ascribed by one of the most enlightened representatives of the medical press in New York, to Professor Bier, of Kiel. It is, however, gratifying that one great American surgeon had recognized its possibilities of usefulness before the *Zeitgeist* fire had been set ablaze. As early as November 10, 1899, Matas had successfully employed it, and as early as June 3, 1899, he had publicly called attention to the American origin of the method. But again no attention was paid to this, and American operators still refused to light the flame of their practical enthusiasm at any except the European lamp. A second cause for congratulation, however, lies in the further history, whence it appears that with eminent sanity Matas rated the method with a sound conservative judgment, before the American traveler had returned from Paris in the summer of 1900. In view of this fact we wonder if Matas' commendation of the methods of local and regional anesthesia must await a European mirror to attract our patriotic attention.

A statistical contribution of exceptional value, as regards the history of anesthetics, and especially concerning the use of ether in the Zurich clinic, has been compiled by Dr. Johanna Gunning. We epitomize from the *Beiträge zur klinischen Chirurgie* (Band 28, No. 1) the results since 1894 of a very careful surgeon, concerning the effects of the administration of ether alone, and of ether combined with morphin. Before 1894, Prof. Krönlein had used for 13 years chloroform almost exclusively, but, led by the demonstrations of its bad effects on the heart, he has changed to ether as his usual anesthetic. From 1894 to 1899 he had some 2,068 cases of narcosis with adults and 4 cases

with children under 6 years. The routine method of preparation was to give the patient only a cup of milk or soup the evening before in order to have an empty stomach for the morning operation. He uses the Juliard mask, in size 20 cm. long, 15 cm. wide, and 12 cm. high, with the Roser-König or Heister gag, and the Krönlein tongue-holder. For face-operations he has also the little bromethyl mask. The ether is purchased in colored bottles containing 100 ccm. each, 10 to 20 ccm. are poured into the mask, which is at first held not very close to the face and the patient allowed to get used to the fumes and told to breathe naturally. After a couple of minutes 10 to 20 ccm. more are poured into the mask. In this way it is necessary to bind only the patient's legs. The narcosis is complete after an average of 4 minutes—even before the corneal reflex has disappeared. An effort is made to keep the amount of ether used as small as possible, with the result that Zurich uses about $\frac{1}{2}$ as much per minute as the usual statistics report as necessary. The ether is given alone and in combination with an injection of 0.01 to 0.015 morphin $\frac{1}{2}$ hour before the operation. This has been found specially good for the treatment of alcoholics and for cases in which an incomplete narcosis is used, as in resections of the jaw or in strumectomies. But in October, 1897, the clinic had a death after the use of morphin, in which morphin poisoning seemed to have played a role, and since then Prof. Krönlein has used the morphin as little as possible. The contraindications to the use of ether are: in young children (therefore the few cases reported), bronchitis, and emphysema (in the last two cases use local anesthesia if possible). Ether is therefore more usable than chloroform, which latter has injurious effects not only on the heart but also on the liver and kidneys. The record follows: 6 cases of use with children under 6 years, average amount of ether used 91.2 ccm., and per minute 1.6 ccm.

There were 31 operations for head, face and neck in which ether alone was used 9 times (average amount 143.3 ccm., and per minute 2.1 ccm.) and morphin with ether 22 times (average amount of ether 154 ccm. and 1.9 per minute). These were all half or incomplete narcoses in order to avoid the aspiration of blood, etc. Prof. Krönlein thus avoids the necessity for tracheotomy, etc. Twenty-seven of these narcoses were quiet, 1 case developed a heart-disturbance, 1 case bilious vomiting, and 2 cases had an excitement stage. There were 2

deaths among those operated, from pneumonia, in which one can believe that the ether had a bad influence.

There were 206 cases of strumectomy: with ether alone, 129 times, and with morphin 77 times (0.015 to 0.017); 184 of these passed without incident and 2 had heart disturbance, 6 vomiting, and 13 excitement stage, and 1 with tremor. In one death after operation the influence of the anesthetic could be seen. It must be noted here that Prof. Krönlein does not operate for goiter from cosmetic reasons alone, and that therefore most of these cases had some difficulty with the respiratory organs beforehand.

There were 55 cases of mamma extirpation: ether alone 52 (average amount 116 ccm., and per minute 2.6 ccm.); with morphin 3 times (average amount 140, per minute 4 ccm.); 50 cases were quiet, 1 had tracheitis, 1 vomiting, 2 excitement stage, 2 tremor.

There were 298 laparotomies, with ether alone 255 cases (average amount 154.7 ccm., per minute 2.4 ccm.); with morphin, 43 cases (average amount 163.6 ccm., per minute 2.3 ccm.). Of these, 273 cases were quiet, 1 had heart-disturbance, 13 vomiting, 7 excitement (2 alcoholics), 1 tremor. There was 1 death 5 days after operation, and 5 cases of slow waking.

There were 279 cases of herniotomy, with ether alone 263 (average amount 109.6 ccm., per minute 2.2 ccm.); with morphin, 16 (average amount 181.2 ccm., per minute 3.4 ccm.). Of these, 224 were quiet, 2 showed tracheitis, 1 coughing, 1 weak pulse, 14 vomiting, 32 excitement (4 alcoholics), 4 tremor. There was 1 case of vomiting after the narcosis.

There were 13 cases of nephrectomy, with ether alone 12 times (average amount 135.4 ccm., and per minute 1.9 ccm.); with morphin 1 (320 ccm., or 3.5 ccm. per minute). Eleven cases were quiet, 1 was cyanotic, 1 had weak pulse, 1 with collapse after operation.

There were 30 cases of urethrotomy, with ether alone 28 times (average amount 153 ccm. and 3.6 ccm. per minute); with morphin 2 (average amount 175 ccm., and 2.9 ccm. per minute). Of these, 29 cases were quiet, 4 excited, 2 showed vomiting.

There were 269 extirpations of tumors, with ether alone 241 times (average amount 169 ccm., per minute 2.2 ccm.); with morphin (0.015) 28 times (average amount 149.4 cc., and per minute .4 ccm.). In 227 of these cases narcosis passed off quietly, 2 had bad pulse, 1 dilation of pupils, 13 vomiting, 25 excited stage (5 alcoholics), and 1 tremor. There was 1 case of slow waking.

There were 163 cases of amputations, exarticulations and resections; ether alone was used 155 times (average amount 122.1 ccm., and per minute 2.7 ccm.); with morphin (0.015) 8 times (average amount 140.6 ccm. and per minute 2.2 ccm.). Of these, 126 cases were quiet, 3 had bad respiration, 3 bad pulse, 11 vomiting (2 alcoholics), 5 tremor, 2 rigidity of muscles. After the operation 1 vomited and 1 waked slowly.

There were 25 cases of osteotomy, all with ether alone (average amount 104 ccm., and per minute 3 ccm.); 20 cases were quiet, 3 vomited and 2 had excited stage.

There were 5 cases of myotomy, all with ether alone (average amount 45 ccm., and per minute 2 ccm.); 3 were quiet and 2 had excited stage.

There were 10 cases of neurectomy, tendons and nerve knot, with ether alone 9 times (average amount 141.6 ccm., and per minute 2.7 ccm.); with morphin (0.015) 1 case (190 ccm., and 2.5 ccm. per minute); 8 were quiet and 2 excited (1 was an alcoholic).

There were 18 cases of cauterization, all with ether alone (average amount 109.7 ccm., and 4 ccm. per minute); 15 were quiet, 1 cyanotic, 2 excited.

There were 549 cases of incision and empyema operation, with ether alone 546 times (average amount 82.8 ccm., and per minute 3.2 ccm.); with morphin 3 (0.015) times (average amount 166.6 ccm., and 2.1 ccm. per minute); 477 cases were quiet, 5 had respiratory disturbance, 4 bad heart, 10 vomiting, 50 excited stage (3 alcoholics), 1 rigid muscles, 1 tremor, 1 chronic twitching. After the operation 2 vomited and 1 waked slowly.

There were 47 cases of reposition of joints, etc., all with ether alone (average amount 75 ccm., and per minute 3.5 ccm.); 36 cases were quiet, 1 had respiratory disturbance, 7 excited stage (1 alcoholic), and 1 vomited.

There were 52 patients anesthetized for examination, and removal of foreign bodies, all with ether alone (average amount 57.7 ccm., and 3 ccm. per minute); 49 were quiet and 3 excited.

There were 12 cases of skin-transplantation, all with ether alone (average amount 103.7 ccm., and 2.8 ccm. per minute). All were quiet.

There were 6 cases of ligature of arteries, all with ether alone (average amount 206 ccm., and 6.1 ccm. per minute). All were quiet.

In general, morphin was given when the operation was expected to be long, and the opinion of the physicians in charge is that its use decreased materially the amount of ether used. Prof. Krönlein believes that he has had less vomiting with ether than he used to have with chloroform.

Viability of the Plague Bacillus in Sputum.—As is well known, pulmonary complications in plague are not uncommon. In addition to the pneumonic type of the disease, there are frequent instances of bronchopneumonia occurring in cases of ordinary bubonic plague. In both of these forms of the disease it has been found that the plague bacillus occurs in the sputum, and that, during the activity of the lung disorder, the microbe displays great virulence. How long after the recovery of the patient this virulence of the bacillus in the sputum continues, has been debated. This is obviously a most important question, since the propagation of plague by this means would very readily occur. According to the observations of Gotschlich, at Alexandria, virulent

plague bacilli may be found in the sputa of convalescents from pneumonic plague, not only during the disease itself, but even 20, 33, and 48 days after complete defervescence. In order to test this important question, Dr. Métin, of the French colonial medical service, undertook a series of experiments during the recent epidemic of plague at Oporto. His paper has been translated by Dr. H. D. Geddings, and published in the *Health Reports* of the United States Marine-Hospital Service. The method of Métin was by inoculation of guineapigs in the peritoneal cavity with the sputa of convalescents from plague. The sputa of these patients during the height of the disease caused the death of the animals in from 3 to 5 days, and the specific coccobacillus was recovered in pure culture in the organs after death. The results of a series of experiments were quite uniform. First, a guineapig was inoculated with sputum during the height of the disease. The sputum at this time usually showed numerous plague bacilli. As a uniform result, the pig thus inoculated died in a few days. After convalescence was established, the sputum from the patient was again used at various intervals of time, and the results noted. As a rule, the virulence of the sputum was maintained during the first week, or a little longer, and then seemed rapidly to decrease. Thus in one case, a guineapig, inoculated 7 days after defervescence, developed buboes and died in a few days. Another pig, inoculated from the same patient, on the fourteenth day, did not sicken at all. The patients used for these experiments were 8 in number. Two had had primary pneumonic plague, and 6 had had ordinary bubonic plague with bronchopneumonia.

The conclusions drawn by Métin are that the virulence of the sputum diminishes even by the end of the first week; for, although fatal at this time to guineapigs, it does not kill them in so short a time as the sputum taken during the fastigium. After the ninth day, the sputum seems to have lost its virulence completely. During the 8 or 9 days in which the sputum is fatal to guineapigs, Métin was never able to find in it the plague bacilli by microscopic examinations of direct preparations. In other words, cultivation or inoculation is necessary to prove the presence of the bacilli during this period. It will be seen that Métin's results are not quite in accord with those of Gotschlich already referred to.

Famine and its Cost.—The Viceroy of India, in a speech recently delivered before the Council, gave some figures of the cost of the late famine in that country. According to Lord Curzon, the famine has affected at least one quarter of the population of India, and even yet 2,000,000 people are receiving relief. Five hundred thousand deaths have been caused by the famine, and the loss of the crops meant a total money loss of about \$250,000,000, a sum which does not include the value

of the cattle lost. A charity fund of 854 lakhs or rupees had been expended at the end of August.

It has been said by some members of the cold-blooded school of political economists, that the English rule in India is largely responsible for the immense overpopulation of that country. In olden times the Hindu population was kept down by famine, war and pestilence, so that the country was rendered more inhabitable for the fortunate survivors. The English, from humane motives, have endeavored to mitigate these three evils, with the result that there is no adequate relief from surplus population. Lord Curzon's figures suggest that this recent famine is possibly an illustration of one of the laws of population. In a densely peopled country any disturbance of the food-supply means starvation and death for many persons. Those social scientists who claim that a dense population is an evidence of national welfare and a promise of national progress, must overlook some of the frightful penalties paid by a country which, like India, is overpopulated and underfed. There should be a golden mean somewhere between population and the food-supply without the necessity of a reliance upon war, pestilence, and famine, and preventable disease.

Spasmodic Sneezing as a Manifestation of Whooping-Cough.—Whooping-cough may be considered a spasmodic neurosis, dependent upon the activity of a specific microorganism, possibly the bacillus isolated by Czaplewsky and Hensel and others, exerting its effects, perhaps through the intermediation of toxins, upon the muscular structures of the larynx, and giving rise to the characteristic inspiratory stridor. The vomiting that so frequently occurs, often independently of the succussion due to the cough, may likewise be a result of nerve-intoxication. In rare instances the cough and laryngeal spasm have been replaced by spasmodic sneezing, and a case in which this condition was present has recently been recorded Szegö (*Archiv für Kinderheilkunde*, 29 B., 3 and 4 H., p. 186). The patient was a boy, three years old, whose younger brother was suffering from an attack of whooping-cough and who was himself seized with catarrhal symptoms, of which coryza and sneezing were the most conspicuous. On removal of the clothing for purposes of examination, the child held its breath and became red in the face, but instead of giving vent to the expiratory spasmodic cough, it was seized with a paroxysm of sneezing. The termination of the attack was attended with the discharge from the nose of a copious amount of viscid mucus. The sneezing was sometimes associated with vomiting. In spite of the absence of laryngeal symptoms, however, laryngoscopic examination during the continuance of the attack disclosed the presence of laryngeal spasm. There were present also tracheobronchial catarrh, emphysema of the lungs and nasal catarrh of moderate

degree. The treatment consisted solely in exposure to the air at the seaside, and recovery gradually ensued. If, as has been indicated, the symptoms of whooping-cough are to be attributed to the toxic products of a specific microorganism, it would not be difficult to understand the transfer of the seat of the manifestation from the laryngeal to the nasal mucous membrane.

The Disease of the Doctor.—It is an accepted belief with many lay people that a physician spends the greater part of his existence in the contemplation of tragedy, and it is often a matter of surprise that under such depressing circumstances he maintains a reasonably contented disposition. It is not often realized that the life of the medical man may be itself a tragedy, rendered more acute by his knowledge of the diseased processes working toward his own destruction. Striking examples are known to all of us. It was only recently that a young physician of great promise, in charge of one of the European sanatoria for the treatment of pulmonary tuberculosis, and himself afflicted with the disease, undertook a careful scientific study of a remedy that had been suggested by a medical man, and heralded by other eminent practitioners as almost a specific for his disease; this was the inhalation of the gas arising from wood in the process of digestion by sulfuric acid, and known as lingo sulfite. His work was of the most careful nature, and included experimental investigations upon animals, and clinical investigations upon human beings. It can readily be imagined with what hopes he undertook his task! At the end of his article he is forced to conclude that the remedy is worthless, and he proved this by dying before his paper was published.

Surgical Treatment of Gallstones.—Maurice Richardson (*Chicago Medical Recorder*, September, 1900) points to the contrast between the great mortality of old and neglected cases of gallstones and the small mortality of recent ones that have been operated upon, and says that, could the surgeon start in where the physician did there would be a sound basis for argument; still one can compare large groups of cases which have been treated first medically with the same groups treated later surgically, and thus obtain a basis of comparison. The fallacy of this, however, lies in the fact that the surgeon treats only patients in whom medical treatment has failed, and who are reduced by prolonged suffering, while medical results are usually based upon a single gallstone attack subsiding coincidentally with rather than as a result of medical treatment. He bases his paper upon an analysis of 150 cases in which the question of operation for gallstone was raised and upon upward of 100 explorations; he reports a total of 23 deaths, of which 7 took place after exploration for malignant disease, and 13 after the removal of gallstones. In 3 fatal cases no operation was performed; these were very severe cases, the patients suffering from the prolonged gallstone lesions. In several cases operation was performed as a last resort; in no case of simple cholelithiasis did death occur and there were many recoveries after the most severe operations when the patients were reduced by prolonged suffering. He concludes that in hospital as well as in private cases mortality in operations has been due almost entirely to local changes and to general systemic depression, caused by prolonged retention of invading gallstones. He has had no deaths from which operations were performed early and upon the strong. [G.C.C.H.]

Correspondence.

A CASE OF ANESTHESIA BY THE SUBDURAL INFILTRATION METHOD.

By L. E. SCHMIDT, M.D.,
of Chicago, Ill.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

THE patient was 63 years old and was brought under my charge September 10, 1900. After preparing the bladder for 3 days and meanwhile examining the patient most carefully, I decided to use this subdural method of anesthesia. Theoretically it appears to be especially adapted to the operative work on the bladder, prostate gland, seminal vesicles, and other structures, whether within the male or female pelvis. As the patient was badly nourished and completely exhausted from the great pains which this condition caused, I was more convinced that it would be the ideal anesthetic to use. Complete loss of sensation of pain was noticed 10 minutes after the injection of 15 minims of a 2% sterilized solution of cocain into the spinal canal between the second and third lumbar vertebrae. The technic of the suprapubic operation remained the same. The operation required but 15 minutes, yet the anesthesia remained for over 60 minutes.

From the foregoing it is very apparent that this method can be employed with advantage in those cases whenever the conditions are as described in my case. From this I mean to infer that it would be perfectly proper to use this form of anesthesia in the class of cases cited, including those operated upon by the Bottini method. It is just here that this method would be invaluable, when this operation is often indicated, yet when we hesitate to give either chloroform or ether, and when we cannot always get complete anesthesia by applying cocain, no matter of what strength, or what other local anesthetic is used to the mucous membranes of the bladder and urethra.

MEDULLARY NARCOSIS.

By CHARLES ADAMS, M.D.,
of Chicago, Ill.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

LIKE the Athenians of old, the medical profession of today seems to run after new things only, apparently ready to forsake old and well-tried means for any novelty of procedure. It is possible that within 10 years all operations upon the portion of the body lying inferior to the costal arches may be performed under medullary narcosis; further, that general anesthesia by inhalation may be superseded by anesthesia of the operated region effected by the production of temporary paralysis of sensation by means of local agents. We are ready to adopt the new method when its positive advantage and greater degree of safety as compared with the old shall have been demonstrated, but until such demonstration shall have been made we are disposed to make the best use possible of the enormous amount of experience accumulated in the use of chloroform and ether.

As regards the question of medullary narcosis, recently brought prominently before the Thirteenth International Medical Congress, I believe a conservative stand should be taken. I do not believe that a sufficient amount of evidence exists as yet to warrant anything like endorsement of the new method. A careful examination of the reports will show

that the use of cocain in the subarachnoid space is not untended by danger, and, to say the least, certain symptoms, exceedingly unpleasant if not serious, followed its use in a large proportion of the cases reported. Thus, M. Severeanu, of Bucharest, after using the method 70 times, says, "In all the cases he observed a general weakness lasting one or two days, and sometimes causing great anxiety. There was very frequent vomiting, with headache, which was generally very severe. Independently of the dangers of the use of cocain, he finds there is a very serious inconvenience attaching to this particular procedure—namely, that it allows the patient to witness the operation." "He found it difficult to combat the alarming symptoms, that sometimes occurred, although he had recourse to injections of caffein, ether, and artificial serum."

M. Tuffier, of Paris, reported upon 125 cases, of which 58 were laparotomies. "The phenomena which follow the injection are nausea, which may go on to vomiting when too large a dose has been injected, pallor of the face, respiratory distress, increase in the frequency of the pulse (from 90 to 120) on the day after the anesthesia, there may also be some vomiting, and more or less violent headache, lasting 15 to 24 hours, is practically always observed." The most common after-effect is vomiting, or a chill, or an elevation of temperature from 38° to 39° C. This temperature is short-lived, lasting 10 to 20 hours at the most.

Five of the 125 patients died, but M. Tuffier is satisfied that the anesthetic could not be held responsible for the result in any of the cases. One reporter says: "The death of four is easily explained apart from the anesthesia, the fifth died with symptoms of asphyxia. Necropsy in this case showed a mitral insufficiency with a marked congestion of both lungs," and then adds, "Cardiac disease is not a contra-indication."

M. Racoviceanu-Pitesci, of Bucharest, after an experience of 125 cases, does not believe that this method can replace chloroform-anesthesia. In 80 of his cases, light symptoms of intoxication ensued, lasting from 12 hours to 5 days, and 3 patients showed symptoms of intoxication that endangered life. He further stated that he knew of 2 cases in Roumania in which death had followed cocain-anesthesia by injection in the lumbar region.

Bumm and Kreis report the use of medullary narcosis by cocain in 6 cases of confinement, stating that the drug caused no bad symptoms, save a little cephalalgia, vertigo, and nausea in one patient.

Marx, of New York, reports (*N. Y. Med. News*, August 25, 1900) five confinements under the cocain-anesthesia, and is loud in his praises of its effects in such cases. He says: "The cases are too few to justify absolute deductions, yet they are sufficient to warrant me in stating that in the lumbar cocainization we have a method which is of the greatest value in producing analgesia, which checks almost entirely the pains of labor without, as far as personal experience goes, the least danger to mother or child." Further on the report reads: "Disagreeable, although very evanescent, features frequently occur. In fact, none of my patients escaped without some evidence of general disturbance, such as nausea, vomiting, severe headache, throbbing and fulness in the head, slight increase in the pulse-rate, chilly sensations, and elevations of temperature up to 103° F. on the evening of the day of operation." These symptoms Marx believes to be due to a disturbed intraspinal pressure, as similar symptoms were observed in a case in which salt-solution was used by mistake for the cocain-solution.

Although most of my information has been collected from the telegraphic reports of the meetings at Paris, there is such striking uniformity of statement as to the after-effects of the drug that I may feel assured that I am justified in forming an opinion on the evidence as above presented.

Speaking frankly, What is there alluring about this new method? Why should it be preferred to anesthesia by chloroform or ether? Is there anything attractive about it beyond its novelty? We may leave the obstetric cases out of consideration at once, for thousands of women have been given painless labors by the use of chloroform *without* severe headache and elevation of temperature to 103° F. on the evening of the day of operation from the anesthesia.

As regards the surgical cases, it would seem, from the presented evidence, that besides the "inconvenience," as Severeanu puts it, of the patients' witnessing the operation, the after-effects compare unfavorably with those following the skilful use of ether or chloroform.

Other objections to the use of this method are the risk of infection in the minor operation required for the injection of the cocain-solution into the lumbar subarachnoid space, and, from the fact that the entire amount of the anesthesia is used at once, further effects can not be prevented by stopping the administration of the agent.

I notice the absence of oxygen by inhalation from the list of agents used to combat the troublesome symptoms produced by the cocain-injection. Undoubtedly the principal reason for the active search for, and the readiness of the profession to adopt, new methods of anesthesia lies in the unsatisfactory results too often observed in the use of the well-established agents, chloroform and ether.

DR. JACOBI UPHELD.

By GEORGE METZLER, M.D.,
of Philadelphia.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

SHORTLY after my return from Europe a medical friend told me of the criticism of Dr. Jacobi's address before the International Medical Congress in Paris. He said that it had been condemned as being an apology of American medicine. Today I read the address of Dr. Moyer before the Mississippi Valley Medical Association containing his sweeping condemnation of Dr. Jacobi's address. I consider this criticism of Dr. Jacobi unjust and an act of great ingratitude. I am unaware whether Dr. Moyer was present at the general meeting in the amphitheater of the Sorbonne; but I know that of the American members registered, very few attended the meetings.

I have not seen Dr. Jacobi's address in print; but I stood very close to him when he delivered it. Its general character was such that the American profession may be justly proud of it. I doubt that the American profession possesses many members capable of delivering an address before such an assembly in such a manner. His French was elegant and faultless. But, aside from this otherwise very important factor, what was the quintessence of his address? It was this: that American medicine had kept pace with the development of medicine in Europe. (I write from memory.) Fifty years ago there was hardly any pathologic anatomy taught in the universities of Germany. There was Rokitski in Vienna and Virchow in Würzburg; that was all. Today in all the better class of American schools the student has to attend a rigid laboratory course, and the Ameri-

can student works while he attends college. Today our journals and our books are the peers of the best journals and books in Europe.

I abstain from citing other passages from this great address, which only a philosophically trained mind could compose, whose conception of what the German calls *Weltanschauung* is far above the common-place. I write this despite the fact that my politico-economic belief differs from that of Dr. Jacobi.

The applause he received was general, enthusiastic, and second to none that was given the most distinguished delegate to the congress. *And it was justly earned.*

Would that others, who perhaps today condemn Dr. Jacobi, had kept their "papers" in their trunks instead of disgracing American medicine by reading them in section meetings.

I still see the grim smiles on the face of Sir Dyce Duckworth, who presided one morning over the section of *pathologie interne*, when a certain paper was read by an American. "He knew it all!" Frerichs, von Mering, Minkowski, Lepine, Chauveau, Kauffman, von Noorden—they were but babes compared with this great man. And there were others of the same type.

ADHESIVE PLASTER IN THE TREATMENT OF WOUNDS.

By EVAN O'NEILL KANE, M.D.,
of Kane, Pa.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IN your last issue appears a letter censuring a correspondent for advocating the employment of adhesive plaster in the treatment of wounds; it is claimed that this treatment is not in accordance with modern methods of aseptic surgery. I beg to state that I fail to agree with the writer. In hospital and outside practice much of my surgical work of the last three years, comprising over 1,000 operations, a large portion of which were abdominal sections, more than 100 being for appendicitis, I have used strips of adhesive plaster largely for the apposition of the edges of the skin-incision with the most gratifying results. These results could not have been obtained as well by any other method. The danger of stitch-abscess infection is avoided, also the distress occasioned by stitch-irritation, and the pain of their withdrawal. I always sterilize my adhesive strips in a steam sterilizer and brush them over lightly with chloroform before applying. Because we used adhesive plaster before the advent of aseptic surgery is no reason why we should not continue to use so useful a material now. Are we so much wiser than our fathers that we must abandon all the learning of the past?

A BAD ADVERTISEMENT.

By D. H. MURRAY, M.D.,
of Syracuse, N. Y.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IT seems to me that R. L. Polk & Co. exhibit an unlimited amount of assurance in asking the medical profession of the United States and Canada to use their offices as billboards for the exclusive advertising of a proprietary medicine and in addition ask the members of the profession to pay \$6.00 each for the privilege. If this Medicine Company desires to advertise directly to sick people who are already in a physi-

cian's office, in immediate competition with him, they ought to be glad to furnish this "Physician's Directory" free to any physician who will allow his office to be used for such a purpose.

No other book in my library has such an advertisement on it, and it makes this one all the more prominent.

My patient sits down to consult me for some trouble that is causing him pain; he is facing my bookcase; he sees most prominent there, a four-inch aluminum bronze-lettered combination display advertisement—"If there's pain—that's enough."

I should have said he would have seen it had I not pasted a piece of leather over it.

Of course this is a good stroke of business on the part of the medicine firm and also on the part of Polk & Company, who no doubt received a handsome sum for this particular space.

I feel that any firm who are asking favors of the medical profession, and who at the same time offer such an insult, ought to be "boycotted," for they have practically said that we will stand any effrontery without knowing enough to resent it.

Personally, I desire to record an objection.

DESIGNATION OF THE OPERATION OF ROUND LIGAMENT VENTROSUSPENSION OF THE UTERUS.

By D. TOD GILLIAM, M.D.,
of Columbus, O.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IN your issue of October 20 I find a statement from Dr. Carl Beck, of New York, in which he claims that I published a description of his operation *in every detail*, but failed to give him credit for the same. In the article referred to by Dr. Beck I was giving a description of my own operation, which in so far from tallying with the Beck operation *differs* from it in every detail. The only thing in common is the inclusion of the round ligament in the abdominal wall. If Dr. Beck can establish priority for this very important feature of the operation he is entitled to credit for it. I got my suggestion from Ferguson and gave him due credit in my first report of the operation in the *American Journal of Obstetrics*, March 1900. I had never heard of the Beck operation until I saw it in the same journal six months subsequently. My operation and the Beck operation are as distinct in detail as the Alexander and Kellogg operations.

Insufficiency of Left Auriculoventricular Orifice of the Heart.—In an article in the *Postgraduate* for September, 1900, Wm. Henry Porter says that organic and the so-called functional insufficiency at the left auriculoventricular orifice may be easily differentiated during life, not by their rational or physical signs, but by an appropriate line of treatment. If the cause of the so-called functional murmur is deficient innervation, by giving such remedies as will restore the nerve-power, the signs and the symptoms will quickly disappear, all regurgitation be prevented, and the patient relieved from all the unpleasant symptoms. On the other hand, when due to a defective nutrition, with incomplete innervation and irregular muscular action, a building up of the cardiac muscles, as can be done with proper dietetic and therapeutic conditions, the murmur will disappear. When the physical signs are due to positive lesions in the valve segments, then the physical signs will not disappear, but will often become more pronounced. Even if the murmurs do not disappear much can be accomplished in the way of improving the action of the heart.

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Calendar of Meetings of Philadelphia Medical Societies for the week ended November 10, 1900:

Monday, November 5—Academy of Surgery.
Wednesday, November 7—College of Physicians.
Thursday, November 8—Pathological Society.

Charitable Bequests of \$10,000 to Philadelphia institutions are made in the will of the late Sallie C. Stout of this city.

Pennsylvania Hospital.—Dr. Alfred Stengel has been elected one of the physicians to the hospital to succeed the late Dr. Jacob M. DaCosta.

The Harrisburg Hospital is to be enlarged and improved and some of the old buildings replaced by new ones with all the modern appliances.

The Ogontz Hospital for the Insane near Philadelphia has applied for a charter. This institution is intended to relieve the overcrowded condition of the Norristown Hospital.

Diphtheria prevails in West Philadelphia, particularly in the Thirty-fourth Ward, where 30 cases were reported in one week. The Bureau of Health has ordered the school-houses fumigated.

Philadelphia Hospital.—The Bureau of Charities has appropriated \$130,000 for the erection of new buildings at the almshouse. The insane department will be enlarged and a building erected for the treatment of infectious diseases.

St. Agnes' Hospital, Philadelphia.—Dr. Joseph M. O'Malley was recently appointed visiting physician to succeed Dr. J. P. Crozer Griffith, resigned, and Dr. Edwin N. Barnhill and Dr. Francis D. Patterson were appointed surgeons in the surgical out-patient department.

University of Pennsylvania.—Owing to the fact that Dr. Edward Martin has been elected clinical professor of surgery, a vacancy arises in the clinical professorship of genitourinary diseases. Candidates may apply to Rev. J. Y. Burk, 400 Chestnut Street, before November 10.

An Aged Man.—Edward Henry died in Pittsburg, Pa., October 27. It is reported that he was born a slave in Culpeper, Va., in 1784, and was therefore 116 years old. He was married 5 times and is survived by his fifth wife, by whom he had 13 children. He is said to be the father of 60 children.

The New Jersey Sewerage Commission has given notice that the property-owners along the Navesink River, near Red Bank, must cease polluting the river on and after June 1, 1901. The town of Red Bank was at the same time ordered to provide a new sewerage-disposal plant by October 1, 1901.

Petition for a Municipal Hospital.—The City Council of Camden, N. J., failed to comply with the request of the Board of Health for the establishment of a municipal hospital. The medical profession of that city has presented a petition renewing the request and pointing out the urgent need of such an institution.

Pittsburg Episcopal Hospital.—An addition will soon be built to this institution, built and supported by the proceeds of that part of the Aspinwall estate that was set aside by the late Mrs. Aspinwall as a legacy to the Episcopal Hospital for the purpose of maintaining a ward for "poor white female orphan children who have been ill and are convalescent."

Druggists and the State Board.—It is reported that the State Pharmaceutical Examining Board has summoned several hundred retail druggists of Philadelphia to pay a fine of \$10 for neglecting to exhibit in view of their customers renewal receipts for the payment of their State registration fee. At a hearing on October 29, 5 of the men paid a fine of

\$10 and \$2.50 costs. The hearing of others was postponed until November 12. The druggists say that they did not know that the law required them to frame and expose the receipt in a conspicuous place. The Retail Druggists' Association intends to resist the payment of the fines.

The Asylum Nurse.—In an admirable paper entitled "A Plea for the Asylum Nurse," Robert Howland Chase, M.D., superintendent of the Friends' Asylum at Frankford, after paying a glowing tribute to the self-sacrificing work of trained nurses in general, to those in hospitals and on the battlefield, makes a strong plea for young women to become trained in nervous and mental nursing, which he considers requires special training and superior ability. He says: "Nursing the nervous and insane is growing into a profession which in its tendencies is progressive, and, when properly pursued, will lift the worthy nurse above the common toils, in proportion as she devotes her energies to it."

Berks County Medical Society.—At the October meeting of this society DR. A. B. DUNDORRE read a paper on the **Old and new obstetrician**. He spoke of the obstetrician of 30 years or more ago, when soap and water were the only antiseptics used, and he believes that the mortality was as low then as it is now. DR. F. W. FRANKHAUSER read a paper on **Fracture of the skull**, with the report of a case. He said Mumford in his analysis reported 300 cases of fracture of the skull treated at the Massachusetts General Hospital. Of these 279 were compound and only 21 were simple fractures. Of the 300 patients, 175 died. The writer pointed out the difficulties in diagnosing the simple fractures. The mortality of fracture of the base of the skull was 80%; of the vault 37.5%. He dwelt on the rarity of septic infection of those wounds, and insisted that the uninjured dura mater presented a strong barrier against it. The writer urged the necessity of trephining in every case of depressed fracture whether or not it is accompanied by an external wound or grave symptoms. He claims that in children especially the fracture will cause epilepsy and mental defect, and that one should operate at once and should not wait for symptoms of compression.

Vital Statistics of Philadelphia for the week ended October 27, 1900:

Disease.	Cases.	Deaths.
Total mortality		396
Inflammation of appendix 1, bladder 3, brain 5, bronchi 5, kidneys 14, larynx 1, heart 1, lungs 41, pericardium 1, peritoneum 3, pleura 2, stomach and bowels 25		102
Lungs—tuberculosis of 46, hemorrhage of 1		47
Debility 5, marasmus 22, inanition 13 . . .		40
Heart—disease of 24, fatty degeneration of 2		30
neuralgia of, 4		26
Paralysis 9, apoplexy 17		21
Uremia 13, Bright's disease 5, diabetes 3 . .		14
Diphtheria	119	12
Casualties		11
Carcinoma of face 1, jaw 1, liver 2, neck 1, stomach 3, uterus 2, sarcoma of arm 1 . .		8
Bowels—ulceration of 4, obstruction 4 . . .		7
Brain—diseases of 1, congestion of 3, dropsy of 1, hemorrhage of 1, softening of 1 . . .		7
Convulsions		7
Typhoid fever	55	7
Diarrhea 5, dysentery 2		6
Old age		5
Septicemia 4, pyemia 1		4
Asthma		3
Croup 2, membranous 1		3
Sclerosis, arterial		3
Malaria		3
Sore mouth		3
Liver—diseases of 1, cirrhosis of 2		3
Scarlet fever	35	1
Abscess of bladder 1, abortion 1, alcoholism 1, anemia 1, cyanosis 2, drowned 2, epilepsy 1, intermittent fever 1, fistula 1, gangrene of leg 1, senile 1, hernia 2, locomotor ataxia 1, suicide—hanging 1, syphilis 2, teething 1, unknown coroner's case 1.		

Memorial services were held October 28 in the Tabernacle Presbyterian Church, Philadelphia, commemorating the life and martyrdom of George Yardley Taylor, M.D., of Paoing Fu, China. It is feared that the son of Dr. E. B. Hodge perished at the same time. Dr. De Forest Willard

and others made addresses. Dr. Taylor by his skill and devotion had saved so many lives that high native officials believed he would be spared, but the very esteem in which he was held increased his value as an offering to the Chinese deities, and his head was laid on a Boxer altar on June 30. He was a graduate of Princeton and of the Medical Department of the University of Pennsylvania. His intellectual precision and unusual memory, his skill as an operator, his powers of endurance, his courage, faithfulness, gentleness and unselfishness peculiarly fitted him for the calling of a physician, and his remarkable gifts as a linguist enabled him to use his scientific knowledge with the utmost effectiveness. His rare modesty and absolute singleness of purpose made him shun the prominence which his brilliant abilities could have so easily won. Such men do not die. Dr. Taylor lives still in two hemispheres as a moral force to which martyrdom has added an impetus that will carry his influence far into the future.

Pittsburg Academy of Medicine.—At a meeting, held October 15, DR. E. W. DAY reported a case illustrating the **resistance of the facial nerve to contiguous inflammation**. DR. J. H. ANDERSON read a paper entitled **Why do we so frequently have relief from pain and other symptoms following operation for exploration of the kidney** where calculus, nephroptosis, pyelonephritis, and tumor are suspected and not found. A case was cited in which renal calculus was suspected by reason of renal colic, hematuria, and bacteruria without decomposition of urea. No calculus was found on exploration, but the kidney was enlarged and firmly fixed, with hyperplasia of the perirenal, cellular and adipose tissue. The manipulation and freeing of the adherent tissue was followed by the entire relief of all symptoms in less than two weeks. The atrium of infection was considered: 1. In **descending** infections to be hematogenous after suppurative diseases with suppurative foci in kidneys, and in injuries and diseases of the alimentary canal with pure cultures of the *Bacillus coli communis* in the urine. Experiments of Posner and Lewin show the frequent existence in kidney-lesions of this bacillus. The theories of the Guyon school, of Rosving, Melchior, and Moullin were considered. 2. In **ascending** infections, from a focus in the urethra or bladder by the lymphatics ascending the ureter to pelvis and capsule and intertubular portions of the kidney. 3. Infection through a standing column of urine in urethral obstruction, the infection following the mucous membrane. 4. Infection by contiguity, as in psoas abscess, etc. In the case cited, there was probably a lymphatic infection with passive hyperemia, causing renal colic and hematuria. This was relieved by freeing the capsule and perirenal tissue, permitting drainage of the lymphatics. In the treatment of bacteruria originating in the bladder, 1½ ounce of 2% silver nitrate solution is injected and permitted to remain 2 minutes, followed by 1½ ounces of sterile water. If the infection be from a higher point, give 2 quarts of water and 12 grains of salol daily, in order to dilute culture-media and render it antiseptic if it be possible. In every case of persistent renal pain with hematuria or bacteruria, exploratory operation should be resorted to. In discussion DR. ADOLPH KOENIG said that if the conditions thought to exist in Dr. Anderson's case were present, it was difficult to understand how they should disappear so suddenly without leaving a kidney more or less diseased. DR. WILLIAMSON reported at length a case of **chronic nephritis** in a man, with double pleural effusion, ascites, and general anasarca, and loss of 100 pounds in weight, under treatment for 2 years. The patient has made a remarkable recovery, being in good general condition at present. He has been most benefited by a pill of blue mass, digitalis, squills, and hyoscyamus.

NEW YORK.

Scarlet fever is epidemic at Palmyra, N. Y. In all about 40 cases have been reported.

Clara Barton, of the Red Cross Society, is reported dangerously ill in Galveston, Texas.

Hospital Donations.—The Episcopal Eye, Ear, and Throat Hospital, Washington, D. C., was the recipient of generous donations, October 27.

The New York State Association of Railway Surgeons will hold its annual meeting at the Academy of Medicine, New York City, November 15, 1900, under the presidency of Dr. J. L. Eldy, of Olean.

Charity.—John D. Rockefeller, Jr., has decided to erect a 5 story building, to cost \$100,000, at Tenth Avenue and Fiftieth Street, New York, to be devoted to the educational and social needs of poor people who live in the neighborhood.

New York Skin and Cancer Hospital.—The governors of this hospital announce that Dr. L. Duncan Bulkley will give a third series of **Clinical Lectures on Diseases of the Skin** in the hall of the hospital on Wednesday afternoons, commencing November 7, 1900, at 4.15 o'clock. The course will be free to the medical profession.

Sanatorium for the Tuberculous.—In a paper on "The City and Its Consumptive Poor—A Plea for a Municipal Sanatorium Outside of the Corporate Limits," read recently before a section of the New York Academy of Medicine, Dr. Alfred Meyer said that such an institution could be built for \$3,000,000 and maintained with \$100,000 a year. He estimated the number of tuberculous individuals in New York to be about 30,000.

New York Eye and Ear Infirmary.—At the annual meeting of the Board of Directors of this institution recently, the annual report showed that for the year ended September 30 there had been treated in the dispensary department 30,878 new cases in the eye service, 9,710 in the ear, and 7,096 in the throat; and that 2,257 patients had been treated in the hospital ward, representing 20,734 days of care. The treasurer's report showed a balance of nearly \$4,000 in favor of the institution after all bills were paid. During the year the permanent fund has been increased by \$65,000.

Midwife Held for Causing an Infant's Blindness.—According to the *Boston Medical and Surgical Journal*, Mrs. Barbara Harprecht, of New York, a midwife, has been held in \$600 bail for trial, charged with causing, by her negligence, the blindness of an infant at whose birth she officiated last spring. This is said to be the first case of the kind in recent years in which the Health Department has been able to get the evidence in such a shape as to enable it to proceed against the responsible person, although it is well known that a large part of the blindness existing at present has been caused by neglect and improper treatment during early infancy. The section of the Penal Code under which the woman will be tried provides that when the eyes of a young child whose birth has been attended by a midwife become affected, the midwife is forbidden to treat or prescribe for the condition, but must either notify the Board of Health or secure the services of a physician. Violation of the statute is punishable by a fine of \$250 or 6 months' imprisonment, or both.

NEW ENGLAND.

The Middlesex East District Medical Society of Massachusetts observed its fiftieth anniversary, October 23, the address of the occasion being given by Dr. S. W. Abbott, Secretary of the State Board of Health.

The Supreme Court of Massachusetts has decided that physicians under the Massachusetts statutes are not liable for negligence in erroneously certifying a person insane or inebriate, provided they do so in good faith and without malice.

The Farren Memorial Hospital, built at Montague City, Mass., by B. N. Farren, of Philadelphia and Montague City, as a memorial to his son, was dedicated October 23. The building is a handsome brick structure, with stone trimmings, modern in every particular. It will be in charge of the Sisters of Providence, and no one will be excluded from the institution on account of poverty.

Harvard University has a medical inspector whose duty it is to care for the health of the students. The students to whom Dr. Bailey, the present inspector, will be required to give his attention this year will number about 3,500. His work will be materially assisted by the new infirmary which is to be built under the terms of a gift of \$100,000 to the

university by James Stillman of New York. Another gift that has followed the appointment of the medical visitor to the University has been the \$156,000 to establish a professorship of hygiene.

Thurber Medical Association.—This society held its forty-seventh annual meeting in Milford, Mass., on October 4. The following officers were elected: President, N. C. B. Haviland, of Holliston; vice-president, Ralph C. Fish, of Hopedale; secretary, J. M. French, of Milford; Treasurer, Le Grand Blake, of Milford; librarian, C. D. Albro, of Milford; orator for 1901, N. C. B. Haviland. A prize of a standard medical work was awarded to J. M. French, of Milford, for a paper on **The treatment of acute croupous pneumonia; a collective investigation report**, which was by vote of the members decided to be "the most meritorious paper read before the society during the year by an active member." The annual address was delivered by Dr. N. W. Browne, of Blackstone, on **The lights and shadows of a physician's life**. After dinner toasts were proposed to the Clergyman, the Alienist, the Lawyer, and the Thurber Medical Association, with responses by the members and invited guests, of whom a considerable number were present.

CHICAGO AND WESTERN STATES.

The American Public Health Association held its first meeting at Indianapolis, Ind., October 23. A report of the meeting will appear in our next issue.

Smallpox on Shipboard.—A case of smallpox on board the *City of Seattle* carrying over 200 passengers, caused her detention for 2 weeks at the quarantine station near Vancouver City.

The Illinois Home for Epileptics has moved to its permanent location, 3240 Lake Park Avenue, Chicago. The home is a charitable institution and is open at all times for the reception of emergency cases.

The Merrit Hospital, Oakland, Cal.—The decision of the lower court has been sustained by the United States Supreme Court, and the \$500,000 devised by Mrs. Catherine M. Garcelon thus made available for the erection of this hospital.

Smallpox in Montana.—There are more than 40 cases of smallpox in the hospital at Butte, Montana, and the health-officer has instructed the police of the city to enforce compulsory vaccination and arrest all persons who fail to show the proper certificates.

Defective Eyes.—The physicians of the health department of Milwaukee who examined the pupils of the public schools report that out of 19,618 children examined, 5,055 cases of defective eyes were found, of which number 3,209 were girls. There were 1,419 cases of defective hearing.

Suit for Damages.—The house physician of St. Vincent's Charity Hospital, Cleveland, Ohio, the Sisters of Charity, Mother Superior and Ignatius F. Horstmann are defendants in a suit for \$10,000 damages entered September 29 by a patient who claims that she was burned by hot-water bags while in narcosis after operation.

The Northwestern Wisconsin and Fox River Valley Medical Associations held a joint meeting in Oshkosh, October 23. Papers were read by Drs. J. G. Hirth, W. H. Nielson, and F. Shimonek, of Milwaukee; Emil Rees, Byron Robinson, and L. Hektoen, of Chicago; V. T. Marshall, of Appleton; and C. J. Coombs, of Oshkosh.

Free Care for Epileptics.—The Illinois Home for the Treatment and Care of Epileptic Patients is the only institution in the State where the treatment of these unfortunates is free. The object of the home is the establishing of an epileptic colony and the erection of a building for this large class of patients, with farms, workshops, a theater, reading-room, gymnasium and equipment for restoring the mental faculties of curable epileptics, and to give a miniature world to incurable epileptics. Incarceration of epileptics in insane asylums and the abuse of persons who fall in a fit on public streets are to be prevented. In receiving and treating patients no exception will be made as to color, creed, race, or religion.

Home for Disabled Railroad Men.—At a meeting of the Brotherhood of Locomotive Firemen, held recently at Des Moines, Iowa, steps were taken for the establishment of a home for aged and crippled railroad men. The sum of \$9,000 was voted for this purpose. Other railroad organizations will be asked to assist in the maintenance of a home for railroad employes similar to those operated by the Masons and Odd Fellows.

"Oakland College of Medicine and Surgery" is the name of a new college to be opened in 1901 at Oakland, Cal. Clinics will be started by January 1. The course in the new college will be for 4 years and the entrance requirements will be fixed at a very high standard. The incorporators of the new college, who will serve as the first board of directors, are: Dr. Frank L. Adams, Dr. J. S. Eastman, Dr. Carl Krone, Dr. Hayward G. Thomas, and Dr. D. D. Crowley.

Medical Inspection of Schools.—Some members of the Chicago Board of Education are opposed to the medical inspection of children who attend the public schools on the ground of expense. Parents and friends of medical inspection, who regard it as a safeguard, are protesting to the Board from all parts of the city. During 3½ months of the last school year 76,000 examinations were made, and 4,539 cases of contagious disease discovered and excluded from the schools. Since September of the present year 510 contagious cases have been excluded.

Chicago Pathological Society.—Regular meeting, October 8, 1900, Dr. LUDVIG HEKTOEN, president, in the chair. Dr. S. E. MUNSON, of Springfield, Ill., read a paper upon **milk-supply**, discussing in particular the relation between milk-supply and tuberculosis. The recent literature bearing upon the subject was discussed, and the use of tuberculin and the slaughter of cows giving a reaction were advocated. The paper was discussed by Dr. W. A. EVANS and Dr. ADOLPH GEHRMANN. Dr. EVANS spoke of the various measures advocated for the elimination of tuberculosis from herds of cows, and concluded by advising the killing of all tubercular cows, as has been urged by Virchow. Dr. GEHRMANN referred to the measures taken by the Chicago Health Department relative to the detection of tubercle-bacilli in milk. The examination of a general milk-supply for the bacilli has been discontinued, and only the milk from individual cows is tested. The use of tuberculin is always recommended in any case where suspicion is aroused, in preference to the examination of the milk. The detection of pus in milk is considered sufficient evidence upon which to condemn it, even in the absence of tubercle-bacilli. Dr. BROWN PUSEY demonstrated specimens of a **glioma of the retina** (so-called "neuroepithelioma"). He said that the present agitation of the subject of glioma of the retina undoubtedly is due to the article of Flexner, published August, 1891, and to the book of Wintersteiner, "Das Neuroepithelioma der Netzhaut," published 1897. In these publications particular attention was paid to the rosetts found in such tumors. Wintersteiner described the roset as composed of cells derived from the neuroepithelial layer of the retina; the wall of the central cavity of the roset, he considered, corresponded to the external limiting membrane of the retina, with rudimentary rods and cones projecting into the central cavity. Flexner and Wintersteiner, working independently, came to similar conclusions, and from these studies suggested the name neuroepithelioma retinae to replace the term glioma retinae. These conclusions have been accepted by many authorities; others have opposed them. Two facts have been particularly hard to explain when considering these tumors as new growths derived from the neuroepithelial layer of the retina. One is, that according to present views, such highly differentiated tissues do not form tumors; the other is, that gliomas arising elsewhere than in the eye have very similar rosetts. Dr. Pusey exhibited specimens from a tumor that was evidently removed in a very early period of its development. It showed the rosetts unusually clearly. For comparison he brought specimens procured when he was a student of Wintersteiner, and also specimens from the tumor on which Emanuel did his work,—the article published in the August number of *Virchow's Archives*. There is no doubt, according to the writer, that the cells of the rosetts of this tumor do in places split up into fibrous tissue—into neuroglia. He believed that his specimens

demonstrate that the rosets are composed of cells which form neuroglia; in other words, that the suppositions of Flexner and Wintersteiner that these tumors are neuroepithelioma are incorrect, and that these tumors are, as was formerly believed, true gliomas. In the discussion Dr. M. HERZOG agreed that the tumor consisted of glia cells, and that if the blood could be demonstrated in some of the spaces, the picture would correspond to a glioma of the central nervous system. DR. H. DUNCAN demonstrated specimens of **castration tumors** from swine, a disease characterized by a tumor or growth which appears as a rule after castration, occupying the position of the testicle. Similar growths occur, however, in other situations, and in the female, usually on the breast. A trauma of some kind invariably occurs previous to the appearance of the growth.

SOUTHERN STATES.

Typhoid Fever.—An epidemic of typhoid fever exists at Elkton, Md. Already 36 cases have been reported. Samples of water taken from the town reservoir were found to be good, but those from the wells very bad.

Medical Inspectors for Schools.—Congress is to be asked to provide 11 medical inspectors for the public schools of the District of Columbia, in conformity with the report of Health Officer Woodward on the need of frequent examination of the pupils. A salary of \$500 is to be paid the physicians appointed.

Richmond (Va.) News.—The first time an operation was performed in this city by the use of **cocain injected in the arachnoid space** of the spinal column was on October 16 at the Virginia Hospital, by Dr. Hugh M. Taylor. The patient had an extensive necrosis of the femur, which was scraped and chiselled out, pure carbolic acid injected into the marrow cavity and the wound drained with a large glass tube. The results, as far as anesthesia are concerned, were perfect; 15 drops of a 2% solution being used.

The Society of Ophthalmologists and Otologists, of Washington, D. C., held its first meeting of the season at the residence of its president, Dr. E. Oliver Belt, October 19. Dr. Belt exhibited a patient suffering with **pulsating exophthalmos** of 2 years' duration. Dr. Walter Wells reported a case of **nasal sarcoma**. Dr. J. H. Bryan read a paper on **Facial paralysis due to middle-ear disease**. At a recent meeting of the Board of Governors of the Episcopal Eye, Ear, and Throat Hospital the medical staff reported that during the past 9 months 6,848 visits were made to the Hospital by 1,464 patients, 212 operations were performed, and 153 patients were received into the Hospital.

The Medical Society of Virginia.—The thirty-first annual meeting of the society was held at Charlottesville, October 23, 24, and 25. The president was Dr. Hugh T. Nelson, of Charlottesville. A special committee suggested the following names as those of physicians to be nominated to the Governor by the society for members of the State Board of Health: Drs. Paulus A. Irving and Landon B. Edwards, Richmond; L. E. Harvie, Danville; Rawley Martin, Lynchburg; Vernon G. Culpepper, Portsmouth; J. H. Neff, Harrisonburg; J. T. Graham, Wytheville. The suggestion was approved by the society. Honorary fellowships were conferred upon Dr. W. Richardson, of Boston; Dr. Edward Parker Davis and Dr. S. H. Musser, of Philadelphia, and Dr. Hugh T. Nelson, of Charlottesville. Notice was given of the purpose to erect a monument in the Capitol Square in Richmond in honor of Dr. Hunter McGuire. The society pledged a contribution.

MISCELLANY.

The Music Cure.—It is reported that the authorities of the Manhattan Asylum, Ward's Island, are now making systematic experiments with the music cure, and have thus far treated a dozen or more patients afflicted with melancholia, giving them concerts an hour long each afternoon with the harp, violin, and piano for instruments. They report after a month's trial that improvement is shown and that patients suffering from acute mania and hallucinations

show more mental alertness and cheerfulness, and that one patient has been assisted almost to recovery by the strains of the violin alone.

Status of Contract Surgeons.—The Comptroller of the Treasury has held that a contract surgeon in the U. S. army is neither an officer nor an enlisted man and is not entitled to the 10% increase in pay, under the Act of May 26, 1900.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended October 27, 1900:

SMALLPOX—UNITED STATES.				CASES.	DEATHS.
COLORADO :	Arapahoe Co. . .	Sept. 17-Oct. 10 .		9	
"	Rio Grande Co. .	Sept. 25-Oct. 5 .		4	
"	Custer Co. . . .	Oct. 5		1	
KANSAS :	Cherokee Co. . .	Sept. 1-30		3	
"	Crawford Co. . .	Sept. 1-30		4	
"	Douglas Co. . . .	Sept. 1-30		1	
"	Rawlins Co. . . .	Sept. 1-30		4	
"	Shawnee Co. . . .	Sept. 1-30		2	
LOUISIANA :	New Orleans . . .	Oct. 13-20		1	
MINNESOTA :	Minneapolis . . .	Oct. 13-20		1	
N. HAMPSHIRE :	Manchester . . .	Oct. 13-20		1	
OHIO :	Cleveland	Oct. 13-20		7	
PENNSYLVANIA :	Philadelphia . . .	Oct. 13-20		3	
UTAH :	Salt Lake City . .	Oct. 13-20		6	

SMALLPOX—FOREIGN.				CASES.	DEATHS.
ARGENTINA :	Buenos Ayres . .	Aug. 1-31		10	4
AUSTRIA :	Prague	Sept. 22-29		1	
BELGIUM :	Antwerp	Sept. 22-29		1	
CANADA :	Yukon Territory				
	—Dawson	Sept. 24		4	
EGYPT :	Cairo	Sept. 23-30			1
ENGLAND :	Liverpool	Sept. 30-Oct. 6 . .		4	
"	London	Sept. 22-Oct. 6 . .		3	
"	Southampton . .	Sept. 30-Oct. 6 . .		4	
"	West Hartlepool .	Sept. 30-Oct. 6 . .		3	
FRANCE :	Paris	Sept. 23-30			7
GIBALTAR :		Oct. 1-7		1	
GREECE :	Athens	Sept. 30-Oct. 6 . .		2	
INDIA :	Bombay	Sept. 18-25			1
"	Calcutta	Sept. 15-22			6
"	Madras	Sept. 15-21			2
ITALY :	Sorronto	Oct. 10		Generally	
				prevalent.	
JAPAN :	Formosa	Aug. 1-31		1	
MEXICO :	Vera Cruz	Oct. 6-20			2
RUSSIA :	Moscow	Sept. 22-29		2	1
"	Odessa	Sept. 30-Oct. 6 . .		10	1
"	St. Petersburg . .	Sept. 22-29		7	
"	Warsaw	Sept. 15-29			22
SCOTLAND :	Glasgow	Oct. 5-12		25	1

YELLOW FEVER.				CASES.	DEATHS.
COLOMBIA :	Bocas del Toro .	Oct. 22		1	
CUBA :	Havana	Oct. 6-13			18
MEXICO :	Tampico	Oct. 7-14		3	1
"	Vera Cruz	Oct. 6-20			13

CHOLERA.				CASES.	DEATHS.
INDIA :	Bombay	Sept. 18-25			64
"	Calcutta	Sept. 15-22			7
JAPAN :	Nagasaki	Sept. 11-20		1	

PLAGUE—UNITED STATES.				CASES.	DEATHS.
CALIFORNIA :	San Francisco . .	Oct. 5-10		2 cases bacteriologically confirmed.	

PLAGUE.—FOREIGN AND INSULAR.				CASES.	DEATHS.
CHINA :	Hongkong	Aug. 18-Sept. 1 . .		13	13
EGYPT :	Alexandria	Sept. 17-24		2	1
INDIA :	Bombay	Sept. 18-25			89
"	Calcutta	Sept. 15-22			24
JAPAN :	Formosa	Aug. 1-31		4	3
"	Kobe	Oct. 23			Present.
SCOTLAND :	Glasgow	Sept. 30-Oct. 6 . .			1
WALES :	Llandoff	Oct. 11		1 case on SS. "Southgaeth" from the River Platte.	

Obituary.—LAURENCE TURNBULL, of Philadelphia, October 24, aged 79. Dr. Turnbull was a native of Lanarkshire, Scotland. He came to this country when 12 years of age, and was graduated from the Philadelphia College of Pharmacy and the Jefferson Medical College. He was the first surgeon in this country to open the mastoid process for dis-

ease of that region. He was a member of many medical societies. Among his contributions to medical literature are: "A Biographical Sketch of Professor John K. Mitchell;" "The Electro-Magnetic Telegraph with an Historical Account of Its Rise;" "Defective and Impaired Vision, with the Clinical Use of the Ophthalmoscope;" "Clinical Observations on the Relief of Pain in Acute Affections of the Ear," and "A Manual of Anesthetic Agents and their Employment in the Treatment of Disease."—JAMES F. MAHONEY, of New York, October 15, aged 35.—PHILIP ROTH, of Newark, N. J., October 21, aged 36.—DAVID PELLMAN BOYER, of Philadelphia, October 14, aged 76.—JOHN MILLS, of Pana, Ill., October 16, aged 81.—JOHN C. BECHTEL, of Harrisburg, Pa., October 11, aged 49.—HIRAM GREENTREE, of Baltimore, October 28.—EDWARD R. SQUIBB, of Brooklyn, October 26, aged 81.—CAPT. BENJAMIN BROOKE, Assistant Surgeon, U. S. Army, at Radnor, Pa., October 18.—GEORGE A. MUEHLECK, of Philadelphia, October 15, aged 40.—MATTHEW J. GREER, of Philadelphia, October 27, aged 73.—JOHN P. DUDLEY, of San Jose, Cal., October 23, aged 50.—JAMES H. MCNUTT, of Bowling Green, Mo., October 25, aged 70.—ALEXANDER H. JOHNSON, of Newark, N. J., October 25.—WILLIAM J. NELSON, at Middletown, N. Y., October 26, aged 40.—EDWARD ADDISON HERVEY, of Rossville, S. I., aged 76.

Changes in the Medical Corps of the U. S. Army for the week ended October 27, 1900:

BRUHL, CHARLES E., acting assistant surgeon, is relieved from duty at the headquarters of Second Artillery, Vedado, Cuba, and assigned to Hamilton Barracks, Matanzas.

PINTO, ALVA S., acting assistant surgeon, is granted leave of absence for 1 month, with permission to go beyond the limits of the division of Cuba.

PURVIANCE, Captain WILLIAM E., acting surgeon, will proceed to the Presidio, where he will report at the General Hospital for duty.

McLAUCHLIN, WHARTON B., acting assistant surgeon, is relieved from temporary duty at the Army General Hospital, Presidio, and assigned to temporary duty with troops on the Army transport "Grant," to sail for the Philippine Islands about October 16. Upon arrival at Manila he will report to the commanding general, division of the Philippines, for assignment to duty.

PROBERT, MERTON A., acting assistant surgeon, is relieved from temporary duty at the Army General Hospital, Presidio, and assigned to temporary duty with troops on the Army transport "Grant," to sail for the Philippine Islands about October 16. Upon arrival at Manila he will report to the commanding general, division of the Philippines, for assignment to duty.

CHAMBERLAIN, GEORGE E., acting assistant surgeon, is relieved from temporary duty at the Army General Hospital, Presidio, and assigned to temporary duty on the transport "Conemaugh" during the voyage of that vessel to the Philippine Islands. Upon arrival at Manila he will report to the commanding general, division of the Philippines, for assignment to duty.

BAUR, ALFRED, hospital steward, and 50 privates, hospital corps, Army General Hospital, Washington Barracks, will be sent, fully equipped for the field and for service in the tropics, to Brooklyn, N. Y., and will report to the commanding officer, transport "Buford," for transportation to Manila, P. I. Upon arrival there they will report to the commanding general, division of the Philippines, for assignment to duty in that division.

LEONARD, CHARLES L., hospital steward, Fort Columbus, will report, fully equipped for the field and for service in the tropics, to the commanding officer, transport "Kilpatrick," Brooklyn, N. Y., for transportation to Manila, P. I., and for duty with detachment of hospital corps privates aboard that transport. Upon arrival there he will report to the commanding general, division of the Philippines, for assignment to duty in that division.

REED, Major WALTER, surgeon, now in Washington, D. C., is detailed to represent the medical department of the Army at the meeting of the American Public Health Association, to be held at Indianapolis, Ind., October 22 to 26. He will proceed to Indianapolis in time to reach there on or before October 22, and upon the adjournment of the association will return to his proper station.

HYSELL, Major JAMES H., surgeon, is granted leave of absence for 2 months.

MUNSON, Captain EDWARD L., acting surgeon, is, on surgeon's certificate, granted 15 days' extension of leave of absence.

BUCK, CARROLL D., acting assistant surgeon, is relieved from further duty at Fort Yellowstone, to take effect upon the return to that post of Acting Assistant Surgeon James B. Ferguson, and will proceed to San Francisco, Cal., and report to the commanding general, department of California, for transportation to Manila, P. I., where he will report to the commanding general, division of the Philippines, for assignment to duty.

JOHNSON, DAVID J., acting assistant surgeon, is relieved from duty at Plattsburg Barracks, to take effect upon the arrival at that post of First Lieutenant Henry Page, assistant surgeon, and will proceed to his home, Roxbury, Mass., and report by letter to the Surgeon General of the Army for annulment of contract.

LUDINGTON, P. L., acting assistant surgeon, will proceed from Omaha, Neb., to New York City, for assignment to duty as transport surgeon on the transport "Kilpatrick."

CARROLL, JAMES, assistant surgeon, is granted extension of leave of absence for 10 days, on surgeon's certificate.

VAUGHAN, MILTON, acting assistant surgeon, is relieved from further duty in the department of Eastern Cuba, and upon the expiration of his present leave will proceed from Little Rock, Ark., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for the division of the Philippines.

SCHLAGETER, HERMAN J., acting assistant surgeon, now at San Francisco, Cal., is relieved from temporary duty at Vancouver Barracks, and upon the expiration of his present leave will report to the commanding general, department of California, for assignment to duty.

WILSON, RICHARD, acting assistant surgeon, is relieved from further duty in the department of Eastern Cuba, and will proceed from Santiago, Cuba, to Washington, D. C., and report to the Surgeon-General of the Army for instructions.

FULLER, First Lieutenant LEIGH A., assistant surgeon, will report to the commanding officer, battalion of the Fifteenth Infantry, for duty and will accompany it to the department of Southern Luzon.

FULCHER, MARRON O., acting assistant surgeon, will report to the commanding officer, battalion of the Fifteenth Infantry, for duty and will accompany it to the department of Southern Luzon.

STUCKEY, HARRISON W., acting assistant surgeon, will report to the commanding officer, squadron of the Third Cavalry, for duty, and will accompany them to the department of Northern Luzon.

STREET, LIONEL A. B., acting assistant surgeon, will report to the commanding officer, Company E., battalion of Engineers, for duty, and will accompany them to the department of Northern Luzon.

ALLEN, H. E., acting assistant surgeon, will report to the commanding general, department of Southern Luzon, for assignment to duty.

FITZGERALD, CHARLES J., acting assistant surgeon, is relieved from duty in the department of Southern Luzon, and will report at convalescent hospital, Corregidor Island, P. I., for duty.

REYNOLDS, Major FREDERICK R., surgeon, is relieved from duty at the First Reserve Hospital, and will report for duty as chief surgeon, separate provost guard, Manila, P. I.

NEWTON, RALPH W., acting assistant surgeon, will report to the commanding general, department of Northern Luzon, for assignment to duty.

RENO, WILLIAM W., acting assistant surgeon, will report to the commanding general, department of Northern Luzon, for assignment to duty.

UNOER, ISIDOR M., acting assistant surgeon, will report to the commanding general, department of Northern Luzon, for assignment to duty.

MANY, HARRY C., acting assistant surgeon, will report to the commanding general, department of Southern Luzon, for assignment to duty.

BYRNE, JOHN B., acting assistant surgeon, is relieved from duty in the department of Mindanao and Jolo, and is assigned to duty in the department of Southern Luzon, where he is now on temporary duty.

LOWER, WILLIAM E., acting assistant surgeon, will report to the commanding general, department of Southern Luzon for assignment to duty.

McGRATH, PATRICK J., acting assistant surgeon, will report to the commanding general, department of Southern Luzon, for assignment to duty.

BAKER, WILLIAM P., acting assistant surgeon, will proceed to Iloilo, Panay, reporting to the commanding general, department of the Visayas, for assignment to duty.

MITTELSTAEDT, CHARLES B., acting assistant surgeon, will proceed to Iloilo, Panay, reporting to the commanding general, department of the Visayas, for assignment to duty.

O'NEILL, JOSEPH A., acting assistant surgeon, will proceed to Iloilo, Panay, reporting to the commanding general, department of the Visayas, for assignment to duty.

BRADLEY, HENRY H., acting assistant surgeon, is relieved from duty at Camp William H. Osborne, Idaho, to take effect upon the return to duty at that post of Acting Assistant Surgeon Jesse P. Truax, and will proceed to his home, Buffalo, N. Y., and report by letter to the Surgeon-General of the Army for annulment of contract.

Changes in the U. S. Marine-Hospital Service, for the week ended October 27, 1900:

BAILHACHE, PRESTON H., surgeon, to proceed to the purveying depot, New York, N. Y., as inspector. October 20.

GASSAWAY, J. M., surgeon, is granted 2 days' leave of absence from October 19, under paragraph 179, regulations.

STONER, G. W., surgeon, 3 days' leave of absence granted October 16 is amended so that said leave shall be for 2 days only. October 23.

COFER, L. E., assistant surgeon, will proceed to Philadelphia, Pa., and report to the medical officer in command for temporary duty. October 25.

FOX, CARROLL, assistant surgeon, to proceed to Portland, Ore., and assume command of the service. October 25.

BEAN, L. C., acting assistant surgeon, is granted leave of absence for 2 days. October 23.
 GREGORY, G. A., acting assistant surgeon, is granted leave of absence for 7 days. October 13.
 GAHN, H., hospital steward and chemist, is granted leave of absence for 20 days from November 12. October 17.
 ROEHRIG, A. M., temporary hospital steward and assistant chemist, is relieved from duty at San Francisco, Cal., and directed to proceed to the immigration depot, New York, reporting to Surgeon L. L. Williams for duty. October 19.
 SCHLAAR, W. F., hospital steward, upon being relieved by Temporary Hospital Steward and Assistant Chemist A. M. Roehrig, will proceed to Washington, D. C., and report at bureau for duty. October 19.
 MORGAN, D. H., passed assistant surgeon, is commissioned passed assistant surgeon from November 27, 1899.
 LEDBETTER, R. E., assistant surgeon, is appointed assistant surgeon from October 19, 1900.

Foreign News and Notes.

GREAT BRITAIN.

Physicians in Parliament.—At the recent election, 11 physicians were elected to Parliament and 10 medical candidates were defeated.

Death from A. C. E.—A death from this anesthetic occurred recently at Guy's Hospital. Cardiac failure was the alleged cause of death.

Lunacy Fees.—The Devonport Board of Guardians has decided that 1 guinea is too large a fee for the medical examiner in pauper lunacy cases.

Smallpox Among Returned Troops.—The *Kildonan Castle*, from South Africa, has arrived at Southampton with smallpox among the soldiers on board.

Typhoid Epidemic in Southwark.—No cause has as yet been found for this outbreak, at present numbering 102 cases. Most of the patients were school children.

Bequests to Charity.—The will of the late Marquis of Bute makes many charitable bequests, including £100,000 to be distributed among various Roman Catholic Institutions.

Treatment of Inebriety in Institutions.—A retreat at Buntingford requires 6 hours of hard labor from each inmate every day. This is outdoor work when the season permits it.

Medical Students Decrease in Number.—There is a distinct falling off in the numbers of students at the various colleges in England. The number diverted into the army is given as one cause of the decrease.

Monument to a Physician.—At Bedlington a monument to Dr. James Trotter was recently unveiled. The monument is in the form of a fountain, 21 feet high. Dr. Trotter had practised in the town for 30 years.

New Drainage Tube.—Dr. Steele, of Clifton, has designed a double channelled drainage tube. It can be used in any case, but is particularly useful in deep cavities where irrigation is used, one channel acting as an exit.

Glanders and Watering-Troughs.—It is stated that in the city of Belfast there has been no case of glanders since the troughs were discontinued in May last. They have been replaced by standpipes, each horseman furnishing his own bucket.

Medical Service in Scotland.—The question of medical service for the poor in Scotland is receiving much attention at present. An unsatisfactory condition exists as regards both the sick poor and the poor-law medical officers. The first class does not receive proper attention, and the second are underpaid. No advance in this line seems to have been made during the last 50 years.

Pathologic Laboratory at Bradford.—The municipal authorities have been petitioned to provide a public pathologic and bacteriologic laboratory. Suspected material is at present sent to Leeds. Cardiff is the only town in Great Britain which has its own health laboratory.

Sale of Patent Medicines in Great Britain.—The stamp duty paid on medicines during the year ended March 31, 1900, amounted to the sum of £288,827, being an increase over the preceding year of £22,423. There has been a steady increase in the net receipts since 1894 when the amount was £213,210, the lowest during the past 10 years.

Crime in England.—The annual report of the Commissioners of Prisons shows that practical results have been brought about by the Prisons Act of 1898. Improvement in the diet scale has not led to an increase in the number of criminals who would be attracted by better fare. Special efforts are made to bring moral and physical influence to bear on prisoners between 16 and 21 years of age. Insanity is steadily decreasing, which is gratifying when it is remembered that insanity in the country generally is increasing.

Lunacy in British Isles.—The report of the Commissioners in Lunacy for 1899 shows the total number of lunatics in England and Wales to be 106,611. Of these 58,075 were females and 48,536 males. The commissioners regret that alleged sufferers from insanity are still examined at police-courts instead of at their homes or the workhouse. They are also strongly in favor of the granting of pensions to the members of the staffs of lunatic asylums. The number of lunatics in Ireland in 1899 was 20,863. Many of the workhouses are said to be overcrowded and uncleanly.

Hospital Reform.—The report of the Medical Guild on Hospital Reform has been published. Among its recommendations are: That the investigation of the financial suitability of the applicants seeking relief at all medical charities should be the work of a central board, and that, in every case in which investigation is decided upon, it should be done thoroughly. That all trivial cases should be dismissed after the first attendance and that they, and all accidents (which should receive first aid), should, if not detained as in-patients, and if not fit objects of charity, receive no further treatment, but be referred to other sources. That the exaction of any payment whatsoever from patients should be entirely abolished.

CONTINENTAL EUROPE.

Dr. Leopold Javal, the eminent French ophthalmologist, recently lost his sight from the occurrence of glaucoma.

Dr. Yersin has returned to France after investigating the plague at Hongkong and Bombay. A report of the results obtained with the antiplague serum will soon be made.

Incubation Period in Malaria.—A case of malaria from Oporto, Portugal, is reported in the *Lancet*, which from certain circumstances places the incubation period at 18 days.

Lunacy in Italy.—The growth of insanity is causing alarm in Italy. There is a considerable increase of idiots, imbeciles, epileptics, etc., but alcoholic insanity maintains about the same proportion.

American Hospital in Paris.—Mrs. Leland Stanford has purchased a site in Paris for an American Hospital, upon which she will have the necessary buildings erected and give a sufficient endowment to maintain 60 beds and the staff needed.

Ulcer Cured by Röntgen Rays.—Stenbeck, of Stockholm, reports the cure of a rodent ulcer by daily exposure to the Röntgen rays. Each exposure lasted 10 to 15 minutes and was continued for several weeks. The hard edge was the most resistant.

The Society of Russian Surgeons was recently established in Moscow, membership being open to all practitioners in Russia upon the payment of 8 rubles yearly or 100 rubles at one time. The organizing secretary is Professor Diakanoff, of Moscow.

Preservation of Corpses.—An exhibit at the Paris Exposition showed the method of preserving bodies by means of formalin. One liter will preserve a body. It is claimed that a body treated in this way for 4 weeks is sterilized and will not decompose if kept in the open air for an indefinite time.

German Professor Injured.—Professor Rieder, of Bonn, fell from a hospital which is being constructed in Constantinople and sustained an injury of the spine and fracture of a foot. He is reorganizing the Turkish Medical Department.

Investigation of Cancer.—The Society of Thuringian Practitioners in Germany is to make a special investigation into the prevalence of cancer. The records of an insurance society show that where 1.43 per 1,000 persons died in 1875, 2.36 per 1,000 died in 1899.

Medical Certificates from Hospital Internes.—The Minister of Commerce in Paris has decided that a certificate given by a student *interne* is not a real certificate. A committee has been appointed to decide whether *internes* should have the right to practise in hospitals.

Gold Medal Founded.—The Swedish Medical Association in Stockholm has founded a gold Pasteur medal, to be awarded every tenth year to the investigator who has done the most to advance hygiene and bacteriology. Prof. Max Pettenkofer, of Munich, has received the first award of the medal.

The Plague.—The mortality in India still continues to rise, principally in Mysore State and Bombay. One new case has been reported in Sydney, Australia. The disease is also in Queensland, Brisbane, and Townsville. The other colonies have thus far remained free. A pronounced recrudescence of the disease has occurred at Mauritius, and the outlook is not satisfactory. Some of the large business houses in Australia are bringing suits for damages against the Government because of quarantine regulations. An officer in India offered to stop the plague in Bombay by burning all infected houses when the disease was somewhat limited. His offer was declined by the authorities, but a number of buildings were destroyed without fire in the hopes of getting at the nidus of the disease. The expedient was futile, resulting only in inconvenience to the people and authorities.

MISCELLANY.

Health of Boer Prisoners.—The Boer prisoners at St. Helena are healthy, very few of them being in the hospital at the present time.

Female Physicians in Asia.—Within the last 20 years the number of American and English female physicians in Asiatic countries has increased from 20 to 220.

Kashmir Mission Hospital and State Leper Hospital.—At the former 4,148 surgical operations were performed during 1899. At the latter there were 132 admissions and 4 deaths.

Beri-Beri.—H. M. S. *Sphinx*, which left Muscat September 15, and arrived at Bombay September 17, reports 5 cases of beri-beri on board. The vessel has been quarantined and disinfected.

Honor for Prof. Haffkine.—This director of the Government Plague Research Laboratory at Bombay has had conferred on him the Cameron Prize in therapeutics by the University of Edinburgh.

Herod's Method Employed.—Some students of the Patna Temple Medical School insulted one of the lady students of the school. As the real culprits could not be discovered, it is reported that the whole school was fined.

New Use of X-Rays.—A thief in Calcutta swallowed a diamond which medical treatment failed to dislodge. A skiagram showed it to be lodged in the throat, where it is thought an artificial dilation had been produced for this purpose.

Chinese Treatment.—A cure for dyspepsia and flatulence is pinching the skin of the abdomen from the sternum to the pubis and around the sides. This is done violently enough at times to force blood from the skin. It is said to give immediate relief.

Cholera and Famine in India.—The numbers under famine relief are fast diminishing, but there are still 2½ millions on gratuitous relief. Cholera is prevalent in Kashmir, though it has decreased in Bombay. The British army is suffering but little from the disease at present.

New Ambulance.—An improved form of ambulance has been built for use in New Zealand. The space under the driver's seat is part of the interior and the bottom is only 16 inches from the ground. Two patients can be carried, one recumbent, the other in a semi-recumbent position.

Epilepsy from the Abuse of Coffee.—The *Indian Medical Record* cites a case, reported by Dr. Marburg, of a previously healthy woman of 44 who in 1893 began eating daily from 5 to 10 drams of roasted coffee beans. Tremor and spasm followed and in 1897 true epileptic convulsions began. In 1898 the coffee was denied her and the convulsions after a time entirely ceased.

Obituary.—DAVID YOUNG, of Rome, aged 61.—SIR HENRY WENTWORTH DYKE ACLAND, at Oxford, October 16, aged 85.—SAMUEL HENRY SWAYNE, at London, October 12.—RICHARD H. COWAN, at Wigan, October 6, aged 42.—MAX SCHAEFFER, of Bremen, aged 55.—ABRAHAM KUHN, of Strasburg, aged 62.—ALEX. TAREWICZ, of Cracow.—E. ALBERT, of Vienna.—RUDOLF ARNDT, of Greifswald, aged 55.—ALFRED SHEIREN, of Sydney, aged 56.—EDWARD H. O'DOHERTY, of Brisbane.—MISS DAGMAR BERNE, of Sydney.

The Plague.—The plague is again on the increase in India. In the Mysore State the deaths are still many in number and the disease is again developing in Bombay. In Calcutta the reports of the plague are practically the same as for several weeks, but the general mortality is increasing. The Bengal Plague Commission has made its recommendations and has been disbanded. A summary of the cases treated at the Alia Island hospital during the outbreak at Aden shows the Arabs to have combated the disease best. Mortality was least in cases under 20 years. A suspected case in London has demonstrated the efficiency of the precautions taken against the disease. No fresh cases have occurred in South Wales since the fatal case at Cardiff and that port has been given a clean bill of health. No fresh cases are reported from Glasgow.

Kashmir Mission Hospital.—In the returns for the Kashmir Mission Hospital, according to the *Medical Press*, there is a high proportion of cases of epithelioma of the thigh and of the abdominal wall. The exciting cause of this affection, as explained by the medical staff at this hospital, appears to be that the natives are in the habit of carrying about under their clothing a form of portable stove in the cold weather. The consequent burns and ensuing irritation result in growths which experience shows are quite capable of cure in the early stages. Unfortunately, however, advice is not generally sought until the trouble has reached the lymphatic glands, when, as might be expected, these cases assume a serious nature. The medical staff are congratulated on the very successful outcome of more than 300 operations for epithelioma in the course of the last few years, only one of which proved fatal.

Prof. Schenck Defends Himself.—In all the bookshop windows, writes a valued correspondent of the *JOURNAL*, G. H. H., is to be seen Prof. Schenck's little brochure, *Aus meinem Universitätsleben*, wherein he seeks to clear himself before the world of the charges by means of which his enemies ousted him from his position at Vienna. In the 69 pages he outlines the story of his 33 years of work in his laboratory at Vienna, how he had to live on a wretched pittance that did not permit him to appear in society even, to say nothing of tasting the other joys of life; how his work in biology had found recognition throughout the world, and how, since the year 1864, he had used every opportunity to investigate the laws governing the influencing of sex. He shows, further, that the newspaper announcement of his theory did not come from him, and was, besides, incorrect. Then he charges the University Court at Vienna of unfairness in that they refused to hear his witnesses, and in the second case gave him no announcement that his case was on and thus prevented him from putting in an answer. He shows how trumpery the charges against him were—being of actions of which at least half a dozen of the other members of the faculty were guilty. The cause of it all he lays at the feet of one or two colleagues, who out of hatred and envy and jealousy at his earnest labors and successes, have intrigued until they obtained the ear of the royal ministry and, *voilà*, he was out. He promises to bring out a larger and completer discussion of his theory in the near future.

The Latest Literature.

Berliner klinische Wochenschrift.

August 13, 1900. [37. Jahrg., No. 33.]

1. Neurofibroma in the Posterior Cranial Cavity. MONAKOW.
2. The Therapy of Impotentia Virilis. J. ZABLUDOWSKI.
3. The Determination of Blood-Pressure by the Tonometer of Gaertner. SCHÜLE.
4. Charcot-Leyden Crystals and Sperma-crystals. BENNO LEWY.
5. The Stomach Tube as a Peristaltic. OSWALD ZIEMSEN.

1.—v. Monakow calls attention to the small proportion of **brain-tumors** which are amenable to **surgical treatment**. v. Bergmann has stated that only tumors in the motor region and superficially seated are accessible for operative intervention. Tumors in the posterior fossa of the skull are not usually considered operable. Bergmann reports 12 tumors of the cerebellum which were operated upon, 5 of the patients dying during the operation from shock. In spite of these unfavorable results, successful cases have been reported, and Monakow is of the opinion that those tumors arising from the dura or the sheath of the eighth nerve, usually neurofibromas or fibrosarcomas, are not unfavorable for operative treatment. He has had an opportunity of examining carefully 3 cases at the necropsy. In one of these cases the patient was under his observation for several months and carefully studied, and a diagnosis was possible. In the other cases no definite clinical data was at hand. A careful report of the pathologic findings in these cases is given and the symptoms of such tumors are discussed at some length. [M.B.T.]

2.—The treatment employed is massage of the lumbosacral region, the perineum, the testes, and the prostate, together with active physical exercise, such as swimming, bicycle or horseback-riding, walking, etc. The details of the massage treatment should be read in the original. [D.R.]

3.—Schale in a series of experiments with Gaertner's **tonometer** found that **blood-pressure** was **increased** in arteriosclerosis, chronic nephritis, neurasthenia, and emotional states (melancholia). Cold baths and, according to certain authors, moderate physical exercise also increase the pressure. The **pressure is lowered** by anemic and cachectic conditions, by fever, during sleep, and in acute heart-failure. The tonometric investigations are at present not of great diagnostic value, but promise to be in time. [D.R.]

4.—Böttcher's **sperma-crystals** differ decidedly from **Charcot-Leyden crystals**, with which they have often been confounded. They belong to the monoclinic system and usually occur in long, prism like elements. Their edges are not straight, but curved; twin crystals are common. They may be obtained by drying spermatic fluid or allowing it to stand, when they may be found in the sediment. With Florence's reagent (a strong solution of iodine in potassium iodide) they take on a beautiful brown or violet color. Charcot-Leyden crystals are not octahedra but hexahedra and stain yellow with iodine. They occur under a great variety of conditions, particularly in leukemia, in asthmatic sputum, in the sputum of fibrinous bronchitis, sometimes in other sputum, in the intestine in cases of helminthiasis, in nasal polypi, etc. Their composition is not known, but there is some connection between them and eosinophile cells. [D.R.]

5.—The author has found that the daily use of the **stomach-tube with lavage** is a valuable stimulant to peristalsis, and an efficient means for curing **chronic constipation**. He introduces the tube in the morning on an empty stomach and pours from $\frac{1}{2}$ to 1 liter of Wiesbaden-Kochbrunnen water into the stomach, and immediately removes the fluid by depressing the tube. This procedure is repeated 15 or 20 times. He believes that the rapid filling and emptying the stomach acts as a sort of gymnastics to the musculature of that organ and that the effect spreads to the entire intestinal tract. Benefit has also been obtained in other diseases of the stomach,—in chronic dyspepsia, atony, dilation, hyperacidity, neuroses, gastric ulcer with hemorrhage, and in diverticula and other changes in the form of

the stomach. He has never had a bad result in gastric ulcer from the passing of the stomach-tube, but advises that novices abstain from the practice. [D.R.]

August 20, 1900. [37. Jahrg., No. 34]

1. Concerning the Separation of Carbohydrates from Albumin. J. WOHLGEMUTH.
2. A Critical Examination of Milk Preparations. W. CASPARI.
3. The Effect of the Tesla Electric Current upon Metabolic Assimilation. A. LOEWY and TOBY COHN.
4. Therapeutic Experiments with Exchange Currents of Higher Frequency and Intensity (Tesla Electric Currents). TOBY COHN.

1.—Wohlgemuth has succeeded in separating from various albumins their **carbohydrate** constituent. The method employed consists in boiling the albumin in a beaker with a solution of hydrochloric acid of from 9 to 10% strength. He found a **hexose** constituent in vegetable albumin and also in lactalbumin. A nucleoproteid from the liver contained **apentose**. Casein, vitellin, and gelatin did not yield a carbohydrate. In some of the albumins the carbohydrate is combined with an amidoradicle. [D.R.]

2.—The author did not find tubercle-bacilli in the commercial milk product known as plasmon. [D.R.]

3 and 4.—**Tesla's currents** are rapidly alternating electric currents of high tension. They were discovered by Tesla and applied therapeutically by d'Arsonval. Their application to medicine is by some termed arsonvalization, but Cohn contends that the proper term is **teslaization**, in analogy with franklinization, galvanization, and faradization, named after the respective discoverers of the particular form of electricity, and not after the one who first employed it therapeutically. D'Arsonval claimed that Tesla's currents stimulate metabolism, but Loewy and Cohn were not able to corroborate this. The therapeutic use consists, as a rule, in placing the patient in a large cage (called solenoid) and passing the current through the cage, without the patient himself being directly connected with the electrodes. There is also a method of direct induction into the patient through the electrodes. The treatment was tried on 76 patients with various functional and organic nervous diseases, and in disturbances in metabolism and joint and skin affections. In no case was there any objective change discoverable. There was apparently no influence on the blood-pressure or metabolism. Subjective improvement was noticed in a large number of cases; sleep, particularly, seemed to be favorably influenced. This subjective improvement is ascribed to the effect of suggestion. [D.R.]

Wiener klinische Wochenschrift.

August 16, 1900. [13. Jahrg., No. 33.]

1. The Warning from Pulsating Ophthalmus. ROMULAD KESCHMANN.
2. Concerning Echinococcus Tumors. D. KOKORIS.

1.—A case of **pulsating exophthalmus** is reported in a boy 14 years old. The right eye was pushed forward and downward. The eyeball was about 3 mm. more prominent than the left and pulsated synchronously with the radial artery. The pulsation was stronger on deep expiration, weaker after compression of the right carotid, though it did not cease entirely. By bending the head forward it was not influenced. No bruit was noticed on auscultation. The tarso-orbital fold was obliterated, the upper lid was much thickened and the conjunctiva injected. The palpebral slit was opened only at the middle; the lower lid was also moderately thickened. In addition to the condition of the eye there was partial thickening of the frontal and temporal bones, flattening of the frontal bone, shortening of the right side of the maxilla, paresis of the right internal pterygoid muscle, atrophy of the temporal and masseter muscle, and atrophy and hyperesthesia of the right half of the tongue. There was a high degree of myopia in the right eye, but entire absence of changes in the retinal field. A diagnosis was made of cavernous angioma in the vicinity of the optic foramen and the superior orbital fissure, and lesion of the second branch of the trigeminus through bony pressure or a fissure in the wall of the foramen rotundum. Ligation of

the common carotid was not performed because of the objection of the father, but an operation was undertaken for the relief of the ptosis and ectropion, which was successful. Because of the great danger to the eye immediate treatment is advised for all these cases. Digital compression of the common carotid may be first tried, and if unsuccessful the carotid should be ligated. Pulsating orbital angiomas may be successfully treated by galvanopuncture in some cases if they can be reached. [M.B.T.]

2.—Kokoris reports a case of a **echinococcus cyst** in a woman 26 years of age. The tumor was located on the right side of the **neck**. It was about the size of a fist, rounded and with a smooth surface. It fluctuated clearly. All the muscles innervated by the right brachial plexus were very atrophic. The right shoulder was hyperesthetic and the right pupil was narrower than the left. An incision was made along the posterior border of the sternomastoid muscle. The cyst was opened and its contents evacuated. With the finger in the cavity the fourth, fifth, sixth and seventh cervical vertebrae could be felt. The entire cyst-wall was removed and the cavity packed with iodoform gauze strips. Perfect recovery by granulation eventually resulted. In a second case a woman of 25 years of age had multiple echinococcus cysts in the peritoneal cavity. The abdomen was uniformly distended and had an elastic firm feel at many points. Tumors with a smooth surface slightly movable could be made out. Exploratory puncture was made and a clear fluid containing characteristic hooklets was evacuated. Celiotomy was then performed and on opening the abdomen a cyst the size of an egg presented. A tumor was adherent by a broad base to the omentum. After ligation it was severed from its attachment with a thermocautery. There were so many and so firm peritoneal adhesions that it was decided not expedient to try to do more. A second, third, fourth, and fifth operation were undertaken. From 7 to 26 cysts were removed at each operation. After the last operation peritonitis developed which resulted fatally. [M.B.T.]

Centralblatt für Gynäkologie.

August 18. [No. 33.]

1. Conclusion of Report of International Medical Congress of Paris.
2. A Case of Fecal Tumor. W. POTEN.
3. A New Knife for Puncturing the Portio. HERMANN BIERMER.

2.—Poten reports a case of fecal tumor mistaken for a hard myoma; but the change of its position following a free use of klysters preparatory to operating for the myoma, revealed its true character and it was treated accordingly. [W.K.]

3.—Biermer describes a new instrument adapted to puncturing the portio. [W.K.]

August 25. [No. 34.]

1. The Effect of Formol in Uterine Hemorrhage. GERSTENBERG.

1.—Gerstenberg, having seen the evils resulting from the use of pyroxylic acid to control hemorrhage, determined to test the value of formol for the same purpose; and in his experience in a series of 10 cases the results were entirely favorable. He admits that gynecologic hygiene played its part in the improvement of these patients, but claims that in the majority the favorable influence of the use of concentrated formol was unquestionable. He recommends it especially for climacteric hemorrhages. In 2 cases of postabortive hemorrhagic endometritis, 3 applications of formol were made with entirely satisfactory effect. In hemorrhage from inflammation of the adnexa he regards the use of formol as an important adjunct where operation is refused, and also thinks it exercises a good influence on the badly contracted uterus in a case of postpartum subinvolution. Not one of the patients under his care has received any injury from it and 8 of them have already returned to their usual activities. He has observed no appearance of stenosis. [W.K.]

September 1, 1900. [No. 35.]

1. A Case of Hypertrophy of the Mammary Gland. CARL DONATI.
2. A Case of Perforation of the Fetal Head *intra partum* with Recovery of the Child. L. PERNICE.
3. An Obstetric Satchel of the Year 1889. KREKET.

1.—Donati adds 1 more to the short list of reported cases of diffuse **hypertrophy of the mammary gland**. His patient, aged 19, had had a severe attack of diphtheria in her fifth year, and some chlorosis in her fifteenth year, and had acute nephritis when first seen. She came to the hospital in the eighth month of her first pregnancy, and it was decided to empty the uterus because of the severe nephritis, from which she was suffering. She was successfully delivered of a dead fetus. The unusual feature in this case was the enormous size of the breasts. There was no evidence of cyst or solid tumor; both glands were about evenly developed, were symmetric and firmly elastic. The distance from the papilla to the middle of the third rib (beginning point of the breast) was in the right breast 28 and in the left 27 cm. The distance between the 2 papillas was 27 cm. The greatest circumference was the same in both breasts, 46 cm. The nipples were small, about the size of a hazelnut. No diminution in the size was noticed during the 5 weeks after her confinement, in which she remained under observation. At that time she removed, and further control of her case was impossible. [W.K.]

2.—Pernice reports the unique case of a child whose **skull was perforated *intra partum*** under the mistaken diagnosis that the case was one of hydrocephalus. He first saw the child when it was 1½ years old. It was entirely normal in every way except that at the middle line of the suture joining the parietal and occipital bones there was a small tumor half the size of a lapwing's egg, which only at the base was covered with hair. At the time of the confinement the mother had very slight labor-pains, and after 7 hours the obstetrician, believing that the lack of progress was due to a hydrocephalic head, operated. The birth followed immediately thereafter and the severe bleeding from the wound of the head was soon controlled. Three weeks after birth 2 small swellings were apparent and these were incised. One contained blood and water, the other thick pus and blood. Immediately after birth paralysis appeared. The child is not able to move the left arm or the left leg. Otherwise its development, both in mind and body, is normal. Pernice was desirous of doing a plastic operation for the relief of the child's condition, but the consent of the parents could not be obtained. [W.K.]

3.—Krevet recommends very highly an **obstetric satchel** made according to his orders by a firm in Breslau, which he has used for 10 years. It is very compact and contains a disinfecting tray together with all the medicaments and instruments likely to be needed in any obstetric case. [W.K.]

September 8, 1900. [No. 36.]

1. Instrument for Intravesical Therapy in Women. SIGMUND MIRABEAU.
2. A New Vaginal and Hot Water Irrigator. CH. HASSE.

1.—Mirabeau describes an **instrument** of his own invention adapted to the removal of foreign bodies from the female bladder, or to the application of therapeutic treatment internally. It consists of a handle and a carrying-tube into which a cystoscope can be adjusted and thus easily introduced into the bladder; or by it may be introduced any one of the 5 instruments which he has fitted to it, namely, small forceps, little knife, curet, scissors, and stone-carrier. It is simple in construction and easily managed. When by means of the cystoscope the foreign body or the diseased portion of the bladder has been located, after the removal of the cystoscope, whatever other instrument is needed can be adjusted to the handle and the proper treatment intelligently conducted. [W.K.]

2.—Hasse has invented a new instrument for **vaginal irrigation** with hot water, which consists of a pear shaped glass balloon, through which passes a double glass tube. One advantage of this instrument is that the sensitive parts are protected from injury by the double layer of air and glass, which forms a poor conductor of heat. [W.K.]

Original Articles.

LOCAL AND REGIONAL ANESTHESIA WITH COCAIN
AND OTHER ANALGESIC DRUGS, INCLUDING THE
SUBARACHNOID METHOD, AS APPLIED IN GEN-
ERAL SURGICAL PRACTICE.

By RUDOLPH MATAS, M.D.,

of New Orleans.

Professor of Surgery Medical Department, Tulane University of Louisiana.

IN a contribution entitled "The Growing Importance and Value of Local and Regional Anesthesia in Minor and Major Surgery," which was presented to the Louisiana State Medical Society at its last meeting in April, 1900, I had occasion to express my conviction that all the dangers of general anesthesia with the classical anesthetics chloroform and ether, whether alone or in combination with other agents, are not sufficiently appreciated and that the present indications for their use are far in excess of the actual demands of practice. I also ventured to emphasize my conviction "that an unfounded and scarcely justifiable skepticism still prevails among many excellent, skilful and otherwise progressive surgeons, who, having neither the inclination nor the patience needed to acquire the most advanced and effective methods of local and regional anesthesia, or who, still confusing the imperfect and dangerous methods of the past with the safe and efficient methods of the present, still doubt and cling to general narcosis as the only means of abolishing pain in their operations. Others again, who while apparently recognizing the practical utility of local anesthesia will not hesitate to open an abscess, remove an ingrown toe nail or even amputate a finger with cocaine,—will smile with incredulity if in a case requiring the amputation of an arm or of a leg, some one suggests the propriety of using cocaine or eucain as the anesthetic."

At the time these remarks were written I was perfectly cognizant of the method of spinal cocainization and had already applied it in several cases¹ and devoted considerable attention to its technic and application in the same contribution. In this I welcomed it as an additional and most valuable resource in those conditions in which general anesthesia was contraindicated or in which the more restricted regional methods were inapplicable.

This method I will again consider in this publication, but my main object on this occasion is to call attention to older methods; or, more correctly, to the more advanced and systematic applications of principles and methods which have been recognized by the profession for some time past, but have not been sufficiently utilized by surgeons in many grave and major conditions in which a general anesthetic would have to be resorted to with far greater risk and positive danger. While these methods are certainly not so brilliant in their immediate results, nor so simple in their technic, and certainly demand much more patience and a longer anatomic as well as surgical training than the spinal subarachnoid procedure, they are just as effective, much safer, and are

susceptible of more general application and to a larger class of patients who call upon the surgeon for relief.

At this moment, when in consequence of the great impetus given to the spinal subarachnoid method by the brilliant demonstrations of Tuffier before the crowded audiences that came from all parts of the world to attend the Thirteenth International Medical Congress, held in Paris during the past summer—a wave of curiosity blended with enthusiasm is sweeping over the entire country, and almost every surgeon is impatient to try (and if he has tried, to report) the "New Method," it is not likely that communications bearing upon less brilliant methods, which require time and much patience to acquire, will be received with special favor. The comparatively slow and more limited methods of infiltration and neuroregional anesthesia must now appear to disadvantage, as not in harmony with the spirit of the moment, and may even savor of the antiquated or retrogressive. But it should be borne in mind that, after all, the method of spinal cocainization is only an extended though specialized form of neuro-regional anesthesia, and that as such it has its distinct anatomic limitations, and that while the area which it embraces represents the most fertile surgical territory in the body, there are still other numerous regions in which it is totally ineffective or inapplicable and in which the resources of local and regional anesthesia still find frequent and most useful application.

It is therefore not in a spirit of rivalry and antagonism that I venture to call attention to the methods herein described; on the contrary, my aim is to utilize all available methods that will suppress pain, provided these may be made safe and effective.

In this paper I have simply alluded to the dangers of the general anesthetics. The simple fact that so many experienced surgeons the world over have accepted the new and yet unfathomed method of spinal cocainization as a substitute for the general anesthetics is the best proof of dissatisfaction in existing conditions and is a practical admission of the fact that there is still much room for improvement. The danger now lies in the other direction. In our efforts to escape from the dangers of Charybdis we are running into the perils of Scylla; and it is not unlikely we shall witness a repetition of the same errors which so disastrously characterized the early history of cocaine anesthesia and which threatened for a time to bar it out of the field of general surgical practice. Cocaine was then discredited in consequence of the frequent and alarming fatalities which resulted from overdosing and from the imperfections of the technic; a condition of things which may again be repeated with still greater reason in consequence of the indiscriminate and reckless application of the method in injudicious and unskilled hands. The wave of enthusiasm which is at present sweeping over this country will undoubtedly furnish the necessary data needed to form a true estimate of the possibilities and the limitations of the method. But at what cost we cannot tell; that we shall soon be able to take an inventory at its just valuation cannot be doubted. In the meantime the general anesthetics will remain, as they must ever, with us, if not in the present form in some other, and in spite of their dangers and disadvantages, because unconsciousness in surgical operations is still a desideratum in many interventions, if only to abolish the *psychic* pain which, at times, cannot be even palliated by the most complete analgesia.

Therefore, while we are seeking by every means sug-

¹ My first application of the spinal subarachnoid method was made in November 10, 1899. I had already called attention to the American origin of the method in an article on the "Progress of Surgery in the United States," *Journal American Medical Association*, June 3, 1899, p. 1212, at a time when the original observations of Dr. J. Leonard Corning on this subject had been apparently forgotten and all the credit of the suggestion and application of this method were exclusively attributed to Professor Bier, of Kiel.

gested by reason, ingenuity, and experience to minimize the dangers of these necessary evils—the general anesthetics—let us continue to develop and perfect the various methods of local and regional anesthesia which permit us, in suitable conditions, to obtain the same results without peril to the organism or injury to the part involved.

* * * * *

THE EVOLUTION OF THE MODERN TECHNIC OF LOCAL AND REGIONAL ANESTHESIA IN SURGICAL PRACTICE.

This may be briefly epitomized in a simple statement of the various discoveries which have exercised the most potent influence in widening and perfecting the methods of local and regional anesthesia.

To the student of American surgical history it will be a source of pleasure to recall the fact that probably the first clinical demonstration of the value of cocain when used by the subcutaneous method for purposes of surgical anesthesia were made by American investigators. Beginning with the earlier experiences of Hepburn (November 15, 1884), which followed closely upon Karl Koller's epoch-making announcement of the true anesthetic properties of cocain at Heidelberg in September, 1884, and continuing with the clinical experiments of Hall and Halsted (December 6, 1884), the physiological experiments of H. W. Biggs (1885), and culminating in the remarkably original and brilliant series of papers contributed by J. Leonard Corning (1885–1894) it is gratifying to note that the essential and fundamental principles upon which rests the most effective technic in cocain-anesthesia had been foreshadowed and in some particulars completely elaborated by these early pioneer efforts of American surgeons and investigators.

I.

The discovery that anesthesia of the skin or derm proper by *intra-dermal* infiltration with cocain or similar analgesic agents, as distinguished from the hypodermal method, is the key to success in local anesthesia—*i. e.*, the anesthesia of the field of operation. This fundamental fact seems to have suggested itself at the same time to several observers, but the names of W. S. Halsted (1884), J. L. Corning (1885), Reclus and Ich. Wall (1886), and Schleich (1890), are the first and most prominent that occur in the literature of the subject, though Halsted was the first to insist upon the importance of the intra-dermal method and to demonstrate by a large clinical experience its great practical importance.

II.

The discovery that the tissues are sensitive to the anesthetic action of extremely dilute solutions of cocain and other analgesics (1 to 20,000 parts, Schleich, Heinze), and that these can be used effectively in exceedingly weak and positively nontoxic doses.

Corning showed the effectiveness of solutions (warm) of $\frac{1}{3}$ of 1% cocain in 1885. Reclus rendered great service by his forcible and constant pleading in favor of solutions not stronger than 1%, which he used as early as 1886; but to Schleich belongs the great credit of reducing the strength of the surgical solutions to $\frac{1}{5}$, $\frac{1}{10}$, and $\frac{1}{100}$ of 1%. His experiments began in 1888, but their value was not fully recognized until the publication of his great work, "Schmerzlose Operationen," in 1894.

III.

The discovery by Schleich (1888), that the thorough

edematization of the tissues with physiologic isotonic solutions of sodium chlorid (.2%, Schleich; .8%, Heinze) at a low temperature is in itself, as a physical process, an anesthetic agent. The clinical evidence on this point began with the observations of Potain (1869), Dieulafoy (1870), Lebroue (1870), and with Liebreich's researches on the anesthetic properties of pure water; Halsted independently called attention to the same property of distilled water when infiltrated into the derm, and also called attention to the efficacy of very dilute solutions of cocain as early as 1885.² While saline infiltration is not to be ranked as a surgically practical anesthetic, it is a most powerful adjuvant to local anesthesia; by increasing the effectiveness of extremely dilute solutions of cocain in many ways that will be referred to later.

IV.

The very important discovery made by Dr. J. Leonard Corning, of New York (1885), to the effect that the action of cocain can be indefinitely prolonged as long as the circulation of the anesthetized area is arrested by elastic constriction or other mechanical devices. This is Corning's first great discovery, undoubtedly the most important contribution made in the early period of the surgical history of cocain, as it exercised a most beneficial influence in encouraging the practice of local anesthesia by improving the results and diminishing its dangers. The value of circulatory stasis in prolonging and intensifying the action of local anesthesia had been fully recognized by Chandelux, of Lyons, who, basing himself upon the previous studies of Letamendi and Cardenal, of Barcelona, had already, in 1885, applied the elastic constrictor to intensify the action of the ether spray. He made no allusion to cocain, however, in his paper. The advantages of the constrictor in cocain operations also apparently occurred independently to Mayo Robson, of Leeds, in 1886. Kummer, of Geneva, especially insisted, in 1889, upon the value of stasis and constriction to diminish the dangers of toxic absorption. Notwithstanding the fact that he duly credited Corning with the suggestion, many French and German writers still persist in referring to the application of the constrictor as "Kummer's method" of local anesthesia.

V.

The discovery that the infiltration of the sectional area of a nerve-trunk, in any part of its course, with cocain or similar analgesics, is followed by a sensory paralysis of its entire peripheral distribution. The effect of cocain when applied in contact with a nerve is to "block" (Franck) the way to all apparent or sensory impressions up to the point where the injection or "blockade" exists. The effect of the drug is not limited to the sensory fibers, as at one time taught, but it paralyzes all nerves whether motor or sensory, only that the anesthesia is much more promptly manifested than the motor paralysis. Its action upon nerve-trunks is so positive that F. Franck proposed, in 1892, that cocain be substituted for the knife in experimenting on animals and spoke of its action "as physiological section" of nerve, differing from section with the knife solely in the fact that the effect was transitory and never injured the integrity of the nerve. The anesthetic action is of variable duration according to the dose of the drug applied,

² See his "Practical Comments on the Use and Abuse of Cocain; Suggested by its Universally Successful Employment in more than One Thousand Minor Surgical Operations." *New York Medical Journal*, September 19, 1885.

the duration of the application, and the size of the nerve. The paralytic action of cocain is continued indefinitely and is intensified by arresting the circulation in the injected and anesthetized nerve-tract. When absorption is not interfered with, the function of the nerve returns gradually and completely, leaving it without a trace, functionally or structurally, of its former paralyzed condition.

The local action of cocain on nerve-fibers was studied experimentally by physiologists long before the possible value of this knowledge in surgical practice had been thought of (Van Anrep, 1880; H. W. Biggs, 1884; *et al.*)

The discovery of the paralyzing action of cocain on nerve-trunks is the present foundation of the *neuro-regional*, as distinguished from the purely *local*, methods of anesthesia. It is interesting to note that the observations of the clinicians largely anticipated the future demonstrations of the physiologists, and were conducted independently of all inspiration from the laboratory. Thus we find that the first demonstration of the surgical value of the principle of neural cocainization is due to Hall and Halsted, who experimented with the drug upon themselves and upon others in 1884. Hall anesthetized his infraorbital to anesthetize teeth, and Halsted injected the inferior dental at the spine of Spix with 9 minims of a 4% solution, thus obtaining a complete anesthesia of the gums, teeth, etc. (Vide *New York Medical Journal*, December 6, 1884.)

The action of cocain on nerve-trunks was also appreciated by Dr. Leonard Corning in 1885, but he did not utilize the neural method as a distinct surgical procedure. The same facts were observed by Barrancha, of Santiago, Chili, in 1885, and he obtained anesthesia of the teeth by injecting the inferior dental nerve as it enters the inferior dental canal at the spine of Spix. These early but indisputable applications of the neuro-regional method in America had long antedated the methods of German operators, and had in fact been forgotten until it was again introduced to us as the method of Oberst, of Halle (1886), as it is known in Germany, and of Krogus of Helsingfors (1894), as it is still designated by Reclus.

It may be safely stated that up to 1897 the principle of nerve cocainization was utilized only in an indirect manner and even at this moment there are few if any of the more advanced regional surgeons in Germany who apply it except by subcutaneous or submucous injection, *i. e.* the paraneural method. The direct, *open* injection of nerve-trunks with cocain anesthesia was first practised (as far as I have been able to ascertain) for surgical purposes, by Dr. George W. Crile, of Cleveland, Ohio, who amputated a leg painlessly after injecting the sciatic and anterior crural nerves on May 18, 1897, and by the writer, without any knowledge of Dr. Crile's operation, on January 18, 1898, in a partial amputation of a hand, after a preliminary direct cocainization of the ulnar, median, and musculospiral nerves at the bend of the elbow. The same principle has been admirably utilized by Dr. Cushing and others in Dr. Halsted's clinic (Johns Hopkins Hospital) about the same time (1897) for anesthetizing the inguinal region in the radical cure of hernia.

VI.

The discovery of a number of local analgesic drugs of which eucaïn B. (Silex, 1897), and nirvanin (Einhorn and Heinze, 1898), alone deserve to be classed as the succe-

danea of cocain. Because of lesser toxicity and their capacity to stand boiling without decomposition, and for other reasons, they may be utilized with advantage alone, or in conjunction with cocain; in this way, while not superseding cocain, they have undoubtedly contributed to widen and diffuse the practice of local anesthesia.

VII.

The greater appreciation in recent years of the physiological fact that all the tissues and organs of the body, with the notable exception of the papillary layer of the skin and the nerves, are, in normal conditions, practically devoid of sensibility; and that if the sensation of the derm, and of the nerves that supply a given region, is subdued by an artificial anesthetic, the sensibility of the tissues can be practically disregarded from the operative point of view. On the other hand, the importance of psychic pain in the course of operations is not to be underestimated; and as this cannot be controlled by purely local anesthetic agencies it remains a serious obstacle which in major surgery frequently compels a recourse to general or cerebral anesthetics in spite of the total abolition of sensation in the field of operation. The evidence on this point can be traced to numerous and even ancient sources, but its great significance in the practice of local anesthesia has been most forcibly presented by Dr. O. Bloch, of Copenhagen. (*Bibliotek for Læger*, Copenhagen, 1898; *Revue de Chirurgie*, Paris, January 10, 1900; see also H. Lilienthal, *Annals of Surgery*, vol. xxvii, 1898.)

VIII.

The discovery that the central analgesic effects of morphin on the cortex and physical centers greatly assist in preparing the mental attitude of the patient for the action of local anesthetics, has materially contributed to the success of local and regional anesthesia. This suggestion independently occurred to many operators simultaneously, but Ceci, of Genoa, has, since 1897, insisted upon the systematic use of morphia as a preliminary to local anesthesia; and the value of the suggestion has been recognized in almost all clinics where cocain is most frequently resorted to.

IX.

The discovery that by utilizing the anesthetic properties of cocain and other local anesthetics (including ethyl chlorid, Bloch) with morphin, a preliminary stage of diminished sensibility is produced which is also most favorable to the action of general anesthesia so that an important group of major operations which cannot be undertaken with local anesthesia alone, and in which the condition of the patient contraindicates chloroform or ether, can be painlessly performed with the aid of a very superficial, intermittent and *purely cortical* anesthesia ("morphin-cocain-chloroform anesthesia"). In the method the essential point is also to subdue the sensibility of the skin as a preliminary; after this is accomplished very little chloroform will be required to complete the operative work in the deeper tissues. No saturation with chloroform as a rule will be required and in this way the dangerous effects of the drug will be avoided or will be reduced to a remarkably safe minimum. (See O. Bloch, *l. c.*, Schleich, *l. c.*, and H. Cushing, *Annals of Surgery*, January, 1900.)

X.

The discovery that the cerebrospinal fluid can be used as a diluent medium for cocain or other analgesic drugs of the same types and that the posterior roots of the spinal nerves are extremely sensitive to the anesthetic action of these drugs when introduced into the spinal subarachnoid space, thus providing another and most effective mode of obtaining complete insensibility of the lower extremities, and other parts supplied by the spinal nerves. This method, which we owe to the inventive genius of Dr. J. Leonard Corning, of New York, was foreshadowed by him as early as 1885 ("Local Anesthesia," D. Appleton & Co., New York, 1886), more fully elaborated in his article on "Further Contributions on Local Medication of the Spinal Cord," *Medical Record*, New York, March 17, 1888, and completed as a demonstration in 1894, "Irrigation of the Cauda Equina with Medicinal Fluids," in his book on "Pain" (J. B. Lippincott Company, 1894). Corning's studies and observations had been forgotten when the possibility of utilizing the subarachnoid space and the cerebrospinal fluid as a comparatively easy avenue to the cerebrospinal centers for direct diagnostic exploration and medication, became the subject of investigation in Europe.

The facility with which the contents of the subarachnoid space could be reached by lumbar puncture for diagnostic and therapeutic purposes was first made apparent by Quincke in 1891 ("Die Lumbalpunktur des Hydrocephalus," *Berliner klinische Wochenschrift* 1891), and he was followed by a number of investigators who contributed to the perfection of the technic of lumbar puncture. Then came the clinical experience of Sicard, of Paris, Jaboulay, of Lyons, and Jacob, of Berlin, all in 1898, in medicating the cerebrospinal fluid with antitetanic serum for tetanus and other spastic conditions; but it was not until April, 1899, that the first use of cocain, introduced by lumbar puncture, for surgical purposes was made known to the profession by Prof. Bier, of Kiel (*Deutsche Zeitschrift für Chirurgie*), in which he completely demonstrated the success of this method. About the same time, Sicard made a most valuable experimental study of the action of cocain on the cerebrospinal axis, including the brain (*Compt. Rendus Société de Biologie*, May 26, 1899), which, together with the contemporaneous studies of Jaboulay and Jacob in the same direction, completes the experimental evidence on the subject, though a great deal of important evidence on the action of cocain on the nerve-centers had been previously obtained by the earlier physiological investigations of Mosso, Aducco, Baldi, Odier, Franck, and many others.

It was the first clinical observation of Bier, however, that gave the subarachnoid method its present surgical importance and has opened the new field which is being rapidly crowded with the observations of a host of surgeons whose contributions are now creating a new chapter in the bibliography of anesthesia. The Corning-Bier method, as we may properly designate anesthesia obtained by the spinal subarachnoid route, marks the culminating point in the history of cocain technic and of regional anesthesia. Its technic, indications, and results will be more fully considered in another section.

* * * * *

As the result of the practical applications of the principles embodied in these ten discoveries or generalizations, the technic of local and regional anesthesia has been gradually evolved into a method, or a variety of

methods, which for efficiency and safety far outstrips the most sanguine expectations of the early advocates of cocain anesthesia. Not only all the exigencies of minor surgery are met with success by the new methods, but they are applicable with still greater force in a constantly increasing number of grave, critical and major conditions which, a few years ago, would have been regarded as absolutely impracticable without the aid of general anesthetics.

* * * * *

Before proceeding to consider the field of application of the new technic and the advantages that can be gained by its more frequent and systematic application in general surgical practice, let us first define and classify these methods in order that their indications and limitations may be the better understood.

CLASSIFICATION OF THE METHODS OF LOCAL AND REGIONAL ANESTHESIA IN WHICH COCAIN AND OTHER ALLIED ANALGESIC DRUGS ARE UTILIZED AS THE ACTIVE AGENTS.

It should be first clearly understood that the artificial anesthesia of any given tissue or organ of the body is entirely dependent for its production upon the suppression of sensation of all sensorial (irritant) impressions made upon that region through the agency of the nervous system. This suppression can be affected by: (1) paralyzing the peripheral nerve-endings or terminal organs of sensation, as in the papillary layer of the skin; or (2) by "blocking" or obstructing the path of all sensorial impressions in the nerve-trunks, including (3) the sensory roots in the spinal cord that connect the field of operation with the sensorium; or (3) by anesthetizing the sensory centers in the cerebral cortex itself.³ This last route is only an experimental possibility and is not available as a surgical method. In regional surgery with local analgesic drugs the effects (1), (2) and (3) are utilized and may be obtained by the following methods:

1. *Local Infiltration Method.*—By infiltration we mean the production of an artificial edema of the tissues with the object of diminishing or suppressing their sensibility. Plain or distilled water when injected in sufficient quantity to edematize the papillary layer of the derm and subjacent tissues will suffice to produce a transient but painful anesthesia of the edematized area. This is "the anesthesia dolorosa" of Liebreich. The pain is caused by imbibitory swelling of the cells. Solutions of the same specific gravity and the same freezing point as the normal tissue fluids are the only ones which can be employed without causing pain from osmotic disturbances and are called *isotonic* solutions (De Vries). More concentrated solutions will draw water from the tissues and cause pain; weaker solutions cause the tissues to swell and are similar in their effects; the nearer they approach pure water the greater the pain. An indifferent fluid iso-osmotic with the blood produces neither pain nor anesthesia.

A warm, osmotically and chemically indifferent fluid with a freezing point of about 0.55° C, is the medium which, when injected, produces no physical effects *per se* and leaves the specific action of the analgesic drug (cocain, eucain, etc.), to act alone. According to Heinze and Braun, such a medium is a 0.9% watery solution of common salt at the body temperature. Heinze (1898)

³ See experimental evidence bearing on intracranial cocainization furnished by Cuarpentier, Tumass, Bianchi et Giorgeri, Carvalho, Aducco, Mosso, and F. Frank from the physiological point of view; and of Jaboulay and Sicard from the therapeutic standpoint.

has also determined that within certain limits, from 0.6% to 2%, the osmotic action of sodium-chlorid solutions is so slight that the injection is entirely painless. A knowledge of these facts is of practical interest because by the use of isotonic or physiologic salt-solutions the tissues are not injured and they recover more promptly and without irritation from the effects of analgesic agents. Hence the use of salt in all local anesthetic solutions. Schleich, who is the father of the infiltration method, was the first to call attention to the value of salt in preventing the pain produced by plain water infiltration, and while many of his conclusions have been more or less contradicted by the experimental studies of Custer, Heinze and Braun, the fact remains that his first appreciation of the remarkable sensitiveness of the tissues to such weak dilutions of cocain as 1 in 20,000 revolutionized the technic of local anesthesia and gave new impetus to this mode of practice. According to Schleich the edematization of the tissues with a salt-solution (2%) at a lower temperature than the body heat is the essential condition required for the production of local anesthesia. The small quantity of the analgesic drug that he adds to his solutions ($\frac{1}{5}$, $\frac{1}{10}$, $\frac{1}{100}$, of 1% cocain) is simply intended, he claims, to suppress the abnormal hyperesthesia of pathologic tissues. When dealing with normal tissues he believes that a plain .2% salt-solution is sufficient to anesthetize, provided the tissues are thoroughly edematized.

The *modus operandi* of the simple infiltration method, as he admits, does not depend solely upon the injection of an isotonic salt-solution; there are other factors which enter more powerfully into the causation of the anesthesia; these are: (1) The ischemia of the tissues and partial stasis caused by the great pressure exercised by the injected fluid on the capillaries and bloodvessels; (2) the compression of the terminal nerve elements themselves from the same cause; (3) the lower temperature of the infiltrated area caused by using cold solutions, or by cooling these after their injection into the parts. These purely *physical* conditions are undoubtedly of great importance in favoring and intensifying the action of the analgesic drug, and upon the thoroughness with which they are brought to play largely depends the success of the infiltration method as it is practised by Schleich. That Schleich has underestimated the importance of the paralyzing effects of the cocain which enters into the composition of the solution cannot be doubted. Heinze and Braun contend, as a result of numerous experiments, that Schleich's solutions owe their entire analgesic effect to the cocain they contain, and my personal experience has convinced me that if the cocain were excluded from them they would cease to be of value as practical surgical anesthetics. On the other hand, we must recognize that without the process of edematization the weak solutions of cocain which Schleich has taught us to use so effectively would become practically worthless.

From the preceding discussion it is evident that there are two efficient factors concerned in the production of infiltration anesthesia, which must be clearly differentiated from one another. One is the *physical* effect of the infiltration from pressure, differences of temperature, etc. (Schleich); the other, is the *chemical* action of the drug employed (cocain, eucain, etc.) to paralyze the sensitive structures. According to the preponderance of the physical or the chemical factors, we may classify the practice of local anesthesia by infiltration into two dis-

tinct methods: First, Schleich's method, with a very weak cocain solution, which depends upon the infiltration itself as the effective agent, and lays the greatest possible stress upon its physical action; and, second, the method of Corning, Reclus, and the earlier German anesthetizers (Wölfler, Landerer, etc.), in which the tissues are injected, layer by layer, with stronger solutions (1 to 4% cocain), and which depends for its efficiency almost exclusively upon the diffusion of the chemical analgesics dissolved in the solutions.

Since the introduction of eucain B. and nirvanin, which can be used in relatively concentrated solutions without fear of toxic effects, and since the neuro-regional method has been perfected so that a maximum effect can be obtained with a safe minimum expenditure of the drug, a decided tendency is noticeable at the present time to depend more upon the action of the analgesic drugs than upon the physical or mechanical effects of the infiltration process itself.

The preference given in the selection of these methods will be determined by various conditions, which will be more readily appreciated in connection with the topographical application of the technic in the various regions of the body. A correct judgment on this point largely depends upon the individual experience of the operator with the various methods, but the best results will be obtained by the operator who is thoroughly familiar with *all* the methods, and who knows how to combine them in the most effective manner to meet the requirements of each individual case. In a very general way Schleich's method of infiltration is indicated in all operations in which the circulation cannot be controlled and in which the major part of the infiltrating solution must be allowed to remain in the tissues. On the other hand, it must be remembered that some of its most brilliant effects have been obtained in the major surgery of the extremities, when elastic constriction sufficient to arrest the circulation and absorption remarkably intensifies its effect and prolongs its duration. (Schleich himself does not depend upon the elastic band.) One of the chief reasons for the frequent failure of the infiltration method and the dissatisfaction that is expressed by many who condemn it as inadequate, is due to the imperfect application of the two fundamental rules—the first, which applies as well to all methods of anesthesia, is that the derm proper, and especially its papillary layer, must be first edematized by *intracuticular* infiltration before beginning the edematization of the deeper planes, the same rule applying to mucous surfaces. This is a *sine qua non* in local anesthesia which cannot be repeated too often. The second rule is, that in using Schleich's weak solutions, especially Nos. 2 and 3, the intensity of the anesthesia as well as its duration will be directly proportional to the thoroughness with which the tissues are edematized. The field of operation in strictly *local* infiltration must be literally packed and made *tense* with the injected fluid, so that all the elements of the tissues may be brought in contact with, and be compressed by, it. If the fluid is injected warm (80–100° F.) it will diffuse itself more quickly; but *after* it has been injected, the application of ice-bags to the edematized area will markedly intensify its analgesic action. Schleich's infiltrating solutions may be applied in several ways: (1) The field of the operation can be edematized *in toto*—i. e., by infiltration *en masse*, without reference to other anatomic elements—the most typical way; or (2) by *circumferential* infiltration—i. e., by enclosing the field of operation within a wall of anes-

thetizing edema, thus cutting off or isolating the enclosed space from all nerve-communication with the surrounding parts. This last procedure may be applied over plane surfaces, as in the removal of neoplasms, or, in a regional sense, by circumscribing pediculated parts at a distance from the field of operation, as in amputation of a digit, or a limb which is completely infiltrated *en masse* around its circumference, as in the arm, leg, or root of penis. This last mode of infiltration is most successfully applied in combination with the paraneural or intraneural method, as will be seen in discussing the topographic applications of local anesthesia.

For the successful application of the infiltration method in extensive operations, the form of injecting apparatus is of great importance. Until quite recently I was satisfied to use the ordinary hypodermic syringe provided with various needles of different lengths. In more extensive operations an antitoxin syringe (10 cc.

versed so that the pumping is done into the bottle instead of aspirating it. The increased atmospheric tension in the bottle is necessary to force the anesthetic solution into the tissues and to overcome the resistance of the derm and other structures, which is, at times, considerable. Of course, the air-pressure in the bottle can be easily regulated by pumping so that practically any ordinary resistance can be overcome. The bottle used is an ordinary graduated nursing bottle (8 ounce capacity), manufactured by the J. Elwood Lee & Co., for the Lee sterilizer and compress heater. Any strong bottle, graded, of similar capacity, that will stand frequent sterilization, will do. The stopper, with metallic inlet and outlet tubes with stop-cock connections, which is furnished with the Potain aspirator, is adjusted to the bottle and held firmly in position by a special clamp, provided with thumb screws, which permits of adjustment to any bottle of the same size—a necessary pro-

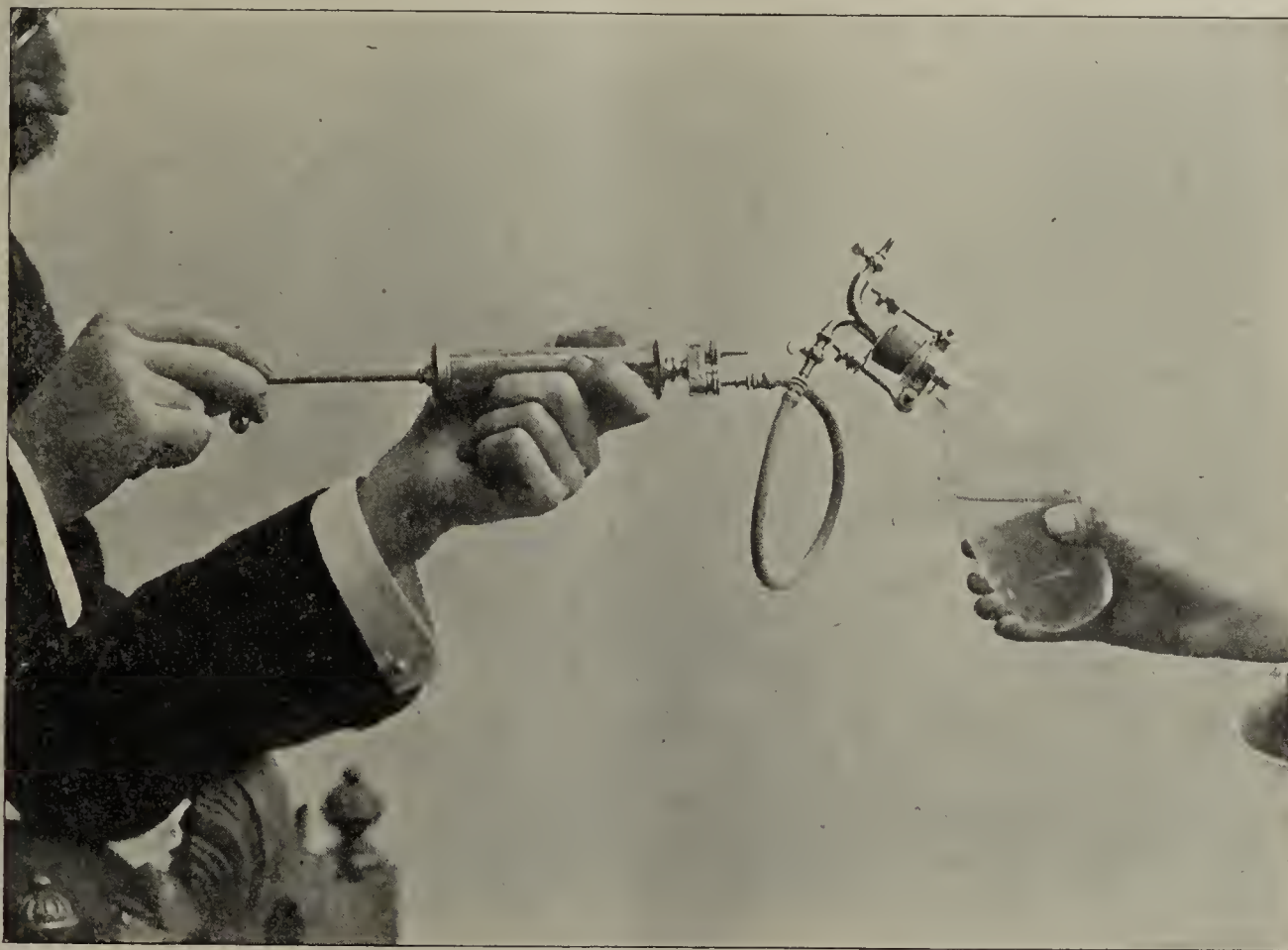


FIG. 1.—Injecting air into bottle containing the anesthetizing solution. The injector is the ordinary pump of the Potain aspirator with the valves reversed for charging instead of aspirating. The bottle is an ordinary graduated nursing bottle (8 oz. capacity), manufactured by J. Elwood Lee Co., for the Lee sterilizer and compress heater. It is provided with the ordinary Potain perforated rubber stopper which is held firmly in the bottle by a specially devised metallic collar, shield and thumb screws which prevent the stopper from being blown off by the compressed air. The delivery (outlet) and pumping (inlet) rubber tubes are screwed to the nozzles attached to the stopper to prevent accidental detachment during operation. The delivery tube is shorter than shown in photograph No. 2, to facilitate sterilization.

capacity), or a common aspirating syringe of similar capacity, was used, but they had to be filled so often and necessitated so many punctures and interruptions in the work that I finally abandoned the syringes and substituted the simple apparatus which is illustrated in Figs. 1 and 2.

The advantages of an injecting bottle in which the anesthetizing solution could be kept under pressure occurred to me while applying subcutaneous gelatin injections (Lancereaux) in the treatment of inoperable aneurysm. It is practically the same apparatus used for saline infusion (hypodermoclysis) in shock and other conditions, only modified to meet the requirements of analgesic infiltration. The injecting outfit can be easily improvised by utilizing the ordinary Potain aspirator with the difference that the valves of the pump are re-

vision to meet accidental breakage, etc. The clamp is very necessary because, in charging the bottle, the stopper will frequently fly out while pumping, thereby causing much annoyance to all concerned. It is important that all the connections should be made to screw into each other, because if ordinary slip-fittings are used, they will frequently become detached during the course of the operation, causing unnecessary delays and waste of solution. In using the injecting apparatus, the pumping connections are detached and the bottle is inverted and held in this position by an assistant during the process of edematization.

As a rule, I prefer to map out the line of cutaneous incision with a hand syringe provided with a long, fine needle. After the elevated ridge of edema, which is characteristic of intracuticular infiltration, is formed, the

larger and longer needle attached to the injecting bottle is introduced into the hypodermal tissues and the *entire* field of the operation is thoroughly edematized, using for this purpose from 1 to 20 ounces of fluid, according to the extent of the area involved in the operation. The rapidity with which the solution is forced into the tissues as well as the thoroughness with which this is done is surprising. In addition to this the limited number of punctures required to infiltrate a very large area—sometimes one or two punctures are sufficient when a fine 4-inch needle is used—greatly diminishes the traumatism of the tissues and enormously expedites the work.

The contrast between this method and the older, in which ordinary cylindrical hand syringes of small capacity were used, is agreeably apparent and will be readily appreciated by any one who has been operating by the classical methods. Since I have adopted the

the other two. I still continue to apply the 1% solution in direct *intraneural* injections into large nerves, because the effect is much more prompt and satisfactory and because the quantity used for this purpose is very small, the difference in the amount of cocaine being insignificant.

In making large massive infiltrations the amount of cocaine used and the strength of the solution must be regulated largely by several conditions; first, the possibility of controlling the circulation with the constrictor; second, the quantity of solution that is likely to remain in the tissues for absorption; third, the character and condition of the tissues to be anesthetized; there are regions which are normally more sensitive than others (*e.g.*, anorectal region, genitals, lips, mouth and tongue, face, fingers, etc.), but the most sensitive are the acutely inflamed tissues; fourth, and most important, the possibility in each instance of anesthetizing the regional

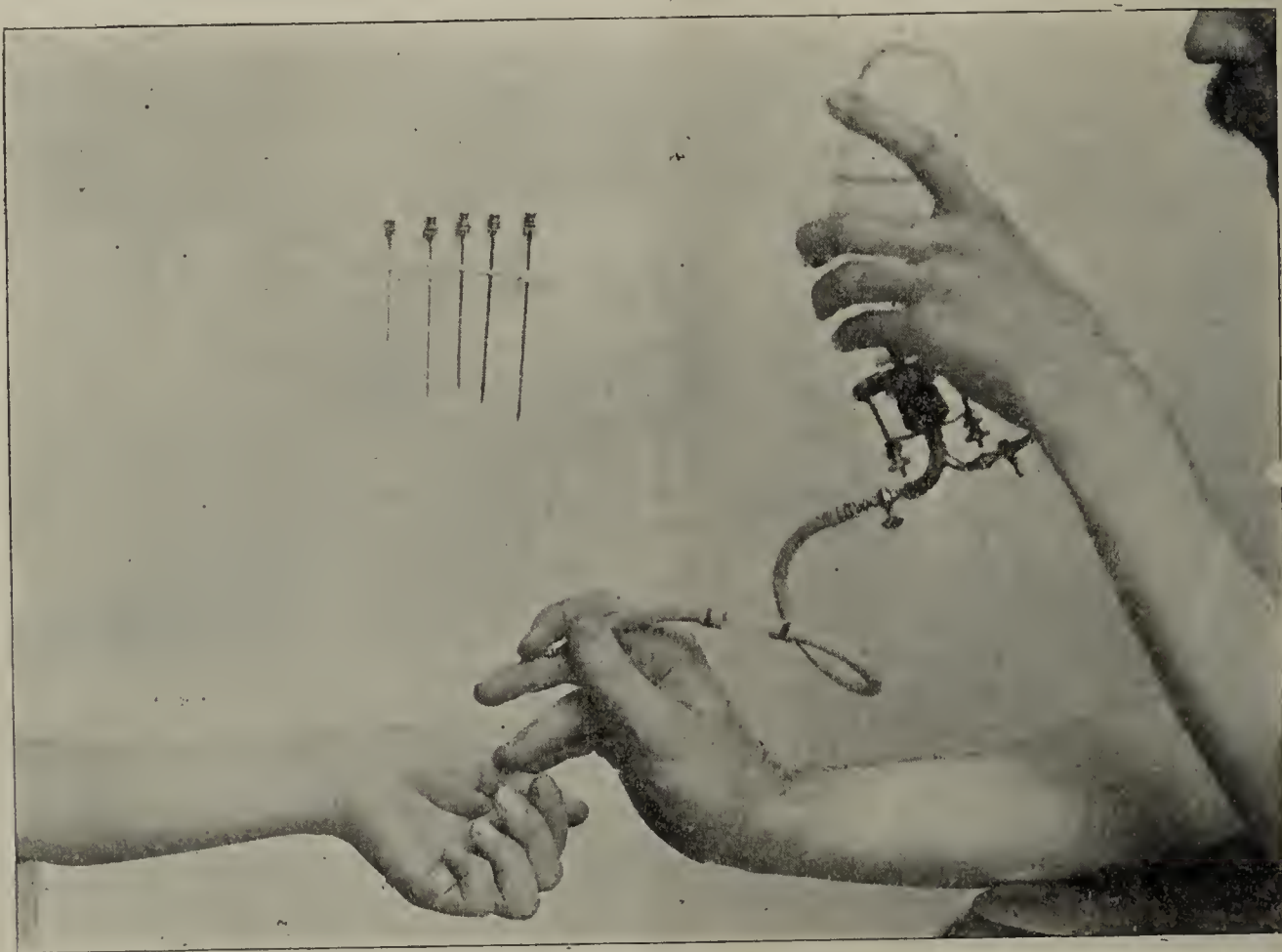


FIG. 2.—Anesthetizing bottle charged and reversed ready for infiltration and edematization. The pumping outfit is detached. The needles shown in the picture are of different lengths and calibers, from 10 cm. (4 inches) to 5.5 cm. (2¼ inches). The caliber varies from Nos. 1-2 (Dieulafoy) to that of a fine hypodermic.

present method I have obtained far more satisfactory results in extensive operations, and have used Schleich's weaker solution, No. 3, with much greater success. In fact, I have learned to rely on infiltration alone more often than formerly, though I still believe that the best results are obtained by combining the infiltration with the neural method. In applying infiltration on a large scale the question of the strength and quality of the anesthetizing fluid assumes great importance.

Up to the last two years I have used cocaine exclusively, the percentage of cocaine used growing less as my experience increased. In the beginning, in 1885 and 1886, I used with the earlier operators (Corning and others), 2% and 4% solution, but I soon abandoned these and limited myself to 1% as the maximum strength. With the advent of Schleich's researches I adopted his solution, but depended chiefly upon his No. 1 ($\frac{1}{5}\%$) and No. 2, ($\frac{1}{10}\%$), only utilizing his No. 3 ($\frac{1}{100}\%$) on rare occasions, and as a mere adjunct to

nerve-supply. Whenever this is possible the quantity of the analgesic drug is greatly economized.

If we bear in mind the different percentages of Schleich's cocaine solutions and remember that 1 grain of cocaine is approximately the limit of safety when allowed to remain in the tissues, we will see that about 1 ounce of his No. 1, 2 ounces of No. 2, and 20 ounces of No. 3, can be used with almost complete freedom from all risk. In using these solutions I use No. 1 ($\frac{1}{5}\%$ of 1%) for the intradermal infiltration, and Nos. 2 or 3 according to conditions and the area involved. Lately, since using the injecting apparatus here described I have almost exclusively resorted to cocaine B. for the deep infiltrations (Le Grand and Joannin). The fact that it is itself mildly antiseptic, that it can be sterilized by boiling and that it is 3.75 times less toxic than cocaine, 5 times less toxic (Vinci), makes it especially valuable for large infiltrations. It is not, in my experience, as effective as cocaine, when used in the same

proportions, but in relatively stronger solutions it is equally effective. A 2% solution is nearly as effective as a 1% cocaine, and since it is possible to use as much as 50 or 60 cgm. ($7\frac{7}{10}$ to $9\frac{1}{4}$ grains) in one operation (Schering and Lohman) and even more without toxic phenomena, its great value cannot be questioned. After numerous trials I obtained the most satisfactory results in major cases with a solution consisting of $\frac{1}{2}$ a grain of eucain B. dissolved in one ounce of an isotonic salt-solution (.8% sod. chlor., Heinze), which represents very nearly $\frac{1}{10}$ of 1% eucain B. Eight ounces of this solution (equivalent to 4 grains of eucain B.) will fill the bottle of my injecting apparatus and is more than is usually required for the large majority of operations. If more solution is required I do not hesitate to refill the bottle until the limit of 10 grains of eucain is reached (20 ounces of solution), provided free drainage of the solution is insured in the course of the operation. In very sensitive parts the strength of the solution may be increased to .2%, 8 ounces of which may be used for the first infiltration, after which a weaker solution must be used so as not to exceed the limit of safety. Larger massive infiltrations than 20 ounces are rarely if ever required, but even then much latitude can be given a judicious operator who will be guided by the loss that is likely to take place through drainage in the course of the operation,—as in the extirpation of carbuncles, large neoplasms, amputations, etc. All that is necessary is to bear in mind the amount that is likely to remain permanently in the tissues for absorption and to see that this does not exceed 5 grains, though experience has demonstrated that 8 and 10 grains are well tolerated.

It is scarcely necessary to insist upon the need of great care in the observance of a rigorous asepsis and more especially a careful personal supervision of the sterilization of the apparatus and of the anesthetic fluid whether they be used for massive edematization or in the small interstitial injections required by the neural method. Fortunately, the problem is easily solved as far as eucain is concerned, since it will stand prolonged boiling without decomposition. Schleich states that the cocaine and morphin that is furnished by the manufacturers (Merck) is usually free from bacteria, but the sodium chlorid is liable to contamination with saprophytes, etc. In my experience the standardized cocaine tablets (Schleich formula) prepared by various American manufacturers (Wyeth & Bro., Sharp & Dohme, and others) are absolutely accurate and reliable and I never hesitate to employ them. The cocaine solutions are prepared by dissolving the tablets in water that has just been boiled and heating the solution *nearly* to the boiling point, the process being repeated several times to secure sterilization by the fractional method. It is generally taught that when cocaine is heated to 176° F. it decomposes into ecgonin and loses its anesthetic properties. Repeated experience has convinced me that cocaine solutions can be heated up to the boiling point for a number of times without losing their efficiency. Peck and Cushing also concur on this point. It has also been pointed out by J. Custer that the toxic power of cocaine, when injected into the tissue, depends less upon the quantity injected than on the concentration of the solution, and that, for instance, the quantity of cocaine in a 2% solution is five times less toxic than a 5% solution. This I believe to be true also of the other analgesic drugs, eucain and nirvanin.

The objections that have been urged against Schleich's method of local infiltration are many. These we shall

not discuss in detail because they have been fully met by Schleich himself in his remarkable book "Schmerzlose Operationen" (especially in the last edition, 1899). The method has really suffered more through the efforts of extreme partisans, more especially in Germany, where an unnecessary and fruitless discussion has been waged for some time between the friends of Oberst and those of Schleich. The regional (paraneural) method has been contrasted with the purely local infiltration method, and efforts have been made to exalt the advantages and superior claims of one at the expense of the other. The truth of the matter is as Briegleb, and Schleich himself, has demonstrated, that the methods are not antagonistic to each other and, on the contrary, the best results are often obtained by judicious combination of both. One thing is certain,—that a thorough knowledge of the method of infiltration as taught by Schleich is indispensable to the successful application of the regional or any other method of local anesthesia with analgesic drugs, and that a complete mastery of his technic is of fundamental importance to all those who would aspire to attain the highest accomplishment in this direction. That it is an art that must be acquired by diligent practice and patient observation is undoubted, and this accounts for the many complaints and failures that are heard about it. That it has its limitations is also evident, as we will have occasion to acknowledge. It has been urged, among other objections, that the artificial edema produced by the infiltrations, masks the anatomic characteristics of the tissues, and this complaint has been made even by such friends of the method as von Hacker, Hofmeister, Krecke, Schlatter, and Dipper, but the writer's experience confirms that of Schleich, Mehler, Briegleb, and others, that the edema is not in the least objectionable, even in some of the most delicate anatomic operations. On the contrary, the ischemia produced by the infiltration provides an almost bloodless field, and the writer has never experienced the least difficulty in recognizing the important structures in any of his operations; as, for instance, his numerous ligations of the lingual, external carotid and other vessels in the neck. Neither has he ever observed, as is theoretically claimed by Braatz, that the method is likely to disseminate infection and favor metastasis. On the contrary, the filling of the tissues with a mildly antiseptic solution in a state of tension has appeared to diminish the tendency to infection by filling dead spaces, etc. This is particularly true since the author has adopted the modified method of large infiltration with eucain B., previously described. The objection that it causes severe traumatism by the numerous punctures that are required to cover a large area, and that it consumes much time, is in a great measure overcome by the use of long needles used in connection with the writer's injecting apparatus.

THE REGIONAL METHOD.

Infiltration—Neural Anesthesia.—This term, as applied by the German operators who first made use of it, signifies that a region or area which embraces the prospective field of operation is to be anesthetized rather than the field itself. In this method, the operator, after a preliminary infiltration of the derm, aims at the cocaineization of the deep nerve-fibers which supply the field of the operation. The cocaineization of the nerves that supply the region may be done, as is usually the case in the surgery of the extremities, *at a distance* from the field of the operation; or the nerve-

trunks may be injected *directly* as they are exposed in the region in the course of the operation, as in Cushing's method of cocainizing the inguinal region for the radical cure of hernia. The nerves themselves may be anesthetized: (1) By the *paraneural* method in which the anesthetizing solution is injected in the vicinity of the nerve-trunk, or as closely to the nerve as possible, with the view of enveloping it in an anesthetic atmosphere; or (2) by the direct *intranatural* method in which, after a preliminary anesthesia of the skin, the large visible nerve-trunks that supply the region are brought to view by dissection, and are directly injected with the needle. Practical examples.—To illustrate the application of the *paraneural* method we will select as a good type the procedure that is usually adopted to completely anesthetize a finger for the removal of a nail, or for the opening of a felon. The skin at the root of the finger, on its dorsal aspect, is infiltrated over two spots on each side of the phalanx nearest the carpometacarpal joint, and on a level with the web of the hand. The needle is then thrust into each spot and directed towards the known situation of the digital nerves which are deeply situated in the lateral aspect of the digits. From 10 to 15 minims of the anesthetizing solution (1.2% cocain or Schleich's solution No. 1) are diffused in the region of each nerve, with the view of creating a cocain atmosphere around it. After a few minutes' delay, to allow the capillary circulation to diffuse the fluid, the hand is exsanguinated by elevation, and an elastic constrictor is carried around the root of the finger below the seat of infiltration. The finger will then become numb and dead to all painful impressions, and it will be possible to perform any operation upon the digit, at any point beyond the line of constriction. It will be noticed that in this method the nerves of the fingers are not exposed by dissection, but are anesthetized by the diffusion of the cocain solution injected subcutaneously in their vicinity; again it will be noticed that the field of the operation itself (presuming that it is at the tip of the finger, as in a bone felon) is not touched or even approached by the anesthetic injection. In this way the regional method differs radically from local infiltration anesthesia, which if applied for the same purpose would compel the infiltration of the terminal phalanx, or of the entire tip of the finger, and along the line of the incision required, to open the felon. In such conditions the advantages of the regional method are too apparent to require comment. Schleich overcomes the objections to his method at this point by creating a circular ring of anesthetic edema at the root of the finger which involves all the soft parts from the skin to the bone, but without special reference to the nerves. But as in the process of circular infiltration the digital nerves must be reached by the anesthetic, it is evident that he really practises the regional method.

The *regional intraneural method* is excellently illustrated by the procedures devised independently by Dr. George W. Crile, of Cleveland, and by the writer in the amputations of the extremities. If, for example, the case is one in which amputation of a foot, or leg above the ankle, is required, the first step in the anesthetic process will be to expose the sciatic nerve in the upper popliteal space between the hamstrings, and above the point of bifurcation into its peroneal and popliteal branches. In order to expose the nerves clearly, the skin and popliteal fascia must be anesthetized by infiltration with a weak 2% Schleich solution. After exposing the nerve and bringing it out well to view, from 20 to 40 minims of a Schleich solution No. 1, or 10 to 20

minims of a 1% solution, are injected into the nerve, until an edematous swelling is formed indicating that the entire thickness of the nerve has been "blocked" or infiltrated; the wound is then packed with sterile gauze, and aseptically protected, and another incision is made over the long saphenous nerve in the leg, which is also infiltrated; this wound is closed with sutures. The limb is then elevated and drained of blood by gravity, and after it has been exsanguinated the constrictor is applied above (centrad of) the incision made to expose the sciatic. By this time, or after a few minutes' delay, the entire lower limb below the sciatic incision will have become completely anesthetic, and an amputation or any other operation can be performed without the least pain as long as the constrictor is kept in place. In amputations or extensive operations at a higher point than the tubercle of the tibia the anterior crural must be injected instead of the saphenous. In this way again the region or field of the operation is completely anesthetized and yet it is not touched by the anesthetizing solution. The same regional method by intraneural injection is beautifully illustrated in the upper extremity, which can be entirely anesthetized by exposing and injecting the brachial plexus above the clavicle; and in the operations below the elbow, where I prefer to anesthetize by the direct injection of the ulnar, median, and musculospiral nerves. The principle is again admirably illustrated in Cushing's operation for the radical cure of hernia, previously referred to.⁴

THE MIXED METHODS.

These are applied: 1. When two or more local anesthetics are utilized in the course of the same operation (*e. g.*, ethyl chlorid and cocain; cocain and eucain B; cocain and nirvanin, etc.).

2. When the local anesthetic action of cocain, or other similar analgesic drugs, is preceded or supple-

⁴The paralyzing effect of cocain upon the nerve is proportional to the duration of the application, the size of the nerve and the concentration of the solution. Strong solutions, 5%, act immediately; weaker solutions, $\frac{1}{2}$, $\frac{1}{10}$ of 1% act slowly but effectively. Francis Franck found that 5 to 10 mgm. ($\frac{1}{15}$ to $\frac{1}{8}$ gr.) were sufficient in animals. The paralyzing effect is variable in duration according to the dose applied and the size of the nerve involved, but the isolation of the peripheral organs which have been cut off from the nerve-centers is usually of sufficient duration even with weak solutions to permit of comparatively long operations. On the other hand, the action of the drug is continued indefinitely and, if anything, intensified by arresting the circulation of the anesthetized nerve-tract. If the circulation is not interfered with, the paralyzing influence of the cocain will extend 1 to 2 cm. above and below the points of contact with the drug (F. Franck). The rules laid down by Franck in his remarkable experiments on animals are as valuable to the surgeon as to the physiologist. The first rule is that the dose of cocain applied to a nerve should always be sufficient to paralyze it locally and insufficient to provoke general toxic phenomena after its absorption. These doses he carefully estimated for the animals experimented upon. 2. The application of cocain must be limited to the nerve that it is intended to suppress functionally. This refers to the dangers of cocainizing the important visceral and motor nerves of the neck, *e. g.*, the phrenic, which, as demonstrated by Mosso as early as 1885, will suspend its function and cause a cessation of diaphragmatic respiration when directly cocainized. In these cases the animals are only saved by artificial respiration which must be kept up until the drug is eliminated. Equally serious but different disturbances attend the direct infiltration of the pneumogastric. The mode of cocainizing the nerves was thoroughly studied by Franck. He tried various methods, bathing the nerves with cocain solution, pledgets of cotton soaked in solution, direct application of the crystals of the salt, cocain-vaseline, etc., but he finally adopted the method of direct infiltration into the nerve sheath, by interstitial injection, as the most reliable and accurate method. The nerve is never damaged by this procedure when it is carefully done with a fine needle.

The paralyzing action of cocain on nerves was studied by various experiments long before the possible use of this knowledge in surgical practice had been suspected. Van Anrep (1880), Laborde (1884), Charpentier (1884), Lafont (1884), H. W. Biggs (1885), Lukahewitch (1884), etc., and many others devoted their attention to the subject before the importance of Kohler's clinical discoveries had been at all appreciated. The majority of investigators subsequently devoted special attention to solving the problem of cocain action on mixed nerves, which from the earlier experiments of Van Anrep had been erroneously believed to be limited to the sensory fibers alone. Doubts still existed on this point until U. Mosso in a conclusive and most exhaustive review of the work done by all his predecessors, clearly demonstrated that cocain acted on all nerve-fibers alike as a paralyzing protoplasmic poison, a view which he had held since 1885. To his learned paper in *Gior. della R. academia di Med. di Torino*, serie iii, xxxviii, and to the later paper by Ch. A. François Franck (*Archiv de Physiologie normale et physiologique*, vol. 4, 5me serie, 1892), the writer is chiefly indebted for the data quoted in this note.

mented by the action of a cerebral anodyne—morphia (mixed morphin-cocain anesthesia, Ceci).

3. When in addition to morphia the local anesthetic action of cocain or other local analgesics (eucain B., nirvanin, ethyl chlorid, Bloch) is preceded or supplemented by the effects of a general inhalation-anesthetic, such as chloroform ("morphin-cocain-chloroform anesthesia," Schleich, Cushing). While, as a general rule, the combination of one local anesthetic in addition to cocain is unnecessary or superfluous in general infiltration or regional anesthesia, there are occasions when, in order to diminish the possible occurrence of toxic phenomena from the too liberal use of even very dilute solutions of cocain, it may be advantageous to utilize the anesthetic properties of its less toxic succedanea. Thus, in the removal of large tumors of the neck, of carbuncles, etc., in which the circulation of the region cannot be readily controled, we resort to cocain solutions (No. 1, Schleich) for the infiltration of the most sensitive parts of the field of operation (*e. g.*, the skin), and depend on eucain B. in .2% solution for the general edematization of the remaining and less sensitive areas. I have also systematically depended upon the combination of the anesthetics in operations on the bladder in which the topical application of strong, local anesthetic solutions is required to anesthetize the sensitive and inflamed mucosa. This occurs most frequently in suprapubic cystotomy for stone or for the relief of prostatic obstruction. In these cases I inject the bladder first with a 2% or 4% cocain solution, according to the degree of sensibility. I follow this with a more liberal use of solutions of eucain B. (4%), or of nirvanin (5%), which are allowed to remain in the bladder while the suprapubic region is cocainized with the Schleich (.2%) solution. In the performance of litholapaxy by Chismore's method, which I have resorted to 7 times with 6 complete successes within the last 2 years, I have begun the anesthesia of the urethra and bladder with a preliminary injection of a 2% solution of cocain; after allowing this to remain 15 to 20 minutes or longer (according to tolerance) in the bladder, I have followed with a 4% eucain B., of which 4 and 6 ounces have been used during the course of the operation. In the last two cases I adopted the plan of making the first application with cocain and continuing for the remainder of the sitting with a 5% nirvanin solution, which I have found very satisfactory as a topical anesthetic in such cases. Before the discovery of nirvanin by Einhorn and Heinze (1898), I also used, in bladder cases, an emulsion of orthoform (10%), which I also found to be a good topical anesthetic for all mucous membranes; but since the introduction of nirvanin, which is a soluble form of orthoform, I have given the preference to this more elegant and efficacious preparation.

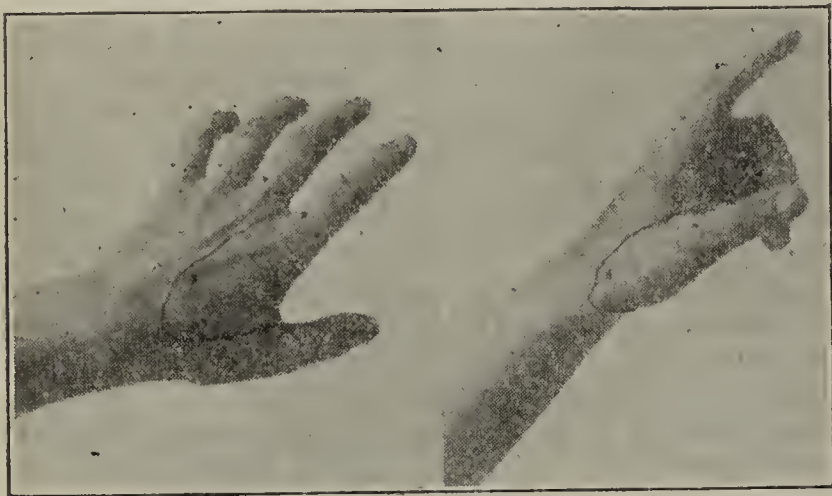
The administration of morphia, one fourth grain hypodermically, 15 to 30 minutes before beginning a cocain operation, has been found to be most valuable in all cases in which any extensive or lengthy procedure is contemplated. It is especially valuable in nervous, timid, emotional patients. In this as in all other cocain cases a liberal toddy or a good draught of hot tea or coffee or of panopepton will materially help to prepare the patient for the mental ordeal. There are very few cases in which the preliminary use of morphia is contraindicated; the exceptions are those who suffer from idiosyncrasy against it, or the very aged in whom the constipating and general disturbing effects of the drug on the eliminating organs and alimentary canal are

especially to be avoided; but even in such cases the good that is derived from the soothing and anodyne effect of the drug more than counterbalances the post-operative effects. Morphia used as a preliminary analgesic, has also, as a rule, a most favorable action in preparing the patient for a general anesthetic, such as is required to soothe the psychical excitement or other neurotic perturbations that often occur in the course of long and tedious operations. The conditions in which I have been able to use the combined morphin-cocain-chloroform methods are numerous and will be again referred to, in considering the topographic technic of local and regional anesthesia. It may be stated in a general way, however, that this mode of combining the anesthetics is chiefly reserved for two classes of cases; one in which the emotions and the excitable temperament of the patient act as a serious disturbing factor in the course of the operation, by preventing the thorough performance of surgical work (even though there be a total anesthesia of the field of operation); and the other, the more important class, in which it is particularly desirable to economize the administration of a general anesthetic for more organic reasons, such as exist in septic, hemorrhagic or exhausted cases in which fatal shock and exhaustion are particularly liable to occur. Preliminary abdominal exploration under cocain has therefore come to be regarded in many large clinics as a regular procedure in a constantly increasing number of cases. Its advantages in saving the patient from the disastrous effects of prolonged and saturating anesthesia are so obvious that this mode of procedure needs only to be mentioned to be appreciated. It is also fortunate that in the majority of the cases in which prolonged general anesthesia is most dangerous that the least quantity of anesthetic is required, provided the more painful stage of abdominal section has been bridged over with the help of cocain. It has been the writer's experience that in a profound septic condition, as in cases of suppurative peritonitis from appendicitis or from perforations in the gastrointestinal tract, in cases of strangulated hernia, in intestinal obstruction, in the profound collapse caused by traumatic or other hemorrhages in the peritoneal cavity, and in marasmic patients exhausted by prolonged starvation (esophageal stricture, pyloric stenosis), very little—almost an infinitesimal quantity of chloroform is required to produce a condition of insensibility which is perfectly compatible with satisfactory surgical work, provided the section of the abdominal wall has been painlessly accomplished with the aid of a preliminary cocain infiltration.

In the preceding sections which refer to the definition and classification of the present methods of local and regional anesthesia, with the exception of the subarachnoid method, which we shall consider separately, we have briefly outlined the general principles which underlie the general application of these methods. It would now be proper to consider the special technic by which these general principles and methods can be best adapted to meet the exigencies of surgery in the various regions of the body. This topographic study of the subject the writer has already fully and systematically attempted in his recent mimograph, published in the Transactions of the Louisiana State Medical Society, and again proposes to elaborate in greater detail in a work which he will soon submit to the press. He will only attempt on this occasion to present a few of the more striking applications of the infiltration and neuro regional methods as he utilizes them in his practice.

THE EXTREMITIES.

The Fingers and Toes and their Metacarpals.—The methods available here are the neuroregional and the infiltration method alone or combined. For these parts of the extremities the methods indicated in Figs. 3 and 4 are invariably used in the author's clinics, and with unfailing success. The paraneural injection of the digital nerve is known variously in Germany and



FIGS. 3 and 4.—*Hand 1.*—Showing point of injection in the regional anesthesia (paraneural method) of the fingers alone. The lower points indicate seat of deep injections to reach the digital interosseous and palmar nerves (paraneural method). The linear outline over metacarpal of index indicates area of artificial edematous infiltration "regional paraneural infiltration method" for disarticulation of index and its metacarpal. *Hand 2.*—Two points at base of thumb indicate seat of deep (paraneural) injection of the digital nerves to control sensibility of thumb. These may be combined with a ring of dermal infiltration at the same level "regional paraneural infiltration method" encircling the digit. The outline over the first metacarpal indicates area of edematization associated with two deep interosseous injections to anesthetize entire thumb and its metacarpal, as in corpo-metacarpal disarticulations (regional paraneural infiltration method).

France as Oberst's, Krogus, Braun's, and Kummer's methods. Contrary to the German method, the constrictor is applied *after* the infiltration, and the anesthetic fluid is allowed to diffuse itself as Corning originally suggested, before exsanguination and constriction. In operations on the metacarpals, the constrictor is applied above the elbow. The points of paraneural injection are made with Schleich's $\frac{1}{2}$ of 1% solution or a 1% solution, according to the sensitiveness and extent of the area. The points usually selected for the deep injections are indicated on the figures, and the areas of general edematization with the 2% eucain B. solution are also outlined in the figures.

The Hand, the Wrist, and the Forearm.—The complete anesthesia of these regions may be obtained in part or in whole, by any one of the following methods: 1. General infiltration (Schleich), which may be applied like a bracelet, circumferentially, around the limb, at any level from the wrist to the shoulder, in thin and emaciated subjects especially. 2. Paraneural infiltration (subcutaneous) method in which the infiltration is more or less limited to the region of the nerve-tracts, as practised at the wrist and elbow by Manz, Hölscher, Berndt, Le Fort, Reclus, and others. 3. Regional direct (open) intraneural infiltration with or without the help of circular dermohypodermal infiltration. The infiltration method alone at the wrist or forearm is especially indicated in thin and wasted subjects; it is most effective when reinforced by the paraneural method, which selects the radial, median, and ulnar nerves in the field of the operation,—as in amputations. The paraneural method is unsatisfactory when practised without massive infiltration by the method recommended by the author, and will yield uncertain results as admitted by Manz and Honigman, who have especially advocated the method. On the

other hand, the direct intraneural method is infallible and will completely anesthetize the hand and wrist up to the junction of the middle and lower thirds of the forearm if the ulnar, median, and musculospiral nerves are separately isolated and injected, as is indicated in Fig. 5.

In operations on the upper forearm the injection of the three great nerves at the elbow will produce absolute insensibility of all the extremity up to the point of injection except the skin of the upper (central) half of the forearm, which is supplied by the overlapping fibers of the internal and external cutaneous nerves. In order to abolish this superficial sensibility a dermohypodermal infiltration applied with the writer's injecting-apparatus, and carried circularly around the arm above the elbow on a level with the neural injections will completely overcome any remnant of sensibility in the distal side.

The open intraneural method of cocainization of the three nerves at the elbow is undoubtedly the most effective and reliable means of securing the anesthesia of the parts below (peripheral to) the points of injection. It has the advantage that it can be applied on stout,

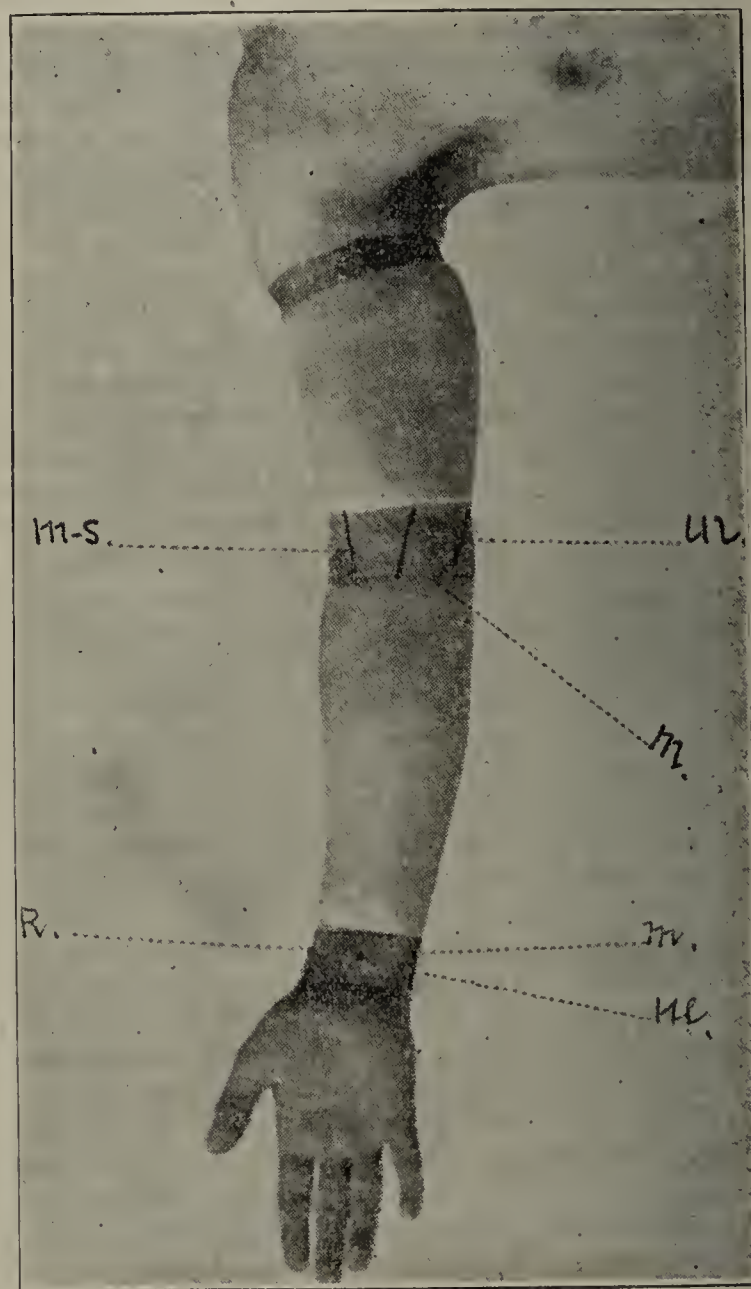


FIG. 5.—Surface anatomy of arm showing regional infiltration intraneural method of anesthesia as practised by the author to obtain insensibility of the entire hand and forearm. A zone of anesthetic dermohypodermic infiltration encircles the arm at the bend of the elbow (shaded zone). The arm is then exsanguinated by elevation and the constrictor is applied at the axillary level. Three incisions are then made to expose the musculospiral (M.S.) the ulnar (UL) and the median (M.) nerves. Each nerve is then injected separately with the anesthetizing solution. The entire hand and lower third of forearm can be anesthetized by a similar process, except that chief reliance is placed upon the zone of infiltration which edematizes all the tissues *en masse* down to the interosseous membrane, separate stronger paraneural injections being made along the tracts of the median (M.), ulnar (UL), and radial nerves (regional infiltration paraneural method).

muscular subjects as well as the wasted and emaciated. But it is a strictly anatomic procedure which cannot be done rapidly, and is for this reason not likely to be popularized except in the clinics of surgical specialists.

The practicability of this method suggested itself to me in 1897, but no opportunity presented itself for its application until January, 1898, when an old man, aged 76, applied to my clinic for the relief of an extensive and deep epitheliomatous ulcer which involved a large part of the dorsal and hypothenar regions of the right hand. The patient was profoundly arteriosclerotic; his radials were hard and rigid as pipestems and his heart was the seat of loud aortic and mitral murmurs which indicated advanced valvular lesions. He was a decidedly unfavorable subject for general anesthesia and I decided to anesthetize the hand by the direct neuroregional method. The musculospiral, the median, and the ulnar were readily and painlessly exposed (under infiltration anesthesia, Schleich, No. 1) by separate incisions made over the region of the individual nerve-tracts where they are most superficial at the bend of the elbow; the nerves were then exposed and each injected with 5 to 8 minims of a 1% cocain solution. This caused a slight fusiform swelling at the point of injection. The wounds were sutured, but the threads were not tied, to provide for further injection, and the entire region was protected by a carefully applied aseptic dressing. The arm was then exsanguinated by elevation and the elastic constrictor was applied over the middle of the arm. The anesthesia of the extremity was now complete from the finger nails to the elbow. We were then able to extirpate the growth very freely, including the fourth and fifth fingers with their metacarpals and the corresponding palmar and dorsal aspects of the hand, proceeding throughout with all the freedom that is permitted by general anesthesia. After completing the work in the hand the incisions at the elbow were closed by tying the knots of the loose catgut-sutures, which had been purposely left untied, before the constrictor was removed. The operation in this way was not only painless but bloodless. Before the operation the patient was given an hypodermic consisting of $\frac{1}{4}$ grain morphia, $\frac{1}{40}$ grain strychnia, $\frac{1}{100}$ grain digitalin.

Since the first operation (January, 1898) was performed, the procedure has been repeated by myself several times and once by my friend and assistant, Dr. Larue. In all these cases the intervention was necessitated by bone lesions of either the hand, wrist, or forearm. In all of these cases the patients were able to walk to their beds after leaving the operating table. None suffered from the least shock or constitutional disturbance and in none were the postoperative sequelae such as to suggest that any injury had been done by cocainization of the nerves. All the small wounds made to expose the nerves healed kindly under the usual aseptic dressings. In all of these cases the anesthesia of the regions tributary to the nerves injected continued for a variable period, from 15 to 20 minutes after the removal of the constrictor.

The Shoulder and Arm, Including the Entire Upper Extremity.—The arm can be amputated at any level, including the scapulohumeral articulation, by infiltrating the brachial plexus as it leaves the scaleni in the supraclavicular fossa. The credit of this brilliant demonstration of the regional intraneural method is entirely due, I am pleased to state, to an American surgeon, Dr. George W. Crile, of Cleveland, Ohio. It was with the view of diminishing shock that Dr. Crile, whose remarkable and exhaustive experimental studies on shock have made his name familiar to all readers of surgical literature, was led to apply this method which, following F. Franck, he appropriately designates "the blocking method."

In a personal communication addressed to me, August 24, 1899, Dr. Crile stated that he had operated by the

"blocking" method up to that time, on seven patients, one of these being a case of amputation at the shoulder-joint, anesthetized by "blocking" the brachial plexus above the clavicle. Dr. Crile's first case of amputation of the leg was reported to the Ohio State Medical Society in 1897, and excited the attention of that body, but the great merit of his performance has failed of sufficient general recognition as one of the most brilliant and useful contributions to the technic of regional anesthesia that have emanated in recent years from an American surgeon.

While the brilliant results of the open neuro-regional method, as applied to the brachial plexus, are most striking in the hands of a skilful operator, the advantages of general massive infiltration and edematization on the Schleich plan in thin persons are not to be disregarded. In pathologic conditions, especially advanced and irreparable tubercular lesions of joints, and humerus necessitating amputation, it is most effective. Recently, my able assistant, Dr. Gessner, very successfully amputated the lower third of the arm with the help of infiltration alone. Schleich ("Schmerzlose Operationen," 1899), Reclus ("La Cocain en Chirurgie," 1896); Haberen ("Grössere Operationen unter lokaler Anästhesia"); Ungar (*Med. Press*, 1897, ii), T. Wikerhauser ("Operationen mit Schleichscher Analgesia," *Centralbl. f. Chirurg.*, October 21, 1899), the writer and many others have reported similar cases.

These successes, however, do not mean that Schleich's infiltration method alone is applicable to *all* cases, they only emphasize the necessity for eclecticism in the selection of cocain methods, local as well as general.

The Lower Extremity.—What has been said of the upper extremity may be in a great measure repeated of the lower limbs. The general principles and methods are the same except that they vary in their topographical application. The infiltration, the paraneural infiltration, the regional *open*, the intraneural, and the spinal subarachnoid methods can all be utilized with advantage according to the regions involved and the local and constitutional indications furnished by the patients themselves.

The infiltration method with weak solutions according to Schleich, with or without constriction, and the mixed infiltration neural methods are alone able to meet a vast number of indications. The ligations of *all* the arteries, from the external iliac (R. N. Hartley, Leeds, 1895) to the dorsalis pedis, have been made subservient to the infiltration method. Amputations from the toes and their metatarsals to the middle third of the thigh have been repeatedly performed with it. And a great number of major operations on the bones and joints, including the femur, have been reported, from the earlier amputation of the thigh by Varick (1886) and osteotomies by Josiah Roberts (1885) with the Corning method to the later cases by Schleich, Trapani, Rhodes, Cowan, and Wikerhäuser, who reports (Operationen mit Schleichscher Analgesie, *Centralbl. f. Chirurg.*, October 21, 1899, Abst.) 18 extensive bone operations out of a list of 113 major operations in which sections of the thigh and leg bones were required. All of these reports, which could be multiplied many dozen times, simply confirm the statement previously made that the operator should not be wedded to any single method, but knowing the capabilities of each can select his technic and at times obtain surprising results with a method that would appear to the inexperienced as theoretically inadequate to meet the demands of the case.

But, in spite of the numerous interventions on the lower limbs which have been obtained by *simple infiltration* with the Corning or Schleich methods, it must be recognized that these successes have been (with the notable exception of the toes and their metatarsals) more conspicuous by their rarity than by their frequency. They simply illustrate what can be done with the method in exceptionally favorable conditions both

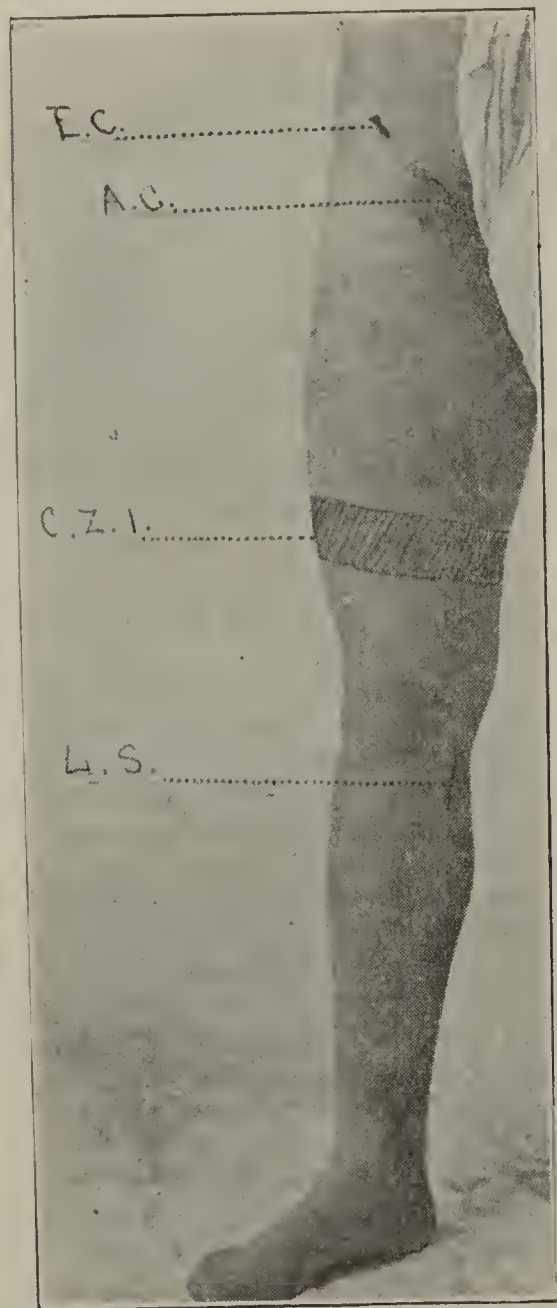


FIG. 6.—Surface anatomy of lower extremity showing superficial points where the external cutaneous (E.C.) and anterior crural (A.C.) nerves can be exposed as they emerge under Poupart's ligament. The infiltration of these nerves will give complete control of the sensibility of the thigh except the upper and inner half. The circular zone of infiltration (C.Z.I.) if carried deeply so as to edematize the entire circumference of the limb (in wasted, emaciated subjects) will suffice without special neural injection (except into the sciatic) to completely control the sensibility at and below (peripherad of) the infiltrated zone. The zone of dermohypodermal infiltration is far more important posteriorly to control the sensitive fibers of the lesser sciatic and is necessary, in connection with infiltration of the greater sciatic, in all operations involving the lower half of thigh and knee. In this last class of cases the circular infiltration need not be pushed deeper than the aponeurosis.

as regards the morale of the patient and the favorable anatomic condition of the parts. This is particularly true of all extensive operations involving the skeleton of the foot, leg or thigh in robust, fleshy subjects. In this class of patients local anesthesia is, as a rule, inadequate, and when an excision of a large joint (the ankle or knee), or when a large sequestrotomy, osteotomy or an amputation is contemplated, a method more positive and reliable is required to accomplish the intervention with that freedom of action that can only come from the absolute analgesia of the entire region involved. It is precisely under such circumstances and when the contra-

indications to general anesthesia are positive that the regional intraneural method can be confidently appealed to. For the purposes of neuro-regional anesthesia, as we understand it, the lower limb may be divided into three topographic areas: (1) the toes and their metatarsals; (2) the large area which includes the tarsus, ankle, leg, and knee, up to the middle of the thigh; (3) the thigh including the knee.

Neuro-Regional Infiltration in the Lower Extremity.—All operations, no matter what their extent, which involve these regions, can be painlessly performed by a single method, viz., the open intraneural cocainization of the sciatic and of the long saphenous, or of the anterior crural and external cutaneous nerves in the higher operations, above the knee. This comparatively simple and thoroughly reliable procedure we owe, as has been already stated, to Dr. Geo. W. Crile, who applied it for the first time in a case of amputation of the leg in 1897. Crile's method of "blocking" the sciatic and crural nerves is infinitely more practical and satisfactory than the purely paraneural methods suggested for these regions by O. Manz (1898), and F. Berndt (1899), who have reported several cases in which the anesthesia of

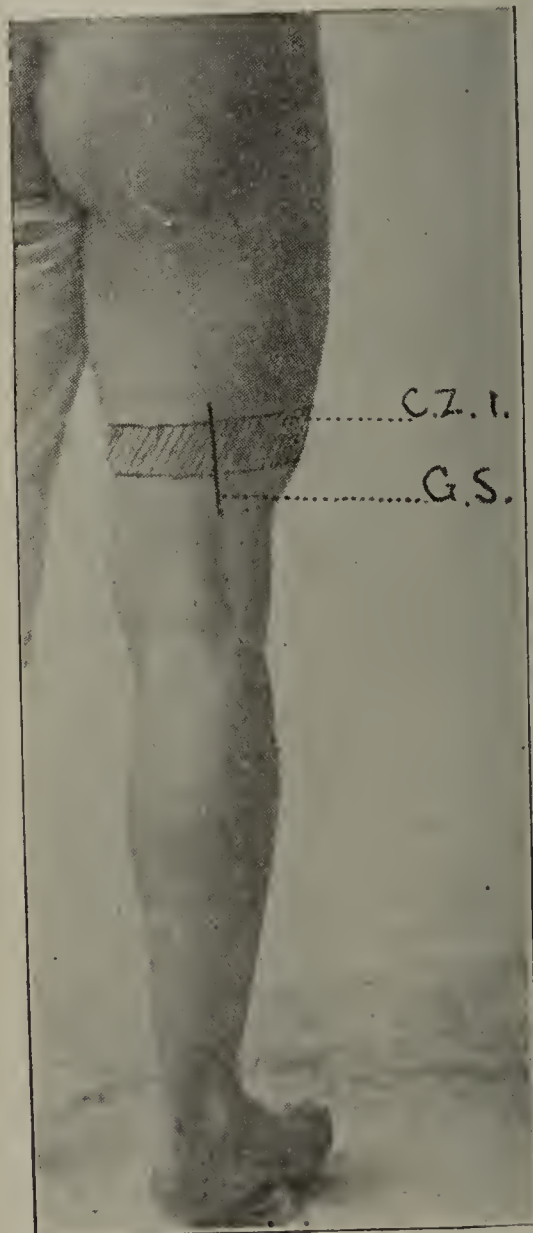


FIG. 7.—Surface anatomy of the lower extremity showing incision to expose the greater sciatic nerve (G.S.) and zone of dermohypodermal infiltration encircling the thigh. In extensive operations requiring anesthesia of the foot or leg (amputations, excisions, etc.), the intraneural injection of the sciatic and paraneural infiltration of the long saphenous below the knee will suffice to completely control the sensibility of the limb. In operations involving the knee or the thigh the zone of dermohypodermal injection (C.Z.I.) together with the injection of the external cutaneous and anterior crural becomes necessary.

the foot, ankle, and knee (Gritti's operation by Berndt) has been obtained by injecting subcutaneously the indi-

vidual branches of the sciatic at various levels in the ankle, leg, and thigh.

Without any previous knowledge of Crile's work, and encouraged by other successes with the same method, as applied to the upper extremity, I performed a Pirogoff operation for frost-bite by this method in March, 1899. From March, 1899, to the present date, I have availed myself of this mode of anesthesia 7 times, my colleagues, Drs. Parham and Perkins, operating on 3 other cases in their services at the Charity Hospital. In all my 7 cases there were reasons which made the administration of a general anesthetic undesirable. In one of these, operated on before the medical class of Tulane University, the inestimable advantage of possessing a reliable and safe method of analgesia as an alternative to general narcosis was made particularly apparent. This case not only illustrates the circumstances in which this method is especially applicable, but it will serve to describe the technic of the method as well.

F. S. W., aged 32, was admitted to the hospital, December 18, 1899, for the treatment of a diffuse suppurating tubercular arthritis of the right tarsus. The patient was suffering with advanced pulmonary tuberculosis (cavity in lung), but his sufferings were so great that an operation was decided upon. In view of his weakened condition, special precautions were taken to guard against the accidents of general anesthesia. In addition to the preparatory administration of strychnia, digitalis, and nitroglycerin by hypodermic, the nares were sprayed with a 2% cocain solution to diminish the nasolaryngeal reflexes (Frank-Rosenberg). Chloroform was then administered over an Esmarch mask by the "guttatim" method. Notwithstanding all the care taken, the patient rapidly entered into a most violent stage of excitement and became rigid and cyanosed; respiration was arrested, the pulse became irregular and imperceptible and when the tetanic rigidity ceased the patient sank as if completely collapsed, and it was only by the immediate application of artificial respiration and other measures, that he finally came back to consciousness again. As the operation was imperative and all general anesthetics were not to be thought of (ether being contraindicated by the phthisis), I decided to try the intraneural method of regional anesthesia—which should have been the method of election at the start. Accordingly, after careful preparation of the parts, the skin and underlying tissues of the upper popliteal space were infiltrated with a Schleich No. 1 cocain solution, and an incision four inches long was made so as to bring the sciatic nerve into view. This done, an injection of 25 minims of the same No. 1 ($\frac{1}{2}$ of 1%) solution was injected into the trunk of the nerve. A constrictor was applied—after exsanguinating the limb by elevation—care being taken to pad the limb well so as to minimize the discomfort it might produce. Eighteen minutes after the injection of the cocain, some sensibility still existed in the foot; fearing that the weak solution would be insufficient, 20 minims of a 1% cocain were then injected into the exposed nerve. In three minutes the anesthesia of the entire region below the sciatic infiltration was complete and the operation was begun 20 minutes after the first injection into the nerve had been given. The tarsus was then explored by making a free externo-lateral incision and all the bones, including the tarsometatarsal articulation, were found to be involved in a diffuse tuberculosis. The astragalus alone was saved. The chisel, gouge, and bone curet were used freely with the hope that a simple excision might suffice, but the lesions of the skeleton and soft parts, including the tendon sheaths, were so extensive that an atypical subastragaloid amputation was decided upon. The patient, who had been perfectly quiet and passive, was now asked his consent to the amputation, which at first he refused, but after showing him the extent of the lesions and explaining to him the advantages of a radical extirpation in a man in his condition, he consented, and the amputation was performed. The patient gave us very material assistance in this operation, not only by holding his foot and leg in the most favorable attitudes for our work and by turning his body around without assistance when at the termination of the operation on the foot we closed permanently the sciatic incision. The

contrast between the alarming condition induced by the general anesthetic (chloroform), and the passive and calm attitude of the patient throughout the operation was most impressive.⁵

The only complaint made was at the end of the operation, caused by the constrictor at the thigh. The pain from the pressure exercised by the constrictor becomes at times intolerable in operations which last as long as an hour. The constrictor should always be relaxed when it causes serious annoyance, provided hemostasis has been accomplished. Even if pain is not seriously complained of from this source, it is important to allow the circulation to reestablish itself, if only for a few moments, to prevent the possible nutritive disturbances that often follow prolonged ischemia in inflamed and badly-nourished tissues. The mode of applying the elastic constrictor or the tourniquet over soft pads and in a spiral manner, so as to avoid concentrated linear pressure at a single level, is very important to insure the comfort of the patient.

The operations successfully performed by this method in my practice have been (1) Pirogoff's amputation for frost-bite; (2) Syme's operation; (3) two atypical resections of the tibio-astragaloid joint, in which the astragalus and calcaneum were excised together with the tibio-fibular surfaces and their malleoli, for tuberculosis; (4) Guyon's supramalleolar amputation of the leg for trauma; and (5) an extensive search in the thigh for a lost bullet imbedded in the neighborhood of Hunter's canal. In the last case the anterior crural nerve and external cutaneous were cocainized under Poupert's ligament. In this case we were misled in the situation of the bullet as indicated by radiographs and failed to find the bullet even after a most extensive dissection in the lateral and posterior femoral aspects of the thigh had been made.

Head, Face, and Neck.—The application of local infiltration and regional anesthesia to the major surgery of these parts is greatly hampered and hindered by the difficulty of effectively reaching the most important nerve-trunks and by the inability to control the circulation, except in a few favorable areas. Nevertheless, surprisingly brilliant results can be obtained with these methods by those who are adepts in their application and who are alert for opportunities to substitute them for general narcosis. At present the control of the circulation is still desirable, not so much to diminish the dangers of intoxication, but to prolong and intensify the action of this narcotic drug in long operations. The demand for appliances to "incarcerate the anesthetic" is shown by the invention of numerous devices, such as Corning's scalp-rings, Corning's hemostatic fenestrated forceps for operations on the cheek, mouth, and breast, Noyes' ectropion forceps, Wright's clamp, etc. At present the introduction of Schleich's infiltration anesthesia has made these devices unnecessary, except in regions in which the anatomic configuration of the parts (scalp and auricle) will permit of easy elastic constriction, which is always advantageous, if only from the hemostatic point of view. The utility of Corning's principle of incarceration was most forcibly impressed upon my mind in 1890, in operating upon an extremely vascular nevoid angioma of the entire auricle.⁶

⁵ This and other cases illustrating regional intraneural and spinal cocainization as they have presented themselves in my clinics at the Charity Hospital have been reported in interesting graduation theses by Drs. Samuel Logan and B. A. Terrett, of the Tulane class of 1899-1900.

⁶ "A large cavernous angioma involving the integument of the entire auricle, successfully treated by dissection, resection of the diseased tissue, and ligation of the afferent trunks *in situ*, by a special method," by R. Matas, M.D. (*Medical News*, December 24, 1892.)

In this case the ear presented elephantine proportions and pulsated with the arterial and venous blood furnished by enormously dilated bloodvessels. One of the caverns ruptured by ulceration and the patient nearly succumbed after a frightful hemorrhage. The external carotid was ligated, but this was followed by only temporary improvement. A few weeks afterwards the ear was cocainized, resected, and bared completely of its tegumentary covering, including the afferent bloodvessels which were all secured and ligated by a very simple procedure. This consisted in the injection of a 4% cocain solution ($\frac{1}{2}$ of 1% would have been sufficient) into the periauricular tissues at the root of the ear until a complete circle of cocain solution had been formed around it (circumferential infiltration). Four hare-lip pins were then introduced at equidistant points so as to transfix sections of the circle. These were used as binding posts to hold a thin rubber band which was wound around each pin and the rubber was stretched tightly around the pedicle. The rubber in this way was held fast and prevented from slipping. The pulsations in the ear ceased immediately and with the arrested circulation a complete anesthesia of the auricle followed, which permitted the operation to be performed throughout without pain or hemorrhage.

In operations upon the scalp I also depend upon constriction with a heavy elastic cord wound around the forehead, just above the glabella, the temporal fossa, and the external occipital protuberance. The temporal fossae are compressed sufficiently to arrest the flow in the deep temporal arteries by threading the elastic into perforated wooden blocks, shaped like elongated trun-

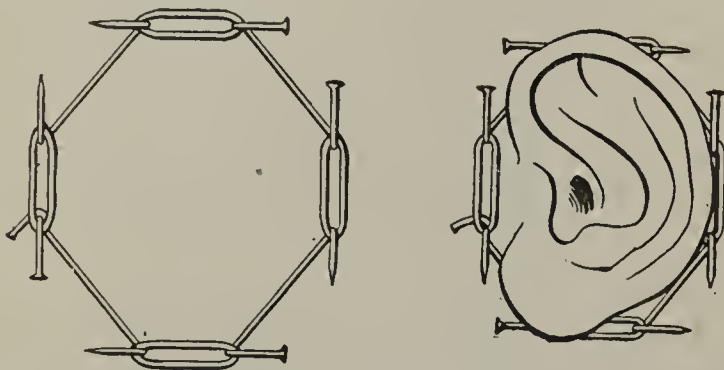


FIG. 8.—Diagrams illustrating author's method of controlling the circulation and of prolonging the effect of cocain anesthesia in extensive operations on the auricle. The anesthetic solution is infiltrated around the pedicle of the ear by circumferential infiltration. The pins are used by bridging posts to prevent the elastic from slipping when excision or amputation is required, as in vascular neoplasms.

cated pyramids, which fit the temporal fossae and exercise the necessary pressure. By this process hemostasis of the entire scalp is obtained and the anesthesia is indefinitely prolonged. In suturing extensive scalp wounds, in removing multiple sebaceous cysts and other tumors, in exploring the skull for injury, in craniectomy (this has been done repeatedly with the chisel by Schleich), and trephining for depressed fracture, in the evacuation of epidural hemorrhages, of intracranial abscesses, etc., the scalp and periosteum can be sufficiently cocainized to permit of painless operating. In operations upon tumors and cysts of the scalp a circumferential infiltration, encircling the field of operation, is usually effective. In more extensive cases an outer circle of edema can be made with cocain, (Schleich No. 1), and the enclosed area is totally edematized with weaker cocain solutions (Nos. 2 or 3), or with the .2% eucain B. previously described.

Usually in the severe traumatism of the skull, such as extensive compound or simple depressed fractures, the patients are in a state of unconsciousness or stupor from shock, or brain injuries, which permit of painless operating with very little local anesthesia. On the other hand, if there is delirium, restlessness or much cerebral irritability, local anesthesia cannot be practised with ad-

vantage and chloroform must be administered. Leaving out of consideration the surgery of the eye, in which local anesthesia is preeminently successful, or that of the intranasal passages and of the external ear, in which cocain anesthesia is also most valuable, we find that local (infiltration) anesthesia finds many restrictions in its application to the major surgery of the face. Nevertheless, with a fair knowledge of anatomy and a large experience with cocain technic, some remarkable operations can be performed by this method.

The following case taken from my note-book will illustrate the value of regional anesthesia in a class of cases usually regarded as unapproachable with cocain.

Partial excision of both upper maxillae and entire hard palate for malignant disease under regional anesthesia.—A white man, laborer, aged 48, addicted strongly to alcohol for years and suffering with advanced arteriosclerosis, was admitted to Ward 7, Charity Hospital (April 29, 1899), for treatment of a recurrent epithelioma of the palate involving the anterior alveolar arch and both upper maxillary processes. The neoplastic infiltration extended to the right half of the palate and along the entire incisor region to the first right bicuspid; the anterior half of the hard palate also presented a large, ovoidal swelling caused by malignant periosteal invasion. I decided that I would try to remove the entire hard palate, including both palatine processes of the upper maxilla, the floor of the antrum and the septal cartilage of the nose. I also decided to anesthetize these parts by *infiltrating the superior maxillary divisions of the trifacial in both sphenomaxillary fossae*, but promised the patient that I would administer chloroform if he felt, at any time in the course of the operation, that the pain was unbearable. A hypodermic of morphia, $\frac{1}{4}$ grain, was given 20 minutes before the operation. In order to anesthetize the maxillaries and the palate the sphenopalatine fossae were filled with a No. 1 Schleich solution introduced by a long needle introduced through the floor of the orbit into the sphenomaxillary fissures. The needle was directed as closely as possible through the fissure in the right orbit towards the infraorbital nerve as it enters the infraorbital canal. In this way it was expected that not only the entire superior maxillary division of the trigeminus could be anesthetized, but that Meckel's ganglion with its palatine branches would be "blocked" by the anesthetic. In a few minutes we tested the sensibility of the cheeks, lips and alae of nose and were gratified to find that the entire cutaneous distribution of the infraorbital had been completely anesthetized on the corresponding (right) side. Encouraged by this result, the left sphenopalatine fossa and infraorbital nerve were treated in the same manner, with identical results. Fully fifty minims of Schleich's No. 1 solution, reinforced by 25 minims of 1% cocain, were injected into each sphenopalatine fossa. The nasal septum, which is supplied by the nasopalatine and the nasal branch of the ophthalmic, was controlled by a separate infiltration, a long needle being introduced through the frenulum of the upper lip and into the root of the columna and septal cartilage of the nose. The anesthesia of the posterior palatine nerves was also reinforced by direct infiltration in the posterior palatine foramina. When the last injection had been completed the patient said that his palate and face felt entirely "numb" and gave the impression of a "dead block of flesh" wedged in his face. The anesthesia of the jaws was then tested by extracting a perfectly sound right canine which was firmly implanted in its socket. The patient was surprised when he saw the tooth, saying that he had not felt the least pain in its extraction. The upper lip was then divided in the median line and detached from the nose by two lateral incisions which were carried along the lower border of the columna nasi and to the nasolabial groove. The lips were then dissected away from the gums and jaws as far back as the tuberosities of the maxilla. The two halves of the upper lip were then reflected outwards and held out of the way with loops of strong silk which acted as retractors. A very sharp McEwen's chisel was then driven by hand into the body of the right maxilla on a level with the floor of the nose. With a few sharp strokes of the mallet, the palatine process including the tuberosity was divided and

the antrum was exposed; the same process was repeated on the other side, and the separation of the septum nasi from the jaws completed the line of osseous section. In this manner the lower half of both upper jaws and the entire hard palate with the attached growth were mobilized and displaced downwards *en bloc*, the connections with the soft palate being severed with a long pair of strong curved scissors. After the removal of the palate, both antral cavities and nasal fossae were widely exposed. The bleeding was very profuse in the last stage of the operation when the palate was being detached, the palatine arteries spurting vigorously. A large tampon of iodoform gauze impregnated with compound tincture of benzoin was immediately packed into the antra and palatine region and promptly arrested the hemorrhage. The lining mucosa of the right antrum was subsequently removed in its entirety. During the intraoral part of the operation the patient's head was kept low, in Rose's position. Throughout the whole procedure, which lasted over 40 minutes, the patient gave us great assistance by spitting out clots and altering the position of the head as we directed. He said that while the chisel was being used he felt the jar of the instrument, the detachment of the vomer gave him some pain, but what gave him more alarm than anything else was the sight of the blood that he spat out.

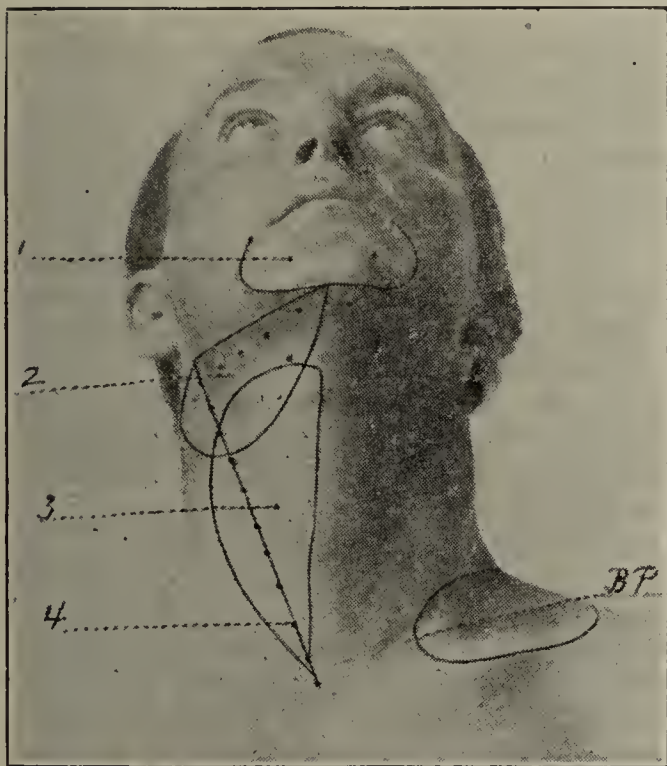


FIG. 9.—Surface anatomy of supraclavicular space, carotid and submaxillary regions to show (B.P.) Crile's method of "blocking" the brachial plexus outside of the scalenus. The oval outline indicates area of edematization in the supraclavicular fossa bisected by the line of incision. 1. Indicates mental foramina, for deep paraneural injection, surrounded by area of artificial anesthetic edema (applied in extirpation of the lower lip for carcinoma). 2. Points to submaxillary triangle which is entirely filled with the anesthetizing fluid. The dotted lines indicate line of intradermal injection for incision in extirpating infected glands. At this point deep infiltrating injections are also made to reach the floor of the mouth, root of tongue, the lingual and inferior dental nerves which are quite accessible with long needles at this point. 3. Outline of area of anesthetic edematization for the ligation of the common carotid, external carotid and its branches, the removal of infected glands, etc. 4. Dotted line indicates line followed in making a preliminary intradermal infiltration before proceeding to the general edematization of the carotid area.

In this case the preliminary injection of morphia was of decided assistance in diminishing psychological anxiety. Fully 180 minims of Schleich's No. 1 ($\frac{1}{2}$ of 1%), and 60 minims of a 1% solution were used in the operation. After the removal of the palate the lip was still completely anesthetized and the facial (cutaneous) and intraoral (mucous) sutures were introduced without pain. The patient was very much exhausted by the ordeal he had undergone, but after taking a good drink of whisky and a hypodermic of strychnia he sat up and said that apart from the jarring of the chisel and the excitement of the operation he had suffered comparatively little pain. The pulse was 110 and there was little shock.

In operations on the tongue, lips, cheeks, floor of

mouth and lower jaw the combined paraneural infiltration method indicated by the author in previous sections, in which large massive infiltrations with .2% eucain B. are made with the help of the injecting bottle, remarkably satisfactory results can be obtained. The procedure adopted by the author for the excision of the lower lip with or without extirpation of the submaxillary contents is shown in Fig. 9.

The floor of the mouth and root of tongue can be thoroughly edematized by deep infiltration with a long and fine 7 or 8 cm. needle which easily reaches the paraneural areas of the lingual and inferior dental on a level with the spine of Spix. The thorough edematization of the submaxillary fossa is also quickly obtained by the author's apparatus. The author's experience entirely confirms that of Schleich, Mehler, Briegleb and other recent German adepts in infiltration, who believe that many of the major operations on these parts can be painlessly effected by this method, only that the additional search for paraneural points which give regional control of the sensibility greatly increases the efficiency of the infiltration.

In the surgery of this region, local anesthesia has made large and permanent conquests. The neck is most favorable for the display of the infiltration method, the paraneural and intraneural methods having found comparatively few typical applications. In the neck, the lesions of the skin and its appendages and those of the supra-aponeurotic planes are everywhere submissive to cocain or its allies. Local infiltration is most valuable in dealing with inflammatory lesions: abscesses, boils, inflamed sebaceous cysts and carbuncles of even large size. In opening deep cervical abscesses connected with submaxillary and pharyngo-tonsillar infections, in which the suppurating focus must be reached by careful dissection (Hilton-Rose), it is invaluable. In the major surgery of the neck, local infiltration finds its most brilliant applications in the anterior cervical and in the supraclavicular regions; and in the operations on the vessels in the carotid triangles, it has become the routine anesthetic in my clinics. In a cursory review of the more important operations that have been performed under local anesthesia I find most frequent references to the ligation of the carotid and its branches, the jugulars, the surgery of the larynx and trachea, the thyroid body and in the removal of large but well-defined neoplasms. Limiting myself to my personal observations, I have ligated the common carotid 7 times, and of these 5 were under cocain. My first operation of this kind is recorded in 1889, when I ligated this vessel near its origin, between the sternal and clavicular heads of the sternomastoid, for a large idiopathic aneurysm of the bifurcation. In this case a 4% solution was used in accordance with the general ideas of the time; at present a Schleich No. 1 solution would have sufficed. I have also repeatedly exposed the common carotid in order to secure it for preventive hemostasis by passing under it a traction loop of thread (on the Rivington plan), in extensive operations on the head, neck, and especially the parotid region. I have notes of 48 ligations of the external carotid in my practice, of which 36 were performed under cocain, several of these being double ligatures in the same subject as a preliminary to extensive operations for malignant diseases involving the tongue and floor of the mouth. In recent years I have frequently adopted Dawbarn's extirpation of the external carotid and its branches for the same purpose. The jugular vein has also been frequently exposed and

ligated under cocain. In three of my cases this vein was ligated and divided in its upper cervical portion to evacuate septic thrombi and prevent the spread of phlebitis originating in the lateral sinus from middle-ear disease.

The procedures that I have found most serviceable in the neck is indicated in Fig. 9. The lines of incision are defined by a purely intradermal infiltration with Schleich's No. 1 solution ($\frac{1}{3}$ of 1%), after which the entire field of the operation is completely edematized with a eucain B. .2%, introduced with the injecting apparatus. That general edematization is not necessary to obtain perfectly satisfactory results, provided the intradermal injections are carefully made, is attended by a long experience in my hands and that of others, but that complete edematization by the method described adds enormously to the effectiveness of the anesthesia and that it is a great improvement on past methods cannot be doubted.

The great advantage of operating without inhalation narcosis in the asphyxiating diseases of the larynx and trachea requiring laryngotomy and tracheotomy led to the early trial of cocain in these operations. In small children suffering from diphtheria, the restlessness and psychical disturbance of the patient contraindicates its use; here, however, intubation has practically supplanted tracheotomy altogether. But in the operations on the laryngo-tracheal passages in adults, cocain has become the routine anesthetic and its success in these cases is as fully and indisputably established as it is in the removal of an ingrowing toe-nail. I first performed tracheotomy under cocain in 1889, in relieving a laryngeal stenosis from abductor paralysis, and since that time it has become the routine anesthetic in my practice. I have had occasion to test its value in such delicate intralaryngeal operations as the extirpation of the vocal bands for paralytic stenosis, using a Trendelenburg tampon canula to prevent the entrance of blood into the lower trachea, and in the removal of foreign bodies. In these operations the reflex irritability of the mucosa must also be subdued by spraying the larynx directly with cocain solution.

One of the most convincing proofs of the great extension of cocain anesthesia in the surgery of the neck has been given by Kocher and his pupils in their numerous operations for the cure of goiter. When we consider that the statistics of operations for goiter, as furnished by the clinics of Kocher, Roux, the Reverdins, Socin, v. Bruns, Mikulicz, Burckhardt, and other surgeons who practise in the great zone of goiter infection in Europe, amount to many thousands of cases, and that since the value of cocain as an anesthetic was first established by Kocher (who alone claims a large majority of more than 1,500 goiter cases as cocain operations), local anesthesia has become a routine practice in such cases—we will realize what a large slice of surgical territory has been wrested from the domain of general anesthesia in this region alone.

With the comparatively limited opportunities for the study of thyroid diseases in our section of the country, I have performed only 7 thyroidectomies for various conditions (sarcoma, cystic and parenchymatous goiter), and in all of these cocain infiltration yielded the most satisfactory results.

In the preceding paragraphs we have endeavored to point out some of the uses of local anesthesia in the major surgery of the neck. It is only fair now to state that there still remain many conditions in which it is an

impracticable and unsatisfactory mode of anesthesia. This is particularly true of all atypical operations in which the lesions and the limits of the field of operation are ill-defined, as in multiple lymphatic tuberculosis, where the chains of infected glands are held fast to the periglandular tissues by dense adhesions. In the removal of chains of malignant lymph-nodes, the same objections hold with still greater force, and a general anesthetic becomes necessary, unless further experience justifies the extension of spinal cocainization to this region, as Tait and Caglieri have suggested. In the performance of laminectomy, in which general inhalation anesthesia is of difficult application because of the ventral decubitus of the patient, the advantages of infiltration should be seriously considered.

We have consumed much space in describing some of the topographic applications of the improved neuro-regional and infiltration methods in the extremities, head, and neck, and yet the equally important territories of the thorax and abdomen, including the hernial regions and of the special fields of genitourinary and anorectal surgery have not been even referred to. These the author has systematically considered in his monograph already referred to in which the vast utility of the methods described are exhibited in detail.

He trusts, however, that enough has been written on this paper to prove, first, that the indications for general narcosis have been vastly reduced by the development of the most recent methods of local and regional technic; and, second, that the field of application of cocain and its allies is not to be restricted to minor procedures as in the past, but that they are now proved to be reliable and potent auxiliaries in preventing the shock and secondary complications that follow after prolonged general narcosis in many of the most formidable and forbidding phases of the surgeon's major work.

Speaking from purely personal experience, I can conscientiously state that by the separate or combined application of the various methods here described the indications for the use of general (inhalation) anesthesia have greatly diminished in my practice and have steadily continued to decrease with a growing confidence in and familiarity with the new technic. I cannot claim with Schleich and others that 90% of all the operations that occur in a general surgical practice can be performed with local anesthesia, but I can safely assert that I have been able to reduce the indications for general anesthesia to at least 50 and 60% of the cases, in which, six years ago, I would have been compelled to depend upon a general anesthetic. Latterly, I have still further reduced the risks of general narcosis by availing myself of the mixed morphin cocain-chloroform anesthesia previously referred to, in which the chloroform is administered either at the end or in the beginning of the operation, and in very small quantities, with the sole object of allaying psychical excitement. Finally, I would state that while I entertain the strongest convictions on the subject of local anesthesia and never fail to avail myself of its advantages in my practice, I am not blind to its limitations and never hesitate to resort to general anesthesia when the conditions are such as to indicate or to justify their administration. Anesthesia with cocain or its allies is most often impracticable and unsatisfactory in the following conditions:

1. All operations or manipulations in which complete muscular relaxation is required to accomplish the object of the intervention; as in the reduction of fractures

and dislocations of the larger bones and joints (the hip, the shoulder, the elbow, and the knee); in relaxing ankylosed joints, spastic muscular contractures; stretching sphincters (of the rectum and bladder), etc.

2. In all extensive atypical operations on the head and trunk in which the neuro-regional method is inapplicable and the field of the operation cannot be well defined or circumscribed, as in the radical extirpation of mammary cancer by Halsted's and Meyer's methods; in the extirpation of bilateral and multiple chains of adherent lymphatics in tuberculosis of the neck, etc.

3. In all atypical operations involving prolonged and complicated maneuvers in the splanchnic cavities, especially when the organs operated upon are adherent and inflamed.

4. In all operations upon patients whose emotions are beyond the control of reason or the will, as in the violently insane, in delirious patients, in children, in hysterical and extremely timorous patients, and in all those in whom the mere consciousness of the operative act (without physical pain) is sufficient to produce great mental excitement and distress.

These are the general conditions which most frequently offer insuperable obstacles to the successful application of cocain and its allies, and yet the number and character of cases in which even the most rebellious conditions can be successfully brought under the dominion of the new technic by a patient, tactful and skilled operator is astonishing to the uninitiated. Much could be written on the qualifications that are required of the surgeon who would aim at success in the practice of local and regional anesthesia, so much depends upon the personal equation and temperament of the operator; so much upon his patience and resourcefulness in dealing with the psychical elements in his patient, that the standard of success in the practice of one operator cannot be made the rule of the majority. The technic of local analgesia in major operations is largely a personal affair; it is an intrinsic part of the operation itself and cannot be relegated to assistants, though an intelligent and tactful assistant is of inestimable value by the side of the patient, if only as aid in diverting his attention from the field of the operation—a "moral anesthetist"—as it were, to use Lilienthal's expression. It is this tax upon the operator's attention and the vigilance required to keep the inhibitory faculties of the patient under control, and the time consumed in the anesthetizing procedure that will prevent cocain and the local analgesics from gaining ascendancy in the crowded amphitheatres of popular teachers where quick and brilliant work is expected by an impatient audience. The atmosphere of such a place is not only calculated to disturb the equanimity of the patient, but is inimical to the spirit of the method itself, which commands the undivided attention of the operator.

It must be observed, however, that while these objections to cocain as an amphitheater method will always make it unpopular in large clinics it will grow in favor in all sectional teaching before small classes, and above all in the quiet and peace of private operating rooms. In every operation, the question that the conscientious operator should ask himself is, What mode of anesthesia is best suited to the condition and needs of this particular patient? Sometimes this question is not considered at all, and the operation is undertaken with a general anesthetic, simply as a matter of routine; often, however, the relative merits of ether and chloroform are

discussed, but the possible advantages of local or regional anesthesia are too rarely considered. Now, I would contend that the time has come when local anesthesia, in the broadest sense in which we have used it in this paper, deserves a higher place in the esteem of general surgeons than has been accorded to it. With Lilienthal, I would say that we have accustomed ourselves to ether and chloroform to such an extent that only in very exceptional cases do we think of the possibility of doing serious surgical work without them. Yet there are, as we have demonstrated in this paper, many major operations which can be better and more safely done with the help of local anesthetics, and it is merely the force of habit that keeps us in the old rut.

THE SPINAL SUBARACHNOID METHOD.

J. Leonard Corning, 1836—1894; A. Bier, 1899.

In previous communications (Transactions Louisiana State Medical Society, April, 1899, and *Journal American Medical Association*, June 3, 1899), I have sufficiently referred to the American origin of this method and to the great credit due to Dr. Corning for its original introduction; the subsequent events that have rapidly followed the reintroduction of the method—by Bier in April, 1899, will be sufficiently indicated by the references given in a bibliography to be published later. We are now more especially concerned with its technic and its practical value as an extension of the neuro-regional methods which we have described in the preceding pages.

We cannot regard spinal cocainization in the light of general (cerebrospinal) anesthesia because it is necessarily restricted in the limits of its territorial application and does not produce unconsciousness which is often as indispensable as analgesia. But, as a means of diminishing the indications of the general anesthetics when these or the safer but more restricted methods of neural and infiltration anesthesia are contraindicated, it is invaluable and deserves the earnest consideration that is now being given to it.

As a result of the vast amount of study, experimentation and experience that has accumulated since Quincke, of Kiel (1891), first demonstrated the utility and comparative benignity of lumbar puncture, a knowledge of the subarachnoid space and of the avenues by which it can be reached for diagnostic and therapeutic purposes had already been practically perfected before the surgical future of lumbar puncture became apparent. But even long before the possibilities of cocain medication of the cerebrospinal fluid had been recognized even by Corning, the investigations made by the earlier students of the physiologic action of cocain as the nervous centers established many data which had been practically forgotten, but which, in the light of the present experience, are interesting and instructive. This is particularly true of the work of Mosso (1890), Aducco (1889), F. Franck (1892), who specially studied the effect of topical applications of cocain upon the medulla oblongata. But to Sicard (May, 1899) we are specially indebted for the most satisfactory experimental and comparative study of the toxic phenomena produced by cocain when introduced into the subarachnoid space by the intracranial route as well as by spinal puncture. The far greater gravity and rapidity with which toxic phenomena are produced when the action of cocain is extended to the cerebral centers as shown by these researches, are well worthy of reflection and throw much light upon the

grave toxic symptoms which have already been frequently recorded by operators who have exceeded the dose prescribed by Bier and Tuffier. We shall not attempt to discuss the physiologic phases of the method on this occasion, but will limit ourselves to its purely practical surgical features as they have presented themselves to me in the course of my personal experience.

The subarachnoid space is accessible by several routes:

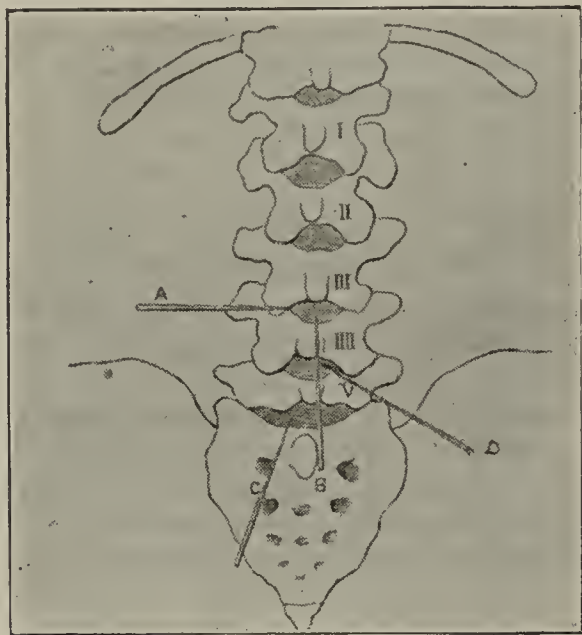


FIG. 10.—Method of puncture for spinal drainage: (A) Quincke's method; (B) Marfan's; (C) Chipault's; (D) Tuffier's.—Modified from Chipault.

(1) By trephining the skull; (2) the atlooccipital route (followed by Magendie in demonstrating the constant presence of the cerebrospinal fluid); (3) the dorsal route, with or without laminectomy; (4) the sacrolumbar route; (5) through the central spinal canal; (6) the cervical route. For purposes of regional anesthesia, the intervertebral spaces are alone utilized, as it is only from the first lumbar vertebra downward that injury to the spinal cord can be avoided. The other routes referred to have been utilized almost exclusively for experimental purposes or for therapeutic injections into the subarachnoid space for other than purely surgical conditions. Recently Tait and Caglieri of San Francisco, in a valuable and interesting contribution on the subject (*Jour. Am. Med. Asso.*, July 7, 1900) have stated that in their experience the sixth cervical space is a sure and extremely easy avenue in the human subject, and have availed themselves of it in three cases for purposes of surgical analgesia without apparent injury to the cord or untoward result. They believe that the spinal cord, like the brain, is tolerant of trauma, and do not fear the possibility of injuring it permanently with a fine needle while introducing the cocain solution. Notwithstanding their confidence and the repeated successes they have obtained, I cannot consider it a safe route to the spinal canal, and cannot recommend it in the regular practice of spinal anesthesia. In addition to the risk of traumatism and hemorrhage there is the additional greater liability of inducing serious toxic phenomena, owing to the greater proximity of the seat of injection to the medulla oblongata which is very susceptible to the paralyzing influence of even small doses of the drug.⁷

⁷ Mosso found that 3 drops of a 10% cocain solution dropped carefully into the floor of the ventricle of rabbits caused an almost immediate arrest of the respiration and death. Aducco repeatedly demonstrated in dogs that from .05 to .010 cgm. of the drug, when dropped into the fourth ventricle, promptly arrested its reflex excitability with failure of the respiration and death. He compares the action of cocain to direct section of the organ with the knife, so prompt and certain is its paralyzing effects (*vide U. Mosso, l. c.*).

After having experienced some difficulty in reaching the spinal canal in my first cases of spinal cocainization in which I had resorted to Quincke's puncture as recommended by Bier, I investigated the subject on the cadaver and arrived at the conclusion that the space between the fourth and fifth lumbar vertebrae is the best suited for puncture and injection. This, however, as I have since found out, is not always the best point, and have in one case been compelled after failure to enter at the fourth intervertebral space to try Chipault's sacrolumbar foramen between last lumbar and sacrum, with success. (Fig. 10 showing different methods.) In another case, a very fat patient, I only succeeded in the second intervertebral space. Fortunately all the spaces, from the second lumbar to the lumbosacral, are available and the injections can be safely made in any of these. The dorsal route also is accessible as high as the sixth space, as shown by Sicard, Tait and Caglieri; but these are objectionable for many reasons and preference should always be given to the lumbar spaces. The largest of these is the sacrolumbar space, but the space between the fourth and fifth lumbar recommended and adopted by Tuffier, is, as a rule, the most easily identified by surface landmarks. The average size of the interlamellar spaces through which the needle enters the spinal canal in the lumbar region varies from 18 to 20 mm. in transverse and from 10 to 15 mm. in vertical diameter (Quincke, Chipault) and the point of a No. 10 or 15 French conical urethral bougie could be introduced into the space without difficulty in an adult. The distance to be traversed by the needle varies from 7 to 8 cm., and much less in thin adults. The mode of procedure adopted in my practice has been practically identical



FIG. 11.—THE SPINAL SUBARACHNOID METHOD OF COCAINIZATION.—The patient is seated on the edge of the operating table. The exact position of the iliac crests having been previously determined, the spinous process corresponding to a transverse line drawn across the spine, on a level with the highest points of the crests of the ilia, is held by the left index. The right hand of the operator holds the needle which is directed forwards and towards the middle line from a point 1 cm. ($\frac{3}{8}$ of an inch) to the right of the spine.—Tuffier, *Sem. Méd.*, May 16, 1900.

with that recommended by Tuffier. In all my 9 cases the sitting posture has been adopted and the directions given by him for the identification of the fourth inter-

space were followed with some differences in the mode of exploring the canal before I had read his communication of May 15, 1900, *Semaine Medicale*, in which he fully detailed his procedure. His description of the procedure is excellent and cannot be made more graphic. The patient is seated on a table with his back to the operator. The hands resting on the thighs support the trunk. The lumbar region is thoroughly prepared with the

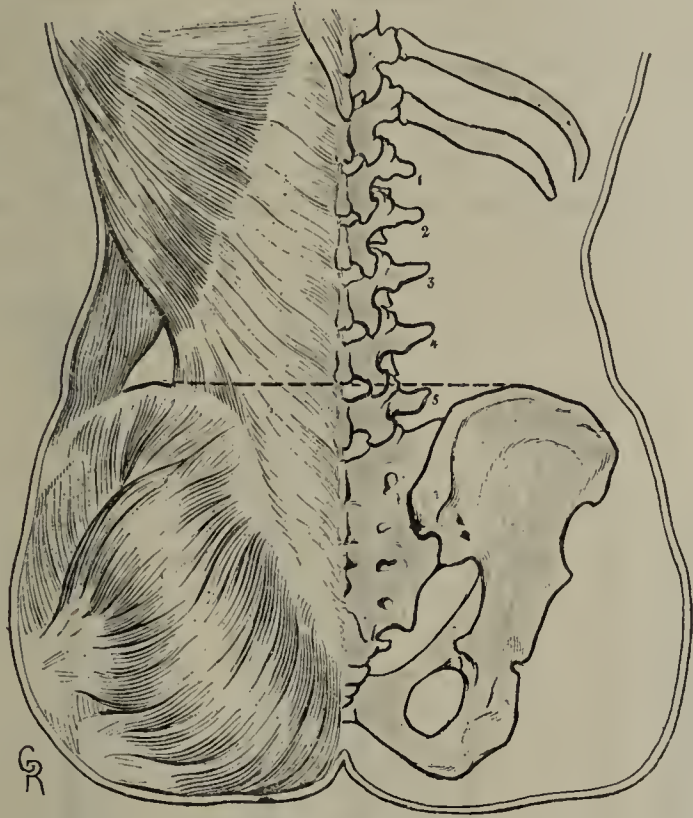


FIG. 12.—THE SPINAL SUBARACHNOID METHOD.—The dotted line crosses the top of the fourth lumbar spine on a level with the highest points of the iliac crests.—Tuffier.

usual antiseptic care, including a thorough scrub with alcohol, followed by lysol or bichlorid. The trunk is held nearly upright, with the spine as straight as possible. The highest points of the iliac crests are now identified posteriorly (a very difficult matter in obese patients), and a horizontal line connecting these two points is drawn across the spine. It will be found that the tip of the fourth lumbar spine touches this line. In fat subjects it is often very difficult to identify the spine and its situation can only be approximated. When it can be clearly identified, as in the majority of patients, it will usually be an easy matter to penetrate into the canal if the canula is thrust at a point just below and to the outer side of the junction of this line with the fourth spine. The skin at this point and for a quarter of an inch to the right of the median line is infiltrated with a few drops of Schleich's No. 1 or No. 2 cocain solution.

I prefer to use a fine but long hypodermic needle which infiltrates the entire tract, to be followed by the injecting canula, and while doing so explore the way to the interlamellar space. This procedure is of value in stout subjects in whom the spinous process is not accurately identified and in whom an error in the recognition of the spine would lead to an additional and unnecessary puncture. The left index is now held as a guide touching the fourth lumbar spine, and the patient is told to lean forward and curve his back ("scorching posture") in order to increase the dimensions of the fourth intervertebral space; $\frac{5}{8}$ in. is gained in the vertical diameter by this procedure (Tuffier). The canula of the injecting syringe, with a small (30 minim) empty hypodermic syringe attached, is held in the right hand and is made to penetrate into the skin about 1 cm. ($\frac{1}{4}$ in.)

to the right and immediately below the fourth lumbar spine. The canula is thrust slowly and steadily forward and towards the median line into the interspinous space for a distance usually of $2\frac{1}{2}$ to 3 inches (about 6.50 to 7 cm.). If the needle has penetrated the subarachnoid space, a diminished resistance is felt which is unmistakable to the experienced operator, and if the piston of the syringe is drawn a perfectly clear watery fluid—the cerebrospinal fluid—will immediately flow into the chamber and the evidence will be conclusive that the subarachnoid space has been tapped. The moment the presence of the fluid is established—and a few drops of the fluid are sufficient—the exploring syringe is disconnected and another syringe already charged with the anesthetic solution is attached and the anesthetic is slowly injected. Care must be exercised to avoid any unnecessary loss of cerebrospinal fluid, as serious accidents have followed excessive drainage in several cases. Bier himself was made quite ill from this cause when the method was tried on himself by his assistant, Hildebrand. This accident is easily avoided by using syringes that are fitted without screw tips.

Special attention must be given to the exact dose of cocain injected and to the aseptic preparation of the solution. Bier in first cases operated from August 16, 1898, to April, 1899, used 2 cc. of a 1% solution. He never exceeded 15 mgm. or $1\frac{1}{2}$ cgm. Tuffier, whose experience with the method is greater than that of any other operator (130 cases up to September, 1900), invariably uses a 2% solution of cocain, of which he injects 1 ccm. (15 minims.) The total dose, he insists very correctly, should never exceed 15 mgm. or $1\frac{1}{2}$ cgm. In my own practice I began by using 1 cc. of a 1% solution of eucain B. after the flow of cerebrospinal fluid had been clearly demonstrated; the needle, with the syringe attached, was left *in situ* pending observa-

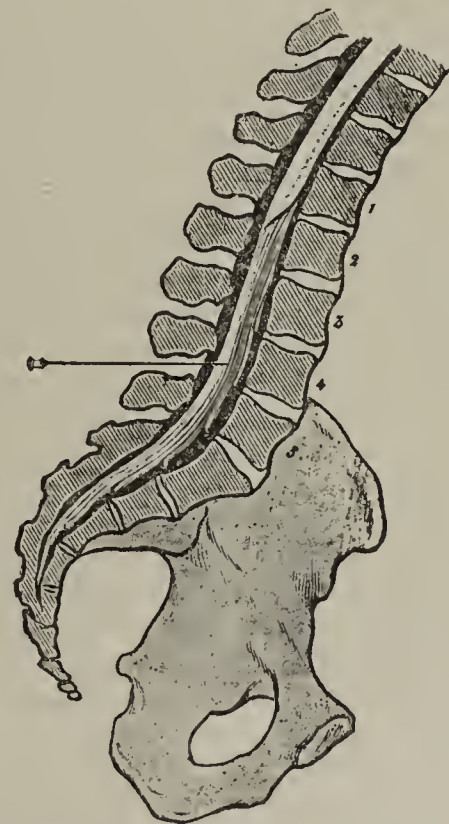


FIG. 13.—THE SPINAL SUBARACHNOID METHOD.—The needle penetrates into the spinal subarachnoid space below the fourth lumbar spine. The termination of the spinal cord on a level with the lower border of the first lumbar vertebra is shown in the diagram. The needle entering in the middle line does not touch the fibers of the cauda equina, which are spread in two lateral bundles.—Tuffier.

tion of the anesthetic phenomena; after 10 minutes' delay, as there was no anesthetic effect, another cubic centimeter was injected, and the canula was with-

drawn. Absolutely no effect followed. It would appear from this experience that eucain B. in the same doses as cocain is absolutely inefficient. Tait and Cagliari state, however, that in the lower animals the effects seem to differ but little from those of cocain. I am convinced that to be as effective as cocain the dose will have to be increased and it would be interesting to observe the results of further experimentation in this direction. After my first experience, I used a cocain solution, 1%, sterilized by heat (fractional method). When using the 1% solution I invariably injected 1 ccm. first and waited for the result, leaving the needle and syringe *in situ*; if the effects were not pronounced in 8 or 10 minutes, another cubic centimeter was administered, when as a rule the result was satisfactory. In the last three cases, however, I have become so confident of the effect that can be obtained with 1 cgm. of the drug that I now inject and withdraw the canula at once and seal the puncture with cotton and flexible collodion. In preparing the solution in these last cases the method adopted was as follows: Five tablets, each containing $\frac{1}{5}$ grain of cocain hydrochlorate; $\frac{1}{40}$ grain morphin hydrochlorate; $\frac{1}{5}$ grain sodium chlorid, were dropped into 100 minims of hot distilled water and dissolved. The solution was again sterilized by the fractional method. Twenty minims of this solution represent $\frac{1}{5}$ of a grain of cocain, $\frac{1}{40}$ of a grain of morphin and $\frac{1}{5}$ of a grain of sodium chlorid. The syringe, which contains 30 minims, was filled with the solution and 22 minims were injected; the excess of two minims is allowed for waste. The solution should always be used warm, about 90°–100° F. The effects following the injection of this mixed cocain-morphin-saline solution were so satisfactory that in future I shall continue to use this combination. The tablets used were those sold for the ready preparation of Schleich solution No. 1 by several well-known and reliable manufacturers. The ease with which a reliable and accurate anesthetic solution can be prepared with the manufactured tablets is one of their chief recommendations. The combination of cocain with morphin and other drugs has been tried by several observers with contradictory results. The reasons why I ventured to try the addition of morphin in small doses ($\frac{1}{40}$ grain) were (1) that I hoped to intensify and prolong the anesthetic effect of the cocain without adding to its toxic qualities, and (2) because I expected that the morphia through its sedative effects upon the cortex would tend to diminish the great mental distress and excitement that is so frequently exhibited by patients before and during the course of even the most painless operations.

That the addition of morphin will prevent the development of the postanesthetic phenomena I do not believe; but that the addition of a very small dose of morphin does not add to the dangers of the method and has the same sedative effect on the mind that it usually exercises when administered in larger doses by the subcutaneous route, I do not doubt.

Another point of importance is the necessity of providing a properly sterilized outfit. This can be usually improvised anywhere with a good antitoxin syringe. I have used the ordinary Walcher's solid piston metal syringe and needle for this purpose; but have used more often a long fine canulated needle, about 7 cm. long (about No. 22 Dieulafoy), that is provided with ordinary exploring aspirators. I have adapted it to two ordinary hypodermic syringes, 30 minims capacity, which could be used separately to explore and inject.

Bier, Tuffier, and the majority of operators first introduce the canulated needle without other attachment, and watch for the escape of the cerebrospinal fluid before injecting. Schiasi, of Bologna, fearing the effects of unnecessary loss of cerebrospinal fluid, leaves the injecting syringe attached from the start and trusts simply to the characteristic sensation which is experienced in penetrating the canal, for guidance. That this sensation is fallacious I know by repeated experience. In fact, if there is anything that is essential for the successful performance of subarachnoid puncture, it is the strict and unswerving observance of Tuffier's golden rule, "never to inject the cocain solution until the cerebrospinal fluid is distinctly recognized." This is the only infallible proof of penetration into the canal, all other signs are misleading, unless the operator is

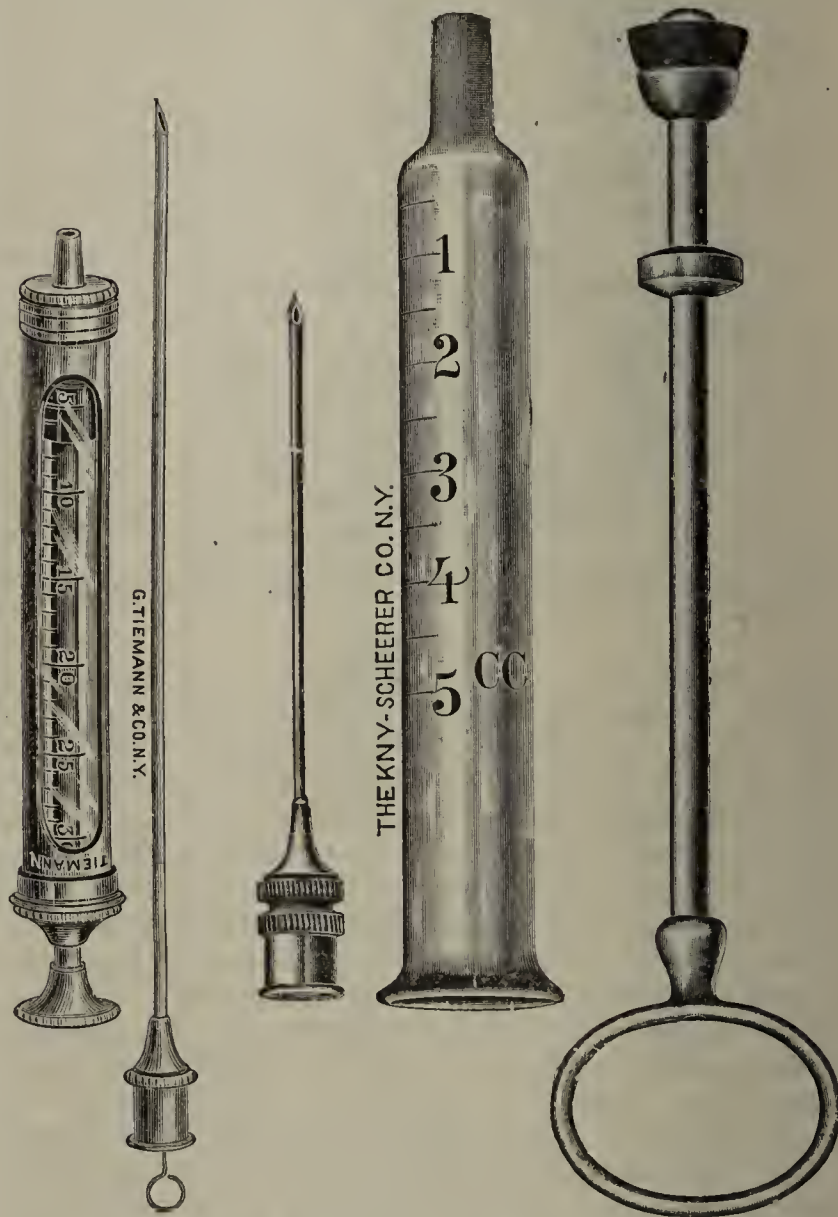


FIG. 14.

FIG. 15.

FIG. 14.—Tuffier's iridoplatinum needle. Actual size, 9 cm. long. External diameter of, 1.1 mm.; internal of, 0.8 mm. The sharp but short point is important.

willing to wait for the anesthesia as a test. But, returning to the needle itself, we find that using comparatively short 7 cm. canulated needles, it is not satisfactory to manipulate them unless they have the syringe attached, as this gives a firm hold. With Tuffier's long iridoplatinum needle, this disadvantage is overcome, and the syringe is not needed as a holder to give a firm grasp to the operator's fingers in directing the canula. The accompanying cuts illustrate the regular Tuffier canula made for me by the Messrs. Tiemann & Co. (See Fig. 14.) The syringe is an ordinary metallic hypodermic with glass barrel which will hold 30 minims (2 cm.) properly graduated. The plunger is made of asbestos packing,

and the whole can be thoroughly sterilized. An admirable aseptic glass Parvaz syringe (see Fig. 15) is also manufactured for this purpose by the Messrs. Kny, Scheerer Co. It is modelled after the original Tuffier syringe and is provided with improved aseptic fiber packing, which can be readily sterilized by boiling. The needle shown in this cut is only 5 cm. long; the regular Tuffier needle, 9 cm. long, is furnished with the needle by the manufacturers. It is important that all needles used for spinal cocainization should be cut sharp, but *short* at the point, as a long, very oblique bevel-point may penetrate the canal and yet allow the contents to escape in the extradural space.

We have already incidentally referred to some of the difficulties and accidents which may accompany the procedure. These are chiefly centered in the not infrequent inability of the operator to find the interlamellar opening. These have been commented upon by almost all observers who have had experience in the practice of lumbar puncture. They are most frequent in very muscular and obese subjects in whom the spines and other landmarks are not easily felt. Tuffier and his pupil, Cadol, have noticed the special difficulties presented by subjects with deformed spines. An interesting case of this kind has been recently reported by S. Coelho, of Lisbon, in which repeated attempts at penetration failed totally because of the cicatricial rigidity of the spine caused originally by an abscess. I have more than once been compelled to repeat the punctures four or five times before reaching the cerebrospinal fluid. If the needle is directed too obliquely (laterally) it will strike a lamina; if pushed too far forward into the canal it will bury itself into the body of the vertebra and only a few drops of blood will flow. It is necessary to direct the point strictly towards the median line in the center of the interspinous space, only keeping closer to the upper spine than to the lower. Then all further attempts at penetration should cease the moment the characteristic sensation of diminished resistance is felt.

As to the immediate accidents of the operation there are, as a rule, none. Nevertheless Gumprecht (*Deutsche med. Woch.*, xxvi, June 14, 1900) has collected 17 cases from the clinics of Quinke, Fürbringer, Lenhart, Lichtheisen, Wilms, Krönig, Bull, and his own, in which death has followed quickly after lumbar puncture for exploratory purposes, and in which the fatal termination could be attributed to no other cause than this apparently trivial operation. It must be noted, however, in justice to the method, that these punctures were made in patients suffering from very serious affections of the central nervous system and meninges and that, in at least several, the sudden deaths may have been due to other accidental causes. Symptoms referable to injury of the fibers of the cauda equina have been referred to by Sicard and Cadol. It is well to remember the greater possibility of hemorrhage in arteriosclerotic subjects. Heumberg has recently reported (January 19, 1900, Cadol) a case in which an intradural and medullary hemorrhage followed an injury to the veins which accompany the filum terminale. In this patient an exploratory lumbar puncture had been made 24 hours before death and 25 cm. of cerebrospinal fluid containing numerous bacilli had been removed. This was evidently a very exceptional case and the injury done to the cauda is accounted for by the tubercular meningeal adhesions which were found at the autopsy. In ordinary, normal conditions of the spinal cord, injury to the cauda equina and filum are almost impossible, as Quinke has shown that owing to

the mobility of the caudal nerve-fibers in the fluid they are easily pushed aside by the needle; hence the advantage of using a needle that is not too pointed.

From this it is evident that the mere act of puncturing the spinal subarachnoid space is not altogether free from risk. On the other hand, when we consider that many thousands of punctures alone, and now several hundreds, probably more than a thousand spinal cocainizations have been made for surgical purposes throughout the world and no serious accidents have been reported as a result of the operative procedure itself, it is obvious that the operation is, in normal condition of the spine, and in the hands of a careful operator, practically free from danger.

By far the greater danger lies in the effect of the anesthetic drug itself. That the toxic effects of the cocain injected may give rise to serious, alarming and even fatal manifestations cannot be doubted by any one who will read the detached reports of the many cases that have appeared in the medical press in the course of the last twelve months. These bad effects may show themselves immediately during the acme of the anesthetic period, but more constantly in the post-anesthetic stage and 12 hours after the injection. In justice to the method it must be said, as Tuffier has pointed out, that they are observed whenever more than one or two centigrams of cocain have been injected. The observations of the Roumanian surgeons, who have had a remarkably large experience with spinal cocainization, especially those of Racoviceanu-Pitesci, who has operated on 125 patients by this method and of Severeanu, also of Bucharest (70 cases up to last August), are worthy of special attention in this connection. Their opinions are extremely conservative and far from reassuring as to the ultimate fate of the method—at least as a routine procedure. Racoviceanu-Pitesci whose experience is almost as large as that of Tuffier, said at the important discussion that took place at the recent International Congress, August 8-10, in Paris, that he knew of 2 deaths that had occurred in Roumania as a result of spinal cocainization. In 80 of his cases he had observed light or moderate forms of intoxication which had persisted for 4 or 5 days. In 3 cases he had observed grave and alarming accidents which had compelled a resort to artificial respiration, hypodermic injections of ether, caffeine, and other measures. In other cases reported by Severeanu, this operator had observed a condition of general exhaustion and prostration which had lasted from one to two days and had given cause for very serious apprehension.

In reading the detailed observations of these cases, especially those published in the *Roumania Medica*, of February 15, 1900, by Stefan Alcssiu, and in the *Spitalul*, of March 15, 1900, by C. N. Poenaru, both internes in the services of Pitesci and Severeanu, one is struck by the frequency with which serious symptoms of collapse, vomiting, pallor, cold sweats with respiratory and circulatory failure with total relaxation of the sphincters and involuntary evacuation of feces, necessitating the most energetic restorative measures in the course of the operation—are observed in some of the worse cases, in several of which only 2 cgm. of cocain ($\frac{2}{5}$ gr.) had been injected. It is not surprising therefore that all of the Roumanian surgeons should be cautious in their expressions of opinion and that not one of these should believe that the spinal subarachnoid method will supplant the general anesthetics except in special conditions. The experience of the Roumanian surgeons distinctly sustains

Prof. Bier in the very conservative and guarded attitude that he has maintained since he first introduced the method for surgical purposes in 1898. In a letter to M. Cadol, last January (1900), and in his recent paper (*Münch. med. Woch.*, 1900, xxxvi, p. 1226), he holds that the problem is not to use cocain in the manner which he first described and for which he predicts no great future, but to devise means of rendering cocain harmless and to prevent its unpleasant and after-effects, or to discover some nontoxic substances. He very rightly condemns the doses of 4 and 5 cgm. which have been frequently used, as dangerous, and, with Tuffier, says that the dose should not exceed 15 mgm. or $1\frac{1}{2}$ cgm.

Tuffier himself, the brilliant propagandist of the method, admits that in 125 cases he had 5 deaths, 4 of which could not be referred to the anesthetic; the fifth, however, died with the symptoms of asphyxia. The autopsy showed mitral insufficiency and two fresh lung-emboli.

That overdosing is, however, the great source of danger is evident, and the symptoms of circulatory and respiratory failure that have been observed remarkably bear out the early experimental demonstrations of the evil effects of even small quantities of cocain in the medulla made by Aducco and Mosso in 1889 and 1890.

On the other hand, in spite of all these very serious accusations and proofs of danger it is curious that a complete immunity from the evil, or even the ordinary physiologic effects of cocain should be exhibited by many persons. Thoroughly authentic cases of this kind have been reported by Racoviceanu, his pupil Alessiu, Pousson, and Chavanaz and Coelho. In these cases the writers state that the puncture was demonstrative, the cerebrospinal fluid being recognized and yet injections of 2 cgm. were injected with very slight or insufficient effect. In a case related by Coelho the patient was an alcoholic and proved almost as rebellious to chloroform as to cocain, and he asks the question whether chronic alcoholism might not have some influence in neutralizing the effect of the drug. These recalcitrant and rebellious cases are accounted for by Cadol, Tuffier, and others by failure to apply an active preparation of the alkaloid, or by defective technic, and this is probably true of some, but the instances are too numerous to justify this as an adequate explanation.

My personal experience with spinal cocainization began November 10, 1899, and has been limited to 9 cases. I have had numerous opportunities to apply the method, but I have made it a rule not to resort to it unless there were positive reasons to justify it. The history of these cases entirely confirms all the observations previously made on this subject. They confirm all that has been said in favor of the procedure, and of the intensity and duration of the anesthesia, and show very little against it. I have never exceeded 2 cgm. and have obtained my most satisfactory results in major operations with $\frac{1}{8}$ grain of cocain combined with $\frac{1}{40}$ grain of morphia dissolved in saline solution (Schleich formula). The conditions in which it was employed were 2 operations for hemorrhoids, one perineal section for vesical drainage, one vaginal resection for malignant disease, one perineal cystotomy combined with the Bottini operation, one amputation of the thigh after an extensive exploration of a tubercular femur and knee, an attempt at sequestrotomy under eucaïn that failed completely after successful injection of 2 cc. of a 1% solution of eucaïn B., two earlier cases of rectal exploration and dilation for

malignant stenosis which were only partial successes in consequence of too weak injections ($\frac{1}{2}$ cgm. of cocain).

All of these cases were exempt from toxic or serious symptoms during the operative or anesthetic period. In at least four the most perceptible effect was a greater mental stimulation, shown by abnormal loquacity and cheerfulness. In 3 the symptoms were absolutely negative; in 2 there was vomiting at the end of the anesthesia. In several, the pulse was markedly accelerated, probably from excitement, but in the majority it was normal throughout the operation. In only 3 did we deem it necessary to stimulate with a toddy or a hypodermic of strychnia and atropia. In these cases there was some pallor and sweating, but without anxiety. The *postoperative* phenomena came on from 5 to 12 hours after the injection, and these were chiefly headache, which, in one case, persisted for 10 days. Vomiting was never observed more than two or three times in the worse case. The temperature rose in my second case (December 11, 1899) to $103\frac{1}{2}$ F., but it gradually subsided in 24 hours. In this case there was also very intense and persistent occipital headache. In this instance (a mulatto) the anesthesia was most remarkable. It came on promptly after the injection of 2 cc. of a 1% solution; it spread rapidly upwards from the lower extremities and pelvis to the thorax, arms, and neck. The anesthesia was so complete that any cutting operation could have been painlessly performed in the upper extremities. The patient felt absolutely no inconvenience after the ligation and excision of the hemorrhoids, and insisted upon walking back to his ward. On the other hand, the postanesthetic symptoms referred to were very intense, showing that these reactionary symptoms are often proportional to the intensity and duration of the anesthesia. In all the other eight cases the temperature never exceeded $100\frac{1}{2}$, and in four was absolutely normal. The most constant and unfailing symptom was the headache, and this was relieved by the use of phenacetin and caffeine, and other coal-tar derivatives of the same kind. In a case—that of a physician upon whom a perineal section with the Bottini operation was performed—there persisted a feeling of tingling and numbness about the feet that made him uncomfortable for more than 12 days after.

It will be seen from this limited experience and synoptical presentation of the facts that I have no very serious complaint to make against the method, but this I attribute largely to the extreme caution with which I have applied it.

Judging purely from my personal experience, I would limit the indications for its applications at the present moment:

1. To adults, and to reasonable persons who have good self-control, thereby excluding children, hysterical patients, and the insane.
2. To patients in whom the methods of local or regional anesthesia are inapplicable.
3. To patients suffering from emphysema, advanced asthma, chronic bronchitis, and other respiratory affections in whom a general inhalation anesthetic is absolutely contraindicated; in advanced cardiac cases with degenerative lesions, I would fear the possible depressing effects of the injection and excitement on the circulation.
4. In the majority of cases in which the painful part of the operation is not likely to be prolonged beyond one hour and a half, as I would be averse, in the present state of our knowledge, to repeat a second cocainization or to increase the total dose of the cocain to more than 2 cgm., especially in exhausted subjects.

The danger of repeating the intradural injections to prolong the anesthesia is also one of the objections to the use of the method in ordinary labor. But its advantages in instrumental cases, as shown by the successful experiences of Dupaigne, of Louviciennes, France, (who, according to Tuffier, first applied the subarachnoid method in labor, January, 1900), and of Bumm and Kreis, of Basle; of Doleris and Malartic, of Paris; and Marx, of New York, cannot be doubted, especially in nephritic patients.

COCAIN ANALGESIA FROM SUBARACHNOID SPINAL INJECTION, WITH A REPORT OF FORTY-FOUR CASES, TOGETHER WITH A REPORT OF A CASE IN WHICH ANTIPYRIN WAS USED.

By GEORGE RYERSON FOWLER, M.D.,
of New York.

Professor of Surgery in the New York Polyclinic; Surgeon to the Methodist Episcopal Hospital; Surgeon-in-Chief to the Brooklyn Hospital; Senior Surgeon to the German Hospital.

THE employment of subarachnoid injections of a solution of cocain for the purpose of producing analgesia for surgical purposes has been recently brought into prominence by a report of 125 cases by Tuffier, at the Thirteenth International Congress at Paris; of 70 cases by Severeanu, of Bucharest; and of 125 cases by Racoviceanu-Pitesci, also of Bucharest. The method however, was not original with either of these surgeons. Its first application to surgical practice in Europe is justly credited to Bier, of Kiel. Dr. Leonard Corning, of New York, however, first called attention to it in his articles upon the subject of cocainization in the *New York Medical Journal* in 1885 and 1888, and subsequently in his book upon "Pain," published in 1894, in which both the method and its technic were developed.

Whether or not the surgical application of the method originated by Corning will rank as an epoch-making event in our art will depend entirely upon future experiences with the effects of the drug as applied in this manner. If the estimate which some surgeons who have used it are disposed to place upon it is upheld by its further employment, a field of usefulness will have been opened up by its introduction; although, until some method is developed whereby it may be applied to operations upon the upper portions of the trunk, as well as to the upper extremities and head, it can scarcely be hoped that it will replace ether and chloroform.

My attention was first called to it by Bier's work, but I had been given to understand that he had abandoned the method after a trial of it upon his own person. Like many others, however, who had probably been restrained from trying the method by this circumstance, I did not take into account the susceptibility of some individuals to the mental depressing effects of cocain. Subsequently, however, I recalled the fact that one of my own former assistants, a surgeon of exceptional ability and evenly balanced mind, was for a time prevented from taking part in operations in which the agent was used after having it used upon himself in the ordinary manner for incising a simple phlegmon. While still debating the feasibility of extending Bier's experiences with the method the matter became the subject of renewed interest to me by an invitation to witness a hysterectomy by Tuffier in which subarachnoid cocainization was to be employed. Unfortunately, a misapprehension as to the time and place for the operation prevented me from attending. Tuffier's reports of his

cases, however, impelled me to give the method a trial upon the first opportunity. The following is a brief resume of the cases in my service up to the present time that have been subjected to the method:

CASE 1.—The patient was a male, aged 23, entered at the Methodist Episcopal Hospital, September 8, 1900, for excision of hemorrhoids; 15 minims of a 2% solution of cocain muriate were injected. Complete analgesia followed in 3 minutes, extending to tenth rib. Somewhat greater difficulty was experienced in dilating the sphincter ani as compared with ether or chloroform narcosis, owing to the absence of muscular paralysis. Patient vomited at end of 19 minutes. Analgesia lasted 50 minutes. There were no after-effects.

CASE 2.—The patient was at the German Hospital, September 12, a female, aged 40. The operation was abdominal section for appendicitis. Patient was placed in the semiprone or Sim's position, and 20 minims of a 2% solution injected. Analgesia was established to the fourth rib in 5 minutes. The patient complained of pain when the inflamed peritoneum was handled, but of no other incidents during analgesia, which lasted 65 minutes. At 8 P.M., or about 10 hours after the operation, the patient suffered what seemed to be an attack of angina pectoris. Her condition seemed alarming and her husband was summoned, who stated that she frequently had such "spells." Under stimulating applications and spartein she rallied. Her recovery thereafter was uneventful.

CASE 3.—The case was at the German Hospital, September 12, 1900, for tenosynovitis of the inner hamstring tendon; 5 minims of 2% solution were injected without analgesia in 15 minutes. A second injection of 5 minims was then given; analgesia to the tenth rib followed in 8 minutes; 6 minutes after the last injection the patient vomited; 10 minutes thereafter there occurred both urination and defecation involuntarily. Analgesia lasted 45 minutes. There were no after-effects.

CASE 4.—Was of a female, 39 years old, at the German Hospital, September 12, for ligature of both internal saphenous veins for varicose veins; 15 minims of a 2% solution were injected. Analgesia was established to the fourth rib in 5 minutes. She vomited after 10 minutes, and had involuntary defecation after 15 minutes. This was repeated twice during the operation. Analgesia lasted 55 minutes. There were no after-effects.

CASE 5.—The case was one of vaginal hysterectomy, at the Brooklyn Hospital, September 13, 1900. The first puncture withdrew a small quantity of somewhat viscid and turbid fluid. At the end of 25 minutes, following an injection of 20 minims of a 2% solution, there was no analgesia, when another puncture was made, and indubitable cerebrospinal fluid was obtained, when an injection of 25 minims of a 2% solution was made; analgesia followed in 4 minutes to the axillae. Sensations of touch were present throughout the operation. The pupils were unaffected, the pulse was 96, and the respirations rose at times to 32. Seven minims of Magendie's solution were given. She was nauseated several times during the operation. The patient developed an hysterical attack after removal to the ward. Her friends stated that she suffered from such attacks frequently.

CASE 6.—The patient was a female, aged 40, at the Methodist Episcopal Hospital, September 13, 1900, for anterior colporrhaphy and perineorrhaphy; 12 minims of a 2% solution of cocain muriate were injected, followed by analgesia up to the free border of the ribs in 3 minutes; sensation returned in 27 minutes, and 3 drams of chloroform were administered to complete the operation, which lasted 45 minutes. Patient became nauseated 5½ hours and vomited 6½ hours after operation. There were no other complications.

CASE 7.—The patient was a male, aged 42, at the German Hospital, September 14, 1900, for excision of hemorrhoids; 15 minims of a 2% solution were injected, with analgesia to the level of the umbilicus established in 3 minutes. The sensation commenced to return in 51 minutes. There were no apparent effects other than the analgesia either during or following the operation. During the night he complained of painful contractions of the fingers of the right hand. Patient is suffering from phthisis pulmonalis.

CASE 8.—The patient was a male, aged 38, at the New York Polyclinic, September 18, 1900; an alcoholic and syphilitic,

with varicose veins of both legs. Cerebrospinal fluid was withdrawn, small in quantity and turbid; 20 minims of a 2% solution were injected, with no analgesia at the end of 15 minutes; 30 minims more of the same solution were then injected, with no result after 20 minutes, and no effects. The patient returned to the ward, with no after-effects.

CASE 9.—At the Methodist Episcopal Hospital, on September 18, 1900, a male, aged 32, was entered for excision of hemorrhoids; 17 minims of a 2% solution were injected, with complete analgesia up to the free border of the ribs in 2 minutes. Operation was completed in 15 minutes; at the end of the operation the patient was allowed to stand upon his feet. He was quite unsteady, and could not support himself. He had slight nausea and vertigo at the time, and vomited on lying down. There was no pain and no after-effects.

CASE 10.—Was entered at the Brooklyn Hospital, September 18, 1900, a female, aged 28, for curettage, trachelorrhaphy, and perineorrhaphy; 20 minims of a 2% solution were injected; 19 minutes were required to produce analgesia, which extended to the level of the clavicle, and included the upper extremities. Vomiting took place before analgesia was established. She was restless only when nauseated, and said her fingers "felt like pins and needles." The pulse varied from 72 to 120; 8 hours after the injection it was 67. Headache commenced 3 hours after injection, and lasted until midnight. Chilly sensations were complained of at the same time. There were no further after-effects.

CASE 11.—A female, aged 30, was entered at the Brooklyn Hospital, September 18, 1900, for operation for the radical cure of inguinal hernia; 20 minims of a 2% solution were injected. Analgesia followed in 6 minutes, extending to the level of the fourth rib; the pulse averaged 92 and respiration 34 during the operation; 12 hours after the operation she developed what appeared to be a hysterical attack. The head of the bed was elevated and she was given 7 minims of Magendie's solution hypodermically, after which she quieted down, and with the exception of a headache, which subsided in a short time, she slept well during the night. There were no further after-effects.

CASE 12.—A female, aged 19, was entered at the Brooklyn Hospital, September 19, 1900, for curettage and trachelorrhaphy; 20 minims of a 2% solution were injected at 10.48. Analgesia was established at 10.55 (7 minutes), which extended to the level of the fourth rib. There was no nausea or vomiting. The pulse ranged from 80 to 88; respiration from 20 to 24; 3 hours after injection there was headache and chill; 4 hours after the temperature rose to 101.6° F.; at 8 the next morning it had fallen to 98°, morphin $\frac{1}{4}$ gr. and 1 ounce of whisky were given for chill and headache. There were no further after-effects.

CASE 13.—This patient was a female, aged 33, at the Brooklyn Hospital, September 20, 1900, for curettage and trachelorrhaphy; 20 minims of a 2% solution were injected at 10.40. Analgesia extended to the fourth rib in 10 minutes. The pulse before injection was 96; at 10.50 it was 144; at 11.05 it was 152. Respiration ranged from 20 to 36. At 11.15 patient vomited; 12 hours after injection, the temperature rose to 101° F.; 8 hours after the injection morphin $\frac{1}{4}$ gr. was given, after which the pulse dropped to 80, and headache, which had been in existence for 8 hours, subsided. There were no further after-effects.

CASE 14.—The patient was a female, aged 18, at the Brooklyn Hospital, September 20, 1900, for excision of suppurating vulvovaginal gland (the patient was 3 months pregnant); 20 minims of a 2% solution were injected at 11.27, and analgesia to the level of the fourth rib was established in 4 minutes; 4 minutes thereafter she vomited. The pulse just before the injection was 120; by 4 in the afternoon it was 76. At this time she complained of severe pain in the head and eyes, and of stiff neck. Given 2 grains of caffein citrate hypodermically, she passed a comfortable night, and the next morning seemed as well as ever.

CASE 15.—A male, 40 years old, was entered at the Methodist Episcopal Hospital, September 22, for fracture of the patella. Puncture procured but a small quantity of turbid fluid. The needle became blocked with blood-clot twice, necessitating three punctures. The first of these was made in the third interspace, the second in the fourth, and the third in the second. These were made at intervals of 20 minutes, 50 minims of a 2% solution of cocain being used. There were no discernible effects of the drug. The patient was re-

turned to the ward, and was operated upon 2 days afterward under ether narcosis.

CASE 16.—The patient was a female, aged 22, at the German Hospital, September 24, for tubercular arthritis of the knee; 20 minims of a 2% solution were injected, only a small quantity of fluid withdrawn, and this was turbid. There was no analgesia in 36 minutes. Chloroform narcosis was established with unusual ease, and operation of incision and drainage of the knee-joint was carried out. There were no unpleasant after-effects attributable to the cocain.

CASE 17.—A man, aged 50, was entered at the Methodist Episcopal Hospital, September 22, 1900, for excision of hemorrhoids; 20 minims of a 2% solution were injected. Analgesia was complete to the tenth rib in 3 minutes, with no nausea or vertigo. Analgesia was still complete at the end of 1 hour and 35 minutes. Sensation gradually returned and was completely normal at the end of 2 hours and 50 minutes. There were no after-effects.

CASE 18.—The operation was for radical cure of inguinal hernia, in a male, aged 60, at the Brooklyn Hospital, September 25, 1900; 13 minims of a 2% solution were injected at 10.48, and analgesia extending to the fifth rib established in 7 minutes; at 11.03 he vomited, was restless when nauseated, and excited when he heard orders given in passing instruments, etc. When the spermatic cord was handled he complained, mildly of pain. He broke out in a cold perspiration. Pulse before injection was 112; 20 minutes following the injection it rose to 140, and then fell in an hour to 80, from which time it varied between 120 and 80 until the following morning. During the same time the respirations varied from 28 to 34. Headache came on 4 hours after the injection, and was relieved by 2 grains of caffein citrate.

CASE 19.—The operation was an abdominal hysterectomy at the Brooklyn Hospital, on September 25, 1900; 20 minims of a 2% solution were injected at 11.38 A.M.; analgesia to the third rib was established in 2 minutes. The patient vomited at 12.15. Operation was completed at 12.45. The patient was very nervous and frightened in the operating room and her pulse was 140 before the injection. It dropped to 105 10 minutes before the completion of the operation, following a hypodermic injection of 4 minims of Magendie's solution. At 4 P.M. she complained of throbbing in the back of the head and vomited.

CASE 20.—The operation was a double orchidectomy for tubercular testicle, at the Brooklyn Hospital, September 25, 1900, in a man, aged 39. Twenty minims of a 2% solution were injected at 1.02 P.M., followed by analgesia to level of third rib in 2 minutes. Pulse just before injection was 100; 26 minutes after injection he received 8 minims of Magendie's solution, after which it was 80. He complained of thirst at this time, and was given a half-ounce of water to drink. He passed a comfortable night, but suffered several attacks of nausea and vomiting the next day. A simple enema was given, which was effectual, after which the nausea and vomiting ceased. There was no headache at any time.

CASE 21.—The operation was the introduction of Harris' segregator, in a man, aged 48, at the Methodist Episcopal Hospital, September 25, 1900. Twenty minims of a 2% solution were injected, followed by analgesia to the sixth rib in 3 minutes, and lasted for more than 1 hour. In 1 hour and 45 minutes the sensation had returned as far down as the knees; 15 minutes later it included the knee; 15 minutes later it had reached the ankle, and 15 minutes later still it was complete. There were no after-effects.

CASE 22.—The operation was for the radical cure of inguinal hernia in a female, aged 26, at the New York Polyclinic, September 26, 1900. Examination before operation showed the pulse 78; temperature, 99.4; respiration, 18; sensory symptoms, kneejerk, and ankle-clonus, normal; 20 minims of a 2% solution were injected, and $\frac{1}{4}$ grain sulfate of morphin injected, subcutaneously. Time occupied in making the cocain injection was 45 seconds. There was paresthesia in feet and legs at the end of 4 minutes; analgesia was complete in 9 minutes, and sweating was profuse at the end of 19 minutes; on complaining of thirst, she was given a glass of water. Respirations were sighing, and averaging 24 throughout the operation. The pulse rose to 110 after the analgesia was complete, but fell to 90 at the completion of the operation. Sensations to heat and cold were tested during the operation and found negative. The anesthesia extended as far as the axillae. During the analgesia, the foot-

clonus and kneejerk were tested, and found normal. The sighing respirations ceased at the end of an hour. The patient was sleeping naturally 10 minutes later; 1 hour and 45 minutes following the injection, the sensation had returned; 2 hours and 15 minutes following the puncture, she was again perspiring freely. She complained of headache, and had some nausea and slight vomiting. Two 1-grain doses of caffeine were given at an interval of 4 hours. The headache, however, persisted more or less during the 48 hours following the operation; indeed, it did not entirely disappear until the morning of the third day. The patient was subject to headache, but not so severe as this. Marked thirst was also a decided symptom during the first 3 days. The pulse was slightly accelerated likewise during the first 3 days, and the temperature ranged from 99.4° F. to 100° F. These symptoms were not more pronounced than would ordinarily occur from the operation itself. The urine remained normal in quantity and characteristics. The pupils were not dilated.¹

CASE 23.—The operation was a vaginal hysterectomy in a female, aged 51, at the Methodist Episcopal Hospital, on September 27, 1900. Twenty minims of a 2% solution were injected. Analgesia to the tenth rib was complete in 5 minutes, paresthesia, numbness, and a feeling of formication in the right foot 5 minutes later; 17 minutes following the injection the patient complained of a feeling of heat at the waist, lasting for 25 minutes. At this time she became nauseated and vomited several times during the operation. Forty-two minutes after the injection she complained of burning sensation all over the body, and faintness, calling for water. The pulse was 80 at the commencement of the operation, and 72 at its close, 40 minutes later. Vomiting occurred after the completion of the operation; 2 drams of whisky were given at the end of the operation. Sensation returned in soles of feet at the end of 2 hours. There were no further after-effects.

CASE 24.—The operation was an incision and irrigation for hydrarthrosis of the right knee (Charcot's joint), in a male, aged 59, at the Methodist Episcopal Hospital, on September 29, 1900. The patient was in advanced locomotor ataxia; 20 minims of a 2% solution of cocain muriate were injected. Examination before injection showed almost complete loss of sensation in the left leg. At the end of 7 minutes both legs were completely analgesic, and in 10 minutes the analgesia extended to the border of the ribs, from which point it did not advance. At the commencement of the analgesia the pulse was 90, full, and slightly irregular. During the next 12 minutes it rose to 104, although of good quality. At this time he became somewhat uneasy and slightly nauseated. Within the next 2 minutes there were sighing respirations, and in the next 3 minutes the pulse became markedly irregular and intermittent; 2 minutes later it was as in the beginning, although he was still somewhat anxious and slightly nauseated. He received $\frac{1}{2}$ grain sulfate of morphia 5 minutes following the cocain injection; 1 hour and 20 minutes following the injection the pain sensation had returned at the knee operated upon, but not below; 3 hours and 40 minutes after the injection the analgesia had completely disappeared. Vomiting did not occur at any time. There were no further after-effects.

CASE 25.—The operation was dilation and curettage for fungous endometritis and metrorrhagia, in a female, aged 16, at the Methodist Episcopal Hospital, on September 29, 1900; 20 minims of a 2% solution were injected, and analgesia was complete in 14½ minutes. During the advance of the analgesia there were no abnormal sensations. All parts of the lower extremities were affected at the same time, after which it extended to the free border of the ribs. During the operation it gradually advanced to the level of the fifth rib. There were no abnormal sensations during or following analgesia. There was slight increase of tension and pulse-rate; $\frac{1}{2}$ grain of sulfate of morphia was given 2½ minutes after the cocain injection; 19½ minutes following the injection the patient became slightly nauseated; this passed off in the course of the next 10 minutes. Sensation began to return from above downward at the end of 1 hour, and was completely restored at the end of 2 hours. At this time she again became nauseated and vomited about 2 drams of curdled milk; 2 hours later she again vomited. She com-

plained of headache all night. There were no further after effects.

CASE 26.—The operation was for the radical cure of inguinal hernia in a man, aged 19, at the New York Polyclinic, October 3, 1900. Twenty minims of a 2% solution were injected and 3 minutes after there was analgesia to the knee; in 4 minutes the analgesia had reached to the fourth rib. He now complained of nausea, and 2 minutes later he vomited. The vomiting continued at intervals for 10 minutes, during which time he complained of feeling faint and moaned as if in distress. When the nausea ceased he ceased to moan, and thereafter he only complained when considerable dragging was made upon the wound-edges by the retractors. The peritoneum seemed to resent the contact of my finger after the latter had been rinsed in alcohol, the patient complaining, although in a mild manner, upon such occasions. Involuntary defecation took place at the end of 18 minutes. He complained of thirst and asked for a drink of water. After the nausea ceased, and while the operation was proceeding, he laughed and joked with the members of the class sitting on the front row. The patient was given $\frac{1}{150}$ grain of hydrobromate of hyoscin just before the cocain was administered.

CASE 27.—This was an abdominal hysterectomy for myomatous uterus, in a female aged 38, at the Brooklyn Hospital, October 4, 1900. Twenty minims of 2% solution were injected at 1.06 P.M., followed by analgesia to the third rib in 4 minutes. The patient said the numbness started in her feet and worked up. At 1.12 there was involuntary defecation; at 1.14 she vomited; at 1.20 the pulse was 54; respiration 26. At 1.50 she complained of some pain just below the umbilicus; the pulse was 71. At 1.55 the nausea which had troubled her occasionally disappeared. At 2 she said she "felt the stitches," but did not complain. Caffein citrate, 2 grains, was given hypodermically at this time. At 3 she seemed to be entirely free from the effects of the cocain, and expressed herself as feeling very comfortable. At 4.15 she was seized with a somewhat severe chill, which lasted 20 minutes, and was followed by a headache all over the top of her head. At this time her temperature was 98° and pulse 80. An ounce of whisky was given when the chill appeared, and 2 grains of caffein citrate for the headache. She passed a comfortable night. There were no further after-effects.

CASE 28.—The operation was at the Methodist Episcopal Hospital, October 4, 1900, on a female, aged 40; an abdominal hysterectomy and appendectomy; 20 minims of a 2% solution were injected at 3.54 P.M. Analgesia to fourth rib was established in 4 minutes; one minute later there was nausea. At 4.07 she was perspiring and complained of feeling faint; there was sighing respiration, the pulse was 60. At 4.09 the sphincter ani was relaxed, with fluid movement. At 4.12 there was a second involuntary movement; respirations were rapid. At 4.20 the pulse was 90 and occasionally omitting a beat. At 4.25 she complained of pain in the epigastrium while appendix was being removed. At 4.40 the pulse was 110; she complained of a slight pain "in the bowels." At 4.50 operation was complete, and the patient left the operating-room smiling.

CASE 29.—The operation was costal resection for gangrene of lung and empyema in a male, aged 36, at the Brooklyn Hospital, October 4, 1900. Before operation the temperature was 102.6 F. and the pulse 120; respirations were 46. The patient was placed on the healthy (left) side and 24 minims of a 1% solution were injected at 8.15 P.M., followed by analgesia to the knees in 5 seconds, and to level of third rib in 3 minutes; 2½ inches of the fifth rib were removed in the axillary line. He complained of pain when the intercostal nerve and periosteum were peeled off from the bone. Analgesia practically subsided in 40 minutes. There was no nausea or vomiting. He had severe headache all night. There were no further after-effects.

CASE 30.—The patient, a male, aged 67, was operated upon for cholecystotomy at the Methodist Episcopal Hospital, October 6, 1900. Twenty minims of a 2% solution of cocain, and 10 minims of sterilized water were injected at 3.31, and the patient placed at once with the hips and pelvis elongated. At 3.36 the analgesia was evident on the level of the tenth rib. At 3.36 he sneezed and complained of nausea; a few seconds later he vomited and at the same time had an involuntary evacuation of the bowels, of which he was conscious. At 3.40 the analgesia was complete to the fourth rib; sighing

¹ For the examination of this patient before the injection, as well as the report upon her condition during the analgesia, and following the operation, I am indebted to Dr. S. Ormond Goldan.

respirations, and parasthesia of the fingers were noted; at 3.41 he was perspiring; he was conscious of pulling sensation at the seat of operation; at 3.43 the pulse was 60 and of good quality; at 3.48 he had a dull sickening sensation at the field of operation; at 3.55 he complained of pain when gauze packing in the abdomen forced the liver against the diaphragm. At 4.10 upon withdrawing the gauze packing from the abdominal cavity the patient complained of dragging pain. At 4.15 the sighing respirations ceased; the pulse was 60, with good quality; at 4.30 there was paresthesia of the feet. At 4.35 the operation was completed and he expressed himself as "feeling fine." At 6.30 he had headache which lasted all night, in spite of caffeine citrate and morphin sulfate. This yielded to phenacetin 5 grains and acetanilid 3 grains every 3 hours during the following forenoon.

CASE 31.—The operation was for ureterocervical fistula in a female, aged 36, at the Brooklyn Hospital, October 9; 20 minims of a 2% solution were injected at 11.40 A.M. and analgesia extending to the supraorbital region was established in 1½ minutes. The pulse before injection was 90, respirations 22; at 10.50 there was sighing respiration for 10 minutes, followed by nausea at 11. At 11.15 the analgesia of the face had subsided, and at 11.25 it had disappeared down to the level of the second rib. The greatest degree of analgesia at this time was near the spine, the least at the middle line in front. She left the operating table at 12.40 with the pulse 120, and respiration 36. Analgesia persisted for 1 hour after returning to the ward. At 2.30 she had a chill lasting for a few moments, followed by severe headache. Whisky given at this time was vomited. At 4 P.M. the temperature was 103.2°, pulse 100, respiration 36. At 8 P.M., temperature was 102.2°, pulse 112, respiration 36. By 8 A.M. of the following day the patient's condition was practically normal.

CASE 32.—The operation was an amputation of a gangrenous toe (the patient a diabetic), in a male, aged 60, at the Brooklyn Hospital, October 9. Twenty minims of a 2% solution were injected at 1 P.M. and analgesia established to the top of the head in 1 minute. The pulse and respiration were unaffected. There were no incidents during the operation. The patient left the operating table at 1.15, and during the afternoon headache gradually came on, for which two 2-grain doses of caffeine citrate were given at intervals of 3 hours. The headache had disappeared by morning. There were no further after-effects.

CASE 33.—The operation was curettage, trachelorrhaphy, perineorrhaphy, in a patient, aged 23, at the Brooklyn Hospital, October 9, 1900. Twenty minims of a 2% solution were injected at 11.51 A.M. and analgesia established in 2 minutes; the extent of analgesia was to level of the fourth rib. At the time of making the injection the pulse was 130 and the respirations 28. At 12.05 there was nausea and vomiting. At 12.30 the analgesia had subsided to the level of the sixth rib. At 12.35 the patient left the operating table with a pulse of 140 and respirations 32. At 4 P.M. the temperature was 99.4° F.; by midnight it had risen to 101.4° F., but fell to 102.4° F. by 4 the next morning, where it remained for 2 days. No vomiting after the first. Headache persisted from the time the temperature rose until the next morning.

CASE 34.—The operation was an excision of veins for varicocele in a man aged 45, at the Methodist Episcopal Hospital, October 9, 1900. Ten minims of a 2% solution of cocain and 20 minims of a 2% solution of antipyrin were injected at 3.35 P.M., and analgesia to level of fourth rib in the axillary line was established in 3 minutes. He complained of pain when the vas deferens itself was being isolated with its accompanying vessels from the veins to be ligated. The operation was completed at 3.50. At 4.30 he was slightly nauseated; sensation was restored above the knee. At 5 the sensation was entirely restored. At 7 he complained of severe headache, and I ordered 1 grain citrate caffeine hypodermically. Later on 5 grains phenacetin every third hour was ordered, and finally ¼ gr. morphia sulfate was resorted to. These, however, seemed to have but little effect. The headache ceased upon the evening of the day following the injection. In the meanwhile the patient became very apprehensive and feared he was going to die.

CASE 35.—The operation was a curettage of uterus for fungous endometritis in a female, aged 40, at the Methodist Episcopal Hospital on October 9, 1900. Ten minims of a 2% solution of cocain and a 10% solution of antipyrin were in-

jected at 7.04 P.M. At 7.07 there was analgesia to the tenth rib. Operation was completed at 7.26. During the operation, she was nauseated and vomited frequently. She had not been prepared for in the usual manner. The bowels had not been cleared out by laxatives, and the patient had eaten her usual dinner. Three hours after injection, she suffered severe headache, and the temperature rose to 101° F. Headache, nausea and vomiting continued the next day, in spite of morphin, caffeine citrate, and phenacetin. These gradually subsided, and disappeared on the third day.

CASE 36.—The operation was an abdominal section for extrauterine pregnancy in a female, aged 28, at the Brooklyn Hospital, October 11, 1900. Twenty minims of a 2% solution were injected at 11.42, followed by analgesia to the level of the third rib in 2 minutes. The pulse, before injection, was 114; respirations, 38. At 11.55 the patient vomited, and at 12.25 the skin was cool and moist. The case was one in which rupture had taken place a few days before. A large blood-clot was turned out from the deep pelvis, when copious fresh bleeding took place, and in the effort to hold this in check by pressure until the bleeding vessel could be identified and secured, the patient became very apprehensive and restless, interfering somewhat with the manipulations, although it is believed the patient did not suffer real pain. For this reason chloroform anesthesia was resorted to, the patient passing under its influence without a struggle. Just prior to the administration of the chloroform, the pulse was 96; the respirations continued as at first. At 12.40 the operation was completed. Before leaving the operating table, $\frac{1}{100}$ grain of hyoscin was given subcutaneously. At 2.30 the patient had a severe chill, lasting half an hour. No headache. There was no further vomiting. Two drams of chloroform was used.

CASE 37.—The operation was curettage for endometritis, posterior colporrhaphy, and perineorrhaphy, in a female, aged 39, at the Methodist Episcopal Hospital, October 13. Twenty minims of a 2% solution of cocain were injected at 3.20, and analgesia established in 3 minutes to the level of the clavicle. At 3.25 there was paresthesia and burning sensations all over the body; she was very nervous. The pulse was 150 at the commencement, and continued at this rate throughout the operation, which was completed at 3.35. At 5.30 the sensation had returned. At 8 o'clock the patient vomited; this was repeated several times during the early hours of the night. The patient complained of headache for the better part of 2 days.

CASE 38.—The operation was an inguinal colostomy for carcinoma of the rectum, in a man, aged 68, at the Methodist Episcopal Hospital, October 13. Twenty-five minims of 2% solution of cocain were injected at 3.58. Owing to some difficulty in clearing the inner needle, which had become blocked with a fragment of fibrous tissue, a quantity of cerebrospinal fluid, estimated at 90 minims, escaped. There was analgesia to the level of the fourth rib at 4.08 (10 minutes). Pulse before injection was 98; at 4.15 it was 64; the patient moaned, and had nausea, with some retching. He complained of burning pain when the operator's hands, previously dipped in alcohol, were brought into contact with the peritoneum. Pulse at 4.57 was 78, with sighing respirations; the skin was sensitive to the sharp-pointed retractors used. He left the operating table at 5.10 with a pulse of 80, and no further nausea. There was no headache at any time. The patient suffered from retention of urine for 3 days.

CASE 39.—The operation was an excision of hemorrhoids in a female, aged 35, at the Methodist Episcopal Hospital, October 13. Twenty minims of a 2% solution were injected at 5.43 P.M., followed by analgesia to the free border of the ribs in 7 minutes. The patient became talkative and said: "My body feels all in a glow, and the pain I have had for days has all gone." The pulse was as before the injection, 80. The patient left the table at 6.08 with a pulse of 80. At 10.30 the patient was restless and suffered considerable pain in the region operated upon.

CASE 40.—Curettage of uterus was performed at the Brooklyn Hospital, October 18, on a patient, aged 22. Twenty minims of a 2% solution were injected at 11.57, followed by analgesia in the operation field in 1½ minutes. The analgesia finally extended to the supraorbital region. The pulse at the commencement was 138; respiration 42. At the end of the operation the pulse was 136; respiration 26. Analgesia lasted 1 hour and 38 minutes. There was no nausea or

vomiting. There was headache at 4 o'clock the next morning, which lasted for 4 hours, but no other after effects. The pulse gradually lessened in frequency, resuming the normal in 16 hours.

CASE 41.—Uterine curettage was performed on a patient, aged 35, at the Methodist Episcopal Hospital, October 18. Twenty minims of a 2% solution were injected at 10.50, followed by analgesia to the lower border of the ribs in 5 minutes; it subsequently extended to the arms and head. At 10.59 she became nauseated and vomited, and complained of numb feelings in arms. At 4 P.M. she had headache. At 4.30 she vomited about 4 ounces of fluid, immediately after which the headache vanished. There were no further after-effects.

CASE 42.—Suturing of fractured patella was performed on a male, aged 57, at the German Hospital, October 19; 20 minims of a 2% solution were injected at 12.27. Pulse before injection was 82. Analgesia commenced in the feet at 12.29½, and reached the clavicle at 12.34. Coincident with the latter there was marked cyanosis, when ½ ounce of whisky was given. At 12.35 he complained of thirst. At 12.36 he became nauseated. At 12.37 projectile vomiting took place. At 12.40 he complained of feeling dizzy, and again vomited. At 12.57 the skin was cold and clammy, and an involuntary evacuation of the bowels took place. At 1.05 the operation was finished, with the pulse 104. At 1.12 the cyanosis which had been gradually lessening had entirely subsided. At 1.20 the analgesia had subsided to the second rib; at 1.36 it had subsided to the fourth rib; at 2.06 sensation had entirely returned. At 4 P.M. the temperature was 106.8° F., and the pulse 118. At 4.30 he complained of intense, "bursting" headache, became delirious, and had to be strapped in bed. At 5.30 the temperature was the same, but the pulse was 148, and the respirations 24. An hour later, following a sponge-bath, the temperature had fallen to 104° F., and the delirium became of a milder type. The temperature fell at midnight to 100.6°, the pulse 112. The more threatening symptoms gradually subsided, although the headache, dizziness, and some vomiting persisted for 54 hours following the injection. The last urine (10 ounces) passed prior to the operation, was at 4 A.M., which, upon examination, was found to be of a specific gravity of 1.020, of acid reaction, with no albumin, sugar, or casts; triple phosphates were found. The first urine obtained after the operation was by catheter at 4 A.M. of the following day (16 hours after the injection), and was only 2 ounces. An examination of this urine showed a specific gravity of 1.030; no albumin or sugar; hyalin casts (a few). At 12 noon, involuntary urination took place, and apparently a normal quantity. At 7 P.M., 16 ounces passed, from which time the average daily amount was normal.

Comment.—A few words in passing upon some of the prominent features of the case may be in order. It is the only case in which symptoms occurred to give me real anxiety. There certainly was present most profound disturbance of the different centers, as shown by the cyanosis, projectile vomiting and persistent vertigo. That the inhibitory heat center was likewise affected is shown by the sudden and extreme rise of temperature, and the fact that abstraction of caloric from the body by simple sponge baths quickly brought the temperature down and held it until the effect of the disturbance upon the center itself had passed off. How much the delirium and persistent vertigo depended upon the renal condition, and the latter, in its turn, depended upon the injection, is difficult to estimate under the circumstances. In view of the fact, however, that practically no urine was secreted during the 8½ hours prior to the injection (which fact was not known to me at the time of the operation, owing to the failure to report the circumstance), and that only 2 ounces were obtained at the end of 16 hours after the injection, it is fair to assume that whatever the conditions which gave rise to the suppression, these were in existence before the injection. It is interesting to contrast the post-operation urinary history of this case with that of Case 44, in which a single kidney, after a nephrectomy,

in which some comparative, if not temporarily complete suppression is to be expected, secreted 21 ounces during the first 24 hours following operation, 8 ounces of which were obtained during the first 7 hours.

CASE 43.—The operation was an introduction of Harris' segregator in a male, aged 29, at the Methodist Episcopal Hospital, October 20. Twenty minims of a 2% solution of cocain were injected at 3.45 P.M., followed by analgesia to the level of umbilicus in 4 minutes. There was no nausea or vomiting while in the operating room. At 4.50 P.M. he was nauseated. At 5 P.M. sensation returned down to the knee. At 5.20 sensation existed half way between the knees and ankles. At 5.30 to the ankles. At 5.40 he had cramping pains from the knees down, lasting about 5 minutes. At 6 P.M. sensation was entirely restored; at 9.45 he complained of severe headache, which persisted until 6 A.M. the next day. There were no further after-effects.

CASE 44.—Nephrectomy for old pyelonephritis was performed on a female, aged 47, at the Methodist Episcopal Hospital, October 20. Twenty-five minims of a 2% solution of cocain were injected at 5.45 P.M. with the patient in the semi-prone, or Sims' position. At 5.51 analgesia extended to the thigh, and at 5.57 to the fourth rib. At 6.20 there was hot sensation all over the body, but no discomfort. At 6.35 she left the operating table with pulse and respiration unaffected by the injection or the operation. There was no nausea, vomiting, or headache. The urinary record for the first 24 hours shows 21 ounces. There were no after-effects.

The following case is presented as a contribution to this subject, although it was not a case of spinal cocainization:

A patient, aged 25, was operated upon by curettage for endometritis, at the Brooklyn Hospital, October 18, 1900. Thirty minims of a 2% solution of antipyrin were injected at 11.57. Analgesia was apparently established in 5 minutes to the level of the nipples. Pulse before injection was 112; respirations 34. At 12.45 the pulse was 130, and respirations 36. At 12.50 the pulse was 120 and respirations 26. There was no nausea or vomiting while in the operating room. Upon returning to the ward the patient slept for a while. At 4 P.M. she complained of severe pain in the temporal regions. At midnight she had nausea and vomiting, which lasted more or less all night. The headache persisted and was severe for 26 hours following the operation. The temperature began to rise 8 hours after the operation, reaching its maximum, 101° F., at midnight, 12 hours after the injection. No medication was employed in this case.

In looking over the notes of this case of antipyrin injection one is struck with the resemblance it bears in many of its features to those in which cocainization was employed. There can be no doubt that some degree of analgesia was established in this case, although to what extent it was difficult to determine, owing to the fact that the patient was a stoical Italian woman, of a low order of intelligence, and who did not understand English. She did not shrink when pricked with a needle, or during the operation, but it was observed that her facial expression at times during the operation was such as to suggest that she was not entirely indifferent to what was going on. The most interesting points in connection with the case, however, relate to the occurrence of the nausea, vomiting, headache, acceleration of pulse, and rise of temperature, these being quite up to the average of those observed in connection with spinal cocainization.

The Technic.—As a result of experience gained in this group of cases I would insist that the following points be borne in mind:

1. The entire lumbar and sacral region including the site of the crista illii upon either side should be carefully prepared as if for an extensive operation upon these parts. This for the reason that in locating the point for making the

injection, more or less contact of the surrounding parts with the surgeon's aseptically prepared hands is inevitable.

2. The point of selection for making the puncture is in the third lumbar interspace, *i. e.*, between the third and fourth lumbar vertebrae. The position of the patient may be upright or in the semi-prone position of Sims. My own plan is to have him sit crosswise upon the operating table, with his lower limbs hanging loosely over the table. With the patient's trunk well erect the surgeon's middle finger of each hand is placed upon the highest point of the crest of the ilium of either side, while the thumbs are approximated upon the same level in the middle line. They should meet at the fourth lumbar spine. The patient now bends forward in the position of ventral flexion, with his elbows resting upon his knees, when a perceptible widening of the space between the third and fourth spinous processes is apparent. The thumb of the left hand remains in position to identify the interspace, while with the right hand the surgeon injects a small amount of the cocain solution about one centimeter to the right of the interspace. With the point of a scalpel a slight puncture is now made on a line midway between the spinous processes and in the area of skin anesthetized. This puncture is very superficial, and serves to permit the passage of the puncturing needle into the depths without danger of infection from microorganisms in the skin itself, as well as to prevent the lumen of the needle from being occluded from a punched-out plug of skin, as happened in one of my cases. The needle employed should be between one and two millimeters in circumference, not larger, with a moderately short or blunt bevel, and about 3 cm. long. The syringe used for making the injection should be capable of sterilization by boiling, such as the glass syringe with asbestos packing.

The needle should be pushed steadily forward and slightly toward the left, so as to enter the canal at a point in the median line. This entire procedure is painless, as a rule, from the time the first needle puncture is made in making the preliminary subcutaneous injection. The entrance of the needle into the spinal canal is announced by the escape of the clear spinal fluid. When this is assured the injection is made.

The amount of cocain used is from $\frac{3}{10}$ to $\frac{4}{10}$ of a grain dissolved in sterilized water and again sterilized after solution is effected. From 15 to 20 minims of a 2% solution is quite sufficient under most circumstances for the average adult. About a minute is taken to make the injection in order to permit the latter to mingle thoroughly with the spinal fluid before withdrawal of the needle, since probably more or less escape occurs through the puncture-opening in the meninges, in which event there is some loss. A little collodion is pencilled about the skin puncture as the needle is withdrawn. The patient is at once placed in the recumbent position and preparations for the operation proceeded with.

Errors and Accidents in Making the Puncture.—A vessel may be punctured by the needle, and a clot form, obstructing its lumen, so that, upon reaching the spinal canal, no fluid will flow. This will be suspected, if the needle travels forward for quite a distance with decided lessening of the resistance felt at first, and finally impinges against the anterior bony wall of the spinal canal. To lessen the liability of puncture of a vessel, the needle-point should have a rather short bevel. A further precaution is to have an exhaust-bulb attached to the needle after it has penetrated a short distance. Blood entering the needle will then be aspirated at once from the latter before a coagulum forms. Under no circumstances must the injection be made until the clear fluid is obtained, and that in sufficient quantities to place beyond the possibility of a doubt the fact that the canal has been entered. In two of the failures occurring in my hands a rather thick fluid was obtained. I have not yet determined where this fluid came from. If from the subarachnoid space, it was not normal cerebrospinal fluid.

If the surgeon feels assured that the needle has entered the canal, and still the characteristic limpid fluid is not obtained, he should resort to aspirating the needle with the syringe attached, rather than withdraw the needle and make a fresh puncture. It is very undesirable to make more than one puncture, since this increases the chances of loss of the cerebrospinal fluid, the presence of which is necessary to a diffusion of the cocain, and, of course, of the cocain-solution itself, when this is finally successfully placed in the canal.

The needle may impinge against the bony structures on its way to the canal. Should this occur, the instrument should

be partially withdrawn, and its direction changed so as to conform with the proper route to be taken in order to reach the canal. To attempt to change its direction without withdrawing it sufficiently far to clear the bone, will risk breaking the needle, in case a steel needle is used. The accident of breaking the needle may also occur from a sudden movement on the part of the patient, the chances of this happening being increased by the fact that a fine steel needle is employed. To use a larger needle, however, is undesirable. To the circumstance of using a large needle and the consequent leakage of a portion of the cocain solution mingled with the cerebrospinal fluid through a large puncture, is to be attributed, at least, one of my complete failures; and the fact that in another case the analgesic effect was not sufficiently prolonged to complete a posterior colporrhaphy after an anterior colporrhaphy had been performed.

Since the accidents thus far mentioned are of a character to be overcome by proper instruments and careful technic they should not deter surgeons from trial of the method. I have endeavored to overcome the mechanical difficulties by an apparatus of simple construction, and which, in the trials I have given to it, seems to work satisfactorily. The needle portion is double, that is to say, one needle passes inside of another, the inner or finer needle passing about a centimeter beyond the outer when projected. The needles are made of 14 karat gold, or platinum with 3% of iridium as an alloy, are sufficiently hard to hold a point well, and tough and flexible enough to withstand any ordinary strain. The inner needle is locked in position by the common bayonet-joint device, is capable of being withdrawn for the purpose of clearing from blood-clot, if necessary, and may be reintroduced along the same track to and into the original opening in the spinal meninges, the outer needle serving as a guide for this purpose. In this manner more than one puncture in the meninges is avoided. A simple aspirating device may be attached to the needle in order to prevent occlusion by blood-clot, and at the same time this will serve to give early warning of the entrance of the needle into the canal by the prompt flow of the fluid which in some subjects occurs but slowly without aspiration. This device also places under the surgeon's control the amount of fluid withdrawn. The instrument which I have evolved from my own experiences consists of a double needle with a bayonet-joint lock, a piece of rubber tubing in the course of which a small glass bulb to catch the fluid is placed, and a stop cock to hold the vacuum secured by the attached bulb.

The instrument is introduced with the needle-points level, the bulb compressed, and the stop-cock turned so as to hold the vacuum in the bulb. Just before the proper depth, as previously estimated, is reached, or when the needle has penetrated about 4 cm., the inner needle is projected and the stop cock turned so as to permit the vacuum to act upon the lumen of the needle. If the needle remains clear and the proper direction has been taken the fluid from the canal is seen to flow into the little glass bulb as the instrument is advanced. If all the conditions have been apparently fulfilled and the flow does not occur, the inner needle is withdrawn, cleared and reintroduced through the outer needle, which has been left in situ, a new vacuum having been obtained, which is turned on when the inner needle has been introduced its entire length.² The aspiration apparatus is now detached, the syringe attached, and 20 minims of a freshly prepared 2% solution slowly injected.

In the absence of the cerebrospinal typical fluid, and before I had learned to avoid errors in the technic I was compelled to abandon the method in the individual case and proceed with the operation under ether or chloroform anesthesia. This was also done in the cases in which the analgesic effect was not sufficiently prolonged to permit of the completion of the operation. No disturbances in the usually-observed phenomena of general anesthesia resulted from the preliminary use of the subarachnoid cocainization, save that rather less of the anesthetic agent was required than usual.

In the cases in which the method was completely successful there was usually ample time to complete the

² Rather than submit to the annoyance of waiting for the needle to be cleared it is better to have a second or duplicate inner needle at hand.

average or even the sometimes necessarily long operations, or those lasting for more than an hour.

The question of the effect of cocain injections upon the cord itself is one of great interest. Nicoletti, of Naples, has shown by experiments upon rabbits and dogs that there are no histopathologic lesions of the nervous system following subarachnoid injections of this drug. Dr. Wm. Browning, neurologist to the German and Brooklyn Hospitals, made careful examination of 11 of the cases in this group at periods of time varying from an hour to a week following the analgesia. The results were negative, and as far as these examinations go, as well as Nicoletti's experiments, no interference with the cord itself is to be feared. I did not hesitate, therefore, upon the basis of Nicoletti's experiments and Dr. Browning's findings in my own cases, to employ the method in a case of advanced locomotor ataxia.

The method cannot, as far as my experience goes, be applied to abdominal section cases involving acute inflammatory intraperitoneal lesion of the abdomen and pelvis. This is unfortunate, since it is in the more despatch-rate of these that the surgeon frequently desires to avoid ether and chloroform. In the single case of appendicitis in which I made use of this method the patient complained very decidedly whenever the inflamed peritoneum was manipulated.

Experiments have been made, notably by Nicoletti, of Naples, to produce analgesic effects in animals by the subarachnoid injection of drugs other than cocain, such as ergotin, antipyrin, and quinin. These have been successful, so far as the abolition of pain may be judged in the lower animals. The effects of drugs applied in this manner upon the human subject has not yet been determined, with the exception of the case of antipyrin subarachnoid injection herewith reported; and in this I believe that the solution was too weak to completely accomplish the object. I am of the opinion, however, that the effects supposed to depend upon the toxicity of the drug are not so much due to this cause as to the disturbance of the cerebrospinal centers by the introduction of a fluid foreign to the environment. That these are not due to the withdrawal of the cerebrospinal fluid is at least suggested by the fact that this fluid escaped in much larger quantities in some of the cases which suffered the least from severe symptoms, and that the latter occurred in most pronounced manner in cases in which the least amount of cerebrospinal fluid was lost.

As to the manner in which the cocain solution affects the nerve structure, the observations of Lewandowsky³ are of interest. This observer asserts that the cerebrospinal fluid partakes of the nature of lymph, is a specific product of the brain, and represents that part of the lymph originating through organic action. Experimentally it was shown that strychnin and ferrocyanate of sodium, when introduced into the subdural space, passed directly into the nerve-substance through its lymph-channels and without the intervention of the circulation. If these experiments are confirmed, it is reasonable to suppose that the cocain gains entrance into the nerve-substance in the same manner. This mode of entrance will likewise explain the extreme rapidity with which analgesia is effected—as, for instance, in one of my cases, in which analgesia up to the ankles was obtained in 5 seconds.⁴

The following is a list of the operations in this series for which the method was used.

	OPERATIONS.
Excision of hemorrhoids.....	5
Abdominal section for appendicitis.....	1
Tenosynovitis of inner hamstring.....	1
Ligature of both internal saphenous veins..	1
Vaginal hysterectomy.....	2
Colporrhaphy and perineorrhaphy.....	2
Curettage, trachelorrhaphy & perineorrhaphy	2
Radical cure of hernia.....	4
Curettage and trachelorrhaphy.....	2
Excision of suppurating vulvovaginal gland..	1
Abdominal hysterectomy.....	2
Double orchidectomy.....	1
Introduction of Harris' segregator.....	2
Arthrotomy of knee.....	1
Uterine curettage.....	3
Abdominal hysterectomy and appendectomy	1
Resection of rib.....	1
Cholecystotomy.....	1
Urethrovesical fistula	1
Amputation of toe for gangrene (diabetic).....	1
Excision of varicocele.....	1
Abdominal section for ectopic gestation.....	1
Curettage, posterior colporrhaphy and perineorrhaphy.....	1
Inguinal colostomy.....	1
Suture of fractured patella.....	1
Nephrectomy.....	1
Total.....	41

In 41 cases in which the method was successfully carried out analgesia was established as follows:

	CASES.
Between 1 and 2 minutes in.....	4
" 2 " 3 " ".....	5
" 3 " 4 " ".....	10
" 4 " 5 " ".....	5
" 5 " 6 " ".....	4
" 6 " 7 " ".....	2
" 7 " 9 " ".....	5
" 9 " 10 " ".....	2
" 11 " 12 " ".....	1
" 14 " 15 " ".....	2

In 1 case it required 19 minutes.

The extent of analgesia in 41 cases was as follows:

	CASES.
To the level of the umbilicus	2
" " " " " twelfth rib	5
" " " " " tenth "	5
" " " " " sixth "	1
" " " " " fifth "	1
" " " " " fourth "	13
" " " " " third "	5
" " " " " axilla	2
" " " " " clavicle	1
" " " " " clavicle, including upper extremity.....	1
" " " " " " " the arms to the elbow	1
" " " " " supraorbital region	2
" " " " " vertex	2
Total.....	41

The analgesia lasted in 25 cases in which this was noted, as follows:

3 hours and 40 minutes in 1 case (locomotor ataxia)	
2 " " 50 " " 1 "	
2 " " 10 " " 1 "	
2 " " " " 7 cases.	
1 hour and 54 minutes in 1 case.	
1 " " 45 " " 2 cases.	
1 " " 35 " " 1 case.	
1 " " 38 " " 1 "	
1 " " 5 " " 1 "	
1 " " " " 2 cases.	
55 " " 2 "	
51 " " 1 case.	
50 " " 1 "	
45 " " 1 "	
40 " " 1 "	
27 " " 1 "	

³ *Zeitschrift f. klin. Medizin*, vol. xl, 1900. *Medical Record*, October 6, 1900.

⁴ But one case in this series proved fatal, and that one of the abdominal hysterectomies from intestinal paresis on the sixth day.

INTRASPINAL COCAINIZATION FOR SURGICAL
ANESTHESIA.¹By S. ORMOND GOLDAN, M.D.,
of New York City.

WHILE intraspinal cocainization as a method of producing general local anesthesia may displace nitrous oxid, ether, and chloroform for operations in the abdomen, pelvis, lower extremities, and to some extent the chest, I do not doubt it will, if nothing more, find a place in selected cases where for any reason it is found undesirable to administer a general anesthetic. That it will be used to the exclusion of other anesthetics I do not believe; for from a considerable experience in the administration of these agents I find that superior results do not lie in the use of any single anesthetic and method to the exclusion of others, but in their proper selection to the case in hand. This the operator has come to place largely in the hands of the skilled anesthetist, realizing the best interests of the patient are subserved by permitting him to use his own discretion.

Medullary narcosis is being subjected to a rigid criticism—if of questionable efficacy the sooner decided the better; if of value in spite of all objections (and so far they have been largely theoretic) it will take its place as one of the methods of anesthetization.

It was a somewhat unique experience to see the uterus and appendages removed by celiotomy—the patient being perfectly conscious, completely relaxed, and anesthetic—this impressed me so forcibly that as an anesthetist the subject had for me more than an ordinary interest.

That to Dr. J. Leonard Corning, of New York, belongs the credit of first producing anesthesia by the injection of cocain into the spinal cord in 1885 I think none will deny; in an interesting series of papers he describes experiments upon the spinal cord of animals followed by the use of cocain injected in the human subject for certain painful affections of the cord which up to that time had not, from the methods then in vogue, given very satisfactory results. At first at a loss how to bring his medicament as close to the cord as possible without injuring it, he devised a technic derived from definite measurements of the spinal vertebrae by which he could deposit his solution close to the membranes;—and with the most satisfactory results, differing in no essential from the results obtained by more recent investigators.

Dr. Corning supposed that the cocain was carried to the cord by means of the veins to a certain extent localized by the sluggish circulation known to exist at the lower part of the cord. He did not use the very practical method of first obtaining the subarachnoid fluid. What he probably did was to deposit his solution partly into the subdural space, which while anatomically separate is in all probability one with the subarachnoid. That his solution only partly entered the subarachnoid space is proved by the absence of toxic symptoms, as he injected in most of his cases 1½ grains of cocain. Quincke in 1890 devised the present lumbar puncture for the removal of cerebrospinal fluid in cases of hydrocephalus; while he injected other fluids into the subarachnoid space he did not inject cocain. Bier in 1898, finding cocain unsatisfactory in the more major operations, thought it possible by the

lumbar puncture to produce anesthesia throughout greater areas; a patient presenting, he used the subarachnoid puncture and injection with entirely satisfactory results; the operation consisting of resection of a tubercular capsule and bones of the foot; this may be said to be the first operation performed with intraspinal cocainization. Bier at this time reports altogether six cases, all satisfactory, then gives an interesting account of the lumbar puncture upon himself; as the syringe did not fit the needle and having lost considerable cerebrospinal fluid it was decided to defer the injection. The spinal puncture and injection of cocain was then made upon Dr. Hildebrand; his well-recorded physiologic symptoms were much the same as those developed in patients at the present time. The very complete and interesting papers describing the technic, with report of cases of intraspinal cocainization which attracted universal attention, were due largely to the efforts of Tuffier, to be followed later by Kreis and other numerous investigators both in Europe and America.

As the most serious theoretic objection to the method I have up to the present time heard is possible injury to the spinal cord itself, the consideration of a few anatomic facts will not be without interest. The spinal cord by means of its surrounding membranes forming its ligaments is contained in a bony cavity considerably larger than the cord itself. It extends from the lower part of the bulb above at the upper border of the atlas to the lower border of the first lumbar vertebra, where it ends in the conus medullaris, descending a short distance as gray matter into the filum terminale of the pia, which descends in the center of the cauda equina to the upper part of the sacrum. The cord is capable of movement from one half to one inch. Three membranes surround it and are prolonged for some short distance on to the nerve-trunks as they emerge from the cord. The pia, the highly vascular and closely adherent membrane, surrounds the cord and is separated from the central delicate membrane, the arachnoid, by a considerable space containing a clear fluid, the subarachnoidean space and fluid. Numerous trabeculae covered with endothelium unite the pia and arachnoid. Between the parietal layer of the arachnoid and the external membrane, the dura, is another space, the subdural, containing a slight amount of fluid only. The two outer membranes extend considerably lower than the cord itself, that is to the second vertebral section of the sacral bone. We have simply to remember that the cord is entirely surrounded by a water jacket; the subarachnoid fluid and outer membranes extending considerably lower than the cord itself, forming as it were a culdesac.

I believe the determination of value of any new method depends largely upon the completeness of the observations recorded. For this reason I would propose the use of some such blank as the following.²

HISTORY OF ANESTHESIA BY INTRASPINAL COCAINIZATION.

No.....	Date.....	Age.....	Sex.....
Name.....	Type of patient.....		
General condition.....	Probable weight.....		
Previous narcosis.....	Temperament.....		
Respiratory system.....	Tactile sense.....		
Circulatory system.....	Reflexes.....		
Temperature.....	Pupil.....		
Urine analysis.....	Reac. light.....		
	" accom.....		
Drugs before puncture.....			
.....			
.....			

¹ Read before the New York State Medical Association, October 15, 16, 17, and 18, 1900.

² Reduced in size herewith to suit space.—Editor PHILADELPHIA MEDICAL JOURNAL.

boiling point for one minute. This insures a sterile solution without any deterioration of the cocain. The solution should never be kept from day to day.

The patient should be placed preferably in the sitting position though the side posture may be used when necessary. The back should be prepared as for operations from the lower dorsal region above to the upper part of sacrum below and laterally as far as the iliac crests; the hands being thoroughly prepared, the iliac crests are determined, and an imaginary line taken uniting them. This line at the mid-point of the back passes through the spinous process of the fourth lumbar vertebra; a point below, that is, between the fourth and fifth vertebrae, about 1 cm. external to the spinous process is selected as the site of puncture. The patient is instructed to bend forward, which separates the vertebra to a slight extent when the unattached needle without the stylet is quickly introduced through the skin—the patient may be prepared for the slight temporary pain of the needle, or if desired the site of puncture may be first anesthetized with cocain. The

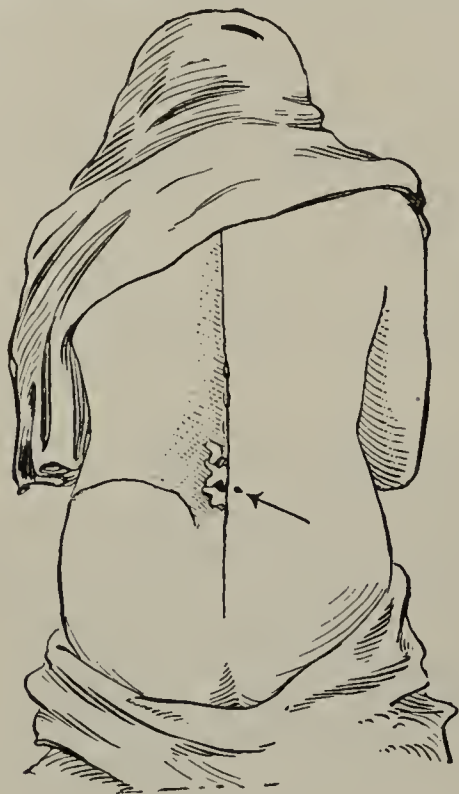


FIG. 4.

needle is then very slowly pushed in a direction from without inward, and passes without difficulty through the tissues of the back, between the arches of the contiguous vertebra and the outer membranes of the cord into the subarachnoid space. As soon as the needle is in the subarachnoid space, and not until then, the cerebrospinal fluid will flow, usually drop by drop. This may, if desired, be permitted to enter a sterile test-tube; from 5 to 10 drops may be permitted to flow, when the syringe previously filled with the required quantity of the cocain solution is adjusted and the solution slowly injected, consuming from thirty seconds to one minute. The needle should not be removed for two minutes after the injection. It may be said that no case is a success nor should cocain be injected where the cerebrospinal fluid has not been obtained. The needle is then quickly withdrawn, the site of puncture covered with collodion and gauze, and strapped; the patient may then be prepared for operation.

In time varying from 4 to 20 minutes, if the puncture has been successful, the patient will be anesthetic and

ready for operation. The first symptom indicative of successful injection will be a paresthesia of the lower extremities indicated by remarks from the patient such as a feeling of pins and needles, or being asleep or dead as they express it. A short history of each case with remarks will perhaps indicate the symptoms one is apt to encounter better than a general statement.

CASE 1.—The puncture was between the fourth and fifth vertebrae. Spinal fluid dropped freely. Cocain solution was injected, 15 m. of 2% solution. Absolutely no result so far as anesthesia was concerned. After seeing no fault in the technic I could only attribute failure to the cocain. I then learned the solution had been made fresh the day before. Having decided to use a second injection I prepared the solution myself. The puncture was again made—this time upon the left side when the spinal fluid easily flowed; 20 m. of a 2% solution of cocain were again injected, which likewise resulted in failure; the operation, dilation, and curettage, was performed without an anesthetic. The patient's pulse rose to 120; respirat on, 24; temperature, 99.2°. The pupils were somewhat dilated; room dusky. Being unable to account for the failure I took both solutions of cocain and tested them physiologically upon myself, in the eye and mouth, as did also the operator. The anesthetic properties of both solutions were not in the least altered. At this time the explanation of the absence of results was inexplicable.

The explanation of failure I believe to be the large-sized needle employed, for the membranes of the cord are tense, and after perforation with a large needle the fluid may pass out between the membranes and bony wall of the canal, exerting no anesthetic or deleterious influence.

CASE 2.—In the second patient the cocain solution was prepared by myself. Only one puncture was made, the surgeon not wishing to subject the patient to unnecessary delay. Fluid dropped freely. Anesthesia was a complete failure. In this patient 20 m. of 2% solution was used. I might say in this case as well as the first, the precaution was taken to see whether the fluid was lost at the end where the needle was adjusted to the syringe. Absolutely none appeared and to all indications it was injected into the subarachnoid space. The patient had no subjective symptom attributable to the injection excepting slight dilation of pupils. Chloroform was administered throughout the operation. I might say this cocain solution was tested upon myself, and also produced local anesthesia when injected beneath the skin, and also applied to the mouth.

Seeking for an explanation of the absence of effects in these cases, which to me were inexplicable at this time, I had recourse to Tuffier's article and found the needle he used was very much smaller than mine. I then provided myself with a smaller needle to be used in Case 3.

CASE 3.—This was a case of pelvic abscess. After spinal puncture the fluid flowed freely. I injected 20 m. 2% cocain solution. The patient 5 minutes after injection complained of a dead feeling in the feet which quickly extended to the waist line; sensation slightly abolished. Operation was extremely painful, but no anesthetic was employed. After the patient was returned to bed I remained one hour. She was completely analgesic from the middle of thighs down; as she expressed it, you might take her foot or leg off and she would not feel it, though paresthesia extended to her waist. There was no nausea or vomiting. The respirations were 26; pulse, 110; the pupils slightly dilated, reacted to light and accommodation. There was profuse perspiration; patellar reflex and ankle-clonus were present.

CASE 4.—S. H., aged 22, was a male, anemic, very thin, and emaciated. His pulse was 118; temperature 99.6; had had several operations for dilation of sphincter and stricture of the rectum. The patient, according to the surgeon, could never permit examination without an anesthetic.

Lumbar puncture was performed at 4.40 P.M., between the

fourth and fifth vertebrae. Fluid was obtained in a test-tube; 20 m. 2% cocain solution was injected. Feeling of weight in feet was noted, and heat, also like pins and needles, in left foot particularly. Slight headache was complained of at 4.50. Pupils were normal, sensation to heat and cold absent. Anesthesia existed up to the iliac crest. Stricture was dilated and all manipulations were without pain. Patient, when taken to ward, 25 minutes after operation, vomited excessively. In bed afterward, his pupils were normal. Profuse perspiration existed, but no headache; anesthesia was still present at 5.15. He left the hospital next morning. No elevation of temperature existed at any time; sensation was fully restored at 7.20. The following morning he had severe headache; when he left hospital he was given $\frac{1}{100}$ grain nitroglycerin.

CASE 5.—F. F. was somewhat anemic and thin. Spinal puncture was carried out between the fourth and fifth lumbar vertebrae, and the fluid dropped slowly. I injected 20 m. 2% cocain solution, prepared as in Case 3. Time consumed in injection was 35 seconds. At 10.46 there was a tingling sensation, though pain was diminished. Abdominal oophorectomy was performed by incision at 10.50. There was no pain during the entire operation. At 10.55 pulse was 100, respiration 28; at 11.15 pulse 100, respiration 26; at 11.25 the pulse was 110, respiration 26, temperature 98. Profuse sweating, but no nausea, vomiting or headache occurred at any time. This patient subsequently developed bronchitis and localized pleurisy, and had a rapid pulse and respiration, and high temperature. The first day after operation the temperature varied between 100.4 and 101; pulse 88 to 104; respiration 24 to 28. There was pain in the side, but no headache; there was cough; the urine was negative—the amount 27 ounces. On the second day the pulse-rate was 84 to 104; temperature 100 to 100.2; respiration 24 to 36. Urine 23 ounces. There was no headache. On the third day the temperature was 100.2 to 101.4; respiration 24 to 36; pulse 94 to 102. There was pain in the chest. Anesthesia was a complete success in this patient, extending to the axillae. The case is also interesting to those who always attribute bronchial and pulmonary complications after operations to the anesthetic. I have not been able yet to connect the spinal puncture with the patient's chest. The temperature, pulse, etc., gradually approached the normal after the sixth day.

CASE 6.—L. M., aged 30, was of a plethoric type. Temperature was 98, pulse 80, respiration 18. He had varicose veins. Lumbar puncture was made between the fourth and fifth vertebrae at 3.20, fluid dropped slowly, and I injected 20 m. 2% cocain solution. Dead feeling in the feet followed almost immediately; when the patient lay down, sensation to a pinprick was felt as a dull, not sharp pain. At 3.26 anesthesia was absolute to the axillae. At 3.28 nausea and vomiting occurred, lasting to 3.30, then ceased entirely. Respirations were 28, pulse 110; he was sweating considerably. Operation began at 3.30 and finished at 4.00 P.M., the patient still completely anesthetic. There was no difficulty in breathing, and no headache; the pulse was full, the pupils normal. Sensation, at 4.35, began to return in the right leg first—was complete at 5.00 P.M. He had considerable frontal headache that night which phenacetin and caffeine seemed to relieve, though he had a dull feeling about the head all the next day. He has had no headache since.

	3.30 P.M.	3.45 P.M.	4.00 P.M.	4.30 P.M.	5.00 P.M.
Pupil	Normal.	Normal.	Normal.	Normal.	
Pulse.....	110	120	120	110	110
Respiration,	28	28	26	26	26

The day following, the temperature was 100, after which it returned to normal; pulse 78; respiration 20; the pupil normal. Reflexes were not involved during anesthesia.

CASE 7.—Mrs. L. weighed 130, and was anemic, the pulse 70; respiration 20. The woman was in labor, with a normal presentation. Puncture was made at 3.50 A.M., between the fourth and fifth lumbar vertebrae; at 3.54 there was paresthesia, the toes and feet being cold; the buttocks were numb, painless to examination, and a feeling of warmth existed up and down the legs. She wished to go to bed, but felt she could not because of the dead feeling in lower extremities. She did so, however, with help; there was no sensation to pain, the pulse was 128; respiration 28. She vomited at 4.20 and retched considerably. Fetal heart-sounds were normal, and

the uterine contractions, I was told, were undiminished; perspiration was profuse, the mouth dry; she had muscular tremors; at 4.25 respiration was increased in rapidity to 60, short and gasping, the pulse 140. The patient was blanched, profusely perspiring, and restless. She had every symptom of shock for about ten minutes; she gradually improved, felt better and the pains returned. A second injection, was not made, but a whiff of chloroform was given when the head was about to be born. In 20 minutes the placenta was expressed. The operator told me shortly afterward the patient went into collapse with no pulse and a blanched color; she was inverted, and hot saline enema was given, when she gradually improved. I saw her shortly afterward when her pulse was 103 and respiration 26. I subsequently was told she had very severe headache for two days following confinement, for which nitroglycerin, caffeine, phenacetin, etc., were given without lessening its severity to any extent. This case was noteworthy for the short anesthesia, 40 minutes, and great amount of systemic effect from the cocain.

CASE 8.—M. H., aged 32, was somewhat anemic, pulse 78, respiration 18, temperature 98°. Operation was for dilation and curettage and repair of the cervix. An ounce of whisky was given. Lumbar puncture was effected at 5.01 P.M., between the fourth and fifth vertebrae, followed by the injection of 20 m. of 2% cocain solution; at 5.03 the left leg was dead first; at 5.05 both legs to the hips, then to the axillae, were anesthetic while movement was unimpaired; the knee-jerk and ankle-clonus were present; the patient vomited at 5.10. Operation began at 5.15 and ended at 6.00, the patient still anesthetic, and having felt absolutely nothing. Sensation to touch was preserved; he felt good throughout.

	5.10 P.M.	5.20 P.M.	5.30 P.M.	5.45 P.M.	6.00 P.M.	6.30 P.M.
Pulse	100	110	110 small	60	100	100
Respiration	24	28	28	28	24	24

At 6.10 sensation commenced to return and was complete by 6.30. There was slight headache the day following, which stopped without drugs. On the following day temperature was 99.4°, the pulse 86, the respiration 18.

CASE 9.—Mrs. G., aged 34, stout, was operated upon for colpoperineorrhaphy and ventral suspension. Puncture was done at 9 A.M. between the fourth and fifth lumbar vertebrae. The fluid dropped slowly; I injected during 40 seconds 20 m. 2% solution of cocain. Within ten minutes the operation was begun. The patient was sensitive; no analgesia was present though vaginal operations were finished; chloroform was given for abdominal operation. After opening the abdomen chloroform was discontinued, to see if the patient felt anything. She became immediately conscious and said she felt nothing. The suturing of the uterus and closing of the incision were absolutely painless. Testing the sensation with a pinprick, the patient was found analgetic up to and including the breasts. All the operations were completed in 40 minutes. Analgesia lasted 30 minutes after the patient returned to bed. This was a delayed case of anesthesia, showing that we should always wait 20 minutes for anesthesia. The patient vomited slightly and had profuse perspiration. Respirations were 28, pulse 120. There was no headache. During the administration of chloroform pulse fell from 110 to 60, became very irregular, then rose to 110 again and remained so.

	9 A.M.	9.15 A.M.	9.25 A.M.	9.30 A.M.	10 A.M.
Pupil.....	Normal.	Normal.	Normal.	Normal.	Normal.
Pulse.....	110	110	60 full, irregular	110	100
Respiration,	24	26	26 deep	26	24

The patient vomited slightly after going to the ward. There was no headaches at any time.

CASE 10.—R. J. F., aged 39, weight 165, was in good general condition. He was very nervous for fear of pain, every examination and manipulation heretofore having been extremely painful. Puncture was made at 3.27 P.M. between the fourth and fifth lumbar vertebrae. I injected 20 m. 2% cocain solution. Parathesia occurred in the lower extremities at 3.28, anesthesia at 3.30, extending as high as the axillae. The sphincter was dilated, and also a stricture of the sigmoid with absolutely no pain, and large tubes were passed without sensation. There was absence of sensation to heat

and cold; kneejerk reflex and ankle-clonus were normal. At 3.25 the pulse was 26; respiration, 90; at 3.45 the pulse was 90, the respiration 28; at 3.55 the pulse was 90, the respiration 26; at 4.10 the pulse was 90; the respiration 26; at 4.35 the pulse was 90, the respiration 26. The parts were still completely anesthetic. The man then rose from the table and could walk to another room to dress; his gait was awkward and he seemed to walk on his heels; this seemed to tire him. After dressing he seemed to walk better, though somewhat shaky; at 5.15 feeling commenced to return slightly, and he left for home. He reported to me the following day saying sensation had fully returned at 7.30 the day before. At 7.45 he passed voluntarily about 8 ounces of urine; he had complete control of the bladder. He had very intense headache that night in the occipital temporal region. I had prepared him for this, having given him two tablets of $\frac{1}{100}$ gr. nitroglycerin. These had no effect; the headache had disappeared in 24 hours excepting a dull feeling about the forehead. He also felt drowsy during the entire day. Temperature was 98.8°; pulse, 72; respiration, 16.

The noticeable feature about this patient was the entire absence of all symptoms immediately after the injection. He only spoke of feeling warm. He also had slightly transitory nausea. He expressed himself as particularly pleased at the absence of all sensation and did not know when the surgeon had finished.

CASE 11.—J. P. was thin, anemic, and extremely hyperesthetic; his pulse was 114, and small. He had a supposed malignant growth of bladder. The patient could not endure two ounces of water injected into the bladder, because of unbearable discomfort. From his apparent bad condition it was not thought advisable to inject the usual amount of cocain solution. Lumbar puncture was made between the fourth and fifth vertebrae, and cerebrospinal fluid was received into a sterile test-tube. I then injected not more than 10 m. of a 2% solution, without anesthesia; as it was too late the surgeon did not wish to have another injection on this day. The second day following I determined to use the regular quantity. Having carefully preserved the spinal fluid removed from him at the last puncture, I decided to make my cocain solution with it instead of the plain water—this was first thoroughly boiled and then the cocain added in the usual manner. The first puncture was between the third and fourth lumbar vertebrae on the right side. After the fluid dropped, pressure of the thumb was made to prevent undue loss. I injected 20 m. of a 2% solution of cocain, consuming 40 seconds in the injection. After 5 minutes the patient said his feet were asleep, he, however, was sensitive to pain up to 15 minutes. His feet up to the ankles were completely anesthetized. The abdomen was sensitive at 4.46 P.M. I made a second puncture between the fourth and fifth lumbar vertebrae of the left side. The fluid dropped slowly, only a few drops being lost. I injected 15 m. of a sterile 2% spinal-fluid solution of cocain in about 30 seconds. Anesthesia occurred in 4 minutes, and quickly extended from the feet upward to the umbilicus. The patient said his entire legs were dead. No sensation to pinprick or knife existed from the feet upward to the axilla. The catheter was introduced and the bladder easily filled with 6 ounces of water without knowledge of the patient. At 4.59 the operation of epicystotomy was performed in the Trendelenburg position, with absolutely no evidence of pain or discomfort to the patient from opening of abdominal incision, to the suturing of the bladder and closing of the abdominal incision; during the suturing of the bladder the patient vomited and retched for 10 minutes, considerably interfering with suturing. The pulse was 120, the respirations 30. The patient was sweating profusely, without headache, the pupils were normal and he felt well though the pulse was small. Paresthesia existed in the hands though they were not anesthetic to a pin-prick. Anesthesia was complete to the axillae. At 5.30 the abdominal operation was finished. The operation of external urethrotomy was then done and the patient returned to bed at 6.10. At no time was the patient conscious of any pain or discomfort.

Puncture was made at 4.46, the operation done at 4.59,

and anesthesia, too, existed at the umbilicus at 5.02. At 5.05 $\frac{1}{4}$ grain of morphin was given hypodermically. The vomiting and retching lasted from 5.15 to 5.25.

The man was given whisky at 6.30, and the pulse improved; he said he felt well and had no headache. Anesthesia was still complete to the axillae. The pupils were decidedly contracted after the hypodermic of morphin.

CASE 12.—R. D., age 27, was plethoric, with temperature of 98.4, pulse 76, and respiration 16. The reflexes were normal. Whisky, 1 ounce, was given. Lumbar puncture was done at 8.30 A.M., between the fourth and fifth vertebrae, followed by the injection of 20 m. of 2% cocain solution. There was paresthesia in the feet at 8.32, and at 8.35 extending to the waist; he was insensitive to pinprick. Operation was at 8.50,—dilation of the sphincter and removal of hemorrhoids by the clamp and cautery. The operation was finished at 9.20, when he was still anesthetic to the mid-chest. He was thirsty, had slight nausea, but no vomiting, and was perspiring profusely; at 9.50 sensation commenced to return, and at about 10.30 it was complete. Temperature the following day was 100, pulse 90, respiration 20, then returned to normal, without headache. The pupils were normal.

During anesthesia the following was the pulse-rate and respirations:

	8.40	8.50	9.00	9.15	9.30	10
Pulse.....	100	120	80	80	100	100 full.
Respiration	22	28	28	16	26	24

During the application of the cautery the patient felt the heat as warm, but had no pain at any time.

CASE 13.—M. B., age 31, was nervous and of a plethoric type. The operation was for closure of inguinal colostomy. An ounce of whisky was given at 3.25. Lumbar puncture was effected between the fourth and fifth vertebrae, followed by the injection of 20 m. of a 2% cocain solution. At 3.30 she had a dead feeling in the feet, and was anesthetic to a pinprick. Operation was begun at 3.45. During the incision the patient apparently felt some pain; the rest of operation was done with no pain, though traction on the intestine caused nausea; resection and suturing of intestine caused no pain, though traction seemed to do so. Sensation to pin-prick was abolished up to the lower rib. The patient occasionally looked at the operation; the sight of the scissors seemed to cause pain, whereas when her eyes were covered she had no such sensation. She seemed to feel traction of the intestine, and packing of the gauze; at the end of operation, 4.50, sensation had fully returned to the feet.

	3.30 P.M.	3.40 P.M.	3.50 P.M.	4.15 P.M.	4.30 P.M.	4.45 P.M.
Pulse.....	100	120	120	110	130	110
Respiration...	24	28	30	32	26	26

There was no headache the next day or at all. The pupils were at no time dilated.

CASE 14.—Mrs. F., aged 26, was stout, though pale, with pulse 90; respiration, 18. She had nephritis. Complete rupture of the perineum. One ounce of whisky was given, lumbar puncture was effected at 9.05 A.M., between the fourth and fifth vertebrae, followed by the injection of 20 m. 2% cocain solution. There was no anesthesia in the feet at all or anywhere. After 15 minutes a second puncture with an injection of 15 m. between the third and fourth vertebrae on the left side was made, and likewise no result so far as anesthesia was concerned. She was perspiring freely, and the operation caused undoubted severe pain. I gave chloroform under which she did well. The pulse was 120 and small, falling to 90, and became quite full. She became conscious very quickly after chloroform was discontinued at 9.20.

	9.10 P.M.	9.20 P.M.	9.30 P.M.	9.40 P.M.	10.00 P.M.	10.15 P.M.	10.30 P.M.
Pulse	100	100	120	60	80	90	115
Respiration,	22	22	28	23	30	34	34

The pupils were normal throughout.

Fully one-half grain of cocain was injected in this patient and produced absolutely no effect.

CASE 15.—A. S., aged 34, was somewhat anemic and of a very nervous temperament. The operation was to be closure of inguinal colostomy (the second case). One ounce of whisky was given, followed by the injection at 3.20 P.M. of

20 m. 2% cocain-solution. She immediately felt her feet dead; after lying down she was absolutely insensitive to pinprick up to the ankles; up to the hip, sensation was limited; after 18 minutes the operation was commenced. She seemed to feel slightly the incision, and fretted very much; testing the sensation, she was found to be painless, though she felt contact; no doubt when the operation was begun she seemed to feel the incision. A second puncture and injection was made at 3.40. Anesthesia did not extend. The patient was very nervous. Operation was continued and finished at 4.40. She seemed to feel traction on the intestines. Sensation to pinprick was felt as a dull pain, probably by contract simply. There was no headache. There was a slight feeling of nausea, though no retching, vomiting, or perspiration.

	3.30 P.M.	3.40 P.M.	3.50 P.M.	4.00 P.M.	4.15 P.M.	4.50 P.M.
Pulse	120	110	120	120	120	120
Respiration,	26	28	28	28	28	28

The surgeon told me he considered both these patients excessively nervous and more frightened than actually suffering.

CASE 16.—J. L., aged 59, a male of mid plethoric type, weighed 120. His general condition was good, his temperament sanguine, his respiration, temperature, tactile sense, reflexes, and pupils normal. Puncture was made at 2.00 P.M. between the fourth and fifth lumbar vertebrae, the fluid dropping slowly; only a few drops were permitted to be lost; a 20 m. 2% cocain solution was injected and the needle removed at 2.20. At first there was paresthesia, and complete anesthesia at 2.10. The operation was a femoral herniotomy with supposed tumor, which proved to be part of omentum incarcerated. Operation was begun at 2.15 and ended at 3.00. Anesthesia ended at 3.50. Five minutes after the injection, the pulse went up to 120, and ten minutes after fell to 60, then varied between 60 and 84, never going above 84. Respiration, five minutes after injection, was 30, then varied between 24 and 30. Respiration and pulse were taken every 5 minutes for one hour, then every 15 minutes for 3 hours following. There was slight nausea, but no vomiting; the following day slight headache and chill; pulse and respiration normal.

CASE 17.—R. C., aged 29, was of mid plethoric type. Her respiratory and circulatory system, pupils, temperature, tactile sense, reflexes, etc., were normal. One ounce of whisky was given. At 12.30 P.M. lumbar puncture was made between the fourth and fifth vertebrae, followed by the injection of 20 m. 2% solution of cocain. At 12.40 she had a dead feeling in the feet, and anesthesia was complete to the axillae at 12.43. The operation was a uterine dilation and curettage. It was commenced at 12.50 and finished at 1.10 P.M. The pupils were somewhat dilated, sensation to touch was present, but sensation to pain was absent entirely. There was no nausea or vomiting. At 1.45, when sensation above the umbilicus was returning. There was reaction to heat and cold, but no sensation to pressure. The vaginal and rectal sphincters were relaxed during the anesthesia. The pupils at times were normal, at others slightly dilated. The pulse varied from 100 to 60; at 1.30 it was 90. The respiration varied from 24 to 30; at 1.30 it was 26. At time of leaving the patient she said she felt good and coffee was given her. This patient had paresthesia in the arms and hands but was not anesthetic.

CASE 18.—G. K., aged 33, was anemic, but the general condition was fair. Pulse, respiration, temperature, pupils, tactile sense, reflexes, etc., were normal. One ounce of whisky was given. Lumbar puncture was effected between the fourth and fifth vertebrae. At 4.36 P.M. I injected 20 m. 2% cocain solution, the patient sitting on a chair; all he felt was warmth in the feet. When asked to sit on the table he found he could not do so, having no feeling in his legs; with help he mounted the table and was prepared for cystoscopy, which, as expressed by him when attempted previously, was torture. Sensation was tested and found absent to the umbilicus. A very satisfactory cystoscopy was performed, the patient being entirely oblivious to any pain. He vomited at 5.10, during which the rectal contents were forcibly expelled, the sphincter being relaxed. He could distinguish heat and cold but not pressure. Examination was finished at 5.30 P.M. During anesthesia the pupils were normal most of the time,

occasionally slightly dilated. The pulse varied between 120 and 100, the respiration varied between 28 and 18. At 6 P.M. he left the hospital, the pulse being 120, the respiration 18; the lower extremities still were anesthetic though he could walk very well, slowly. The day following he reported to me: he arrived home at 6.30; when testing sensations with pin he felt slightly. The pulse was 102 at 7.50, with marked chills and headache in the occipital region. I had given him powders of phenacetin 7 grs. and caffein citrate 2 grs., of which he took one and the headache became better. The chills did not last long. At 10.20 he was warm and perspiring, the pulse 100; headache was worse again in the morning; he took another powder and the headache was better except for a dull feeling; his headache was better when he kept perfectly quiet, if he but turned his head it became worse. He had also dull pain in the lower extremities. Pulse was 90 and full; respiration 18 and full; the temperature 99.2°. He spoke of the entire absence of pain during the examination the day before.

CASE 19.—Mrs. F., an anemic patient, had the spinal puncture injection about 10 days previously. Anesthesia was a failure in her case even after two injections of cocain aggregating over $\frac{1}{2}$ grain. The patient was hypersensitive. It was necessary to remove a broken glass catheter from the bladder, and remove the stitches of perineal operation. At 9.13 A.M. puncture was made between the fourth and fifth lumbar vertebrae; 20 m. of a 2% cocain solution were injected, followed by a dead feeling in the feet at 9.15. The feet were anesthetic to pinprick at 9.20, and anesthesia was as high as midway to the umbilicus. The patient was returned to the ward at 9.45 and complained of her feet still being dead. When sensation was tested with a sharp pin anesthesia was found still below the umbilicus. During manipulations the patient worried for fear she was to be operated upon, but it was evident, however, she felt no pain. Pulse was continually high from 120 to 130, and respiration from 24 to 36. The pupils were normal. At first there was pallor and then a suffused face. There was no nausea or vomiting up to 10 o'clock.

CASE 20.—The patient was of the plethoric type, muscular, and the pulse was 84, the respiration 20; temperature was normal. A half ounce of whisky was given at 2.23 P.M., and puncture made between the fourth and fifth lumbar vertebrae. I injected 20 m. of a 2% cocain solution at 2.25, followed by anesthesia to the ankles; at 2.30 anesthesia was complete to the axillae. The operation was an umbilical herniotomy and hysterectomy. It was begun at 2.40 and ended at 4.05 P.M. This patient felt the traction on the uterus and intestines; whether actual pain I am unable to state; there probably was pain during the pushing back of the intestines before suturing the abdominal wall. It is also supposed the patient saw part of the operation at one time and became excited over it. The first part of the operation was done with no evidence on the part of the patient of having felt anything. The anesthesia may have partly passed off toward the end, though before taking her to the ward I tested her sensations with a pin; she was anesthetic to the umbilicus. Her face was at first pale, then became suffused. Pulse after injection rose to 120, then varied between that and 60; at the end of the operation it was 102. Respiration varied from 20 to 30; the pupil at times was normal, sometimes slightly dilated. There was no nausea or vomiting up to the time she was taken to the ward.

In Case 11, but 10 minims were injected at the first puncture, and produced anesthesia almost entirely throughout the distribution of the small sciatic nerve on one side, that is, the posterior part of thigh and leg, from buttock down. This patient had a severe headache the entire day following. In Cases 6, 10, and 12, large plethoric types, 20 minims each were injected and produced surprisingly rapid and complete anesthesia. From these varying and interesting results, we must deduce that a quantity which in one patient will produce anesthesia, in another would result in failure, in others again resulting in but partial success. We cannot anticipate the necessary dose for the large and plethoric patients, as we have seen they are sometimes

easily influenced by small doses, whereas at times the small, thin, and anemic require large doses. We may formulate the only safe and practical plan to be used in all cases as follows: the intraspinal injection in any case should never exceed 20 minims of a 2% solution of cocain, or its equivalent. When this does not produce anesthesia, it neither affects the patient physiologically. At least this has been my experience up to the present time; a second injection may then be made with perfect safety. When the first injection has produced but partial anesthesia, the second injection should be made; this, however, less in quantity than the first.

DEDUCTIONS AND CONCLUSIONS.—The explanation of the failure to produce anesthesia in the first two cases, I believe, due to the large needles employed, the removal of which permitted the solution to eke out into the bony wall of the sacrum, exerting no influence upon the patient in any way whatsoever. In the other case, too small a dose, even after a second injection, though the first cases may have been due to this cause also. In the first patient, altogether $\frac{1}{2}$ grain was injected. The somewhat tense condition of the membranes of the cord and the entire absence of any symptoms would indicate that the explanation mentioned is the true one. The fact that Bier advises that the needle be not withdrawn for 2 minutes after injection would indicate the possibility of the loss of the solution before it disseminated in the subarachnoid fluid was not unknown to him. In the third case where a smaller needle was employed, anesthesia was complete from the middle of the thighs down; here a second injection would no doubt have produced complete anesthesia. This must be taken as a case of individual insusceptibility. It shows that cocain injected into the spinal canal differs in no way from its introduction into the general circulation, though I believe its symptoms are decidedly less developed by the spinal route.

I do not believe that the circulation is any factor in the production of anesthesia when cocain is injected into the subarachnoid space; its effects are in all probability due to the passage of the cocain from the subarachnoid space along the perivascular spaces in the tunica adventitia of the bloodvessels to the sensory columns of the cord, also directly into the lymph spaces of the nerves themselves, which have been shown by Key and Retzius to be continuous with the subarachnoid space.

Corning believed the circulation was the means of anesthetizing the cord, in corroboration of which he quotes Harley, from Ringer's work, to the effect that strychnin injected into the canal of the cord produced well-marked physiologic symptoms, but when placed in direct contact with the nervous elements of the cord divested of its vascular supply, the solution remains entirely inert. Hardly any other result could be expected to occur. If, however, the subarachnoid space and its fluid had been artificially replaced, his results would, in all probability, have been different. The physiologic symptoms, more or less produced in all patients, are probably due to the direct action of cocain upon the important centers of the cerebrospinal system and also, but to a lesser extent, the circulation. There is every reason to believe that the dilution of cocain by the cerebrospinal fluid is not great, as this fluid in any individual is very small in amount, though none the less of physiologic importance. The fluid is in greater amount in the region of the bulb, and its direct effect,

when containing cocain, upon the respiratory and vasomotor centers, can very easily account for the alteration in these functions, besides affecting the heart and respiration efferently through the sympathetic, which also accounts for the very profuse perspiration that frequently occurs. Hill has shown in his very perfect experiments that the cerebrospinal fluid-pressure never exceeds that of the cerebral veins, any tendency to increased pressure is counteracted by rapid absorption by the veins. It has also been shown that the cerebrospinal fluid when drawn off has a peculiar chemical composition, and is quickly, but how quickly he does not say, replaced by a fluid more similar to the serum. From what has been said, we may deduce that the cerebrospinal fluid is constantly though very slowly secreted and absorbed, and it is conceivable that the withdrawal of a small amount of the fluid may account for certain symptoms.

In Bier's experiment upon himself, he lost considerable subarachnoid fluid, developing well-marked, though not grave symptoms, which took him nine days to recover from. In his case it is reasonable to suppose the tension of the cerebrospinal fluid was lowered and reestablished only after some considerable time. It is also possible the rapid replacement of serum which is not at all like the cerebrospinal fluid may, though not probably in itself, be the cause of his symptoms.

The worst of all symptoms in many patients upon whom the lumbar puncture and injection have been made, is severe headache referred to the frontal, occipital, or temporal regions. This may be due to either an increased cerebrospinal fluid tension, though not probable, as any increased tension is quickly equalized by absorption into the veins. It may be due to decreased tension. This is, I think, the most important, though possibly not the only cause. It may also be due to the simple injection of sterile water or saline solution with or without cocain. As the cerebrospinal fluid is mostly secreted in the brain, absorption may also take place by this route, and the gradual elimination of cocain here may be the cause of the severe head symptoms encountered.

In Case 11, when the first puncture was made, the cerebrospinal fluid was permitted to drop into a sterile test-tube, and immediately plugged with sterile cotton. As another puncture was to be made upon this case, it occurred to me to make the cocain solution of this spinal fluid, which was done, taking the special precaution to boil this fluid thoroughly before introducing the cocain, exactly the same as when making a watery solution. If the headache complained of in this patient was due to the introduction of saline or sterile water or a reduction of cerebrospinal fluid tension, by replacing this fluid I might eliminate it; at the same time I might determine if cocain itself was the cause of the symptom. This patient had injected into the subarachnoid space the cerebrospinal fluid differing from his, normally, only in the addition of cocain. Again more fluid was injected than was lost by the puncture. This may have increased the tension slightly, but this, as we have seen, is of no consequence. The patient, in two injections received one-half grain of cocain and strange to say had absolutely *no sign of headache* at any time after the puncture. It may be contended that as some patients suffer from little or no headache these punctures may simply have acted in this manner. It is rather significant, however, that in the second punctures the total quantity of cocain injected was three times that of the first. I do not believe that the spinal fluid

solution of cocain will ever become popular, for unless the greatest precautions are taken, much harm may result, differing greatly in this respect from the water solution.

We must conclude from Bier's and my own experiences that the removal of the subarachnoid fluid should be restricted to the fewest drops; that is, after being certain that the needle is in the subarachnoid space (by a few drops of the clear fluid), the tip of the thumb should be placed over the end of the needle until the syringe is adjusted.

In conclusion, I would suggest that as the cerebral circulation is directly dependent upon the general circulation, a remedy for the headache may be found not in simple analgetics, but drugs exerting their influences upon the circulation direct either in an increase or decrease in the general blood-pressure. Increasing the blood-pressure favors an increased secretion of cerebrospinal fluid with an increased tension in the veins retarding absorption.

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ANALGESIA IN OBSTETRICS PRODUCED BY MEDULLARY INJECTIONS OF COCAIN.*

By S. MARX, M.D.,
of New York.

IN the development of any subject which opens up a new field of investigation, there will ever be on both sides of the conservative imaginary middle ground, those who are ultra enthusiastic, composed mainly of the pioneers in this new departure on one side, whilst on the other side are those who are hesitant, doubting, or absolutely pessimistic. This is the status which confronts us today in our position as advocates of cocain medullary narcosis. But is this not the history of all new departures in medicine? "Make haste slowly" will be our motto. Calm deliberation and time alone will tell the true story. Whether or not medullary narcosis will live and be useful, with a distinct field, limited or not, or whether through untimely mishaps, failures, or fatalities, the measure will be allowed to sink into innocuous desuetude the future alone can tell. Up to the present writing—and I speak from the obstetric standpoint alone—I am more than pleased; call it enthusiasm if you will, but this is not the enthusiasm of youth, nor that of the fervor of getting one's name associated with something new and startling; but the enthusiasm of success, calm, deliberate and painstaking after months of hard and trying work, with a record of success of which one need

not be ashamed. I write this not in a spirit of dogmatism or egotism, for I claim neither the honor nor do I wish it, since that crown of honor and success can only be given to Corning, of New York, before whom we bow our heads, and suppose that his not having pushed these measures more forcibly to the front in order to attain for them the recognition due, was because of his natural inherent modesty. But since this is always a measure of greatness we forgive and forget.

In obstetrics I have yet to record a failure, or even a bad result, whether attributable to the cocain or to the puncture itself. I shall refrain from touching on my experience in other cases, since these will be embodied in another paper later on. Up to the date of writing this paper, I have had over 40 cases of labor. Of these my first 6 cases were fully reported in the *Medical News* of August 25. My next paper in the *Medical Record* of October 6 of this year, gives the complete histories of 23 more. As my experience increases with this form of anesthesia in labor, my confidence in its application makes me more and more firm in the absolute utility and safety of its exhibition, and the best proof I can give of my sincerity in my statement is that I should not hesitate to employ this measure in my own family. I recognize but two dangers (1) sepsis, (2) cocain poisoning. 1. Sepsis can as surely be controlled in the lumbar puncture as elsewhere in the body. I still maintain, that the surgically trained aseptic operator is the only one who can and will overcome this complication, and is the only one who should think of doing this otherwise safe operation. This territory is a dangerous one, and when we undertake to operate territory which is forbidden ground except for those who know how to be clean, we must surround our technic with every precaution tending to point in one direction—asepsis in everything and everybody directly or indirectly concerned around the operative field. In other words prepare the patient as if about to invade the abdominal cavity. 2. As to cocain poisoning, in all the cases reported there was at no time in any of my cases any symptoms which could be referred to cocain toxicity. In every case in which the puncture was made, there occurred certain symptoms more or less marked which might have been referred to the cocain. But how account in five cases that acted beautifully as central tests where the same symptoms arose and yet no cocain, or in one case an inert solution was used? And yet in these cases where either a saline solution or a solution of strychnin for purposes of inducing labor was employed by the intraspinal avenue, there were noted the headache, vomit, trembling of limbs, disturbance of temperature and pulse even as occurs after cocain, but minus the analgesia. Surely this is not sepsis, since it occurs in all the cases. And when with these symptoms there were found spastic contractions of the legs and the thighs, marked ankle-clonus, and a material increase of the patellar reflex, we have a symptom-complex present which denoted spinal shock or a condition due to disturbance of equilibrium inside the subarachnoid space. When cocain was employed the same conditions were present, plus an analgesia. But we are fully cognizant of the fact that poisoning may occur and has occurred. We are fully prepared to cope with it when the emergency arises, but I am thankful never to have met it. And I am of the opinion that cocain is particularly a safe drug in the parturient condition, and on the same grounds as chloroform. We know that there has never been an authentic case

* Read before the Obstetric Section of the New York Academy of Medicine.

of death from chloroform on record during labor. This for the reason that it is supposed to kill by causing an acute anemia of the brain. Pregnancy and the parturient state presuppose normally the opposite condition, viz., dilated cerebral capillaries, which means congestion, and thus in a measure the normal cerebral congestion counteracts any tendency to the pathologic anemia due to chloroform. Now, I think the dangerous symptoms from cocain are due to an acute anemia of the brain, whether proved other than clinically I am unable to state, which vicious action is aptly counteracted by the normal condition of that viscus, congested during labor, and thus any grave symptom is thoroughly antagonized. This may be the reason why I have never seen any symptoms which might be interpreted as due to cocain poisoning when administered during labor. Since my trials have commenced I have always felt that all the symptoms, so far as I know, were due to operative shock and not to cocain.

Technic.—From a greater experience I cannot find any improvement in the method which I have employed from the very beginning, since it has never failed me in reaching the canal in all my cases. The exaggerated inclined "scorching position" is the one I prefer; and yet increased practice makes a right or left lateral decubitus as handy a position for me as the upright one, if only the back, it should be remembered, be arched by natural posture; or, by mechanical means, the patient's side in contact with a pillow is so raised as to give the spinal curvature a convex upwards; the natural posture being effected by placing head and pelvis on a level higher than the trunk, thus again bending the spine, but with the convexity downwards. I then inject from the convex side, for this has a tendency to increase the space between the individual vertebrae. *It is absolutely necessary for successful anesthesia to enter the spinal canal; a sine qua non to an absolute analgesia is the escape of subarachnoid fluid before the cocain solution is injected, and by its escape I am in positive position to state that the needle is in the canal.* There is no other guide. Since I have depended on getting a fluid tap I never failed to secure perfect anesthesia. This statement refers only to my obstetric work. In two gynecologic cases in spite of every step known to me for success, I failed. More of this later on.

As a rule the puncture is readily done, but in a few cases there has been the greatest difficulty in its performance, i.e., in ankylosis of the spine; in an enormous fat back where I had to penetrate over two inches of fat before I reached the canal, and then had no needle left to enter the space; further, universal anasarca, where the edema of the back was so great that landmarks were utterly destroyed and the edema was so great that serum escaped from the needle, thus simulating the escape of spinal fluid. Only by placing the patient on the side was I able to get the needle into the canal, where after placing $\frac{1}{8}$ grain of cocain in the canal, as beautiful an anesthesia was produced as under chloroform. A total hysterectomy followed and was completed without pain.

The patient's back from coccyx to the middle of dorsal vertebrae is rendered sterile as is the abdomen before section. A finely tempered needle with as short a bevel, i.e., point, as possible is employed,—length from 3 to 4 inches. I advocate a short bevel to insure as small a penetration as possible, for long needle points may wander beyond points of selection. In other words, as soon as I strike fluid, I want to check further penetra-

tion, and this cannot be satisfactorily nor safely done with the needles I have heretofore used, those with long points. The trocar point is the preferable one. I am still in favor of the solid hypodermic syringe, for it can be taken apart and boiled, there is no danger of breakage, nor are there washers to shrink. The one in present use and that one of my house-surgeon have been in use in all our punctures now over 100 times and still they are as good as new. The only advantage in favor of the glass syringe is that we can see and watch the fluid as it is injected.

Both needle and syringe are boiled for 10 minutes. The patient being placed in position, the thumb of the left hand is placed on the spinous process of the fifth lumbar vertebra. This point may be readily found by locating the deep depression between the spine of the fifth and first sacral, the posterior landmark of the external conjugate, or in very fat women, a line drawn joining the highest points of the crista ilii will pass over the center of the fourth lumbar vertebra, and is a valuable guide. To insure absence of pain from the puncture through the skin a freezing spray is used. The needle is inserted in front of and just over the edge of the thumb at an angle of 165° , the direction being slightly from below upwards and from without inwards. If the point strikes the lamina it is to be moved gently up or down until the space between the vertebrae is felt, i.e., absence of bony resistance; the point is pushed in very slowly and gently in a slightly downward direction until the clear, limpid fluid runs out. Immediately that fluid runs out the syringe is carefully screwed on, disturbing the needle as little as possible, and the cocain injected. From 8 to 15 m. (as the needle holds about 3 m., we must allow for this, and the barrel of the syringe charged with the extra amount) of a 2% cocain solution is used, representing between $\frac{1}{8}$ to $\frac{1}{4}$ gr. of the salt; the solution is slowly injected, the needle held in situ for a minute to plug the arachnoid puncture and insure the impossibility of its escape, and then withdrawn, and the puncture sealed. Within from 2 to 30 minutes anesthesia is ushered in, occurring somewhat suddenly, occasionally preceded by a marked hyperesthesia. There is often trembling of the limbs, and a feeling of formication in the effected areas. Vomiting often accompanies these symptoms, but is very evanescent. Operation can usually be commenced as soon as firm pinching or pulling upon the labia minora elicits no pain. If at the end of 15 minutes the desired result is not obtained, the injection may be repeated. In the light of our present experience small doses, say $\frac{1}{8}$ gr., give us sufficient anesthesia for any ordinary operation.

The area of anesthesia varies considerably and cannot be influenced by either the dose given or the force with which the solution is thrown in.¹ It depends upon the rapidity of absorption or on the susceptibility of the patient. I have seen analgesia from the ears down, but in most cases there is complete anesthesia from below the umbilicus. Anesthesia from one injection lasts from 1 to 5 hours. I have never noted any severe symptoms in labor, such as are occasionally seen in surgical work. There is no failing pulse, and never any cyanosis. In all our cases it was the rule to have disagreeable symptoms in all cases. But repeated trials by various drugs have given such excellent results that barring a very

¹ Pain to pinprick is absent. Sense of touch is retained to a gross degree, that is, the patient knows some object is brought in contact with the skin, whether brush or hand she cannot tell. In most cases heat and cold sense is retained, but is not painful. This has an important bearing in surgery, as for example in the use of the thermocautery.

short vomit and a transient headache I never see the distress I was formerly accustomed to.

After eliminating all drugs as inefficacious to combat symptoms, we pin our faith in three: (1) bromides; (2) hyoscin hydrobromate; (3) nitroglycerin. As a prophylactic measure it is very advisable to have the stomach of the patient empty for some time prior to the expected puncture, since I have noted a greater disposition to nausea and vomiting in patients who have recently ingested a full meal.

Since my belief has ever been that the symptoms immediately following puncture are due to some form of shock, my earliest and persistent endeavors were to find a drug which was a decided cerebral sedative, and to this end my best successes have been in those cases where from 30 to 40 grains of the bromide of soda was given from one to two hours before the expected puncture. Following this, and only in the event of the bromides failing, do I allow the administration of the hyoscin hydrobromate from $\frac{1}{10}$ to $\frac{1}{200}$ grain by the needle. To overcome all extra shock of pain the hypodermic should be given in the anesthetic areas. The nitroglycerin I usually reserve when slight cyanosis becomes apparent, or when the pulse fails; but the last indication seldom presents itself, for even though the pulse becomes feeble, rapid or slow, it is a sign that immediately anticipates the nausea and vomit, and is of no particular moment. Nitroglycerin is injected by the needle, from $\frac{1}{25}$ to $\frac{1}{100}$ grain.

Motor disturbances of the uterus I have never seen, for the uterine contractions go on regularly and rhythmically and under their action the os dilates as under normal conditions, and all this time, while the patient has some indescribable sensation in the abdomen, but not pain, she is delivering herself as naturally as if her symptoms of pain were not masked. Under these conditions we only recognize the powerful contraction either by placing the hand on the abdomen, or by exposing the protruding and bulging bag of water or the advancing head. Reflex action of the abdominal muscles was found present only when incomplete anesthesia existed, and was then accounted for by the presence of pain. But when anesthesia was complete, spontaneous bearing down did not occur; voluntarily the muscles were not called into play. Only when told to do so was the patient capable of bringing her abdominal muscles into play, and then as powerfully as under normal conditions. This I have always encouraged, to further the *vis a tergo* in normal labors. I have done some extremely difficult operations under spinal anesthesia, in fact all forms of obstetric operations were undertaken except symphysiotomy and cesarean section. Explorations, versions, forceps extractions, placental removals were done, not with as great ease as under chloroform, but with much greater facility than in a nonnarcotized (chloroform) woman. It was never necessary to finish any operation under a general anesthetic when commenced with medullary narcosis. Relaxation of the uterus or even spasm of severe grade was never encountered, nor was there a greater disposition to bleed than under ordinary conditions. My original indications (as given in the *Medical Record*) still are those I hold to day and from my present experience cannot be added to. I have carried a woman by repeated injections, for eight hours, through her labor with practically no pain. My rule at the hospital has been to inject when the pains begin to be severe. There is a distinct field when it becomes necessary to explore the pelvis for one reason or other. In very prolonged and painful first-stage labor, when it is

impossible for the doctor to sit for hours giving whiffs of chloroform, it would be ideal to give a cocain puncture and relieve suffering for from one to five hours and yet have the labor go on and the os dilate painlessly.

Again, a case might be imagined in which both chloroform and ether are contraindicated, or a case in which no assistance is to be had and operating is absolutely imperative. A puncture is made, anesthesia is complete, and the operator can attend strictly to his field of operation. In cases of threatened or already present convulsions, in which a mere examination would provoke a spasm, a lumbar injection—lessening, as it does, peripheral nervous sensibility—might be of avail. But at best, so far as I am concerned, it is a method ideally suited to mitigate or absolutely allay the dreadful pains of a normal labor, with no danger to mother and none to child, immediate or remote.

One feature I have noticed—and it has been apparent to my guests witnessing the confinement—and this is the great ease with which I can dilate a cervix when the patient is cocainized. The os seems to melt away from my fingers and its degree of dilation or its dilatability does not seem to be a deterrent factor for a rapid and easy manual dilation. It is not to be denied but that this form of narcosis will ever completely supersede general or cerebral anesthetization.

That one must expect failures cannot be denied also, and when failures occur they are as likely to happen under most humiliating circumstances. But there is no contraindication to follow up with chloroform. To my mind, a prolific source of apparent failure is due to the following inexcusable conditions, and it is one of the many links in the chain going to make this special form of anesthesia a complete and absolute success. The keynote is perfect quiet while operating. Sight and hearing are unusually acute in the woman. Apprehension is ever present, and a morbid fear that she might suffer pain causes not actual but psychical pain. This I have repeatedly demonstrated. To this end my audiences are told to refrain from talking, especially in reference to pain. The eyes of the patient are snugly bound and the ears are thoroughly plugged with cotton. No unusual bustle is allowed, and instruments are handled so as to insure absolute quiet. The operator gives his orders in an undertone, quiet and firm (what a blow to, and what an almost physical impossibility for the average operating surgeon!) The patient is constantly being reassured, her mind diverted by various measures—one patient was chewing ice while being operated upon, and interrogated by one person as to her sensations.²

ANESTHESIA IN CHILDREN WITH ADENOIDS, AND IN THE ADENOID OPERATION, WITH SPECIAL REFERENCE TO THE DANGERS OF CHLOROFORM IN CHILDREN OF THE LYMPHATIC DIATHESIS.*

By T. H. HALSTED, M.D.,

of Syracuse, N. Y.

Professor of Laryngology and Otology in the Syracuse University Medical College; Laryngologist and Otologist to St. Joseph's Hospital, and the Women and Children's Hospital.

THE presence of hypertrophied lymphoid tissue in the nasopharynx is often but a local expression of a general diathesis—the lymphatic diathesis—with which

²Table of cases sent by the author has been lost in transmission to us. [Editor PHILADELPHIA MEDICAL JOURNAL.]

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the child is affected. Occurring during the immature and developing period of life, adenoids, by obstructing nasal respiration, impair the oxygenation of the blood and must of necessity affect injuriously, to some extent, every cell, every tissue, every organ of the body—not merely the neighboring organs of the ear, nose, and throat, but more remotely and yet certainly the heart, the lungs, the cerebrum, and every part of the body where blood circulates.

A child with adenoids, then, presents two distinct conditions, the lymphatic diathesis manifesting itself locally in the nasopharynx, and the constitutional and local results of nasal obstruction.

These children may be and often are of large build, weighing above normal, slow and sluggish both in their physical and mental activity, the word "flabby," perhaps, expressing their general physical make-up. There is another type, that of the nervous temperament, the children of this class being thin, peaked, hollow-eyed, restless, with the facial expression of mouth-breathing, and the dusky pallor of one starving for oxygen. On the other hand, apart from some local effect upon the ears, many are in apparent perfect health, until the obstruction is removed, when the child's general health improves so much that it is seen, by contrast, to have been in a worse general condition before the operation than had been suspected.

There is no question but that children with adenoids are in a depressed general health, and have weak hearts, impoverished blood, impaired lungs, and resist disease or shock with much less force than do other children. The recognition of the truth of what has been said is of vital importance, not alone to laryngologists and otologists, but to the general physician and surgeon, when he comes to the selection of a general anesthetic for children.

For many years—ever since chloroform and ether were discovered—it has been taught and thought to be true that chloroform was especially safe in children, and I dare say that 90% of medical men believe this to be true and act upon this belief. Those who operate much upon children are, from their individual experience, beginning to question this, and I believe that before many years are passed it will be recognized generally that chloroform is especially dangerous during the period of early childhood.

In a recent paper, discussing the selection of an anesthetic, Wyeth,¹ a general surgeon of wide experience, says that in about 75% of his operations in general surgery he uses chloroform in preference to ether, but states that in children under 12 years of age he considers chloroform especially dangerous and thinks ether should be the selective agent during this period of life. In children above 12 years of age, without any dyscrasia, heart-trouble, or kidney-lesion, he thinks chloroform as safe as ether.

With reference to the postmortem-findings in deaths occurring from chloroform, Kolisko,² who has probably made more autopsies than any other person, averaging 2,000 a year for many years, and of these about 6 a year on persons dying from cardiac syncope due to chloroform, in whom no previous lesion of the lungs, kidney or heart was known to exist, says: "In these cases we always find the condition known as the 'habitus lymphaticus.' The nature of this condition is (1) a persistent thymus gland which has often become considerably enlarged through an increase of its lymphatic tissue; (2) enlarged lymph-glands; (3)

adenoid vegetations in the pharynx, enlarged tonsils, enlarged follicles at the root of the tongue and in the pharynx; (4) enlarged follicles in the intestines and in the stomach. These conditions are accompanied by acute dilation of the heart, with no changes in the muscle or endocardium; or occasionally there is evidence of a previous cardiac dilation marked by thickenings in the endocardium, but not recognized clinically. There is also very frequently found a hyperplastic condition of the arterial system." Brickner, to whom this personal communication was made, adds, "It would seem, therefore, that in anesthetizing patients of the lymphatic temperament or those in whom there is a previous heart-disease, or in whom lymphatic enlargement or adenoid vegetations exist, chloroform should be rigidly excluded." That is to say, he would exclude chloroform not simply in the adenoid operation, but in any other operation in a child having adenoids, enlarged tonsils, or other evidence of the lymphatic diathesis.

Children have more fear and struggle against taking an anesthetic to a greater extent than do adults. Hare³ says, "Persons who are robust and strong, and who struggle violently are in greater danger from chloroform than the sickly and weak because the struggles exhaust the vasomotor system, strain the heart, and dilate the veins."

Chloroform, fear and shock are all strong cardiac depressants, any one of the three capable of producing death through cardiac syncope, and when all three are combined as is so often the case in anesthetizing frightened children, the patient is necessarily in a critical condition at the very beginning of anesthesia and this probably accounts for the fact that most deaths take place during this period and is also the most potent reason for never operating under primary chloroform-anesthesia, since in addition to the other three depressants you add another powerful one—pain. This is especially true in the operation for adenoids because here the anesthesia must be withdrawn before the operation is begun and the patient begins to recover before the cutting, which is done in an unusually sensitive site, is begun.

The explanation of Wyeth's clinical experience and belief that chloroform is especially dangerous under 12 years of age is, I think, to be found mainly in the fact that it is in this period of life that the so-called lymphatic diathesis is most marked, a much larger percentage of children than of adults presenting this condition. This, the lymphatic diathesis, together with the greater fear which children have of an anesthetic, would account for the statement that chloroform is especially dangerous during early childhood.

With reference now to the question of anesthesia in the operation for the removal of adenoids in children; time and clinical experience have proved that remnants of partially removed adenoids do not tend to shrivel and atrophy as was believed to be the case a few years ago, but instead show a marked tendency to enlarge and cause a recurrence of symptoms. A true recurrence of a completely removed adenoid is a rare occurrence, though one that does take place, but not with the frequency of a recurrence of symptoms. It is exceedingly difficult under any form of operation to make sure that all the growth is removed, but it is all important to remove it all. Thoroughness of operation is the most important consideration, and we must choose a method which permits of thoroughness with the greatest degree

of safety to the child and the infliction upon him of the least amount of pain, shock and hemorrhage both during and following the operation. The practice, prevailing in this country and Great Britain, of doing this operation on children under 12 years of age, under general anesthesia, is, I think, correct. Why children should be deprived of the blessing of narcosis in an operation which, above most others, is excruciatingly painful, and because of the great amount of blood, most horrifying and full of shock to sensitive children, is to my mind inconceivable, unless it be that the anesthetic offers so much more danger in this than in other operations. We know that in Germany and Austria it is the custom to operate without an anesthetic, but the operation, I am satisfied, is not only done very imperfectly and coarsely but too often brutally.

Two years ago, in one of the largest ear-clinics of Berlin, I saw a surgeon in the course of half an hour, while operating on 2 children about 5 years of age, without anesthesia, break and leave in the nasopharynx of each of them, the blade of the Beckman curet, at least half an inch in length. On the other hand, one of the most complete adenoid operations which I ever witnessed, was done 10 years ago, without an anesthetic by a justly famous German otologist, now dead, and it was done thoroughly and, leaving out the question of anesthesia, properly. The child was placed in an arm-chair on a raised platform. Straps in front of the legs, the thighs, the chest, forearms and arms and finally the forehead, bound the child to the chair. The little patient was completely and perfectly immobilized, mechanically anesthetized if you like. The operator then inserted the mouth gag, used the tongue depressor, introduced several times his forceps, removing the greater part of the growth. With different-sized curets and frequent examinations with the finger, all remnants were carefully cleared out. When the operation was completed to the satisfaction of the surgeon, the child was convinced that it had been thoroughly done. I assert that this is the only way in which this operation can be made on a small child with the proper degree of thoroughness, without using a general anesthetic, and I am satisfied that if all who operate without anesthesia would be as thorough, they would have a death-rate from shock approaching if not equalling that of those who use chloroform or ether.

Local anesthesia under cocain in small children is impracticable for the very good reason that, as used ordinarily, it does not anesthetize the deeper parts where cutting is done, and if applied deeply with the hypodermic needle it would be attended with more fatalities than chloroform. In many children above 12 and 15, and in adults, the operation may be done under cocain, although almost never without a great amount of pain. Persons of this age commonly prefer, however, to stand the pain to taking a general anesthetic, and, if necessary, several operations at different times may be made. Cocain is not without danger. Sanford⁴ reported a death from cocain in this operation, and in the discussion of his case 2 others were reported. How many more have not been recorded is not known, but probably few attempt its use with a view to getting genuine anesthesia in small children.

Chloroform is probably the agent most commonly employed today in the removal of adenoids, though many operators are giving up its use and employing ether, ethyl bromid, or nitrous-oxid gas. Fatalities will occur with any of them or without any of them,

but we are bound to choose that one which is least likely to kill and at the same time permit of a proper operation.

Hinkel,⁵ in a strong paper in 1898, called attention to the high mortality from chloroform in this operation. He was able to find in this country the reports of but 3 fatal cases besides his own, while in England during the preceding 5 years, 14 cases were recorded. In both countries but 1 death from ether was reported. Since that time, *i. e.*, in the past 2 years, I have been unable to find the report of but 1 death due to chloroform or ether in the adenoid operation occurring in this or any other country. This was a death from chloroform reported by Wishart.⁶ Until I had the misfortune nearly 2 years ago to lose a patient, 10 years of age, the heart ceasing and breathing stopping a few minutes after the adenoids and tonsils were removed and chloroform taken away, I fancied chloroform was, all things considered, as safe as ether.

The sooner we recognize and realize the fact that statistics relating to the frequency of deaths from chloroform and ether, especially if based upon reports found in medical journals, are utterly valueless, the better off we shall be. Such statistics prove only that physicians will report anything rather than a fatality from any anesthetic. I myself know, or have learned through verbal communication, of more chloroform fatalities in the adenoid operation than are recorded in all American medical journals. So far as they go, however, statistics are overwhelmingly in favor of the view that chloroform has caused in the removal of adenoids many more deaths than ether, but, on the other hand, chloroform has undoubtedly been employed many times as often as ether, so that we cannot altogether rely on statistics until they approach a semblance of accuracy.

In the earlier part of this paper I believe I showed clearly that chloroform is proved to be theoretically, clinically, and by postmortem findings, the one drug from which in this operation we ought to expect a high mortality. It ought to have a higher mortality in this than in other operations if Kolisko's investigations mean anything, because the lymphatic diathesis is here nearly always present.

With ethyl bromid I have had no personal experience, being prejudiced against its use because of the fatalities in other operations which have been reported with such frequency that it is proved to be not the harmless agent we were at first led to hope it might be. When it kills, it kills quickly, very much like chloroform, being a powerful cardiac depressant; and in children who are of the lymphatic diathesis and depreciated in health and tone by mouth-breathing, I should feel that the objections that exist to the other would exist to this newer anesthetic.

Nitrous-oxid gas I have used a few times and have seen others operate for adenoids under it, but not to my satisfaction excepting in exceptional circumstances. The patient recovers too rapidly to permit of a thorough operation, especially if one does the double operation of adenoid and tonsils as I am in the habit of doing when, for in the majority of cases, all require removal. At the same time there are many cases in which nitrous-oxid gas would be sufficient, and it probably has a valuable place as a preliminary to etherization, though I have had no experience with it in this connection.

In the great majority of cases, all things considered, I believe ether is the best anesthetic for the adenoid

and tonsil operation, and in children with adenoids should be preferred to chloroform in other operations. I have employed it almost exclusively in this operation for the past 18 months and for 8 years prior to that very many times. I am well aware that in this operation ether presents many peculiar disadvantages. As compared with chloroform the patient is longer in becoming unconscious. There is more suffocation and struggling; retching and vomiting are always possible complications and of more importance in this than in most short operations on other parts of the body. The operation is unquestionably attended with more hemorrhage than when chloroform is used, and because of the retching there is more danger of the blood and stomach-contents being aspirated into the lungs, or of the blood and mucus being churned into a semisolid mass in the to-and-fro movements of respiration. The special dangers to be apprehended then from ether are those of asphyxia, and if death should occur it would come on comparatively slowly and not until a great deal, including tracheotomy, had been done to avert it, greatly differing from chloroform, which, when it causes death, does so without warning and almost instantaneously.

Primary ether-anesthesia in a short operation, not complicated by enlarged tonsils, is often sufficient and there is not the objection to it that exists to chloroform in the primary stage, ether being a cardiac stimulant which would offset the depressant effects upon the heart of shock and pain that might occur before the completion of the operation. In primary ether-anesthesia the patient does not recover from the anesthetic nearly so quickly as from chloroform in the same stage, so that one has a much longer time to operate. In longer operations, when both adenoids and tonsils are to be removed, the third stage may have to be reached, but expertness in operating will make the primary stage very often all that is necessary even when both adenoids and tonsils have to be removed. Expertness in operating should be cultivated because the shorter the operation compatible with thoroughness the better for the patient, since the danger of blood entering the trachea and asphyxiating him is lessened.

Objectors to ether emphasize the serious after-effects upon the lungs and kidneys. As these depend upon the quantity of ether inhaled, they are not to be feared in the operation under consideration because of the shortness of the operation and the comparatively little ether inhaled.

The disadvantages of ether can be largely overcome or much minimized. The art of giving ether has been much neglected in the teaching of medical schools, so that it is very commonly given, indifferently or badly. The saying that few can give chloroform safely, but that anyone can give ether, is one of those loose statements that cause positive injury in that it prevents men from appreciating the necessity of learning the art of etherization, and it is an art. For the past year I have had atropia, in doses of $\frac{1}{300}$ to $\frac{1}{100}$ grain, depending on the age of the child, given hypodermically prior to the ether. This so greatly diminishes the excessive secretion of mucus in the pharynx, trachea, and bronchi that it largely overcomes this objection to the employment of ether.

Rosenberg¹ and Laborde have advanced the theory that the nausea and vomiting resulting from the inhalation of ether and chloroform is produced by the irrita-

tion of these drugs upon the peripheral branches of the trigeminal nerves in the nasal mucous membrane. This irritation of the trigeminals causes a reflex stimulation of the pneumogastric and inhibitory respiratory center in the medulla, with the result that nausea and vomiting are produced and struggling and a feeling of suffocation excited. Now, if to the nasal mucous membrane cocain in a 5% to 10% solution is applied, the nerve endings are deadened and consequently less stimulation of the pneumogastric and inhibitory respiratory center follows. They advised that cocain be sprayed into the nose some minutes prior to beginning the anesthetic and in long operations reapplied by spraying. I have for six months or more made use of this suggestion in many of my operations when ether is given, never, however, spraying the cocain, but applying it by means of a cotton swab, dipped into a 5% or 10% solution, depending upon the age of the patient, and making use of but 2 or 3 drops, and then gently and rapidly inserting the small swab into each nasal cavity, and brushing over the mucous membrane. By this means a very small amount of cocain is used, never enough to excite any apprehension from the effects of the cocain. My experience with this has been so satisfactory that I mention it here, feeling that it does much to overcome, or at least diminish, one of the great objections and one of the chief dangers of ether, that is the vomiting and inhalation or aspiration into the lungs of stomach-contents or blood. Given a good anesthetist, atropia hypodermically and a very small amount of cocain applied to the nasal mucous membrane, ether is as readily administered as is chloroform and with but a fraction of the danger.

In conclusion:

1. Children with adenoids present two distinct conditions, viz., the lymphatic diathesis, manifesting itself locally in the nasopharynx, and the constitutional and local effects of mouth-breathing.
2. Mouth-breathing children and those of the lymphatic diathesis are in depressed general health and possess a lowered general tone of all the cells and organs of the body and so resist badly all heart depressants, such as chloroform, shock, fright, etc.
3. Instead of being regarded as comparatively safe in children, chloroform should be especially feared during the period of childhood because of the existence, among so many children, of the lymphatic diathesis; the presence of this diathesis is a positive contraindication to the use of chloroform in any operation.
4. The adenoid operation in children under 12 years of age without general anesthesia must as a rule be condemned because it does not permit of a thorough removal of the growths, is exceedingly painful, and because the pain and loss of blood produce such shock that irreparable injury is often done to the nervous system of a sensitive child.
5. For the removal of adenoids, ether properly administered is incomparably safer than chloroform and in skilled hands is but little more disagreeable to the patient, and in the great majority of cases is the best anesthetic in this operation.

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LARGE SCROTAL HERNIA; OPERATION FOR RADICAL CURE UNDER SPINAL ANESTHESIA WITH EUCAIN; ALUMINUM BRONZE WIRE USED FOR BURIED SUTURES; OPERATIVE RECOVERY; DEATH FROM EXHAUSTION AND URINARY SEPSIS.¹

By W. W. KEEN, M.D.,
of Philadelphia.

W. W., aged 51, was sent to the Jefferson Medical College Hospital by Dr. E. N. Moyer, Jr., of Greenville, N. C., September 13, 1900. He was a negro farmer. His mother and father and two brothers died of causes unknown. He has one brother and three sisters living, and in good health. There is nothing else in his family or personal history which would bear upon his disease. He denies syphilis, but admits gonorrhea in 1896.

In 1877, while working in a ditch, two small lumps suddenly appeared, one in each groin. He states that they were not painful. The one on the right side disappeared in 1880, while the one on the left continued steadily to grow in size. He also states that last summer the tumor on the right side reappeared, and then disappeared 2 weeks later.

On examination, a large, left-sided, scrotal hernia was discovered, the scrotum extending nearly to the knees. The ring is so large that four fingers can be inserted into it without trouble. The hernia can be reduced with moderate ease, but the abdomen, which, prior to the return of the hernia, is scaphoid, then becomes arched, very tense, and he has a great deal of discomfort, especially in breathing.

The urine was of specific gravity 1.012, acid, contained a small amount of albumin, no sugar; urea 13%; no casts were found, but there were numerous leukocytes, and a few red blood-corpuscles.

Operation October 3. The usual Bassini operation for the radical cure of the inguinal hernia was done under spinal anesthesia by eucain.

During the operation, Dr. Wiggins, one of the anesthetists, made the following observations on his pulse, respiration, and temperature. Unfortunately, I did not take the pulse, respiration, and temperature immediately before injecting the eucain; but the observation, 2 minutes later, was probably the same. The temperature was taken under the tongue.

Hour.	Pulse.	Temp.	Resp.	Remarks.
2.03				One ccm. 2% eucain injected between the third and fourth lumbar vertebrae.
2.05	80	96.3°	18	
2.10	120	96	—	Sensation persists in legs and feet, operation begun. An incision 15 cm. long was made over the upper scrotum and extended nearly to the anterior superior spine. No pain was felt and yet at the same time a prick of the needle at his ankle made him jerk his legs.
2.14				
2.15	120	96	—	
2.20	120	96.1		Prick in the ankle still felt; slight headache.
2.23				Felt a warm salt-solution poured over the bowel.
2.25	122	96.2	20	As the bowels were being restored to the abdomen, a process which took considerable time, he said that he felt a little pain, but did not manifest it by any motion.
2.30	126	95.2		Pulse weak.
2.35	98	96		Some nausea soon followed by vomiting. As the pulse was weak one-twentieth grain of strychnin was injected hypodermatically, and 2 drams of brandy given by the mouth.
2.40	68	95.2		
2.45	100	96.2		Nausea all gone, pulse very distinct, entirely comfortable, though he still felt a pin-prick in the ankle.
2.50	78	96		
2.55	82	96	30	Pulse fair.
2.58				Operation completed, patient comfortable.
3.00	92	96.4	22	General condition good; pupils were contracted during the operation.

From the surgical point of view it is to be noted in addition that the scrotum contained not only a large portion of small intestine, but about half of the colon, including the caput coli and the appendix. If, therefore, he had suffered from appendicitis, it would have been a left-sided scrotal attack. As the appendix was healthy and I had

enough on hand, I left it alone. The ordinary Bassini operation was then done with interrupted sutures instead of continuous, and I used aluminum bronze wire to unite the muscular layers, continuous silk for the external oblique and interrupted silkworm-gut for the skin.

His temperature rose on the day after the operation to 101°, but fell on the next day to 100°, and fluctuated between the normal and 100° until the twelfth day after the operation. At the end of a week the wound was entirely well and the stitches all removed. Two days after the operation, as he required to be catheterized, it was discovered that he had so tight a stricture that only a filiform bougie could be introduced. The stricture was dilated by Prof. Horwitz up to a No. 19. The urine, however, became increasingly turbid, though every possible antiseptic remedy was used, and on the twelfth day (October 15) the temperature rose to 101.6°, and thereafter fluctuated between that and a somewhat subnormal temperature. He rapidly lost ground, especially as to his strength, and succumbed to exhaustion on October 21, 18 days after the operation.

Remarks.—Spinal anesthesia has passed through two stages. An intermediate but necessary step between the two stages was a purely surgical one, irrespective of any reference to anesthesia. The first step was taken in 1885 when J. Leonard Corning of New York injected both in experiments on the lower animals and later in a number of cases in man, a solution of cocain, not into the spinal cord, but into the tissues just outside of it. In this way he showed that the veins carried the solution to the cord and produced an anesthesia below the point at which the injection was made.

It is not at all impossible that with increasing knowledge of the subject we may again revert to this method at points at which it is not permissible, nor, in some cases, physically possible to puncture the spinal canal.

The intermediate step was Quincke's lumbar puncture.

The second step was taken by Bier in 1899, without any knowledge, it would appear, of Corning's work. He based his experiments on Quincke's lumbar puncture (with which, of course, he was more than familiar, as both of them were in the Faculty at Kiel), and he conceived the idea of injecting the cocain directly into the spinal canal.

The method, therefore, it seems to me, should be called the "Corning-Bier method," provided any personal name is given to it. It would not be just to call it the "Bier method" alone, since the essential principle of the procedure was thought out by Corning, nor would it be just to call it the "Corning" method, since Bier's improvements are essential and also original.

The introduction of lumbar puncture led by a natural step to the method advocated by Bier. This is a difference of mechanical technic, and a very important one, but the credit of first proposing the basal principle of the whole procedure, namely,—cocainization of the spinal cord—belongs to Corning.

The site selected should be the lumbar region below the termination of the cord, so that no injury shall be done to the cord itself, especially its lumbar enlargement. In fact, it is a question in my mind whether the action of cocain or eucain, when applied directly to the delicate fibers of the central nervous system, may not prove occasionally, and, possibly, more than occasionally, deleterious. Until the nerves leave the dura mater through the intervertebral foramina, they are without any sheath, hence the anesthetic being injected into the cerebrospinal fluid attacks the nerves very much more readily than if they were protected by a fibrous sheath.

¹ Presented as a verbal communication to the College of Physicians, October 3, 1900.

The technic of lumbar puncture is a very simple one. The level at which the injection is made is the level of the crest of the ilium, *i. e.*, just above or below the fourth lumbar vertebra. As soon as the cerebrospinal fluid escapes, we know that the needle is in the canal, and the injection (1 ccm. of a 2% solution) may be made. It should not be made until this phenomenon, *viz.*, the escape of the cerebrospinal fluid, is observed. Anesthesia up to the level even of the diaphragm, and if larger doses are given, somewhat higher sets in in the course of 6 or 10 minutes, when the operation may be begun. In the case herewith reported it was certainly very curious that the patient did not feel the pain of the operation in the inguinal region, yet he jumped sharply when he received a needle-prick at the ankles. This observation was confirmed by two subsequent similar observations.

I used the method of spinal anesthesia in this particular case for two reasons; first, the man had bad kidneys from an old neglected, and, at the same time to me unknown, stricture of the urethra, followed by cystitis and albuminuria. It was my opinion that the spinal anesthesia would not have any deleterious influence on his kidneys, whereas chloroform or ether might do so. But the principal controlling motive in using it in this case was that fully half of the intestines had lost what the French picturesquely call their *droit de domicile* in the abdomen. They had been in the scrotum for 27 years. They could be restored to the abdominal cavity, but produced a considerable embarrassment of respiration, and if this restoration was accomplished during profound anesthesia, I was by no means sure but that there would be a possible danger even to life by the encroachment on the lungs through pushing up of the diaphragm as a consequence of suddenly doubling the contents of the abdomen. If the patient were conscious and the discomfort had become marked, then I should have re-established the hernia. Under general anesthesia, however, this embarrassment of the respiration might have readily gone on and escaped observation until too late.

I used eucaïn and was well satisfied with it, though Murphy and others who have used the method in this country before myself, have tested it and did not approve of it. Eucaïn is less toxic than cocain and can be boiled and, therefore, readily disinfected. Cocain cannot be brought above 80° C., without destructive effects, and in the hands of a careless person, the thorough method of Tuffier of a six-fold heating to this temperature may be very easily neglected and sepsis readily induced. In fact, the chief danger of the method, in my opinion, is the danger of an imperfect asepsis; hence I believe that it is a method not to be used by everybody, but only by competent, skilled, and careful surgeons. Nor do I believe it will ever replace chloroform or ether as a routine anesthetic. Its use will be only an occasional, possibly even a frequent one, in selected cases. I proposed using the method in a patient upon whom I did a total hysterectomy a few days later, for the reason that a year ago I had removed one of her kidneys, and I did not like to risk the effect of ether or chloroform on the single remaining kidney; but her fear of lying conscious for so long a time as the operation of hysterectomy would require, and the consequent strain upon her nervous system, caused her to prefer to run the risk of the kidney rather than the risk of the mental strain.

This is by no means one of the smallest objections to

the method. The ideal anesthetic, as I have several times pointed out in other papers, is not an anesthetic which abolishes sensation, leaving consciousness intact, but an anesthetic which will abolish consciousness and, therefore, sensation, *without the slightest danger to life*.

I had every reason to be perfectly satisfied with the action of the anesthetic in this case. The anesthesia lasted about an hour. At the end of a week the wound was entirely well, and everything seemed to be progressing favorably. The urinary symptoms, however, then came to the fore, since two days after the operation a very tight stricture was discovered, of the existence of which he had not previously complained. He died as a result of a neglected stricture, and not at all as a result of the spinal anesthesia.

ANESTHESIA BY COCAINIZATION OF THE SPINAL CORD.

By GEORGE G. HOPKINS, A.M., M.D.,
of Brooklyn, N. Y.

ANESTHESIA by cocainization of the spinal cord, or, as it has been called, medullary narcosis, while not the device of a French brain, has nevertheless derived its present general notoriety from the indefatigable and painstaking labors of Professor Tuffier, of Paris. The invention of a German was developed by a Frenchman, and carried to a perfection that has rendered this use of a dangerous and uncertain drug as safe as many other forms of anesthesia which are countenanced by the profession. Since Tuffier published his results in the use of this drug, it is claimed that the method originated in this country. Be that as it may, it was a dead method until brought to light again by Tuffier and perfected in the manner of administration. It has attained its world-wide notoriety owing to his operations during the session of the Thirteenth International Congress at Paris in the summer just past. At these sessions he courteously explained his method of procedure to every one of the visiting thousands who had been fortunate enough to learn when and where his clinics were to be held. To me it opened a new light in the world of anesthesia. The first application of this method is a surprise and a revelation. To be able to converse with a patient during the performance of a hysterectomy or other major operation, the patient all the while evincing not the slightest indication of pain (and even being unable to tell where the knife was being applied), was certainly a marvel, and was well worth crossing the Atlantic to see. Still, although this effect is plain, we have yet to determine the safety of the method, not only in its immediate results, but in its ultimate effect upon the nervous centers. The method so impressed me that I put it into operation in September last. I have collected in this brief time the reports of 225 cases. Of these 222 are reported as having been successful. In two there was depression and life was threatened.

In the first case of these last two with unsatisfactory results, anesthesia was produced, but depression and the poisonous effects of the drug were perceptible and active for six hours. In the second, a case in my own hands, all the symptoms of acute cocain poisoning were developed. Yet in this case I got a clear arachnoid fluid from the canula after introduction of the needle into the lumbar space, which proved conclusively that we

had punctured the sac. In this case I injected 30 minims of a fresh thoroughly sterilized 2% solution of cocain. (I never use a solution after it is 48 hours old.) At the end of 10 minutes there was not the slightest anesthetic effect produced on any of the nerves of sensation, but the patient was trembling from head to foot and the pulse was somewhat feeble.

Tuffier claimed that ether was not contraindicated when cocain did not produce the desired effect. I therefore proceeded to have ether administered. The patient quieted down under it and I began my operation. My anesthetist notified me that the patient was in a bad condition and the operation was suspended and we turned our attention to resuscitation. The effect of the ether soon passed off and the patient regained consciousness, but her general condition was very alarming, the pulse being 160, respiration feeble, the pupils dilated, and general tremulousness of the whole body, with considerable vomiting. At times the heart almost stopped. We injected three pints of saline solution in the brachial vein, and two quarts in the rectum, and administered strychnin and nitroglycerin hypodermically. With all these measures it was six hours before we were at all relieved about the immediate condition of this patient. Her pulse continued rapid and she had frequent "sinking turns" for the next ten days, with general depression and great tremulousness of the whole muscular system.

When medullary narcosis is complete and safe, as it usually is, there is a sense of relief in operating that one does not always feel with a patient under the influence of an anesthetic that produces cerebral anesthesia.

The sphincter ani is the last muscle to relax under ether or chloroform-anesthesia, yet I have stretched the anus with the patient under cocain, injected into the cord, without the least consciousness on her part of what was being done.

The process of anesthetization by this method is certainly very remarkable and has many useful applications, but we have yet to perfect the method and above all to find a reliable guard to its poisonous effect. There are hundreds of patients being anesthetized with cocain all over the world, but it is very difficult to get at the complete statistics, as we are all of us more ready to report our successes than our failures.

It is very important that every patient whose spine has been injected with cocain should be kept under observation for a year or more in order that the profession may ascertain whether interference with such a cavity as the spinal canal, carrying as it does the cord, the integrity of which is so important to the functions of life, shall result in disease of the nerve centers or of any special nerve function. Neuroses are very insidious, tardy in their approach, and do not make themselves felt until some time after the exciting cause has ceased to act.

These are considerations that we should bear in mind when making use of this wonderful method of producing anesthesia.

The use of this procedure must not be undertaken by any surgeon without the most careful sterilization of the fluid to be injected and the most scrupulous cleansing of the surface of the back all about the region where the injection is to be made. The slightest deviation from the most rigid antiseptic precautions, when invading such an important vital center as the spinal canal, is criminal.

Dr. Tuffier has devised a syringe for the injection of

the cocain into the spinal sac. The syringe is glass. The needle is platinum and beveled at the end so as to make a cutting point, for introduction through the skin. It is $3\frac{5}{8}$ inches in length and has bent in my hands when trying to pass it through a tough skin, which is the only tissue that offers any serious resistance if the needle is carried in a proper course.

I have had Tiemann & Co. make me a trocar and canula of the same size as that of Prof. Tuffier's, which is more convenient of introduction. When you have passed in between the laminae of the fourth and fifth lumbar vertebrae the trocar may be withdrawn, and if there is no return of the clear limpid spinal fluid, it should be reintroduced and passed further on, and the operation repeated until the sac is punctured. The trocar has the additional advantage of keeping the canula patulous, since not infrequently the operator may puncture a bloodvessel before reaching the spinal canal, and thus gets a flow of blood from the needle; this may clog it, and requires its removal and reintroduction.

SUBARACHNOIDEAN INJECTIONS OF COCAIN AS A SUBSTITUTE FOR GENERAL ANESTHESIA IN OPERATIONS BELOW THE DIAPHRAGM, WITH REPORT OF SEVEN CASES.

By EDWARD WALLACE LEE, M.D.,

of St. Louis, Mo., formerly of Omaha, Neb.

Member of American Medical Association, the Mississippi Valley Medical Association, etc.

THIS method of anesthesia, originally instituted by J. Leonard Corning, subsequently adopted by Oberst and Bier, and lately brought to greater perfection by Tuffier, of Paris, and Murphy, of Chicago, is a procedure which demands the most scrutinizing investigation on the part of every one interested in the subject of anesthesia. The results obtained, though not free from difficulties and objections, are sufficient to warrant and call for further investigation. From data collected there is reason to believe that 1800 operations have been performed without a single death having to be recorded, and with no unfavorable complications or symptoms, except such as can be avoided if proper precautions are used.

It is stated that in many cases after this procedure a rise of temperature has been noted without complications directly due to the operation. From my observations I am inclined to think that this is merely the post-operative rise of temperature which is usually observed. The unfavorable complications or symptoms which follow the subarachnoidean injection of cocain are nausea, headache, general nervousness, and expression of anxiety, and general prostration with a tendency to collapse. Another disagreeable feature is the pain and inconvenience complained of by the patient as a consequence of the puncture. This latter operation, I believe, as the result of my observations, can be overcome by first producing local anesthesia, with ethyl chlorid, of the spot to be punctured. A hypodermic injection of $\frac{1}{20}$ of a grain of strychnia, $\frac{1}{150}$ grain of atropin and $\frac{1}{6}$ of a grain of morphin will, to a great extent, mitigate the unfavorable symptoms alluded to.

The operative technic of the procedure, as followed by Tuffier and Murphy, is about as follows: The field of the injection is first thoroughly aseptized. Then, having located the iliac crests, one finds a line connect-

ing these two crests and passing through the fourth lumbar vertebra. Injecting beneath this line, the medullary canal is punctured. In order to locate this position exactly, the patient must be instructed to bend forward so as to produce as nearly as possible a right angle of the lumbar region with the pelvis. This bending forwards separates the lumbar vertebra, causing a separation of 1.5 cm., and allowing sufficient space for the injection. Make the injection with the right hand, and insert the needle to the right of the vertebral column, about 1 cm. from the line of the spinous process.

It is well to know what structures the needle passes through. They are the skin, subcutaneous cellular tissue, lumbar aponeurosis, muscles of the sacrolumbar region. Having gone through these, the needle penetrates the lamellar space, and at last enters the spinal canal. As soon as this point is reached, the needle meets with no resistance. At the same time there escapes from the needle, drop by drop, a clear, yellow fluid. This is a cerebral spinal fluid, and the cocaine-solution should never be injected until the surgeon has observed the escape of this fluid. After the fluid has escaped, the injection should be made. The injection which I have used is from 12 to 20 minims of a 2% sterilized solution, put up in hermetically sealed tubes by Truax, Green & Co., of Chicago, and I have made the injections with a syringe with a platinum needle also made by them. The solution is injected slowly. It takes from 4 to 12 minutes for the anesthetic condition to become apparent. It lasts from 20 minutes to an hour and a quarter.

Up to date the following cases represent my experience of producing local anesthesia by the method described:

CASE 1.—Girl, aged 9, with tuberculous necrosis of the tibia; 12 minims of a 2% solution were injected 8 minutes before operation was commenced. This lasted 30 minutes. There was no nausea, no headache, no symptoms of shock or collapse.

CASE 2 was one of internal hemorrhoids, in a male patient, 22 years old. The injection was 15 minims, 7 minutes before operation was commenced. Pain was felt on attempt being made to dilate the sphincter ani, but no pain on applying ligatures and removing hemorrhoids. The operation lasted 20 minutes with no unfavorable symptoms.

CASE 3 was one of epithelioma of the cervix, in a woman aged 38. Operation was begun in 6 minutes. The quantity used was 15 minims. The cervix amputated, the patient experiencing no pain or unfavorable symptoms.

CASE 4.—The operation was for hemorrhoids in a male, aged 39, a strong robust man. Amount of anesthetic was 20 minims, with 20 minutes of waiting before commencing operation. The sphincter was dilated readily without pain. There was slight nausea and headache, but no other unfavorable symptoms.

CASE 5.—The operation was in a male, aged 62, for suprapubic cystotomy for drainage from an enlarged prostate. Amount of anesthetic was 10 minims. The patient suffered slight nausea after operation as well as some pain during it. This case I consider extremely favorable, as any other form of anesthetic would, I believe, have been attended with severe symptoms. The time of operation was 10 minutes.

CASE 6.—The patient was a male, aged 32. The amount of solution, 12 minims. The time of operation, 30 minutes. I curetted the inguinal glands, with no unfavorable symptoms.

CASE 7.—The man was aged 28. The amount of anesthetic was 20 minims, the length of operation (Bassini) was 20 minutes; it was for uncomplicated inguinal hernia.

Preceding all these operations, a hypodermic injection of $\frac{1}{100}$ of a grain of strychnin, $\frac{1}{150}$ of a grain of

atropin, and $\frac{1}{6}$ of a grain of morphin was administered, and the spot to be punctured was anesthetized with ethyl chlorid, while a mustard plaster was applied to the epigastrium. This was the preliminary procedure in all but the first case, in which the amount of the hypodermic injection was decreased to one-half the quantity given in the other cases.

TWO CASES OF MEDULLARY NARCOSIS.

By W. L. RODMAN, M.D.,

of Philadelphia.

Professor of the Principles of Surgery and Clinical Surgery, Medico-Chirurgical College, and Professor of the Principles of Surgery in the Woman's Medical College.

As requested, I herewith report only two cases in which I have employed subarachnoid injection as a means of producing anesthesia. I was ready to use it several days before October 2, the date of my first injection, but in handling the syringe which I had had carefully prepared, it accidentally fell from my hand and broke. A delay of several days was necessitated in order that I might obtain a new syringe. My first case was operated on October 2, at 11 A.M.

CASE 1.—I. S., 45 years of age, colored, was born in England, and by occupation was a blacksmith. He presented himself to me with a large swelling at the inner side of the popliteal space of the right limb. An enlargement of the bursa lying beneath the tendon of the semitendinosus muscle was diagnosed. It had caused considerable pain to the patient who complained of it particularly during working hours. He had a mitral murmur and some kidney disease; on this account, and the further objection to giving ether or chloroform in the prone position, I decided to employ the treatment now used many times by Tuffier and others so successfully. He himself preferred that it should be used instead of ether or chloroform. At 11 o'clock precisely, the puncture was made in the fourth lumbar interspace, the needle passing easily into the spinal canal. Its passage was facilitated by having the patient fold his arms and bend forward just before the puncture was made. Then shortly there was an escape of a few drops of cephalo-rachidian fluid unmixed with blood. I was then positive that the needle was in the proper position, and 15 minims of a sterile 2% solution of cocaine were slowly injected. Nearly one minute was consumed in the injection, as Tuffier, Murphy, and others insist upon this precaution. At the time of the injection the pulse was 68, the respiration 24, the temperature 98.6. In four minutes there was some disposition to nausea. In six minutes nausea was marked and the patient became covered with profuse perspiration. Vomiting began a few seconds later, and was quite marked until it was checked very promptly by the administration of pellets of ice. In six minutes after the injection the patient complained of numbness of the feet and tingling in his limbs. There was then partial anesthesia and abolition of the reflexes. In 10 minutes the anesthesia was absolute, and the vomiting having ceased, the patient was placed in a prone position, an incision was made over the tumor and its enucleation begun. As I have said, the anesthesia was complete. He did not even feel the pressure of my knife in going through the skin. The diagnosis of an enlarged bursa was confirmed, and it was removed in 10 minutes. In 20 minutes from the time of incision the wound was closed and dressed. I particularly asked if pain was felt during the introduction of the stitches, and always was answered in the negative. Dr. Robert Brodie, who was present, kindly offered to note the condition of the pulse and respirations during the operation. From the notes furnished by Dr. Brodie I see that the pulse rose to 120. The respirations he did not count, or has failed to make record of them. The patient was a very nervous man and the increase in the pulse was, I think, partly due to that, but more to the accompanying nausea and vomiting. I should have said that the vomited matter was at first mucous, later on bilious in character.

I also see from the notes of Dr. Brodie that while the anesthesia was complete, the patient retained the sense of touch. He could feel that he was being touched by the needle though it gave him no pain whatsoever. The patient said "his legs felt like each had a brick on it."

I myself, saw the patient in the ward at 11 45. He was perfectly calm and tranquil; in no pain; the nausea had entirely passed away, the skin was no longer relaxed, his pulse was 60, temperature 98°, respirations 24. At 4 P.M. the pulse was still 60, respirations 32, temperature 99°. The patient passed a wakeful night, but had no return of any unpleasant symptoms. On the morning of October 3 his pulse was 86, respirations 22, temperature 99.4° in the mouth. The evening of the 3d the pulse was 72, respirations 32, temperature 99.2°. The temperature never rose higher than 99.4° at any time after the operation. The pulse was always about 70. The wound healed by first intention under one dressing; the stitches being removed on the tenth day. The man was discharged from the hospital on October 20. The puncture of the lumbar region was at once closed with iodoform collodion, and over this a pad of sterile gauze was placed. There was at no time during his stay in the hospital any pain or uneasiness in the region of the puncture. It would be a work of supererogation to detail how everything of an aseptic and antiseptic nature was done to make the instruments and operative field sterile.

CASE 2.—Although this patient, B—, gives his age as 57, he looks as if he were 10 years older. He has lead a life of dissipation, though latterly he has not been drinking. He has had a very extensive ulcer of the leg for many years. Some time since, an effort was made to give him ether, and he says that he took it so badly, it had to be abandoned, and that he was then advised never to take it again. He also has a weak heart, but, after a very careful examination, there was no positive evidence of organic disease. He had such a fear of ether, that when he was admitted to the ward he at once asked me not to give it to him, and that anesthesia should be produced in some other way. At my clinic, October 24, at 1 o'clock, cocain—15 minims of a 2% solution—was injected into the fourth lumbar interspace. The needle went readily into position, and in 2 seconds there was an escape of cephalo-rachidian fluid, drop by drop, so that every one present could see it. It was not even tinged with blood, but of a very pale, limpid appearance. The cocain was slowly injected, about 1 minute being consumed. Professor Anders was asked to be present and to note accurately the condition of the pulse, respirations, and any other points of interest. "I found the first effect was to increase the frequency of the pulse and respirations considerably, and that, while the pulse soon (at the end of 20 minutes) had returned to almost its normal rate, the respirations continued at 36 per minute after the lapse of 34 minutes. Epigastric oppression developed after 10 minutes, and vomiting after 15 minutes. The nausea and vomiting ceased in the course of 10 minutes. While nauseated, the mucous surfaces looked cyanotic, and the skin-surface pale and covered with sweat, though the latter symptom was not well marked."

In 10 minutes from the time of the injection I had the patient raise his own leg, hold it in position, and I at once made a circular sweep with an amputating knife at the junction of the upper and middle thirds of the leg. He did not feel this, or any other step of a regular Schede operation. On the contrary, he moved his leg up and down, from side to side, just as I requested. After this the extensive ulcer was curetted; both wounds were dressed, and after the dressings had been completed the patient asked me if I was ready to begin the operation. I may say he was blindfolded up to this time. He was much surprised to find the operation over and the stretcher ready to take him to the ward. After my clinic was over I went into the ward and found this patient congratulating himself that he was feeling so much better than the one just opposite him, who had taken ether. There was not the slightest nausea, his pulse was 96 and regular, his countenance was placid, and he expressed himself as "feeling better and freer from pain than he had done for 12 years." I was impressed, as I am sure all must have been who saw the demonstration, with the advantage of operating upon an extremity by this method. It is of great assistance to have the cooperation of a patient during the steps of an operation. I believe that a part of the perfect success attending this injection was due to the fact that I

kept the patient blindfolded. No one, I take it, can look at his own blood without misgivings and apprehensions. There was a minimum amount of nausea, nothing like the amount experienced by the first patient. At 7 P.M. his pulse was 88, temperature 98.2°, respirations 24. If all the patients behaved as well under this method of anesthesia as this one, I should be disposed to use it more frequently than I have hitherto thought probable. The cocain used in this case, like that in Case 1, was sterilized by heating it to 80° C., 4 or 5 times, and then sealing it up in glass ampullæ. This, I believe, insures sterility. Eucaïn may be boiled, and ideally might be preferred, yet in several instances reported, it has failed to produce anesthesia.

COCAIN ANESTHESIA OF THE SPINAL CORD.

By ERNEST LAPLACE, M.D.,

of Philadelphia.

Professor of Surgery in the Medico-Chirurgical College.

CASE 1.—M. T., aged 72, was admitted to the Medico-Chirurgical Hospital, October 10, with a large sloughing varicose ulcer of the right leg. A weak heart and albumin in the urine led to the use of cocain anesthesia of the cord to scrape the ulcer and denude the edges. On October 12 the patient had fasted since yesterday, the pulse 82, temperature 98.3. At 11.32 A.M., 2 cc. of 2% solution of sterilized cocain hydrochlorate was injected between the fourth and fifth lumbar vertebrae into the subarachnoid space. At 11.40 A.M. the pulse was 110 and patient grew pale and restless. At 11.43 the patient became cyanotic and had nausea; the pulse was 120. There was a spasm of the muscles of respiration. I administered nitroglycerin $\frac{1}{40}$ grain hypodermically. There was involuntary passage of feces; anesthesia existed from the feet to the knee. At 11.45 the patient breathed more easily, the pallor disappeared, the pulse was 100; anesthesia extended to the nipples. At 11.50 the operation of scraping the leg ulcer 3 inches in diameter, almost to the tibia, was done with a sharp curet. The ulcer was pared of its edges about $\frac{1}{4}$ inch around. Anesthesia was perfect. Patient sighed frequently. At 12.30 anesthesia persisted up to the diaphragm, the pulse was 64, temperature 97.5, respiration 22. At 12.45 sensation was restored from the diaphragm to the ileopectineal line. At 1 P.M. sensation was restored to the knees. At 1.05 P.M. sensation was entirely restored to the extremities. The patient was given some ice, as he felt nauseated and thirsty. Since then he has shown no symptoms of interest. There was little or no headache following in this case.

The symptoms of dyspnea came on with remarkable suddenness. I used 2 cc. of the 2% solution, which was perhaps a large dose for a man of 72 years. The dyspnea was, however, immediately remedied by the hypodermic injection of $\frac{1}{40}$ of a grain of nitroglycerin; 2 cc. of a 2% cocain solution is the dose now used generally by Tuffier, in whose clinic I watched a large number of cases this summer without a single accident.

Summary.—The patient was a male, 72 years of age. The injection was 2 cc. of a 2% solution; toxic symptoms began in 10 minutes; anesthesia of the extremities followed in 11 minutes; anesthesia extended to the nipples in 13 minutes; anesthesia began to disappear about the abdomen in 73 minutes with total disappearance in the extremities in 83 minutes from the moment of injection. The total duration of anesthesia from the nipples to the pubis was from 60 to 65 minutes. The total duration of anesthesia from the pubis to the toes was from 65 to 72 minutes.

In future cases, I intend to give a preliminary injection of $\frac{1}{60}$ gr. of nitroglycerin, to counteract the depressing effect of the cocain.

CASE 2.—As an anomaly that may be met with in the attempt to practise the cocain anesthesia of the cord, the following case is deemed worthy of being recorded:—M. H., aged 42 years, suffered with cholelithiasis. There was a history of syphilis. The operation was cholecystostomy. On October 6, cocain anesthesia was attempted by injection into the spine. The fifth lumbar interspace was selected, according to Tuffier's directions. The needle used was the same as that used by

Tuffier in his numerous cases, and which I brought from Paris with me and was used on the previous case reported here. No difficulty was found in introducing the needle in the proper place, but no cerebrospinal fluid exuded. It was introduced several times in this space, then in the fourth, then in the third, without allowing cerebrospinal fluid to exude. All care was taken to exhaust the air with the syringe after the plan used by Tuffier, and to ensure that the needle was not plugged, but to no avail. Thus 12 punctures were made; the needle surely reached the cord and touched it, for after the point fell on the vertebra on one side, and by moving slightly it penetrated the intervertebral space, it was pushed deeper and deeper and on reaching the cord, gave, as the patient expressed it, "a terrible electric shock" to her extremities. Nothing but blood would be drawn into the syringe when the needle was gradually withdrawn after suction had been made. It was then judged improper to inject cocain solution,—for the absence of cerebrospinal fluid would have limited the action of the cocain locally instead of anesthetizing the course of the spinal cord. Possibly there was an obliteration of the sac in that region due to chronic syphilitic infection. The patient was subsequently operated upon under ether.

SUBARACHNOID INJECTIONS OF COCAIN AS A SUBSTITUTE FOR GENERAL ANESTHESIA.

By A. M. PHELPS, M.D., A.M.,
of New York.

President of the New York State Medical Society; President of the American Orthopedic Association for 1894; Member of the New York Academy of Medicine and the New York County Medical Society; Visiting Surgeon to the New York City Hospital; Professor of Orthopedic Surgery and Visiting Orthopedic Surgeon to the New York Post-Graduate School and Hospital; Professor of Surgery in the Medical Department of the University of Vermont from 1889 to 1899.

It is not my purpose to enter into a long discussion of the history of cocain anesthesia, particularly of the spinal cord. Its history has been carefully compiled by Dr. John B. Murphy, of Chicago, and published in the *Chicago Clinic*, and by others equally as eminent.

Undoubtedly, Corning is the original discoverer of this peculiar method of cocain anesthesia. Bier published the method of Corning in the German journals years after the last paper of Corning was published in the *New York Medical Record*. The description of the method by Bier so closely resembles that of Corning, that one is inclined to believe that Bier may have received his inspiration from Corning's articles. Corning, in the *New York Medical Journal* for October 31, 1885, published the result of his work, and demonstrated that anesthesia could be produced in this way, and suggested the treatment in the *New York Medical Record* of March 17, 1888, page 291, "Painful diseases of the spinal cord could be treated in this manner."

Professor Tuffier is probably the one man in the whole world who has done more to introduce this method of spinal anesthesia than any other. In Murphy's excellent article he parallels the writing of Tuffier with that of Corning, and any one who reads these parallels must become thoroughly satisfied that Tuffier received his inspiration from Corning, even to the invention of the needle. All that he says had been said years before, and was well known to the profession of America. I quote these parallels from Dr. Murphy's article to show the profession how unconscious cerebration may be responsible for very great injustices:

CORNING says:

The ordinary needles with very oblique bevel possess one disadvantage. This disadvantage is that the orifice

TUFFIER says:

The needle must be sufficiently long to penetrate easily the space between the skin and the subarachnoid

of the needle may only be partially in the subarachnoid space, while the other portion of the needle may be without the sheath, so that the injection may flow partially into the subarachnoid space and partly into the surrounding tissues, so that this needle with a short bevel is what he prefers.

In a few of my trials I failed to obtain a complete and perfect analgesia. This failure was due to the fact that I employed an old solution of cocain. The solution was not absolutely limpid. In these cases, by following the unsuccessful injection with a fresh solution the desired result was obtained.

In my first case, to make the injection, I used to place the patient in the left lateral position, the thighs flexed on the abdomen and the body bent forward. It has seemed to me that in this position the spinal column is subject to deviations, is subject to flexures, which make lumbar puncture difficult.

The patient being forewarned, when the needle penetrates the tissues, he does not jerk, and by not jerking he does not deviate the needle from its proper course.

When the same posture is used the needle must be inserted perpendicularly, from backward forward.

If this dose be exceeded, epigastric anxiety is more marked, vomiting is more frequent, but, nevertheless, even with a large dose, I have never observed any alarming symptoms.

It was my good fortune to be in Germany during the years 1882, 1883, and 1884, during the time of the first cocain craze. The profession was running riot. All manner of devices for its application were being presented to societies, and in the various scientific bodies that I happened to attend I heard from the lips of the most eminent surgeons advice in regard to the use of cocain, which, if it had been followed, must necessarily have resulted in a very large percentage of mortality. For instance, one made the statement that a 10% solution of cocain was a perfectly safe one to use with a hypodermic needle under all circumstances, and that even stronger solutions could be used; that these solutions in dentistry rendered the parts anesthetic, and that he thought the hypodermic use of them should be urged upon the profession.

That week there was a death in the dentist's chair from the injection of a 10% solution of cocain into the

space. This interval varies in length, according to the muscular development and obesity of the patient. The needle must be of platinum. It must be easily sterilized and be 9 cm long. . . . It must be solid, so as not to bend when it comes in contact with the vertebral column. Its end must have a short bevel.

I employ a 2% solution of cocain. This solution must be sterile and recent; old solutions must be discarded. This is important.

The patient is in the sitting posture, both arms carried forward. The field of injection is thoroughly aseptized. Locate the iliac crests. An imaginary line connecting these two crests passes through the fourth lumbar vertebra. By injecting beneath the line you penetrate the medullary canal. As soon as you have located with the left index finger this spinous process, tell the patient to bend forward so as to make a big bag.

Then it is always wise to tell the patient, "I am going to stick you with a needle; you will feel some pain, but do not move."

I insert the needle to the right of the vertebral column, about 1 cm. from the line of the spinous process.

The injection is made slowly; it should be completed in one minute. The dose injected should not exceed 15 mgm. of cocain.

gums of a patient. A warning note was given to the profession soon after, and such strong solutions were rapidly abandoned.

I returned to this country in 1884, and found that cocain anesthesia was running the same riot that it had already run in Germany, and in other countries of Europe. That winter, in the New York State Society, a prominent member advocated the use of strong solutions of cocain in surgical practice, and mentioned in particular its application to dental surgery. Others were writing on the subject. Our journals were filled with advice in regard to this particular method and its administration. I remember well that Corning's work appeared a little later, and but few as yet had raised a voice against the dangers of cocain anesthesia by hypodermic injections.

Within twelve months from that time I witnessed the death of two patients from cocain anesthesia. One occurred later in my own practice, and I had only used in that case a 2% solution of cocain hypodermically, 30 minims, and the patient died within two hours of the administration. The other two cases to which I refer occurred in the practice of dentists who had injected a 10% solution into the gums.

The object of injecting the stronger solutions, it was urged, was for the purpose of producing prolonged and profound anesthesia. I found that a 0.5 of 1% solution of cocain, when injected hypodermically into the extremity or in the abdominal parietes, produced a prolonged and profound anesthesia, and amputations, and even extensive laparotomies for obstruction of the intestine I have repeatedly performed with these weak solutions used as already stated, where general anesthesia was impossible. In 1886 I did an extensive laparotomy for Dr. Brewer, of Madrid, St. Lawrence County, N. Y., now of Utica, using a 0.25 of 1% solution of cocain, injecting a large quantity of the fluid in the abdominal parietes. The operation was performed without pain. And then again I have seen the most alarming symptoms arise from the injection of even this weak solution in large quantities, say two drams. Since the death of the patient to which I allude, I have been very careful about using any solution stronger than 1% and only a very few minims of that. Now it is urged upon the profession that they inject into the spinal canal a 4% solution of cocain. Bier uses 2%. Others have injected as strong as 8% or 10%, and we are asked to substitute this method of anesthesia, for operations below the diaphragm, for the anesthesia of ether or chloroform. There is one death in 75,000 administrations of ether, and one in 11,000 administrations of chloroform. If it can be shown to the profession that this form of local cocain anesthesia can be administered more than 75,000 times without death, then we would be justified in abandoning the general anesthesia of ether for that of cocain. Until this is proved, I admonish the profession to advance with great caution. In my whole life I have seen only one death from ether anesthesia, and one from chloroform. Within two years, I saw three deaths from cocain administered hypodermically. I place this upon record, and I believe that it corresponds closely, if not exactly, with that of the observations of many surgeons of wide experience. Tuffier reports 5 deaths in 125 injections into the spinal canal. One of the cases died almost immediately after the injection. I can understand and appreciate the great value of the discovery of Corning. I can understand that in a

certain class of cases in which chloroform or ether anesthesia would result in death on account of organic disease of heart, lungs or kidneys, or some other peculiarity of the patient, this form of anesthesia would be proper and justifiable, but until it is proved that the mortality is less than one in 75,000, the profession should not accept it as a substitute for general anesthesia in any operation. I am of the opinion that if a 4% solution, or even a 2% solution, is injected in the spinal canal of 1,000 individuals taken indiscriminately, that the mortality will be greater than 1%. Every surgeon has patients upon whom he has operated under local cocain anesthesia administered hypodermically, and he knows that there is an idiosyncrasy in some of those patients against cocain, and if profound anesthesia was produced by the injection of a dose of cocain to one individual which would be a small dose in another individual, death would certainly be the result in certain cases if a full dose were given.

Then, in conclusion, let us hasten slowly. Let these experiments be done by men of mature judgment, of long experience, of clear heads. And so long as the profession has an anesthetic in ether that has so low a rate of mortality, or in nitrous-oxid gas in which the mortality is almost nothing, they will be loath to substitute for it a method of anesthesia which must necessarily have a great mortality.

I was fortunate enough to listen to the discussions upon this subject while in Paris last summer, and I must say that I was very favorably impressed with what I saw until I learned that two deaths had already occurred there during the summer from this method of administration of cocain. And now that we are occasionally hearing the mutterings of dissent in the profession on this side of the water, and hearing of a death or extremely alarming symptoms, let the profession take warning.

A NOTE ON THE USE OF NITROUS OXID AND ETHER AS AN ANESTHETIC.

By THOS. R. BROWN, M.D., AND HOWARD
A. KELLY, M.D.,

of Baltimore, Md.

THE choice of an anesthetic is of such paramount importance, not only to the patient who is operated on, but also to the surgeon who performs the operation, that anything which promises to render anesthetization easier for the patient, either by shortening the period of time required to render him or her unconscious, or to lessen the unpleasant symptoms preceding or following anesthesia, should be given careful consideration by all who constantly make use of anesthetics.

Most anesthetizers have agreed that while chloroform is the more pleasant, ether is much the more safe anesthetic. On the other hand, the irritation of the throat during the long period of time required for complete anesthesia by this latter chemical, as well as the almost invariable and often protracted nausea following its use, render it, although the more safe, much the more unpleasant anesthetic of the two. In recent years, other anesthetics or mixtures of anesthetics have been used, but the only method which has gained a wide enough vogue to be seriously considered is the combination of nitrous-oxid gas either with ether or with chloroform, preferably, of course, with the former, due to its greater safety. Stimulated by the favorable reports of the

method in the hands of numerous of the London and New York anesthetizers, and feeling sure from a personal study of the method as given by Dr. Goldan and several other of our New York confrères, who most courteously demonstrated it to us in a number of cases both in private houses and in hospital, we have, for the past eight months, been using the combined nitrous oxid and ether method in practically all the cases operated upon at Dr. Kelly's private hospital. These cases number between 200 and 300, and comprise all varieties of abdominal, perineal, vesical, renal, ureteral, and rectal operations.

The instrument used was that devised by Dr. Bennett, of New York, and made by Tiemann. This instrument in our hands has proved absolutely satisfactory, and too much credit cannot be given to Dr. Bennett for so successfully solving the problem of controlling definitely the supplies of nitrous-oxid gas, ether vapor, and air. Dr. Goldan's instrument also promises to be extremely satisfactory.

The advantages of the method have been so distinct to the patient, the surgeon, and the anesthetizer, that we feel that the use of the older methods, that is, the administration of ether alone or of chloroform alone, or of the A. C. E. mixture, should give place to this newer and more effective mode. To the patient, these advantages are: The rapidity with which he or she becomes anesthetized, the freedom from all unpleasant symptoms during the process of anesthetization, and the distinct diminution in the after-symptoms, especially as regards nausea; to the surgeon the great advantage is the shortening of time; to the anesthetizer the advantages are obviously a combination of the two preceding. To these advantages must be added the much diminished quantity of ether employed and the much shorter time required by the patient to recover entirely from the effects of the anesthetic.

The possible disadvantages of the method are the cyanosis during the administration of the nitrous oxid, the increased secretion of mucus, and any untoward postoperative effects which may be shown to be directly referable to the use of the nitrous oxid.

As to the cyanosis, while in a certain proportion of cases a slight degree of cyanosis seems inevitable, yet without doubt this largely depends upon the skill of the anesthetizer and his experience, so that we have found that the presence or the degree of cyanosis is distinctly diminishing with our constantly increasing experience with the method; in many cases it is wanting altogether, in others it is present in only a very slight degree, while in a very few,—and these last are constantly diminishing in number,—is the cyanosis marked. Of course, only constant experience in the mixing of the nitrous oxid and the air will bring about the ideal anesthetization, but we feel sure that many of the symptoms of asphyxia may be eliminated in the hands of those who are constantly using the method.

As to the secretion of mucus, while this seemed to be increased when we first made use of the method in a certain number of cases, now with our increasing experience this secretion is constantly decreasing, so that it is now certainly no more and, we think, distinctly less than after the use of ether alone.

As regards postoperative symptoms, the nausea is undoubtedly markedly lessened, in some cases absent altogether; in a certain very small proportion of cases, a slight headache is found, while in two of our cases, both very hysterical young women, and in each of whom

nephropexy was performed, quite marked mental symptoms were present for several days. We mention these cases, not because we regard them as being probably due to the method, but simply to make the record more complete.

Perhaps it will be of interest to give in detail a few of the salient points in the use of this method in the last 25 or 30 cases in which it has been used by us.

To render this easier of reference it will perhaps be better to tabulate the results.

In this table the time was taken by half minutes, and for that reason errors of less than 15 seconds may have occurred, while for the same reason slight errors may have been present in the quantity of ether used, as this was estimated by quarter cans (25 grams). This was done simply to facilitate matters, although if we had known that the result would subsequently be published even these slight errors would have been eradicated. They are, however, so slight as to make no real difference in the value of the table.

It will be seen, from a consideration of the table, that loss of consciousness from the use of the nitrous-oxid gas was produced in from 1 to 2½ minutes, and complete anesthesia in from 2 to 5 minutes. The cases, however, were all women and therefore easier to anesthetize than the average of general hospital patients.

OPERATION.	PULSE BEFORE ANESTHESIA.	PULSE AFTER ANESTHESIA.	TIME REQ'D FOR LOSS OF CONSCIOUSNESS WITH NITROUS OXID.	TIME REQUIRED FOR COMPLETE ANESTHESIA.	TIME PATIENT WAS UNDER ANESTHESIA.	AMOUNT OF NITROUS OXID USED.	AMOUNT OF ETHER USED IN GRAMS.
Hysterect. left ovary.	82	90	Min. 2½	5	H. M. 2 20	1 bag.	250
L. nephropexy.	84	80	1	2	58	1 "	130
Hyst., myo., salp., ooph., cholelithotomy.	112	90	1	2½	1 40	1 "	250
Probing of sinus.	100	90	2	3	20	1 "	50
Susp. resection r. v. o.	136	80	2	4	1 25	1 "	175
Plastic operation on urethra, resection r. v. o.	96	80	2	4	1 6	1 "	200
Resection r. v. o.	128	80	1	2½	55	1 "	200
Exam.	108	100	1	2½	20	1 "	75
D. and C., r. v. o. susp.	112	90	1½	4	1 25	1 "	225
D. and C.	116	90	1¾	"	20	1 "	75
D. and C.	120	90	2	4½	20	1 "	75
Double salp., D. and C.	78	94	2	4	2 10	1 "	200
Exam.	120	100	1	3	20	1 "	75
Cystectomy (ovary).	104	84	1	2½	2 8	1 "	150
D. and C.	82	78	2	4	48	1 "	200
Operation for breast cancer, D. and C., susp.	100	100	1½	3	3 40	1 "	300
Closure of ur. vag. fist.	128	80	1	3	45	1 "	150
Removal of breast tumor.	76	80	1¾	3	1 4	1 "	200
D. and C.	100	100	1	2	20	1 "	75
D. and C.	. . .	. . .	1½	3	40	1 "	100
D. and C.	78	78	2	3	15	1 "	100
Hyst. my.	104	92	1	2½	1 25	1 "	200

In all of these cases, except the nephropexy, the nausea after operation was slight, and in some cases practically absent altogether.

The Bennett instrument was employed only to induce complete anesthesia, after which an ordinary cone was

used during the rest of the procedure; this was done because of the heaviness and rather unwieldy character of the Bennett instrument, and therefore to prevent the anesthetist's hands from becoming weary.

In our experience the method has seemed to possess so many advantages to the patient, operator, and anesthetist, and so few disadvantages to any of these, that it has become an indispensable part of our operative technic; and that it has proved satisfactory can be easily judged from the fact that after over 200 anesthetizations with the method, our faith in it, instead of diminishing with experience, has increased a hundred-fold.

ETHYL BROMID IN OBSTETRICS AND GYNECOLOGY.

By WILMER KRUSEN, M.D.,

of Philadelphia.

Instructor in Gynecology, Jefferson Medical College; Assistant Gynecologist, St. Joseph's Hospital.

ETHYL BROMID was first proposed as an anesthetic by Dr. Thomas Nunnally in 1846, but was not brought earnestly before the profession until 1875-77, when attention was called to it by Rabuteau in France, and Laurence Turnbull in the United States. In 1879, Turnbull reported the results observed in his first 21 cases; and in 1885, E. E. Montgomery, in a contribution to the *American Journal of Obstetrics*, recommended it as a valuable anesthetic in labor. This, and Montgomery's later contributions to literature have probably done more than those of any other American writer, to promote the employment of this anesthetic in obstetrics and gynecology. A brief description of this drug is important. Ethyl bromid (monobromethane), C_2H_5Br , occurs as a clear, colorless, or almost colorless, volatile, not readily inflammable liquid, of an agreeable odor. Its specific gravity is 1.45 to 1.50; boiling point, between 36° and 40° C. It must not be confounded with ethylene bromid (dibrom-ethane), a substance possessing very dangerous properties. It is very important that a chemically pure article should be procured, better in the original hermetically sealed tubes which contain one ounce avoirdupois. It should always be kept in a cool, dark place, since it is exceedingly prone to decompose under the conjoint action of air and light. A brownish, poorly volatile article is not fit for use.

As an anesthetic to be used in cases in which a brief period of anesthesia is desired, ethyl bromid is the ideal drug. For the past seven years I have used it extensively in obstetric and gynecologic practice and I have yet to witness the first accident or alarming symptom. As in the use of all anesthetics, great caution must be exercised. A careful study of those instances in which accidents have occurred shows that, although the drug is not devoid of danger, there is no sufficient reason for believing, that with an absolutely pure article, the danger is any greater than with chloroform and very little greater than with ether. In obstetrics its use is indicated when an agent is desired to relieve the severity of labor-pains; but it is not indicated when prolonged manipulations, such as version or high application of forceps, etc., are required. The ideal obstetric anesthetic is one which acts rapidly, surely and safely, with effect of short duration, and which can be carried in a small compass. Ethyl bromid fulfils these requirements. A characteristic that has been many times noted is the tendency for sensibility to pain to be lost before consciousness is entirely destroyed, thus enabling

the patient to cooperate with the obstetrician without intense suffering. If properly administered it does not arrest the pains, produce complete unconsciousness, or cause uterine inertia or relaxation.

The method of using it in obstetric practice is as follows: During the latter part of the second stage of labor, as the suffering becomes severe, the drug is administered with the advent of each pain, by holding over the face of the patient a napkin on which a few drops have been poured. This is removed as the pain subsides. There is no choking or suffocation and an entire absence of any stage of excitement. After one inhalation the patient usually begs for the drug with the advent of each recurring pain. As small quantities are administered the sensation of pain will be blunted while intelligence is retained, and the patient will be perfectly subject to control and ready to render or withhold voluntary efforts as desired. Any obstetrician that once gives this anesthetic a fair trial will find that it affords great satisfaction and relief to his patient and increases materially her belief in his humanity and desire to mitigate all unnecessary suffering.

In gynecologic practice it has long been recognized that in order to make a thorough bimanual examination on nervous patients with rigid or tender abdominal walls, an anesthetic must be used. To administer ether or chloroform for this purpose means a considerable expenditure of time, and often exceedingly unpleasant sequels. They cannot be used in the physician's office with any hope of getting rid of the patient in a reasonable length of time. Nitrous oxid, although rapid in action, requires too expensive and complicated an outfit to make it a satisfactory agent, while ethyl bromid, being exceedingly evanescent in action and rarely productive of vomiting and other sequels, seems to be peculiarly useful and well adapted for this purpose.

This drug has also been advantageously employed in the treatment of the following conditions: Dilation of the urethra or anus; evacuation of vulvovaginal abscesses; for vaginal section when there is an accumulation of pus, blood or exudate in the pelvis; abscess or sinuses of the anterior abdominal wall; incision of mammary abscesses, and many of the minor gynecologic operations which can be quickly performed. The method of administering it for this class of cases is to pour one dram of the drug on a cone-shaped towel or napkin which is applied over the mouth and nose with the edges held snugly to the face so that no air may enter. Narcosis usually comes on in from 30 to 40 seconds and lasts from 2 to 3 minutes; when unconsciousness is complete the mask should be removed, and it is rarely necessary for it to be reapplied. Although if care is exercised a second quantity may be administered, yet it is better, if more prolonged unconsciousness is desired, to continue the narcosis thus induced with chloroform or ether. In fact, in excitable or insane patients, I have found that ethyl bromid will materially shorten the excitement of the initial stage and render the use of the other agents much less difficult.

As in the administration of all anesthetics, a thorough examination of the patient should be made. Dangerous lesions of the heart, kidneys, or lungs are strong contraindications. There are certain patients, especially alcoholics, who greatly resist this drug, and under no circumstances should the attempt to force the anesthesia be made.

The employment of a pure drug must be insisted upon. This is emphasized by the statement of Gilles, who claims that there is no fatal result on record in which it has been proved that a chemically pure bromid has been administered. This writer also states that there were given in Germany 20,000 administrations without a single fatal result. The narcosis is only in rare instances accompanied by general muscular relaxation; indeed, frequently the general muscular tonus is increased; but even during the state of muscular rigidity analgesia is perfect and the surgeon may proceed with the operation without the patient experiencing pain. The pupillary and corneal reflexes are usually preserved and the eyes are sometimes wide open and crossed from muscular contraction. The pulse and respiration should be vigilantly watched and the drug withdrawn if danger threatens.

The advantages which may be confidently claimed for this agent are: 1. The short space of time required to render the patient unconscious. 2. The small quantity of the drug employed and the rapidity of its elimination from the system. 3. The simplicity of its administration, no cumbersome apparatus or inhaler being required. 4. The comparative freedom from unpleasant sequels, such as headache, nausea, vomiting, etc., which characterize the other more popular anesthetics.

Gangrene Complicating Typhoid Fever.—P. W. Howle (*Virginia Medical Semimonthly*, Vol. IV, p. 641). A boy of 19 was taken with typhoid fever which was of usual severity for the first 2 weeks. At the end of the second week he developed pneumonia of the lower lobe of the right lung. On the eighteenth day his heart began to weaken and on the twenty-fourth day he developed a state of almost collapse with tympanites and severe abdominal pain. The abdominal distention subsided by the use of turpentine stupes and he began to improve. The fever had been treated by frequent cold baths. On the twenty-seventh day he complained of pain in his feet, which continued to increase. Purple spots appeared and by the thirty-fifth day both feet were gangrenous as high as the ankles. Symptoms of sepsis developed and death resulted the following day. [M.B.T.]

The Relation of the Specific Gravity of the Blood to its Percentage of Hemoglobin.—Busch, Kerr, and Filsinger (*Buffalo Medical Journal*, October, 1900) have tested the specific gravity of the blood by Hammerschlag's method of floating a drop of blood in a mixture of benzol and chloroform in 80 cases. Thirty-one of the patients were in a state of health, 17 were suffering from simple anemia, and 8 from pernicious anemia; the remainder from various other diseases. Blood-counts were also made and the results compared with the estimations by the Fleischl and the Gowers' methods. They conclude that in most cases the specific gravity and the percentage of hemoglobin of the blood present such a close resemblance to one another that the latter may be predicted from the former with sufficient accuracy for clinical purposes. They believe that both Fleischl's and Gowers' instruments are liable to an error of 10% or more. There is liable to be very slight if any error in the determination of the specific gravity by Hammerschlag's method. [M.B.T.]

Thyroid Extract in Obesity, Scleroderma Psoriasis and Fibromyoma of the Uterus.—Weber (*New York Postgraduate*, September, 1900) says that he has made extensive trial of thyroid extract in cases of obesity. Loss of weight and fat was quite noticeable, but lasted no longer than the exhibition of the remedy; patients gained rapidly and returned to their former weight soon after its discontinuance. In one case of scleroderma in which the stiffness of the skin involved the arm, parts of the shoulder and breast, recovery followed after the patient had taken some 500 or 600 5-grain tablets to the exclusion of all other medicines and without any unpleasant by-effects. The thyroid extract

was given in a case of well-defined fibromyoma of the uterus and this treatment was followed by gradual diminution of the tumor until at the expiration of 4 months the fibromyoma was reported reduced to a minimum and practically cured. In a fourth case, psoriasis which had existed for about 10 years, the extract, in doses of 5 grains 3 times daily during a period of 2 months, resulted in a permanent cure. The local remedy used was a 25% aristol salve. [G.C.H.]

Rheumatic Diseases of the Ear.—Uchermann (*Transactions International Otological Congress*, August, 1899) sums up this condition as follows: 1. Rheumatic fever is sometimes preceded and sometimes accompanied by otalgia, alone or together with an acute swelling and infection of the drum and adjacent bony meatus, followed by a serous or a serofibrinous secretion in the middle ear; or it may be complicated during its progress with affections of the middle ear and the internal ear. 2. There are other more independent rheumatic ear diseases in persons of a rheumatic constitution or tendency. The ear affection appears as an otitis media "serosa" with yellowish half-fibrinous exudations, or as a sclerosis of progressive character. 3. The characteristics of the different forms are: in the acute forms, painfulness, excessive injections, and the tendency to the formation of infiltrations and exudations; in the chronic forms, the tendency to the formation of fibrinous exudations and the tendency to affect the bony capsule, with strong tinnitus, and slow progression. Salicylic acid seems to influence the acute forms but not the chronic forms, the latter being influenced more by general rheumatic treatment. [A.B.C.]

Periosteal Tendon-Grafting.—Lange (*Ztsch. f. Orth. Chir.*, 8 Band, p. 30) reports 2 cases in which one or more muscles of the lower leg had become paralyzed as the result of poliomyelitis, which were benefited by transplanting tendons of sound muscles. In the first case the extensor communis digitorum and the peronei muscles were affected so that during the course of a few years marked clubfoot had developed. At the operation the deformity was corrected and the tibialis anticus tendon split from its insertion on the internal cuneiform up to the beginning of its muscular portion. The external half of the tendon was detached from its insertion and pushed under the skin of the back of the foot and the end sutured to the periosteum of the cuboid bone. The result in this case after 10 months was most satisfactory, the patient being able to walk with his foot in the proper position, half way between pronation and supination. In the second case the gastrocnemius was the muscle affected and the remedy was found in the peroneus longus, whose tendon was fastened to the periosteum on the median side of the os calcis. Two and one-half years after the result was still excellent, the patient being able to flex and extend his foot at will. [G.B.W.]

Coxa Vara.—Schanz (*Zeitschrift f. Chirurgie*, Band 8, p. 130) speaks of the recognition of coxa vara in its earlier stages. He says that objective symptoms will be found only when the condition has progressed beyond the incipient stage, and deformity has already developed. About the earliest of the objective symptoms are adduction and outward rotation, though the latter does not appear in all cases. When present, subjective symptoms give far better hold for the making of an early diagnosis, but just as in scoliosis and flatfoot there are numbers of patients who will have well-marked deformities without any apparent discomfort, so here the subjective symptoms are often lacking. When the subjective symptoms do appear, the first that will be noticed is a discomfort, which develops by walking or standing, but which rapidly disappears on lying down. This discomfort at first is simply a sense of tire, but later develops into unbearable pain. In many cases, pressure over the hip will elicit tenderness and occasionally considerable muscular fixation of the joint will be noticed. When the sense of tire has passed over into pain, the patient will begin to limp, and the degree of limping corresponds to the amount of pain and also to the amount of deformity which may be present. From these symptoms it will be seen that in the early stages of coxa vara it is most difficult to differentiate this disease from tuberculous coxitis, and the only sign which is at all distinguishing is the bilateral character, which is almost always present in coxa vara, and is seldom present in the tuberculous diseases of the hip. [G.B.W.]

The Philadelphia Medical Journal

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GEORGE M. GOULD, M.D., *Editor*

Collaborators

JOSEPH SAILER, M.D.
D. L. EDSALL, M.D.
D. RIESMAN, M.D.
J. M. SWAN, M.D.

M. B. TINKER, M.D.
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A. A. STEVENS, M.D.

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Rabies in the District of Columbia.—Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, has performed a public service by issuing a pamphlet in which he subjects to trenchant criticism the course pursued by a Washington newspaper in reference to the recent prevalence of hydrophobia in that city. This newspaper has made itself the mouthpiece of those mischievous agitators who periodically seek to mislead the public on this important subject. They deal, of course, in nothing but the old stock arguments against the reality of this disease, and they absurdly seek to champion the cause of the much-abused dog who offends against public safety by occasionally contracting rabies. These people are harassed by the thought that the dog is controled in the city of Washington by certain salutary laws, and in order to defend his so-called rights they ignore the cardinal principles of common hygiene and common sense. It can hardly be expected of us here to rehash all their stale arguments, but we take time and space to applaud Dr. Salmon's energy in seeking for some of the individuals who not long ago were offering a prize in money for any person who would produce a case of real hydrophobia in a dog. As Dr. Salmon has the facilities occasionally in his laboratory to gratify their demands, and offers to devote the prize-money to philanthropic purposes, it is to be hoped that these benevolent skeptics will now produce their money. It is too much to expect sensational newspapers not to take the wrong side of any question whatever, and we are not surprised that this Washington journal declined to publish Dr. Salmon's very able article.

High Mortality in Puerto Rico.—As the United States has only recently acquired Puerto Rico, the health reports from that island have special interest for American physicians. Dr. W. W. King, of the U. S. Marine-Hospital Service, has just submitted a report on the high mortality at Ponce, and throws much light on the hygienic state of the island. The lower classes of Ponce are a mixture of Spanish, Indian, and negro blood, the latter predominant. Generations of under-feeding, ignorance, and immorality, amidst unsanitary conditions, have produced a race short-statured, flat-chested, and physically weak. These people are shiftless, improvident, and doless, and become, in the face of disease or misfortune, passive and apathetic. The city of Ponce is unhygienic. It is situated on a low-

lying plain, with inadequate surface drainage, and its population is supplied with water from a river that is polluted from numerous sources. The soil is a loose, porous gravel, and is, of course, thoroughly infected.

Among the immediate causes of the recent high mortality was the hurricane. The banana and plantain crops, the mainstay of the people, were almost entirely destroyed. The people ate whatever they could get, and this consisted largely in sugar cane, unripe fruit, and decayed fish, and this unwholesome food was rendered worse by bad cooking.

Dr. King submits a mortality-table which shows that the fatal diseases may be grouped largely under three main headings: anemia, dysentery, and digestive disorders. The unwholesome diet is evidently largely responsible for the disorders of digestion, and these disorders are not specially interesting. Malaria seems, however, to be an occasional cause.

The most important subject in Dr. King's paper is the role played by *Ankylostomum duodenale*. Cases of a pernicious type of anemia seem to be common in Puerto Rico, and the evidence goes to support the belief that they are largely due to this parasite. Malaria may also be a causative factor, but Dr. King thinks it is not universally so, because malaria prevails most along the coast, while this pernicious anemia prevails extensively in the high interior. A wide difference of opinion exists as to the relative part played by the ankylostomum and simple starvation. Both occur frequently in the same patient, and the microscope is not often used to detect the ova of the parasite. The anemia is extreme, but Dr. King does not report the results of any blood-examinations. This is to be regretted. The mucous membranes become colorless, and a marked edema occurs. The cases thus present some resemblance to beriberi, but Dr. King thinks that true beriberi has never yet been observed in Puerto Rico. The cases can hardly be called truly pernicious, because a generous diet often effects a cure; exceptions occur in cases infested with the ankylostomum. Tetanus is also unusually prevalent in the island. Dr. King's paper may serve to remind us that in Puerto Rico we have acquired an interesting field for scientific research.

Careful Scrutiny of Death-Certificates an Element of Accuracy in Statistics.—We have several times insisted on the value of common sense in the

interpretation of statistics. An added factor of great import in the collection of statistics is the necessity for accuracy of information as to the cause and circumstances of death. In the matter of deaths by violence, many physicians and coroners are in the habit of giving the cause of death as "accident," without specifying whether it was a fall from a window, a railway crush, or a runaway; in some instances the lapse of time after the accident has not been taken into account and a surgical operation, such as amputation or exploratory celiotomy, is not mentioned. So, where death has resulted from the action of a poison, the agent employed is often not stated, nor is there information as to whether it was taken accidentally or purposely or administered with homicidal intent. Suicide is often given as the cause of death, without any specification of the means employed. The necessity for careful scrutiny and perhaps subsequent inquiry by the health-officer is often even greater in reference to death from certain diseases. Old age is perhaps the most abused term as a cause of death; many a man or woman of sixty is said to have died of old age, when in reality the cause of death was an enlarged prostate, a cerebral hemorrhage, or a cancer of the gastrointestinal tract. To the nonprofessional health-officer or clerk the incongruity of a death from "old age" at sixty would hardly suggest itself; the thoughtless physician is also apt to overlook the unlikelihood of such an occurrence, but if trained to careful thought and investigation in sanitary matters he will at once feel the necessity for further inquiry when such a certificate is brought to his attention. Some years ago it was not uncommon to see "heart-failure" given as a cause of death; the indefiniteness of this term was often used by sorrowing friends and obliging physicians for the purpose of securing transportation of corpses that had died of diphtheria, scarlet fever, or even smallpox; in addition it was extended by inaccurate observers to cover many other acute or chronic diseases. There are few health-officers that are today willing to accept a certificate of death from "heart-failure" without some further explanation. Anemia, marasmus, exhaustion, debility, and kindred terms too often serve to conceal cancer, or gastroenteritis, or tuberculosis, just as "inflammation of the bowels" or "obstruction" in times past obscured—with perfect honesty and ignorance it is true—deaths from appendicitis, salpingitis, and ruptured ectopic pregnancies. Even a careful and painstaking sanitarian will often make mistakes in accepting causes of death that are incorrectly given or inadequately expressed. How much greater is the chance of error when uneducated persons act as health-officers or as clerks in charge of vital statistics! Too much care cannot be exercised in connection with every record of a death and every practitioner can contribute his small mite to better existing conditions, make public records more accurate, and enhance the value of mortuary statistics.

An Experimental Study in Oxaluria.—Dr. Helen Baldwin, in the *Journal of Experimental Medicine*, No. 1, 1900, has contributed a paper on this interesting subject. After the discovery of calcium oxalate crystals in the urine by Donné, in 1838, there resulted a description of a so called oxalic-acid diathesis, which was thought by certain clinicians, notably Prout, Golding-Bird, and Begbie, to be of much importance. This view has been quite largely adopted, although Smoler, Neubauer and others showed that calcium oxalate was present in solution in the urine of a large percentage of persons, but that the salt was not always precipitated. This led Dunlop to the view that all the oxalic acid excreted in the urine had been ingested with the food, and that it was never formed in the animal organism by metabolism.

Dr. Baldwin has sought to test the accuracy of Dunlop's view; also to study the influence of the ingestion of oxalic acid in foods, and the physiologic action of soluble oxalates in producing symptoms of the "oxalic-acid diathesis." Oxalic acid and its salts are widely distributed in foods. Some of those which are rich in oxalic acid are spinach, rhubarb, figs, cocoa, tea, coffee, potatoes, beets, beans, plums, tomatoes and strawberries, while those which contain little are peas, asparagus, cucumbers, mushrooms, onions, lettuce, rice, cauliflower, pears, peaches, grapes, melons, and wheat and oats flour.

Dr. Baldwin's observations show that in health the amount of oxalic acid excreted varies with the amount ingested in the food. This tends to prove the accuracy of Dunlop's view. Opinions have differed on this subject. Men fed on a milk diet, and dogs fed on a meat diet alone, do not excrete oxalic acid as a rule, although exceptions have been claimed to occur. Baldwin's experiments were made on dogs and are related in detail. The author's conclusions are as follows: Oxalate of calcium may be present in the urine in solution, and conclusions based merely on the presence or absence of crystals are untrustworthy. Quantitative tests are required, and these demand the utmost care. An ordinary mixed diet always contains oxalic acid or its salts, and some of these may be absorbed and reappear unchanged in the urine. The amount excreted fluctuates with the amount ingested, and varies from a few milligrams to two or three centigrams, being usually below 10 milligrams. In health no oxalic acid is formed in the body by metabolism. In certain disturbances of health, characterized by the absence of free hydrochloric acid in the gastric juice, oxalic acid is formed in the organism. This formation is connected with fermentative activity in the alimentary canal. The prolonged ingestion by dogs of large quantities of glucose leads to a state of oxaluria, which is associated with a mucous gastritis. Finally, the symptoms attributed to an oxalic-acid diathesis are not due to the presence in the system of soluble oxalates, but probably

depend on other products of fermentation and putrefaction. It is thus seen that Dr. Baldwin's experiments tend to place the theory of an "oxalic-acid diathesis" in the list of pathologic myths.

The Condition and Future of the Negro.—The question of the best ways of dealing with the negroes of the South has occupied the attention of very many able educators and philanthropists during the past thirty-five years and the solution of the problem is yet far from evident. Recently several observers have been of the opinion that this question would settle itself eventually by the disappearance of the negro, giving as their reason the great mortality of this race from tuberculosis and syphilis and the lessened fecundity because of the prevalence of venereal disease. Professor N. S. Shaler, Dean of the Scientific School of Harvard University (*Popular Science Monthly*, Vol. 57, p. 29), has recently published some interesting observations and comes to somewhat different conclusions as to the future of the blacks. He finds that with the exception of mulattos the negroes of the South are in excellent physical condition. They are of even, serviceable size, dwarfs and giants being much rarer than among whites. The percentage of deformed persons in the country districts is very low and the physical condition is on an average, he believes, better than that of the peasant classes of any of the European nations. This, he thinks, is due to the rigid selection effected when the Africans were chosen for slaves and the care of their bodies during the time of slavery. He considers them a chosen people, well fitted to carry the burden of life. They are laborious and productive up to, if not beyond, the average of man. Attention is called to the fact that no considerable effort has been made by students of anthropology to determine the varieties which exist in our negro population. Professor Shaler believes that they may be roughly classified in several groups. The mulattos, he believes, are comparatively rare, making up not more than one-tenth, possibly as small as a twentieth, of the whole negro population. The pure Africans of the Guinea type make up about one-half of the southern negroes. The men are usually burly fellows, with massive trunks, low noses and protruding jaws. The Zulu type is much rarer. These blacks have in common with the Guinea type the burly form, deep black hue and general form of the features, but their foreheads are fuller and the expression of their faces quite different. They give the impression of vigorous, brave, alert men. A third group has an admixture of Semitic, probably Arabian, blood. They are tall and lean, with slender necks, high heads, thin features and a better form, the nose sometimes approaching the aquiline. Their skin is often as black as that of the Guinea negro, but is a deader black, possibly due to some difference in the cutaneous glands. The mulattos are of feeble vital-

ity, rarely surviving middle age, and Professor Shaler believes that the mixed stock is likely to disappear. The moral and intellectual condition of the negroes, he thinks, is improving. The belief that negroes are sexually dangerous animals is probably founded on imperfect basis of judgment. An offence which would pass unnoticed in a white is widely published because of mob injustice to the negro. On the whole, he considers the negro less dangerous than whites of a like social grade.

Those interested in the negroes will be glad to see such hopeful views expressed regarding them. As Professor Shaler is a Southerner by birth and has lived a considerable part of his life in the South, his opinions are not expressed without a fair basis of observation from which to draw his conclusions. No doubt a more careful study of the races from an anthropologic standpoint would be of much value in helping to solve the questions of the best method of dealing with a class that makes up a considerable part of the population of our country.

An Example of Newspaper Shamelessness.—We recently alluded to the fact that some physicians may secretly encourage newspaper reports of clinics, interviews, etc., and also that despite all attempts to prevent such things others may be made the victims of newspaper immorality. It is easy to blame the physician when one sees a disgusting report in the papers of his work, but if we wish to be just we should first learn the facts in the individual instance, and upon evidence judge whether the disgrace should not be charged to the characterless reporter or to the editors who permit and encourage his work. We reproduce, for instance, some correspondence which has lately been placed in our hands. Reports of one of Dr. Keen's clinics had been published in several Philadelphia newspapers, without even his knowledge. He at once wrote to the editors of the principal newspapers of the city the following letter :

1729 CHESTNUT ST., PHILADELPHIA, October 12, 1900.

To the Editor of the ———, Philadelphia.

MY DEAR SIR : I have been very much annoyed lately at the publication in several of the Philadelphia newspapers of some reports of my clinics at the Jefferson Medical College Hospital without my consent or even my knowledge that they were to be published.

I am perfectly defenceless against reporters, because my clinics are open to any one who comes in under the guise of a medical student, no ticket being required. May I, therefore, ask you kindly to give instructions that no such reports shall be published hereafter? It exposes me necessarily to the suspicion of being privy to them and invites very disagreeable and unfavorable comment from those who do not know me so well as your reporters. The latter are well aware of my aversion to interviews on such matters.

Yours very truly,

W. W. KEEN.

Not for publication.

Silence, or satisfactory answers, was the result in all but one instance :

OFFICE OF THE —,

PHILADELPHIA, October 15, 1900.

Dr. W. W. Keen, 1729 Chestnut St.

MY DEAR SIR: Replying to your favor of the 12th, I would state that whenever we have a piece of news referring to a clinic conducted by you we will be pleased to send a good reporter to see you, in order that you may have the opportunity to make any statement regarding same you deem proper. It is our desire to print the news accurately, and in order to guard against errors we will be glad to let you know about stories of the character referred to, before publication. I am sure you appreciate the necessity we are under of printing all the news of the day, but in so doing we are anxious to give courteous consideration to persons directly interested and we are as earnest as are you in the desire that the facts shall be accurately and properly presented.

Yours very truly,

— — —, City Editor.

To this strabismic letter Dr. Keen replied as follows:

October 16, 1900.

— — —, Esq., City Editor, —, Philadelphia.

DEAR SIR: I have your courteous letter of October 15. You do not understand, I think, my objections. The fact that your statement of my clinic was quite erroneous is a very minor consideration. What I object to is *any* statement on such professional matters. I always prefer to publish these in medical journals to the profession. Once that they are there, then, of course, newspapers can get accurate statements and make any comment they wish, but when it is reported, as my clinic was in the — some two weeks ago, in a sensational manner, it subjects me, and very properly, to extremely unpleasant criticism. I must beg you, therefore, to excuse me from any publication whatever of this character, and, if you would respect my wishes in this matter not to have any such publication, I would be under many obligations to you.

Yours very truly,

W. W. KEEN.

This frank and explicit letter was followed five days later by the most astonishingly outrageous report in the —, in the yellowest of yellow journalistic style—a rehash of the old material. The insult was made more heinous by flaring pictures of a clinic which was not that of Dr. Keen, and in which an impossible syringe was being thrust in an impossible manner in *the middle of the dorsal region* of the spine of a newspaper skeleton. With commendable pertinacity Dr. Keen now appealed to the proprietor of this paper which wished so ardently for accurate news, and whose editor had spontaneously promised to consult with the surgeon prior to publication:

1729 CHESTNUT ST., PHILADELPHIA, October 26, 1900.

— — —, Esq., Proprietor of the —.

MY DEAR SIR: I beg leave with this to hand you copies of a correspondence I have recently had with the City Editor of the —. May I also ask you to look on page 4 of the — for Sunday morning, October 21?

I beg to appeal to you as a gentleman for protection against what seems to me to be a flagrant abuse of power on the part of the — in utter disregard of my repeated request. This article was published five days after my last letter, when there had been ample time to think over the matter and, therefore, to act deliberately. This I regard as an invasion of my rights as a private individual.

The blunders and inaccuracies of the article are so glaring that any doctor must simply laugh the article to scorn. Its

being a second publication on the same subject in spite of my polite, but urgent and repeated request, is most obnoxious.

I stated in my first letter to your Editor that, owing to circumstances, I was defenceless against reporters. Am I defenceless against editors as well?

Yours very truly,

W. W. KEEN.

Following this came an answer from the City Editor, explaining that "future stories with which your name is connected will not appear until you have had the opportunity to make such statement in reference thereto as you may desire." To this Dr. Keen again replied: "You *still* misunderstand my objection. I do not wish any 'future stories with which my name is connected' to appear in the —."

And there, for the present, the matter rests—at least until the profession shall organize itself and make its wishes respected.

Palatable Prescribing.—Herman B. Sheffield (*New York Postgraduate*, October, 1900) cites a series of adjuvants that may be used to make medicines palatable to children, giving a number of prescriptions. He gives these rules: Never prescribe medicines unless thoroughly convinced of their absolute indication. If a *placebo* is desirable, employ a palatable adjuvant. Never prescribe a preparation requiring a large dose when a small quantity of another proves equally efficient, *i. e.*, use an alcoholic extract or an alkaloid instead of a sirup, tincture or infusion. Never prescribe an offensive, nauseous mixture when a palatable one will be equally serviceable. Never prescribe more than 2 ill-tasting drugs in one adjuvant, and do not combine several adjuvants which are likely to disguise each other. [G.C.C.H.]

Postoperative Treatment.—Hunter Robb (*Cleveland Medical Gazette*, October, 1900) reports a series of 114 consecutive unselected abdominal sections without a death, with comments on treatment. For restlessness in the 24 hours following operation, he recommends an enema of 2 ounces milk of asafetida, sometimes combined with a half dram of potassium bromid, to be repeated in an hour if necessary. Morphine should never be used unless all other measures have failed. Its use as a routine measure is strongly condemned. Occasionally great restlessness and pain require 15 or 20 drops of the deodorized tincture of opium, added to the nutritive enemas; exceptionally morphine is necessary. In the 114 cases, 18 patients received tincture of opium by the rectum, 13 cases hypodermic injection of morphine. Strychnine sulfate is given as a routine after every abdominal operation. The patient is given $\frac{1}{30}$ grain by the rectum before she leaves the operating room. When she arrives in the ward she is given $\frac{1}{30}$ grain strychnine hypodermically with $\frac{1}{15}$ grain atropine sulfate every half hour for 2 doses. After this she is given $\frac{1}{30}$ to $\frac{1}{60}$ grain strychnine hypodermically every 3 to 6 hours, according to the character of the pulse. In marked shock the $\frac{1}{30}$ to $\frac{1}{60}$ grain of strychnine is administered hypodermically every half hour in doses until 6 to 8 doses have been employed. If the pulse on the morning after the operation is under 110, as a rule no strychnine is given, but if the pulse is over 120, $\frac{1}{40}$ to $\frac{1}{30}$ grain strychnine is given hypodermically every 3 or 4 hours until the pulse-rate is reduced. In 113 cases strychnine was given hypodermically, the total amount in the whole number of cases being 32.8 grains, the average amount being $\frac{3}{10}$ of a grain. It is only rarely that he uses nitroglycerin. For the tympanites which sometimes occur after abdominal operations, the tincture of capsicum—1 to 2 drops in a teaspoonful of hot water every half hour for 3 or 4 doses—or 15 to 20 drops of the essence of peppermint—will often prove effectual. A turpentine stupe, or a mustard leaf over the epigastrium, is a useful adjuvant. If these measures do not relieve the tympanitic condition, a rectal tube is introduced high up into the rectum, and allowed to remain for from 15 minutes to half an hour longer, or until the tympany disappears. [G.C.C.H.]

Correspondence.

A PROTEST AGAINST PROCRASTINATION IN APPENDICITIS CASES.

By EVAN O'NEILL KANE, M.D.,

of Kane, Pa.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

FAR too much is said in favor of the so-called abortive treatment of appendicitis and of conservatism in operating. The general practitioner is only too willing to procrastinate and "leave nature to take its course," "the trouble to come to a head," "work its way out," or "scatter." This "conservative" course is most agreeable to patients and friends and leaves the onerous responsibility of urging operation to the surgeon. Granted that the physician who treats with medicine instead of the knife is more popular than the "cutter," that he who is prompt to advise operative interference is feared by the timid, and that nine out of ten of these appendix cases get well anyhow, or somehow, by what is practically a let-alone treatment,—yet is this a safe or honest course? If it is true that nine out of ten do recover (I doubt it), who can with certainty determine which! If sometimes a circumscribed abscess does open into the bowel, or externally, and recovery follows, does this excuse our jeopardizing our patient's life?

Perhaps the physician would not be so likely to delay if he always saw all his more serious appendicitis cases through to the end, or if he were permitted to have autopsies in all fatal cases of peritonitis, obscure typhoid, or obstruction of the bowels. If he were always present when operation is performed, as it so commonly is, as a last resort, or if he could see the postmortem condition, he would be more prompt to urge operation.

I have become disgusted with continually having to be called upon to operate either too late, or when it required every effort of the operator, assistants, and nurses to bring the patient through, when the abdominal cavity was filled with pus, general peritonitis had set in, with sinuses burrowing in every direction, and when the appendix had become gangrenous, or had completely rotted away.

In my opinion delay is never safe and seldom advisable. I have known pus to form outside the appendix 32 hours after the onset of the first symptoms or gangrene to develop almost or quite as rapidly.

Appendectomy can be performed without danger if proper asepsis is procured, and is a simple procedure in the hands of an experienced operator, and hernia should not follow if the incision is properly made. There can be no practical harm done by operating as soon as a diagnosis is made, and to delay in any case of acute appendicitis over 24 hours is hazardous. Even if the physician is in doubt as to the correctness of his diagnosis, a mere exploratory incision will clear up the question and may save the patient from a dangerous operation later. I have only three times operated for a suspected appendicitis in which I have been mistaken in the diagnosis. No harm was done, the diagnosis was cleared up, and in one of these instances there were gallstones removed and in another serious adhesions broken up that would otherwise have been overlooked.

I wish that every tender appendix might be removed as soon as detected. Not only would dangerous consequences be averted, but many a case of obscure dyspeptic trouble would be permanently cured.

The stereotyped clinical picture of appendicitis requires cramps, vomiting, fever, constipation, tenseness of the abdominal muscles, with tenderness over the appendix, and pain after eating. In fact, however, we rarely find all these symptoms present in any one case, and indeed none may have been so pronounced as to have attracted the attention of the patient or his friends, and yet grave mischief may have been going on. Thus in a case for which I was indebted to Drs. Mollhaupt and Wilson, of St. Mary's, the patient had not complained of any discomfort, appearing well up to the time of the actual rupture of a large typhlitic abscess. On operating we found the entire abdominal cavity flooded with pus. The appendix had sloughed completely off, so that an eight-inch-long stomach-worm had wandered out through the opening and lay, still alive, up almost under the liver. The patient, a phlegmatic German, had worked every day without complaint until, on receiving a slight blow upon the abdomen, the abscess burst and flooded the peritoneal cavity. Women often suppose their appendiceal trouble to be some menstrual irregularity.

Recently, in such a case actual obstruction threatened from the lymph exudate about the appendix and the adhesions of former attacks, before the patient could be led to believe that her trouble was not entirely due to a uterine displacement. It would, therefore, be losing valuable time to wait for the development of a complete array of manifestations before advising operation. Each hour would add to the gravity of the existing symptoms and to the chances of fresh complications, while the increasing exhaustion of the patient would also detract hourly from the probability of standing operative shock.

Finally, too much censure cannot be given the common practice of drugging these sufferers into a calm insensibility of pain. The fool's paradise into which an opiate throws these patients, not only hides from the physician the full gravity of the case and obscures the diagnosis; it paralyzes the intestines, allowing them to become hopelessly overdistended with gas and caked together by adhesions. At the same time the patient and his friends, being satisfied by the ease and rest thus afforded, refuse to permit operation until the cold sweat of collapse or stercoraceous vomiting tells of impending dissolution.

NOTES ON MASSAGE IN JAPAN.

By H. C. WOOD, M.D.,

of Philadelphia.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

As every one knows, massage has been largely practised in Japan almost from time immemorial. In a recent tour through that country one of the most interesting and curious sights that I witnessed was a little "tot" between five and seven years old, with the utmost seriousness and earnestness, and with a marked degree of skill, standing and massaging the age-stiffened trapezius and other muscles of the shoulders of an old grandfather or grandmother squatting before him. The common belief that the blind have in Japan a monopoly of the practice of massage appears to be only so far correct that probably 90% of the practitioners of the art are blind persons, who wander about the streets blowing a peculiar double whistle whose two weird notes may be heard at almost any hour of the day or night, pleading for work and sustenance.

In order to make out the differences between the art as prac-

tised by the Japanese and the Europeans, I ordered a masseur in Yokohama, Tokyo, Kioto, Mianoshita, Nikko, and one or two other places. As was perchance naturally to be expected, Yokohama being simply a foreign excrescence on the Japanese body corporate, the masseur in that city was not blind and seemed simply to be badly trained in the European methods. I could not make out any difference between him and a second-class American masseur.

Kioto is the center of all that pertains to Japanese religion, art or customs, having been the capital of old Japan, and being still the culture-capital of the country. The masseur I saw there possessed great skill; his methods, however, did not differ very greatly from those to which we are accustomed except in one motion, which seems to me the most efficient I had ever had practised on me, for the purpose of deep kneading between groups of muscles or of muscles situated much below the surface. The motions were so quick that in the absence of ability to talk with the practitioner it was a little difficult to perceive exactly how they were made, but I finally made out that the procedure might be termed a rolling use of the different joints of the fingers; first, the tip; then the distal intraphalangeal articulation; then the next joint; and then the knuckles applied one after another with great rapidity and force; the maximum of the force sometimes being reached with the second intraphalangeal joint, the knuckles only pressing lightly; in other cases the knuckles themselves giving the main blow. It was apparently when it was desired to penetrate deeply between two closely placed muscle-groups that the maximum force was applied with the second intraphalangeal joint.

One or two somewhat curious differences between the Japanese customs and our own were noticeable. In one of the places a woman, old, blind and ugly, was sent to do the work. The length of the seances seemed to be arranged according to the desire or the ability of the person operated upon to pay, and were remarkably cheap even when the foreign price was demanded. Thus, asking the charge at one of the hotels, before engaging an operator, I was told "Thirty sen," *i. e.* fifteen cents an hour. On expressing surprise, saying I had always paid forty sen, the man replied, "Oh, yes, that is the price for the foreigner." Not considering myself seriously cheated I paid the forty sen, or twenty cents for an hour of labor sufficiently hard to make the operator sweat freely.

A CASE OF PERNICIOUS HEMORRHAGIC MALARIA, WITH MALARIAL HEMOGLOBINURIA.

By NORMAN P. GEIS, M.D.,

of Brooklyn, N. Y.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

MRS. M., 31 years of age, had never been ill since childhood, except at the time of childbirth. Although all her five labors were difficult she had no bad after-effects, and never had any chills nor fever during these confinements. On August 29, 1900, she had an attack of vomiting with some slight fever, but this passed off the next day. On August 31, at 4 A.M., she was taken with a chill that lasted one hour and required numerous blankets to keep her warm. Fever then came on, and gradually increased till about 12 M., when it reached its highest level of 105.4° F. Sweating began shortly after this, and continued until about 5 P.M., when the temperature fell to normal. On September 1, at 4 A.M., the same symptoms developed as on the 31st, and continued in the same way, except that the fever reached 106° F. I was called

in at 3 P.M. this day, and at that time the temperature was 103° F. and declining, reaching normal about 5 P.M. I ordered 10 grains of quinin sulfate at 10 P.M., and 5 grains at 11 P.M. that night. As she complained of severe pains in her legs and arms I ordered 10 grains of sodium salicylate every fourth hour. The pulse was good, regular, and 80 to the minute. On September 2, at 4 A.M., a chill began, followed by fever and sweating as before, except that her temperature reached 106.4° F. I made an examination of her abdominal organs. The abdomen was not distended, although the intestines contained a fairly large amount of gas. The spleen was enormously enlarged and tender, and the lower border was fully 5 inches below the last rib. The liver extended down 3 inches below the ribs and was only slightly tender. I could not feel the kidneys owing to the enlarged spleen and liver. The bladder was empty. No signs of pregnancy existed. For the last 24 hours she had passed only four ounces of urine, which they had saved to show me. The urine was black, and at the bottom of the glass was a grayish sediment. It had a very strong ammoniacal odor. It was the "black-water urine." Unfortunately the urine was thrown away, so that I could not make a thorough test of it. I ordered quinin sulfate as before, and gave nitroglycerin and caffeine citrate in an infusion of digitalis, every 2 hours. The pulse was 90; full and regular. The patient was feeling good. During the remainder of the second day she felt well, but did not pass urine. At 1 P.M. on the third day she vomited a small amount of blood, and shortly afterwards passed about 2 drams of blood from her rectum. There was no chill at 4 P.M.; at 7.15 A.M., I was sent for in a hurry because she was sinking. I arrived just before 8, and found her dead. She was talking and laughing just before she died. I found that the left side of her face was bluish as from a hematoma, but it was only in spots. The anterior side of her third left finger contained blood in the distal phalanges. The husband said he first noticed the marks about 10 minutes before she died. The marks were evidently due to hemorrhages, and I think that the immediate cause of her death was internal hemorrhage.

URIC-ACID ENDARTERITIS AND "SYPHILITIC NEUR- ASTHENIA."

By R. B. BARROWS, M.D.,

of Wilmerding, Pa.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

A MAN, aged 33, contracted syphilis 8 years ago; 2 years ago—4 years after his supposed cure—he developed leukoplakia (papulosquamous syphilid) of the inner surface of the lower lip. There was some muscular twitching of the first interossei; he also had several attacks of night headache, with tenderness in the region of the ascending frontal lobe. He was treated for a year with 50 gr. of potassium iodid, and then for about 6 months with 15 gr. thrice daily. Similar symptoms returned last May, with the addition of two attacks of herpetic eruption of the roof of the mouth and a peculiar head-symptom. This latter resembled slight bilateral pressure against the temples, about the region of the posterior end of the middle frontal convolution. Mental debility supervened, especially as to memory for proper names, arithmetic calculation, with inability to study, and difficulty in comprehending voice-sounds. The patient was of a hopeless, apathetic disposition. He laughed boisterously occasionally at jokes, feared dementia, and considered suicide a possibility. His appetite was good, his strength normal, he slept well, was slightly

anemic, and his patellar reflex was almost absent. He said that he felt that if he only could get rid of the peculiar feeling in his head he would be all right. The iodid proving apparently useless, he was given small doses of auri et sodii chlorid with some benefit. Finally, on an increase of symptoms the last part of August, he was given 45 grs. of piperazin during 5 days, with complete cessation of all symptoms, even leukoplakia. Some tremor remained, but this was probably due to the tobacco-habit. I suggest that syphilis followed by large doses of potassium iodid predisposes to a uric-acid endarteritis, and explains why specific treatment fails in beginning paresis and tabes; also, why "syphilitic neurasthenia" is so "difficult to treat."

SMALLPOX IN FETUS ABORTED AT THE FIFTH MONTH.

By C. W. RUMMEL, M.D.,

of Webster City, Ia.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

MRS. Y., aged 24, married, was never vaccinated, and had had no previous pregnancy. Last menstruation occurred the latter part of February, 1900. On Saturday, June 30, she was taken with severe chills which lasted with varying severity through the next day. She suffered severe headache and lumbar pains. No physician was called, as they suspected the nature of the trouble, her father having just passed through an attack of smallpox, but her people thought she had "a high fever" with and following the chills. On Tuesday, July 3, the eruptions appeared, after which the patient felt improved and was soon up and around. On Saturday, July 21, the patient felt tired and began to have pains. On Monday the pains became worse, especially during the night, but Tuesday she felt better. On Wednesday, the 25th, I was called and found the patient in severe labor-pains. The fetus was soon born and was seen to be covered with an eruption most marked on the face and upper portion of the thorax. There were a few confluent lesions on the face and many of the vesicles still showed distinct traces of umbilication. It might be well to add that a few days before I was called, the health-officer learned that the patient had smallpox and fumigated with formaldehyd—to which fact they ascribed the abortion.

AN UNUSUAL DOSE OF OLEORESIN OF MALE FERN.

By ARSHAG D. MARGOSSIAN,

of Fall River, Mass.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

THE patient complained of having tape worms for 10 years or more, as far back as his recollection extended. He was treated by several physicians for the same without the least benefit. In accordance with my class-room knowledge, therefore, I concluded to give a trial of "oleoresin of male fern," with the necessary steps taken during the administration of the drug.

It was given in the form of capsules, as this was considered the best method of administration. Ten capsules of one drop each were given—the usual dose. However, this was not a successful treatment as regards the expulsion of the head, which should be the main point in the line of treatment.

In order to reach a conclusion as to the merits and demerits of the said drug, I decided to give a larger dose of unusual amount.

The patient was given a half-ounce at one sitting, which resulted in the expulsion of the head with its entire length within 2 hours' time. I have had 5 more cases since the first one, and reached the same results with the administration of half-ounce doses of the drug itself.

Contrary to the unusual dosage of the drug, there have been no complications, or symptoms of poisoning of any kind whatever.

THE REMOVAL OF HAIR BY THE X-RAYS.

By G. H. STOVER, M.D.,

of Denver, Colo.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

FOR some time I have been seeing reports of the use of the Röntgen-ray for the removal of hair from the skin, all advocating this form of light-therapy for the purpose. My limited but very satisfactory experience in this line has led me to a conclusion opposing the opinions of the writers of the above-mentioned reports. I once made several long fluoroscopic examinations of a young boy, and also made a skiagram; another operator did the same, and some time later it was noticed that the hair on one side of the head, in a strip about half an inch wide, came out. It returned completely after a time. For about a year I was making various experiments with the x-ray, making many skiagrams of my left hand, and also using it as a test-piece in fluoroscopic work; a typical x-ray dermatitis resulted, marked by itching papules, swollen, cracked, edematous skin, and loss of the hair from the back of the hand; I stopped using my hand in the way, and after a while complete recovery took place; there is just as much hair on the back of this hand as is on the other one.

PRIORITY AS TO THE SURGICAL MANAGEMENT OF UMBILICAL HERNIA WITH LARGE RING.

By E. D. FERGUSON, M.D.,

of Troy, N. Y.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IN the issue of the JOURNAL for October 20, 1900, there is an article by me on "The Surgical Management of Umbilical Hernia with Large Ring," by what I supposed was a new expedient. A letter from Dr. J. F. Baldwin, of Columbus, Ohio, called my attention to an article by Dr. Ch. P. Noble, of Philadelphia, Pa., in the *American Medico-Surgical Bulletin*, of June 20, 1896, on "A Remarkable Case of Ventral Hernia. . . ." In that case Dr. Noble utilized the anterior layer of the sheath of the rectus to bridge across the ring, and though his technic and anatomic description varies from my own, he had the idea essential to the operation, *i. e.*, the closure of the ring with a reflected flap from the sheath of the rectus, and hence he is entitled to priority.

Etiology of "Mal des Bassines."—M. Fabre has recently made clear the pathology of this disease of girls engaged in winding silkworm cocoons. It is a dermatitis caused by a poisonous substance in the urinary products of the silkworm moths. Hypochlorites are suggested to neutralize the poison.

Society Report.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Twenty-eighth Annual Meeting, Held at Indianapolis, Ind.,
October 22, 23, 24, 25, and 26, 1900.

THE Section on Bacteriology and Chemistry met at the Pathological Laboratory of the Central Hospital for the Insane, with the chairman of the section, Dr. Theobald Smith, of Boston, presiding.

Several papers were read and discussed. Among them was one by DR. H. L. RUSSELL, of Madison, Wisconsin, in which he showed the **degree of heat which is necessary to destroy the tubercle-bacillus in milk** without injuring commercially the value of the milk. He also read the report of the Committee on the **bacteriology of milk** in its sanitary relations. As illustrating the peculiar way by which such germs find their way into milk, an incident occurring in a hospital at Leeds, England, was related. The nurses in that institution were in the habit of taking glasses of milk from the pantry up into the sick wards several hours before the milk was drunk. An outbreak of typhoid fever occurred among the nurses. Investigation disclosed the practice to which they had been resorting, and when it was ordered discontinued the epidemic subsided.

DR. V. A. MOORE, of Ithaca, N. Y., related the history of a **diphtheria epidemic** which was started in that city from milk delivered by a dairyman whose family had suffered from acute tonsillitis. The eldest son, who attended to the milking of the cows, had been pronounced well and resumed his regular work, but scientific investigation demonstrated that he still had germs of the disease in his system.

The meeting of the Association was presided over by DR. PETER H. BRYCE, of Toronto, Canada. The sessions were held in the amphitheater of the German House. Addresses of welcome were delivered by EX-PRESIDENT BENJAMIN HARRISON, GOVERNOR JAMES A. MOUNT, and HON. ADDISON C. HARRIS, Minister to Austria. The response to these addresses was made by DR. CHARLES A. LINDSLEY, of New Haven, Conn.

The first paper presented at the general meeting was by PROFESSOR S. H. WOODBRIDGE, of Boston, which was the report of the Committee on **Car Sanitation**. The following recommendations were reported in the paper:

1. When a passenger is known to be contagiously ill, he should be isolated in a compartment appropriately equipped and ventilated in such a manner as to separate it from the rest of the car. Through trains should be provided with rooms for the sick as well as staterooms, interchangeable in use.
2. The interior of passenger cars should be plain, finished with hard, smooth and polished surfaces.
3. All furnishings should be as nonabsorbent as possible.
4. Coaches should be furnished with effective means for continuously supplying not less than 1,000 cubic feet of warm air an hour for each single seat and for distributing and removing the air without troublesome draught.
5. The temperature should be regulated.
6. The cleaning of cars should be frequent and thorough.
7. Floors and sanitary laboratory fixtures should be frequently treated with a disinfecting wash.
8. All fabrics in cars should receive sterilizing treatment. All bed and lavatory linen should be thoroughly sterilized in the process of laundering.
9. Sewage tanks and earth closets should be provided under the cars. The practice of disposing of excreta by scattering it over roadbeds is dangerous.
10. Water and ice should be obtained from the purest available sources. The use of tongs in handling ice should be insisted upon.
11. The water tank should be frequently cleansed, and periodically sterilized with boiling water or otherwise.
12. The public should be educated to use individual cups. Paper paraffined cups might be provided by a cent-in-the-slot device.
13. The use of canned goods in buffet car service makes careful inspection of such goods imperative. Fruits and all eatables before and after purchase should be stored with care to avoid all unnecessary exposure to street and car dust.

14. The filthy habit of spitting on car floors should be dealt with in a manner to cause its prompt discontinuance. It should be punished as one of the most flagrant of the thoughtless offences against the public right to health.

15. Station premises should receive attention directed to general cleanliness of floors, furnishings, air, sanitariums, lavatories, platforms and approaches, and should be plentifully supplied with approved disinfecting material.

The recommendations of the committee were concurred in by the Association.

DR. J. N. HURTY, of Indianapolis, said that if the Association would make a vigorous demand for **white blankets for sleeping cars**, instead of colored ones, it would be a great reform. The white blanket would tell its own story. Colored blankets are frequently saturated with filth.

DR. H. M. BRACKEN, of Minneapolis, said that inasmuch as the traveling public pay a good price for Pullman cars, it is only right that the **cars should be kept clean** and in good condition. The beds are made up, people sleep in them, the next morning the linen is removed, while the mattresses and blankets are thrown into the upper berths and remain there until the next night, then used again. It is not uncommon for people, on entering Pullman cars, to complain of the odor of stale bedding, etc.

DR. C. H. JONES, of Baltimore, referred to **tuberculous patients who travel** long distances. When the greatest care and caution are observed, the blankets used on Pullman cars are now and then spat upon by them. The attendants cannot always be with such patients to cover their mouths with handkerchiefs. Railway managers should be notified of the great danger to the public from this source. When the public is educated in this matter, a great reform will have been inaugurated.

DR. C. P. WILKINSON, of New Orleans, stated that the chief objection to the equipment and furnishings of railway cars is that they are **upholstered with absorbable material**. In the extreme South, rattan and steel springs are now used instead of plush and woolen furnishings.

DR. U. O. B. WINGATE, of Milwaukee, referred to the work that is being done in this direction by the **International Association of Railway Surgeons**, and suggested that it might be well to appoint a **committee to cooperate** with a similar committee of that Association to do further work in car sanitation.

DR. HURTY spoke of one railroad which is now constructing seven cars with perfectly **plain interiors**. The bottoms and backs of the seats can be taken out and thoroughly sterilized at the end of every run.

DR. DOMINGO ORVANANOS, of Mexico City, Mexico, read a supplementary report on **car sanitation**. Boards of health in the territories covered by the Association ought to try and obtain support from the different legislatures so as to make certain provisions obligatory on railway companies, as for instance: (1) The isolation in special cars of any persons suffering from transmissible diseases; (2) to supply guaranteed filters in the tanks of drinking water; (3) the disinfection of bedclothes, hangings, curtains, and towels; (4) all sleeping cars should be provided with small disinfectant stoves for small toilet articles; (5) the absolute prohibition under severe penalty of expectoration on pavements; (6) all railroad cars should be provided with a sufficient number of cuspidors containing a strong disinfecting solution.

New Quarantine Methods and Changes which are Called for in Marine Sanitation.—This paper was contributed by DR. ALVAH H. DOTY, of New York City. Contrary to the popular belief, the most careful investigation, both from a scientific and practical standpoint, has demonstrated that the clothing actually worn by well persons is not a medium of infection. This is also true of the cargoes of ships. In making this statement, the author does not mean to imply that infection from these sources is not within the realms of possibility. Evidence was adduced that the cargo of a ship does not act as a medium of infection. If exceptions exist, they have not been revealed to practical sanitarians. Outbreaks of bubonic plague in European and other ports have brought prominently before our notice the question of the transmission of this disease by rats and other vermin. Information on this subject at present is incomplete, although Kitasato and Yersin have demonstrated the presence of the disease in rats during the epidemic of bubonic plague in Hong Kong in 1894. Beyond this, sani-

tarians have but little authentic information on the subject. It is reasonable to believe, however, that in such communities as are found in India and China, where filth, overcrowding, and bad sanitary regulations exist to an extent which is almost beyond belief, that the dissemination of infection is so general that even vermin are involved. In civilized communities, however, where the ordinary sanitary regulations are carried out, the danger from this source would seem to be very limited. No authentic reports exist which show that cargoes of vessels have transmitted bubonic plague through the medium of infected rats or other sources. In the inspection of persons coming from infected ports, the ordinary examination, which includes a statement from the person concerned, is not sufficient at all times to detect mild or ambulant cases. The most practical and important addition to the ordinary method of inspection is the use of the clinical thermometer. This has been in operation for the past two years in New York, and the most satisfactory results have been obtained in detecting mild or ambulant cases. While the essayist is convinced that the maximum period of incubation of yellow fever is five days, there is no doubt but that during the first day or so of the disease, persons affected may present themselves and pass the ordinary inspection. The use of the thermometer at this time, however, will almost always show an elevation of temperature sufficiently high to justify the physician or health-officer in causing a longer detention. The author closed with a reference to the value of modern sanitary regulations.

PROFESSOR F. C. ROBINSON, of Maine, said that formerly a great deal of paper was made from rags, and he was surprised to hear that there was no danger from **infectious diseases from cargoes of rags**. He believes outbreaks of smallpox and other contagious diseases have been traced to rags.

DR. H. M. BRACKEN vigorously controverted the statement of the essayist that healthy persons are not liable to carry disease in their clothing. Every physician of experience could cite instances of physicians who have carried contagion to healthy people.

The paper was further discussed by Drs. WILSON, MONTZAMBERT, the President, LEE, DURGIN, JONES, most of whom protested against the idea that physicians could not carry infection in their clothing.

DR. A. WALTER SUITER, of Herkimer, New York, read the **report of the Committee on Cause and Prevention of Infectious Diseases**. Reference was made to smallpox, which he said was on the increase, and he cited copious statistics to prove his assertion. He added the pleasing assurance that the death-rate from this malady is decreasing. The latter fact must not be viewed too optimistically because smallpox is certain, if an epidemic of it continues long enough, to develop its greatest degree of virulence. He showed the value of sanitary precautions and of vaccination by citing the fact that Puerto Rico, since the United States has dominated its government, has rid itself of the disease, which before the war was very prevalent in that island.

He also discussed malaria, scarlet fever, typhoid fever, and declared himself a believer in the theory that the germs of malaria are transmitted by mosquitos in many instances.

In discussing typhoid fever he referred to the declaration of Dr. Vaughan, that more than 80% of deaths among American soldiers in the Spanish War were caused by typhoid fever, and emphasized the necessity of cleanliness about military camps. He touched upon bubonic plague, and said he did not anticipate a scourge of this disease here, but urged great sanitary precautions.

Etiology of Yellow Fever.—DR. WALTER REED, of Washington, D. C., read a paper on this subject, which was published in the PHILADELPHIA MEDICAL JOURNAL of October 27.

DR. HENRY B. HORLBECK, of Charleston, South Carolina, read the **report of the Committee on the Etiology of Yellow Fever**. Reference was made to previous contributions on this subject by the Committee, and a digest given of the labors of bacteriologists who have, during the past 12 months, devoted themselves to the study of the *Bacillus icteroides*. The report closed with the following conclusions from an article by Proust and Wurtz, published September 7, 1900:

1. *Bacillus icteroides* of Sanarelli seems to be the spe-

cific agent of yellow fever. That microorganism injected into certain animals, especially dogs, produces symptoms and lesions strikingly analogous to those observed in man. The toxin of this bacillus produces in animals the same effect as the microbe. The injection of this toxin into 5 individuals reproduced in man typical yellow fever, accompanied by its symptoms and anatomic lesions. The serum of individuals attacked with yellow fever agglutinates cultures of *Bacillus icteroides*.

2. The bacillus has a prolonged vitality both in air and water (fresh and sea). It is certain that it is the same in the soil. Moulds favor its development. These facts confirm conditions that have been known a long time. They explain the reawakening of yellow fever a long time after the extinction of an epidemic, and the longevity of the disease aboard vessels in bad hygienic conditions.

"No new prophylactic measures have come out in this knowledge of the etiology of the disease. As formerly, the prevention of yellow fever consists in applying the measures of isolation and of disinfection, and of improving the hygienic conditions."

While the numerous contributions to the cause of yellow fever are far from being conclusive, the researches made during the last few years furnish matters of information which will be guiding-stars in future investigations.

DR. J. P. BERNALDEZ, of Mexico, spoke of human vaccine as a prophylactic of smallpox, and discussed its advantages and disadvantages.

DR. M. S. IGLESIAS, of Vera Cruz, Mexico, spoke of the elements of defence against infectiocontagious diseases at the port of Vera Cruz.

Influence of Temperature on Vaccine Virus.—DR. F. W. ELGIN, of Philadelphia, read this paper. After detailing a series of experiments, he drew attention briefly to some of the lessons suggested by the experiments:

1. Vaccine points are unreliable when stored for any length of time at any temperature.

2. Virus on points may be inert, yet germs charged along with the virus remain active, causing a form of irritation somewhat resembling vaccine vesicles, and known as spurious vaccination.

3. That glycerin will not destroy the extraneous bacteria in lymph when stored at or below the freezing point.

4. That continued exposure of germs to low temperature, when constant, does not destroy their activity, and but slightly decreases their number.

5. Hot, and especially variable, temperatures specially injure vaccine.

6. Hot temperatures increase enormously the number of germs in fluid lymph other than that stored in glycerin.

DR. H. C. H. HEROLD, of Newark, N. J., read a paper on **Newark's diphtheria-antitoxin plant**. Early in 1895, a laboratory for bacteriologic research with an attendant plant for the application of antitoxin for diphtheria, was established under the jurisdiction of the Board of Health in Newark. This department has been in practical operation for more than 5 years. The author presented the results of the experiment of establishing such a plant, and showed by statistics of greatly reduced mortality from diphtheria by the use of antitoxin, that it is one of the best things the city officials and medical profession of that city have ever undertaken.

The presidential address was delivered by DR. PETER H. BRYCE, of Toronto, who sketched at great length the progress of sanitary science from its birth in the period of the Renaissance down to the present time, and declared that scientific workers ought to take courage from what they have seen accomplished in this century. The address was scholarly, and an admirable compact sanitary digest.

The report of the Committee on Pollution of Water-supply was presented by the chairman, MR. GEORGE W. FULLER, of New York City. The report took the form of records and summaries showing recent progress in the more important branches of the subject. With regard to quality, the water-supply of the future should meet the following requirements: It shall be free, or substantially free, from disease-producing germs. It shall be clear and colorless, containing no noticeable turbidity or vegetable stain. It shall be free from objectionable tastes and odors, as supplied to the consumer. It shall be free from noticeable amounts of dissolved iron, such as unfit it for household use. It shall be free

from excessive amounts of lime and magnesia, such as make water too hard for ordinary use. It shall be carefully examined with regard to constituents capable of dissolving metals used in distributing pipes.

Of the various branches of public works connected with the pollution of water-supply, there is none in which such substantial progress has recently been made as in water purification. Ten years ago information upon this subject was very meager, and comparatively few plants were in operation. During this period English sand filter plants have increased from about 1.5 to 19 acres, with respective normal capacities of about 4,000,000 and 57,000,000 gallons daily; and the American or mechanical filter plants have been increased from about 12,000 to 90,000 square feet, with respective nominal capacities of about 36,000,000 and 270,000,000 gallons daily. Projected plants for some of the largest cities in the country show that in the next few years there will be very rapid development in the application of both of the leading methods of purification. Of the various processes for the purification of water-supplies, there are two general methods which have shown distinctly their practicability, namely, the English method of slow sand filtration, and the American method, employing rapid mechanical filters. For those waters which never possess more than a slight or moderate amount of turbidity or dissolved vegetable color, the English method is somewhat more efficient, and as a rule it is slightly the cheaper for such waters. For those waters which for long periods at a time contain excessive quantities of either finely divided clay or of dissolved vegetable matter, there is now no practicable method of purification without the use of coagulants and subsiding basins. While coagulants can be successfully used in connection with the English method of sand filtration, the American method, in which coagulants are imperative, yields somewhat more efficient and economical results, as a rule.

Teaching of Hygiene and Granting of Degrees of Doctor of Public Health.—DR. WYATT JOHNSTON, of Montreal, compared methods of hygienic instruction in vogue in the United States and foreign countries, with the result that the showing was decidedly favorable to the foreign countries. He inveighed strongly against the looseness of methods in this country by which men are able to secure positions as health officers or as members of boards of health without having the necessary qualification. Dr. Johnston urged the association to consider this matter and endeavor to arrive at some standard for a purely hygienic education.

DR. L. P. JONES, of Greenwich, Conn., followed Dr. Johnston, and outlined the following **scheme for preventive medicine**:

1. The endowment of a chair of preventive medicine in each of the leading medical colleges of the country.
2. The establishment of an institute, the members of which should be the incumbents of these chairs.
3. An award of prizes by this institute for essays and discoveries of special merit in sanitary science.
4. Establishment of fellowships for a limited number of advanced students.

Disposal of Refuse Material.—This subject was dwelt upon by MR. RUDOLPH HERING, of New York City, who presented a report in which he mentioned the methods for disposing of garbage in the great cities of the world. He referred to the progress made by European cities in this direction, and said that the present status of disposing of garbage and refuse has resolved itself largely into a question of engineering.

DR. JUAN BENA, of Zacatecas, Mexico, dealt with the vice of **smoking among youths**, and offered suggestions as to the means of overcoming it.

Report of the Committee on Disinfection.—This was presented by PROFESSOR F. C. ROBINSON, of Brunswick, Me. From what has been accomplished in this work, the following conclusions seem warrantable:

1. Household disinfection after infectious diseases should combine the use of formaldehyd with other means. It can be safely relied upon for all exposed surfaces, and these only.
2. Formaldehyd requires moisture enough in the air to nearly saturate it for its most efficient working.
3. There is much disagreement among experimenters as to the disinfection of tuberculous matter. One says a 2% solution of formaldehyd disinfects it; another that even a 10%

solution does not. Several say that formaldehyd gas applied as above destroys it; others deny this. Further experiments are needed.

4. Soap is a poor disinfectant, but 1% caustic alkali, or 20% carbonate of alkali, is efficient.

5. Carbolic acid, less than a 5% solution, has little scientific value.

6. The creasotes, as used in creolin, lysol, and solutol, are safe disinfectants.

7. Alcohol at from 50 to 75% has considerable disinfecting power, but not at other strengths.

8. Most metallic salts, except those of mercury, have little disinfecting action.

9. Mercuric chlorid should be used in strength at least 5 to 1000 if tuberculous matter is to be disinfected. A fresh solution is more active than one which has stood for some weeks. The addition of salts does not increase the strength of a fresh solution, but prevents it from losing its strength as rapidly.

10. Bright sunlight kills the tubercle-bacillus in a few hours, and, as a rule, pathogenic bacteria keep their greatest virulence only when kept in the dark.

DR. JESUS CHICO, of Guanajuato, Mexico, gave some **hints about malaria**, from personal observations, saying he did not think the mosquito was as important a causative factor as has been attributed to it in distributing malaria, but in Mexico he thought the injudicious use of tropical fruits played an important role.

MISS HESTER MCCLUNG, of Indianapolis, recounted the **sanitary work of women** in that city.

Report of the Committee to Define What Constitutes an Epidemic.—This was read by the chairman, DR. BENJAMIN LEE, of Philadelphia. In the minds of the public at large, and of many of the profession, the word epidemic still conveys an idea of universal atmospheric contamination. This is to be deplored, because, while on the one hand its use inspires an indefinable horror and creates panic; on the other hand it leads to the disregard of the very precautions which are of essential use in restricting the spread of the contagion, namely, those which should be taken in regard to the person and the excreta of the patient, his effects and his immediate environment. In view of changed views as to the propagation of communicable diseases, the word epidemic has outgrown its usefulness. It has become the means of perpetuating false conceptions, and its official use may be misleading and mischievous. Without attempting any stricter, more comprehensive, or more lucid definition of this word, the committee recommended that, as opportunity occurs in all laws and regulations in which certain executive action is made contingent on the declaration by health authorities of the existence of an epidemic, the phraseology shall be altered by omitting the word epidemic, and in place thereof inserting a brief statement of the condition calling for such action, as for example, "whenever a communicable disease prevails to such an extent, or is spreading with such rapidity as in the opinion of the Board to make it its duty to notify either the general public or the authorities of neighboring towns of the fact that such and such action shall be taken." The report of the committee was adopted and the committee discharged.

Report of the Committee on National Leper Home. DR. H. M. BRACKEN, of Minneapolis, chairman, presented this report. The committee dealt with the desirability of establishing national leprosaria in the United States. The records of Dr. Bracken for certain States, compared with those of Dr. Hyde, are as follows:

STATE.	DR. HYDE.	DR. BRACKEN.
North Dakota.....	2	2
South Dakota	...	1
Iowa	20	3
Minnesota	120	61
New Jersey.....	1	1
Ohio.....	...	1
Pennsylvania.....	6	6
Wisconsin.....	20	7

He presumed that Dr. Hyde's figures for Iowa and Wisconsin are estimated. Probably they are not too high. He has taken only those cases of which a history could be given. It is probable that the 120 cases credited to Minnesota are taken from Dr. Hansen's report. It seems to him that this, too

must be an estimate. If there were 120 cases in Minnesota, the speaker cannot understand why they are not on his records. If there were that many cases in 1888, the number for Minnesota is much higher than he has given, for many of the cases in the official list cannot have possibly belonged to Dr. Hansen's 120. It might appear from the report of cases in the Northwest that leprosy was far more common in Minnesota than in the neighboring State. He can see no reason for this belief, for the lepers in this district are among the immigrants from Norway, Sweden, Iceland and China. These people have quite a representation in all this group of States. He can only attribute the more complete returns for Minnesota to the fact (1) that there has been less agitation against leprosy in this than in some of the neighboring States; (2) that with this lack of agitation against leprosy physicians report their cases more willingly to the State Board of Health, which has endeavored during the last 20 years to palliate the sufferings of this unfortunate class; (3) Minnesota is fortunate in having among its physicians men who are familiar with leprosy, and who are interested in philanthropic work, and these physicians have given material aid to the State authorities engaged in securing a list of all lepers in Minnesota. Several lepers in the Minnesota list give the history of a previous residence in Wisconsin, but their names in not a single instance appear upon the Wisconsin records. Of the 37 living lepers known to be resident in the Northwest, 17 only are in Minnesota, and there is a strong possibility of 2 of these being dead, but he has no positive knowledge of the fact. He does not dwell upon these facts as an alarmist, but simply reminds the Association that leprosy has existed, does exist, and will continue to exist for years to come in all three countries represented in the Association.

Establishment of Leprosaria.—A leprosarium should afford a comfortable home for lepers. This means not only good buildings, but extensive grounds comprising many acres, where the lepers may have liberties and still be in exclusion. The buildings connected with the leprosarium must combine the privileges of a home and of a hospital. Those who have the disease in mild form may need little, if any, medical care. They need comfortable clothing and good food. With those in whom the disease is more advanced, the care should be that of a hospital patient, with medicines to lessen their sufferings and dressings that would commend themselves to any surgeon. A leprosarium should resemble modern colonies for epileptics. It should furnish employment for those who are able to work, and amusement of various kinds for all.

Two of the strongest medical societies in Minnesota have placed themselves on record as favoring the establishment of national leprosaria, also the American Dermatological Association has appointed a committee to determine the best methods to be used in the care of lepers. By resolutions the Association placed itself on record as favorable to the establishment of national leprosaria.

DR. JOHN S. FULTON, of Baltimore, described a suitable **dress for defence against infectious diseases.**

MR. F. H. NEWELL, Government hydrographer, contributed a paper showing some results of the investigation of **stream pollution** which has been made by the United States Geological Survey. The Government, realizing the importance of public water-supplies and their conservation and protection against pollution, has established a special division under the title of Board of Hydrography.

Report of the Committee on Animal Diseases and Animal Food.—This was read by DR. D. E. SALMON, of Washington, D. C., chairman. He urged the importance of careful observations being made of glanders, in view of the fact that serum for use in the treatment of many human ailments is obtained from horses. Army horses are peculiarly liable to contract the disease in time of war, on account of the extra exertion and frequent lack of full rations during such periods. He roundly condemned the carelessness of the U. S. Government in the matter of providing skilled and trained veterinarians in the army. He discussed the subject of hydrophobia, and emphasized the importance of active measures looking to the extermination of this disease. He cited statistics of many outbreaks of rabies, and showed the disease to be peculiarly virulent and almost invariably fatal to human beings. Misguided people, who declare there is no such thing as hydrophobia communicated to man from animals, were sternly rebuked. DR. SALMON declares that

their obstructive tactics have wrought incalculable harm in the way of deceiving people into a careless attitude towards this malevolent disease. The Pasteur treatment was highly commended by the committee, which also recommended that the association take steps to enlighten the public on the disease and its treatment, as well as means for its prevention.

Tuberculosis.—The committee made strong recommendations on the subject of tuberculosis, asserting its belief in the theory that the disease can be and is communicated from infected cows through their milk. Here also the committee encountered learned men who controvert the theory, asserting that the difference in appearance of the bacillus of human tuberculosis and that of bovine indicates that the latter cannot communicate the disease to human beings. Bovine tuberculosis is undoubtedly communicable. He inveighed against loose methods prevailing in many creameries by which the milk received from an infected herd is mixed with the general supply of milk on hand; and further, the practice of distributing, without previous sterilization, the waste milk and cream to be used as food for swine was condemned.

PRESIDENT BRYCE added a few terse, vigorous utterances on the subject of the care which ought to be employed in dairies to guard against the distribution of milk infected with tubercle bacilli.

DR. R. M. WOODWARD, of Washington, D. C., gave a resume of the recent foreign **work of the Marine-Hospital Service.**

DR. F. F. WESTBROOK, of Minneapolis, reported on behalf of the Committee on Transportation of **Diseased tissue by mail**, recommending that nose and throat specimens be included in one package.

DR. CRESSY L. WILBUR, of Lansing, Michigan, presented the report of the Committee on **Demography and statistics in their sanitary relations.** He mentioned the progress that has been made in matters relating to vital statistics concerning which the association had acted in the past. He urged the association to stand for united and determined action in elevating the standard of registration laws in this country, and in insuring the practical success of new laws when enacted.

The following resolutions were introduced, discussed, and adopted:

1. *Resolved*, That the Association, recognizing the benefits of **medical school inspection**, heartily approves the efforts of boards of health and of education directed towards the establishment of systems of inspection. (Offered by DR. ADOLPH GEHRMANN.)

2. *Resolved*, That the Association approves of and encourages all efforts made by governments, whether national, state or municipal, for the **limitation of pollution of streams.** (Offered by MR. C. MONJEAU.)

3. *Resolved*, That a committee of three be appointed, to be known as the Committee on **Uniform Municipal Statistics**, to take such steps as may seem practicable towards securing greater uniformity in all branches of municipal accounts, reports, and statistics; and particularly those branches relating to vital and sanitary statistics; said Committee to have power to confer with similar committees from other societies already or hereafter appointed to the same general end, and to report at the next meeting of the Association. (Offered by DR. LEAL, of Paterson, N. J.)

Election of Officers.—The following officers were selected for the ensuing year: President, Dr. Benjamin Lee, of Philadelphia, Pa.; first vice-president, Mr. Rudolph Hering, of New York City; second vice-president, Dr. J. N. Hurty, of Indianapolis, Ind.; secretary, Dr. Charles O. Probst, of Columbus, Ohio; treasurer, Dr. Henry D. Holton, of Brattleboro, Vermont.

Buffalo was selected as the place for holding the next annual meeting. The Executive Committee recommended that the time be fixed during the third week in September, 1901.

Two instruments, which have given great satisfaction in the medical service in South Africa, are the telephone probe and Thomas's tourniquet forceps. One blade of the latter is introduced through a small skin-incision, the vessels being compressed between it and the other blade on the outer surface of the skin.

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Calendar of Meetings of Philadelphia Medical Societies for the week ended November 17, 1900:

Monday, November 12.—College of Physicians, Section on Medicine.

Wednesday, November 14.—County Medical Society.

Thursday, November 15.—College of Physicians, Section on Gynecology.

The Carlisle Indian School has been quarantined owing to an epidemic of measles. About 50 cases have been reported.

The "Divine Healer," Francis Schlatter, was denied permission by the Mayor of McKeesport, Pa., to hold an outdoor meeting in that city.

Gift to a Hospital.—The new Nurses' Home, erected and furnished by Mrs. H. C. McCormick, was formally opened and presented by her to the Board of Managers of the Williamsport Hospital, November 1.

New Dental School.—The heirs and legatees of Dr. T. W. Evans have at last reached an agreement to have the estate settled in Philadelphia. About \$3,000,000 will become at once available for the construction and foundation of a dental institute in this city, as provided for in Dr. Evans's will.

Municipal Hospital.—At a recent meeting of the Philadelphia Board of Health, a communication was received from the Woman's Sanitary League, recommending that Councils be asked to appropriate money for fitting up wards in the Municipal Hospital for the treatment of pay patients with scarlet fever and diphtheria. The communication was referred to the director.

Filthy Streets and Diphtheria.—Dr. J. Howard Taylor, chief medical inspector of the Bureau of Health of Philadelphia, has had his attention called to the condition of streets near Heston School, West Philadelphia, where nearly 50 cases of diphtheria have developed within the last 10 days. The streets have been inspected, and the statement made that the recent outbreak of diphtheria in West Philadelphia was probably due to filthy unpaved streets and back alleys.

The Mutual Aid Association of the Philadelphia County Medical Society will hold its annual meeting November 12 at 8 P.M., at 1627 Walnut Street. Officers for the ensuing year will be elected. The Association has been in existence for 22 years. According to its charter, the object of the Association and the purpose for which it is formed is benevolence, by offering pecuniary aid to the widows and orphans of such members as require it, as well as to such members as from long-continued illness or accident may be compelled to seek such aid. The Association has during the year received notice that it is one of the residuary legatees of the estate of the late Dr. Albert Frické, who was for many years chairman of its board of directors. The amount of this legacy cannot be determined until the adjudication of the executor's account. It will probably be several thousand dollars.

Philadelphia Obstetrical Society.—At the recent meeting of the society on November 1, Dr. B. F. BAER reported a case, illustrating the application and relative advantage of vaginal and abdominal section; also a case of tubal pregnancy, in which tubal abortion was completed, and the tube and ovary of the affected side preserved, the other ovary having been destroyed by advanced cystic degeneration, rendering removal necessary. Dr. FRANK W. TALLEY reported 2 cases, 1 of which was an interesting instance of pyosalpinx. A paper by Dr. JOHN G. CLARK described a unique case of sarcoma of the uterus associated with fibroma of the round ligament. According to the clinical diagnosis, the latter was deemed secondary to the sarcoma, an instance of metastasis; but the microscopic examination of the fibroma proved that the

disease was localized in the tumor itself, it being practically a large uterine polyp. Discussed by Drs. BAER, NOBLE, FISHER, and others.

Vital Statistics of Philadelphia for the week ended November 3, 1900:

Disease.	Cases.	Deaths.
Total mortality		376
Inflammation of appendix 4, brain 8, bronchi 8, kidneys 14, larynx 1, heart 2, lungs 34, peritoneum 5, pleura 1, stomach and bowels 18, uterus 2		97
Lungs—tuberculosis of 46, abscess of 1, edema 1		48
Heart—disease of 37, fatty degeneration of 1		38
Marasmus 18, inanition 14, anemia 1, debility 5		38
Apoplexy 12, paralysis 6		18
Diphtheria	120	18
Uremia 8, Bright's disease 7, diabetes 2 . .		17
Carcinoma of breast 1, cheek 1, liver 2, esophagus 1, stomach 5, uterus 1, sarcoma of breast 1, tumor of brain 1		13
Convulsions 9, puerperal 1		10
Casualties		8
Typhoid fever	55	7
Liver—cirrhosis of 4, abscess of 2		6
Old age		6
Brain—congestion of 1, effusion of 1, softening of 3		5
Burns and scalds		4
Alcoholism		3
Cyanosis		3
Croup 1, membranous 2		3
Surgical shock		3
Drowned		3
Scarlet fever	38	1
Pelvic abscess 1, aneurysm of aorta 1, asthma 1, atheroma 1, childbirth 1, diarrhea 1, puerperal fever 1, erysipelas 1, exophthalmic goiter 2, gangrene of leg 1, hemorrhage of stomach 1, hernia 1, obstruction of bowels 2, lead poisoning 1, pyemia 1, rheumatism 1, retention of urine 1, arterial sclerosis 1, septicemia 1, stricture esophagus 1, suicide—illuminating gas 1, teething 1, traumatic tetanus 2		

Pittsburg Academy of Medicine.—At a meeting held October 22, Dr. E. E. MAYER reported a case of **locomotor ataxia** and presented the patient, a street-car conductor. The case was of 2 years' standing and on admission presented practically all the typical symptoms in so severe a form as to necessitate giving up his occupation. Treatment consisted in massage, baths, and various movements calculated to stretch the spinal cord and nerves. He left the hospital after 5 weeks' treatment a cured case, clinically, but, of course, not pathologically. The prognosis is not unfavorable in first and second stages if certain measures are carried out. No internal treatment is used, as it is of no value. Dr. PETTIT inquired if the so called goat's lymph was of any value. Dr. MAYER said he had used it on a few cases without effect. It contains considerable quantities of bichlorid of mercury and chlorid of gold and sodium upon which its efficiency is supposed to depend. Dr. HECKEL said that goat's lymph bears all the earmarks of downright quackery. Dr. J. I. JOHNSTON reported 2 cases of **orchitis following typhoid fever**, and as to the rarity of the affection mentioned Osler's statistics of 2 cases in 800 patients. They are instances of true typhoid infection, but rarely go on to suppuration. In both of his cases there was a marked febrile disturbance. Drs. ELDERICH, MILLER and BURLEIGH also reported cases of the same nature (posttyphoid), 2 of which broke down and suppured. Dr. WILLIAMSON reported a case of orchitis in which the testicle remained permanently greatly enlarged, but patient states that it never causes any pain. Dr. MAYER stated that he gathered from Dr. Johnston's remarks that he considered the typhoid bacillus a pyogenic organism. Many authorities do not so consider it, and it is very doubtful if it can produce pus. Dr. JOHNSTON replied that he was not prepared to assert positively that it was pyogenic, but he had come to consider it so. Dr. J. D. SINGLEY said he could not call to mind inoculation experiments carried out for the purpose of proving the typhoid bacillus pyogenic, but the consensus of opinion of the best observers is that it is a pus producer. Dr. Keen's work on the Surgical Complications of Typhoid Fever has directed especial attention to the role of this bacillus. Dr. BURLEIGH reported the case of a **fluctuat-**

ing tumor appearing over the occipital bone of a young child following trauma, which he believed was due to rupture of membranes over the posterior fontanel. The aspirated fluid resembled cerebrospinal fluid. DR. P. J. EATON reported 4 cases illustrating the difficulty of finding a food which can be digested and assimilated in obstinate cases of gastrointestinal trouble in children. It is a peculiar fact that some cases seem to do well during the hot weather, but so soon as the temperature falls to any extent, they go into collapse and die. In treating these difficult cases, occasionally one is impelled as a last resort to give, say pure cow's milk, after having failed with various low-percentage modifications, and is surprised to find the child digest it and improve at once. There is no hard and fast rule in feeding which can be applied successfully to every case. DR. ELDERICH emphasized the important part changes in temperature play in such cases. DR. J. I. JOHNSTON reported the case of a child severely burned over a large surface, which had convulsions for 36 hours following. A peculiar papillary rash developed all over the body, which looked and felt like an incipient variola.

NEW YORK.

Dr. Roswell Park, of Buffalo, has been appointed Medical Director-General of the Pan-American Exposition, to be held in Buffalo in 1901.

Paterson (N. J.) General Hospital.—The Graham memorial operating pavilion of this hospital, the gift of Mrs. John Graham, of New York, in memory of her husband, has been opened for public inspection.

Revolt in an Asylum.—In the State Hospital for the criminal insane at Matteawan, N. Y., recently, about 20 inmates revolted, attacked and overcame 8 guards, and made their escape. All were captured within a few days.

Buffalo Academy of Medicine.—At a meeting of the Section of Surgery, held November 5, 1900, DR. GEORGE EMERSON BREWER, of New York City, read a paper on **Differential diagnosis in diseases of the gall-bladder**. The discussion was opened by Dr. Roswell Park.

Suing for Expert Fees.—Dr. R. A. Witthaus, whose bill for \$18,550 for examining the stomachs of Mrs. Katherine J. Adams and Henry C. Barnett, under direction of the district attorney in the Molineaux case, was not paid on account of the small amount in the sinking-fund, will sue the city of New York to recover the full amount of his bill.

Medical Society of the County of New York.—At a meeting held October 22, 1900, the following officers were elected for the ensuing year: President, George B. Fowler; first vice-president, Charles N. Dowd; second vice-president, Irving S. Haynes; secretary, John Van Doren Young; assistant secretary, Fred Palmer Solley; treasurer, John S. Warren.

The Staff of the Buffalo General Hospital has arranged for a series of clinical meetings, to be held in the amphitheater. Interesting medical and surgical cases will be presented from the wards, and also the pathologic material of the hospital will be demonstrated. The first meeting was held November 1, and cases were presented from the wards of Drs. Carey, Stockton, and Park.

Sterilized Milk Depots.—Mr. Nathan Straus, of New York, who has heretofore maintained 2 depots throughout the winter for the distribution of pasteurized milk and milk foods, will, during the coming winter, maintain 4 depots in that city. At all these depots free coupons will be honored, and physicians' prescriptions, to those people who cannot afford even the nominal sum asked, will be gratuitously filled.

Flushing Hospital.—According to the *Medical News* the Flushing Hospital may soon close its doors on account of lack of funds to support it. The hospital authorities have issued a statement, showing that it costs \$14,000 a year to run the institution. The city gives the hospital \$6,000 and about \$3,000 is derived from pay patients. This leaves a

balance of \$5,000 to be raised by subscription. The trustees of the hospital have appealed to the citizens of Flushing to save the hospital.

Victim of Christian Science.—Faith in christian science is alleged to have been responsible for the death of Mrs. Augusta Hubbell, of Brooklyn, November 4. An autopsy revealed the fact that her death was due to peritonitis and appendicitis. She refused to have a regular physician called, and submitted to the treatment of two christian scientists. The physician whom the husband finally summoned, said that her life could, no doubt, have been saved, had medical aid been summoned in time.

The Right of Hospital Residents to Vote.—The attempt made in New York to prevent resident physicians from voting under an article of the Constitution intended to exclude paupers, etc., failed. Justice Andrews, of the Supreme Court, before whom the case was tried, decided that the clause in question referred to paupers, patients and other persons who are maintained at the expense of the public. The decision affects over 400 physicians, nurses and helpers in the hospitals of New York City.

The effect of music on the sick was discussed at length at the meeting of the International Metaphysical League recently held in New York. It was said that the therapeutic value of music has passed beyond the experimental stage and is no longer a mere theory. So many and varied are the natures of the diseases influenced beneficently by it that it is impossible to draw the line and say that it is better for this or that disorder, for music acts directly upon the mind, and mental states are mirrored in the flesh. We do not claim music to be a cureall, but an adjunct, and as such it should have an honored place in the homes of those who would heal, in the hospitals, sanatoriums, and prisons.

The New York Obstetrical Society.—At a meeting, held October 9, DR. JOSEPH BRETTAUER demonstrated a specimen of **lymphosarcoma** of the intestine, in which the diagnosis lay between intestinal and ovarian growth. At the operation the mass was found to be a coil of small intestine, adherent to other coils and omentum. The mesentery was infiltrated, likewise the retroperitoneal glands. The glands were removed with difficulty, 20 inches of intestine resected, after which a Murphy button anastomosis was established in the usual way. The woman did well for 24 hours, but died 50 hours after the operation. The autopsy showed perfect anastomosis, no signs of peritonitis, but signs of hemorrhagic nephritis. The most interesting feature of the case was the entire absence of any subjective symptoms, pointing to a disease of such a serious nature.

DR. H. N. VINEBERG presented a specimen of **fibroid uteri** removed from a patient in whom the menstrual flow has persisted after supravaginal hysterectomy. The patient was 34, had had one miscarriage, and was operated upon one year ago, at which time the uterus, with the fibroid and adnexa, was amputated just above the vaginal insertion. Recovery was satisfactory. Since the operation was performed, there has been, each month, a slight flow, lasting about a day. Examination showed everything to be normal. In the absence of ovaries and tubes, this persistence of menstruation is of interest, and, furthermore, the patient suffers from the usual phenomena of the artificial menopause. DR. H. J. BOLDT, in discussion, said that when the tubes, ovaries, body of the uterus and greater part of the cervix were removed, "menstruation" was impossible, and the "menopause changes" were the same as if the cervix had been removed as well. DR. E. E. TULL, in order to lessen the symptoms, of the menopause, advised leaving at least a portion of the ovary, a proceeding which he had used successfully.

DR. GEORGE L. BRODHEAD read the paper of the evening entitled the **Treatment of persistent occipito-posterior positions of the vertex**. He said, for convenience, all cases may be divided into 3 classes. The first class will include cases in which the vertex is above the brim of the pelvis, the second, cases in which the vertex is engaged or occupies the pelvic cavity, but is not yet at the outlet, and the third, cases in which the vertex has reached the outlet, and is pressing upon the peritoneum. The first class of cases, in which the vertex in posterior position remains above the brim, is met with far less frequently than the other two.

Among the operative procedures which have been advocated are the following: (1) Rotation of the head and body forward by external manipulation with the subsequent application of forceps; (2) rotation of the head to anterior position by internal manipulation followed by forceps; (3) the application of forceps without previous attempts at rotation; and (4) internal podalic version. Early in labor, with membranes intact, the rotation of the occiput anteriorly by external manipulation might be successfully carried out, but where labor has been in progress for many hours, whether the membranes are ruptured or not, rotation is accomplished only with great difficulty if at all. No rule can be laid down in these cases for one or the other method of treatment, nor can it be said that either method is inadmissible in all cases. For men of comparatively small operative experience, he believes that version not only in occipito-posterior, but in occipito-anterior positions as well, is a safer operation for the mother than high forceps. The fetal mortality on the other hand will be higher with version than with forceps rightly used. Operators of considerable experience may under deep anesthesia attempt to rotate the occiput to the front by the introduction of the hand into the uterine cavity. Failing in this, forceps should be applied to the head in the posterior position, by the so-called pelvic application, and the head extracted. The high forceps operation, in these as in all other cases, is always to be undertaken with a proper appreciation of its difficulties and dangers. Failing to deliver by forceps, the child being alive, version, of course, is the other alternative. But, in cases where there is but little amniotic fluid left and the uterus is tightly contracted about the fetus, the careful tentative use of the forceps is to be preferred to internal podalic version. In many cases of the second class the failure of the head to rotate and advance seems to be caused by imperfect flexion. During each pain, therefore, the forehead may be pushed upward, in order to increase flexion and bring the occiput lower down. Should further assistance be indicated the forceps is to be used. In the great majority of occipito-posterior positions rotation is spontaneous, and the normal mechanism is that of rotation from posterior to anterior position. Although the occiput usually rotates forward, the exceptions to the rule are so numerous that one must consider carefully the treatment to be followed in such cases. It will be generally conceded that the birth of the head in the occipito-posterior position, even where it is accomplished with great difficulty, is attended with much greater danger of laceration of the soft parts than is the case with the occiput to the front, and that it is difficult to extract the head if it remains in posterior position, and in some cases impossible without great injury to mother and child. In all cases, then, with the exception of some multipara, it is desirable and indeed necessary in the best interests of mother and child to bring about in some way the forward rotation of the occiput. This can best be done by the use of forceps. The conditions which should be fulfilled before the operation of rotation is undertaken are these: (1) The head should be as well flexed as possible; (2) the vertex should be well down in the pelvis and preferably at the vulvar outlet; (3) the membranes must be ruptured; (4) the cervix should be fully dilated or dilatable; (5) the bladder and rectum should be empty; (6) last, but not least, the operator should be positive of his diagnosis of position. Whenever it is possible, the patient should be placed upon a table, but where inconvenient the buttocks should be brought to the edge of the bed. The Tucker solid-bladed forceps is the best for the operation of rotation and subsequent extraction. The writer then reported 8 cases in which rotation had been performed easily and safely, with perfect safety to the child in all, and with but one extensive laceration of the soft parts, due to edema of the vagina and perineum, the laceration taking place before and after rotation had been accomplished.

DR. E. A. TUCKER said in discussion, that the practice of rotating with forceps would have been considered malpractice a few years ago. He had not seen a textbook which made the direct statement that the head could be rotated with forceps, with safety to mother and child. Yet this procedure is being repeatedly done by our best operators. By "persistent" he understood those cases in which the occiput came down posteriorly and remained so unless some kind of operative interference was used. He considered that an important advance in operative obstetrics had been made, in

recommending forward rotation with forceps. In his opinion, the soft parts were more often injured by waiting too long than by the application of the forceps. Where all the parts had already become edematous, laceration took place with or without forceps. If the operation of rotation is performed before edema takes place, injury will not result.

NEW ENGLAND.

The will of the late Jonas G. Clark, of Worcester, Mass., who founded Clark University in 1889, was filed in the Probate Court of that city the other day. The entire estate is left to the university, provided the people of the city raise a fund of \$500,000.

CHICAGO AND WESTERN STATES.

Diphtheria.—St. Louis reports 398 cases of diphtheria in the heart of the city.

The Deaconesses' Hospital, Seattle, will soon be opened. It is a substantial four-story building, erected at a cost of \$35,000, and will be equipped according to modern methods.

Bequests to Charity.—By the will of the late John Gallagher, of Chicago, St. Joseph's Providence Orphan Asylum, and St. Mary's Training School for Boys each received \$20,000.

Rush Medical College, Chicago, is to have a new \$80,000 building, for which Dr. Nicholas Senn has just given \$50,000. The new building will be principally used for clerical purposes and will be named Senn Hall.

To Make Vaccination Compulsory in Colorado.—An ordinance may be added to the laws governing the city of Denver, Col., making it compulsory for adults to be vaccinated. At present the law only pertains to children.

An Osteopath Fined.—The osteopaths have lost the first battle waged against them in Wisconsin. Dr. Thompson, an "osteopathic physician" of Milwaukee, was recently fined \$50 and costs for practising medicine without a license. The case will be appealed.

Fresno Hospital Burned.—The county hospital at Fresno, Cal., was completely destroyed by fire, October 18, the loss, being about \$30,000, was fully covered by insurance. No lives were lost, but it is feared several patients who were in a critical condition may die from shock.

Milwaukee Hospital.—By a clause in the will of John Plankinton it is possible that the Milwaukee Hospital will inherit an estate worth several million dollars. This inheritance is contingent upon the extinction within 3 or 4 years of two branches of the testator's family.

Chicago Ambulance Corps.—In February, 1900, this corps, numbering 54 men, went to South Africa to aid the Boers. Of this number 4 were killed, 3 were taken prisoners of war, 3 escaped from prison, and 3 are still missing. The surviving members have arrived at Trieste, Austria.

Metropolitan Medical College.—True bills have been found by the federal grand jury, against James Armstrong, Thomas Armstrong, and John H. Randall, officials of the Metropolitan Medical College of Chicago, known as a diploma mill, charged with using the mails to defraud. The accused are at liberty under bond.

Smallpox Among Indians.—Smallpox has broken out in a number of Indian reservations in the West. The Indian Bureau has forwarded vaccine virus to the various agencies. Lieutenant-Colonel Randlett, in charge of the Kiowa Indian Agency, at Oklahoma, telegraphs that smallpox is epidemic on the Wichita Reservation, and that 50 cases have occurred among the children at the Riverside Indian boarding school on that reservation. The disease also has appeared at the Cache Creek Mission, and the St. Patrick Mission, on the Apache, Kiowa, and Comanche reservations. No deaths have been reported thus far, and no alarm is manifested by the Indians. The disease has also appeared in Idaho and Washington.

Ventilation in Theaters.—Complaint has been made to the Chicago Health Department that many of the city theaters are in an unsanitary condition, particularly the dressing-rooms, many of which are almost without ventilation. The department has made an investigation, and found the complaint, in the main, correct. The members will endeavor to have the evils remedied.

The Detroit Medical Society meets every Wednesday at 8.15 P.M., in the Valpey Building. This society is the product of a genuine desire for a more united profession and of honorable means to secure it. It possesses the enthusiasm of recent organization, the strength of a membership of 300, and a definite purpose to do something for its members. It is distinctively a Wayne County society, but regular physicians in good standing, residing out of the county, are solicited to join.

Hygeia Medical College.—According to the *Cleveland Journal of Medicine*, a curious suit will shortly be tried in a justice court in Cincinnati. The Hygeia Medical College of that city has long been having trouble with the State Board, because it was unable to show that it was properly equipped as a school of instruction in medicine. Now one of the lecturers in said college, Dr. O. J. Hensler, has sued the institution for \$260 of unpaid salary with interest. The State Board when it examined the "college" building found very little property of any kind therein.

Testimonial Banquet to Dr. Christian Fenger.—Dr. Christian Fenger, professor of clinical surgery in Rush Medical College, of Chicago, was given a banquet at the Auditorium, November 3, by the profession. The occasion was the sixtieth birthday of the guest, and the entertainment was under the auspices of the American Medical Association. Over 500 guests were present, representing medical societies of Philadelphia, Cincinnati, Louisville, St. Louis, St. Paul, and other cities. Dr. C. A. L. Reed, President of the American Medical Association, of Cincinnati, acted as toastmaster, and Dr. W. W. Keen, of Philadelphia, was selected to present a loving-cup to Dr. Fenger. Then followed "The Physician as a Leader of Men," by Dr. Edwin F. Ricketts, of Cincinnati; "The Physician in Times of Plenty," Dr. W. H. Earles, of Milwaukee; "The Physician in Times of Adversity," Dr. J. M. Mathews, of Louisville, Ky.; "The Physician as a Scientist," Dr. N. Senn, Chicago; "The Physician as a Good Fellow," Dr. C. A. Wheaton, St. Paul, Minn.; "The Physician in Times of War," Dr. C. B. Nancrede, Ann Arbor, Mich.; "The Physician in Times of Peace," Dr. William E. Quine, Chicago; "The Period of Awakening and the Period of Progress," Dr. Christian Fenger.

In acknowledging the receipt of the loving-cup, Dr. Fenger said: "You have certainly passed far beyond any ambition that I ever had. Your gift will make what work yet remains to me pleasant, and when this work is finished I shall be contented in looking back to your kindness tonight, and shall feel that I, perhaps, have not lived in vain. The chief value of this honor to me is the kindness of heart which inspired the gift. For this token of friendly love I wish to express my heartfelt thanks."

Dr. Fenger was born in Copenhagen, Denmark, November 3, 1840. While still a medical student in 1864 he served as surgeon in the war between Denmark and Germany. He received his diploma in 1867, and was for 2 years assistant in Wilhelm Mayer's ear clinic in Copenhagen. During 1868 and 1869 he was an interne in the Royal Friedrich's Hospital, Copenhagen. At the outbreak of the Franco-German war he became surgeon in the Red Cross ambulance corps and served in that capacity throughout the war. From 1871 to 1874 Dr. Fenger was prosector, and during 1873 and 1874 privat-docent at the Copenhagen City Hospital. In 1875 he went to Egypt and was a member of the sanitary council and surgeon to the Khalifa district of Cairo. In 1877 Dr. Fenger came to Chicago, which has since been his home. In 1878 he became a member of the attending staff of the Cook County Hospital; in 1880 curator of the Rush Medical College Museum; in 1884 professor of clinical surgery at the College of Physicians and Surgeons; 9 years later professor of clinical surgery at Chicago Medical College; and in 1899 he was appointed to the chair of clinical surgery in Rush Medical College.

SOUTHERN STATES.

The Josiah Simpson Hospital, comprising 37 buildings at Old Point Comfort, Va., in which more than 2,000 sick and wounded soldiers were cared for during the Spanish-American war, has been sold at public auction.

Smallpox in Kentucky.—In Catlettsburg, 25 cases of smallpox are reported and there is one case at Denton. The president of the State Board of Health has placed Morgan County under quarantine because of smallpox at Caney.

Quarantine Continued.—The summer quarantine in Florida generally terminates at midnight on October 31, but according to an order issued by the Florida State Board of Health the quarantine restrictions will be continued until further orders.

The Right to Inspect.—A local meat-packing company of New Orleans has instituted suit against the New Orleans City Board of Health to restrain that board from inspecting their pickled goods, claiming that according to law fresh meats only are subject to inspection.

Smallpox has reappeared in Washington, D. C. Dr. Newbern, of North Carolina, recently appointed to service in the Quartermaster's Department of the army, is the victim. He was promptly removed to the smallpox hospital and there is no fear of the spread of the disease.

Medical Inspection for Public Schools in Washington.—At the last regular meeting of the Board of Education in the District of Columbia, the Committee on Sanitation recommended that medical inspectors be appointed for each school division at a salary of \$500 per annum. The recommendation was endorsed by the Board and will be urged upon Congress.

Correction.—Dr. B. L. Hardin, of Washington, D. C., writes: I would like to make some corrections in the last Washington note published, referring to the aneurysm reported at the Medical Society by Dr. Johnston. The injections used were gelatin—not glycerin—and the amount of silver wire introduced was 10 feet, instead of 12 inches. Dr. Finney, of Baltimore, did the operation, and I think he ought to be given credit for it.

The Virginia State Board of Health was established by Act of the Legislature February 13, 1872, and the following were appointed by the Governor to constitute the first board: Drs. James L. Cabell, Loudon B. Edwards, J. W. Lawson, George Ross, L. S. Joynes, and J. Grattan Cabell. Of these members there are at present only three living. Dr. Edwards has the unique distinction of being a continuous member of this board from its organization up to the present time.

Orleans Parish Medical Society.—October 27, Dr. E. L. McGEHEE reported a case presenting obscure nervous phenomena, simulating latent tuberculous meningitis following normal labor. The case has baffled treatment and is gradually approaching exhaustion. Dr. J. LAZARD reported a case of spinal anesthesia with cocaine for operation on fistula in ano. Sufficient anesthesia was obtained—although not complete—but severe headache and vomiting intervened, which was attributed to the loss of about 25 minims of cerebrospinal fluid. Dr. J. BARNETT reported a case of severe septicemia apparently cured by injections of antistreptococcic serum.

CANADA.

Gift to Hospitals.—At the annual meeting of the Lake of the Woods Milling Company recently in Montreal, \$2,500 and \$500 were voted to the Winnipeg General Hospital and St. Boniface Hospital, respectively.

New Hospital at Toronto.—The Anticonsumption League offers to raise \$30,000 by popular subscription, if the city will provide \$50,000, and then Mr. Gage's offer of \$20,000 will be ample to proceed with the building of a hospital of 100 beds. A suitable site has been procured about 9 miles from the city.

Queen's College.—Dr. Fife Fowler, for 50 years connected with the Medical Faculty of Queen's, has resigned the Professorship of the Practice of Medicine. He will retain the honorable position of Dean of the Faculty.

Disease Among Indians.—It is reported that whole tribes of Indians in British Columbia are being decimated by a disease similar to scurvy. Out of a tribe of 100 Indians 33 males died in 2 weeks, and many others are said to be in a deplorable condition.

MISCELLANY.

Plague in Alaska.—Stories of the sufferings of the plague-stricken natives of the Yukon have reached Dawson by travelers. At Holy Cross 60 patients are reported to have died.

Smallpox.—The British consul at Guayaquil, Ecuador, confirms the report of a smallpox outbreak at that place, but says the disease is not epidemic, though it is spreading among the children.

Obituary.—WILLIAM ARTHUR ZABRISKIE, of New York, October 27, aged 42.—EDWARD ADDISON HERVEY, of Rossville, N. Y., October 26, aged 77.—WILLIAM T. PRENTISS, of Lewisport, Ky., aged 73.—G. W. ROTHWELL, of Sedalia, Mo., aged 88.—LOUIS W. READ, of Norristown, Pa., October 31, aged 72.—JOHN G. DAVIS, of Manila, P. I., November 1.—W. L. MAY, of Crawfordsville, Ind., October 24.—M. W. KELIHER, of Pawtucket, R. I., October 31.

Health of Soldiers in the Philippines.—The War Department has made public an order issued by General MacArthur looking to the protection of the health of the soldiers in the Philippines. This recites that 50% of the sickness of the army is avoidable by sanitary precautions, the most important of which are the boiling of all drinking water for not less than 20 minutes and the adoption of the strictest cleanliness as to camps, quarters, kitchens, and cooking utensils. Proper regulations are prescribed to insure the adoption of these precautions.

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General, Marine-Hospital Service, during the week ended November 2, 1900:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
COLORADO:	Arapahoe Co. Sept. 10-13	2	
"	Costilla Co Oct. 15	1	
"	Ouray Co Oct. 9-16	10	
"	Wild Co Sept. 1-30	2	
INDIANA:	Indianapolis Oct. 20	1	
KENTUCKY:	Lexington Oct. 27	2	
MICHIGAN:	Detroit Oct. 20-27	1	
"	Delta Co Oct. 14-20	1	
"	Maple River Tp Oct. 14-20	21	
N. HAMPSHIRE:	Manchester Oct. 27	1	
OHIO:	Cleveland Oct. 20-27	27	
UTAH:	Salt Lake City Oct. 20-27	9	

SMALLPOX—FOREIGN.

AUSTRIA:	Trieste Oct. 6-13	1	
BOHEMIA:	Prague Oct. 6-13	5	
ENGLAND:	Liverpool Oct. 6-13	3	
"	London Oct. 6-13	1	
FRANCE:	Paris Oct. 6-13		6
GERMANY:	Solingen Oct. 1-7	1	
INDIA:	Karachi Sept. 23-30	1	
MEXICO:	Mexico Oct. 7-14	2	1
RUSSIA:	Moscow Sept. 29-Oct. 6	3	
"	Odessa Oct. 6-13	17	1
"	St. Petersburg Sept. 29-Oct. 13	18	4
"	Warsaw Sept. 29-Oct. 6		13

YELLOW FEVER.

CUBA:	Havana Oct. 1-27	274	67
MEXICO:	 Oct. 7-14		1
"	 Oct. 14-21	4	1

CHOLERA.

INDIA:	Bombay Sept. 26-Oct. 2		54
"	Karachi Sept. 17-23	4	3

PLAGUE—UNITED STATES.

CALIFORNIA:	San Francisco Oct. 14		1
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PLAGUE.—FOREIGN AND INSULAR.

CHINA:	Hongkong Sept. 1-8	4	4
INDIA:	Bombay Sept. 26-Oct. 2		86
JAPAN:	Osaka Sept. 11-29	26	
MADAGASCAR:	Tamatave Oct. 16	Reported pres-	ent.
PHILIPPINES:	Manila Sept. 7-15	1	
SCOTLAND:	Glasgow Oct. 13-19	14	
W. AUSTRALIA:	Perth April 7-Aug. 11	6	3

Hardships of Campaigning in the Tropics.

According to the New York *Evening Post*, not all the story is told of the hardships of campaigning in the tropics with an army recruited from the temperate zone by the list of killed and wounded or of dead from all causes. Just as some of the most unwholesome places on the map show the most insignificant death-rates, the inhabitants dragging themselves about with difficulty and unfit to carry on any persistent work, but not ill enough to die, so the morbidity in an army often speaks more loudly than its mortality concerning the conditions surrounding it. The records at the War Department on the subject of discharge for disability are very unsatisfactory. Of 65 000 enlisted men in the regular army for the year ended June 30, 1900, 3½% were invalided. Of the 31,000 enlisted men in the volunteer branch of the service the percentage of discharges for disability was .8%, omitting the Puerto Rico regiment, which had a larger percentage of discharges for inability than any other single regiment.

Changes in the Medical Corps of the U. S. Army,

for the week ended November 3 1900:

MITCHELL, L. T., acting assistant surgeon, will proceed to Kaltag, Alaska, for the purpose of relieving Acting Assistant Surgeon R. J. Marsh.

MARSH, R. J., acting assistant surgeon, will return to the post of Fort St. Michael for duty.

WADHAMS, S. H., acting assistant surgeon, is granted leave of absence for 1 month, with permission to visit the United States.

WELLS, Captain GEORGE M., assistant surgeon, is relieved from duty at the post of San Juan, P. R., and will turn over all public property and other accountability to Major P. E. Eagan, surgeon.

EAGAN, Major P. E., surgeon, in addition to his other duties, is assigned to duty as surgeon, post of San Juan, and attending surgeon, department headquarters.

WHITTINGTON, WM. L., acting assistant surgeon, will proceed to his home, St. Joseph, Mo., where he will report by letter to the Surgeon-General of the Army, for annulment of contract.

MOLONY, LOUIS A., acting assistant surgeon, will proceed to his home, Washington, D. C., where upon arrival he will report to the Surgeon-General of the Army for annulment of contract or orders.

HARVEY, LUTHER S., acting assistant surgeon, leave of absence for 1 month is extended for 1 month.

EGAN, Major PETER R., surgeon, is relieved from further duty in the department of Puerto Rico, and will proceed to Fort Douglas.

TENNEY, ELMER S., acting assistant surgeon, is relieved from duty at Fort Douglas, to take effect upon the arrival at that post of Major Peter R. Egan, surgeon, and will proceed to San Francisco, Cal., for assignment to duty with the troops destined for the division of the Philippines, and upon arrival at Manila, will report to the commanding general, division of the Philippines, for assignment to duty.

WALLES, Captain PHILIP G., assistant surgeon, will proceed to San Francisco, Cal., and report by telegraph to the Surgeon General of the Army for instructions.

KEAN, Major JEFFERSON R., surgeon, is relieved from further duty in the division of Cuba, and will proceed to Fort McHenry for duty.

NEWGARDEN, Captain GEORGE J., assistant surgeon, is relieved from duty at Fort McHenry, to take effect upon the arrival at that post of Major Kean, and will proceed to Fort D. A. Russell.

PILCHER, Captain JAMES E., assistant surgeon, having been found by an Army retiring board incapacitated for active service on account of disability incident thereto, his retirement from active service, October 31, is announced.

MENDOZA, F. F., acting assistant surgeon, is relieved from duty at Nuevitas and will proceed to Santiago, Cuba, for duty.

GEDDINGS, E. F., acting assistant surgeon, is relieved from duty in connection with contagious diseases in the department of Eastern Cuba, and is assigned to duty as attending surgeon at department headquarters and assistant to the sanitary inspector of the city of Santiago.

WILSON, RICHARD, acting assistant surgeon, is relieved from the duty of attending surgeon at department headquarters, Santiago, Cuba, but will remain on duty in connection with civil matters in the city of Santiago.

LIND, OSCAR, hospital steward, Fort Columbus, is relieved from further duty in the division of Cuba, and will report to the commanding general, department of the East, Governor's Island, for assignment to duty.

LEONARD, CHARLES L., hospital steward, now at Fort Columbus awaiting transportation to Manila, P. I., on the transport "Kilpatrick," will proceed to Fort Wood for temporary duty, pending the assignment to duty at that post of a hospital steward in place of Acting Hospital Steward Alfred T. Rowe, U. S. Army, recently discharged by expiration of enlistment.

WYCHIE, CHARLES L., acting assistant surgeon, will proceed from St. Louis Mo., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for the division of the Philippines, and upon arrival at Manila will report to the commanding general of that division for assignment to duty.

foreign News and Notes.

GREAT BRITAIN.

Lunacy in Scotland.—Reports for 1899 show 15 663 insane persons in Scotland, an increase for the year of 264.

Influence of Liquid Hydrogen on Bacteria.—Experiments have been made which prove that an exposure of 10 hours to the temperature of liquid hydrogen has no appreciable effect on microorganisms.

Hospital Charges Soldier.—A returned South African soldier has made the statement that he was charged for 77 days' hospital stay. This charge is directly opposite to statements of the War Office in seeking recruits.

Conflict of Evidence.—In a compensation case at Wigan, 3 doctors testified that a man died from blood poisoning following an injury. Another stated the cause of death to be typhoid fever and was sustained by a pathologist.

Insane Jews.—Statistics from the Colney Hatch Asylum show that 21% of all male Jews admitted are subjects of general paralysis, the proportion in other males being only 13%. Paralysis is not more frequent among the females than in those of other races.

Insane Patients in Clinics.—Dr. Whitcomb, of Birmingham, has for 18 years demonstrated insane patients to his classes. Recently a journalist has created great indignation against it among the town people by questioning the propriety of this procedure.

Sir William McCormac has been given permission by the Queen to accept and wear the "Kaiser Wilhelm Commemoration Medal." This has been bestowed on him by the German Emperor in recognition of his services during the war of 1870-71. The medal was instituted in memory of the late Kaiser.

Practice in Anesthesia.—An editorial in the *Lancet* calls attention to the fact that students of medicine are taught but little of the practical use of anesthetics. They are never asked concerning this in examinations and do not appreciate its importance. A plea for more practical instruction is made.

Vaccination Prosecutions.—At the meeting of the Trowbridge and Melksham Board of Guardians held October 17 it was decided that all vaccination defaulters were to appear before the guardians, and if they gave a reasonable excuse why vaccination should not be performed no proceedings would be taken, but if no reasonable excuse could be given the vaccination officer was to be instructed to prosecute.—[*Lancet*.]

Advantages of Circumcision.—Mr. Jonathan Hutchinson recently delivered an address on this subject at the London Polyclinic. The most obvious advantage is cleanliness. Many cases of seborrhea, balanitis, and herpes are prevented. It lessens the danger of cancer in the aged who suffer from phimosis. Syphilis is also prevented. Attention was called to the fact that while gonorrhea is quite as common among Jews as among Christians, syphilis is very much rarer. This must be explained by the absence of the prepuce instead of by greater morality.

Medical Orthography.—The editor of *The Medical Press* is not yet ready to accept American efforts to simplify the orthography of medical terms. "To bid the scholar discard one of the most tangible results of a long and tedious education is about as reasonable as to bid the physician 'to throw physic to the dogs.' To plead that this is prejudice and not reason is deliberately to ignore the fact that most things in this world are decided by custom, *e. g.*, prejudice, rather than by any act of the reason. That the reform for which he (a correspondent) pleads will come to pass at some future time we cannot doubt, but as yet, though the spirit is willing the flesh is weak, and the repulsion which American terminology inspires on this side of the ocean is still strong."

A Noble Death.—We are rightly proud of the fact that the medical profession numbers many heroes among its ranks. It is no uncommon thing for a medical man to lay down his life owing to the exigencies of his profession; but the recent death of Mr. Alexander Stewart Brown, F.R.C.S. Edin., which took place on October 17, deserves special recognition owing to the circumstances which led up to it. A week or two ago Mr. Brown met with a carriage accident in which he injured his spine. In order to recruit his health he set out for the South of France and on arriving at Boulogne he was just getting into the train when he saw a young man with whom he had traveled from London fall off the quay into the water. Mr. Brown at once waded into the water nearly up to his neck, got the man out, and finding that he was unconscious, wet as he was, proceeded then and there to perform artificial respiration. After two hours' hard work Mr. Brown was successful and he continued his journey to Paris. When there, however, he became so ill that he thought it best to return home, which he did, but succumbed to pneumonia shortly after his arrival.—[*Lancet*.]

CONTINENTAL EUROPE.

Mrs. D. C. Erxleben, the first female medical graduate in Germany, received her degree in 1754.

Professor Robert Koch has returned to Berlin after 18 months of travel in studying malaria and other tropical diseases.

Smallpox.—Hemorrhagic smallpox has broken out near Salerno, Italy. Vaccination is being rapidly done to prevent its spread.

The practice of pharmacy has recently been opened to women in Austria. They must be over 16 years of age and in good physical condition.

The birth of a living child 19 minutes after the death of the mother is reported from Germany. The child was completely restored, but died after a few hours.

Trachoma in Prussia.—This disease is on the increase among the school children of Prussia. Extensive measures against it by the State are recommended.

Massage as a separate study has been introduced at the Berlin University. There are 2 courses, one of 6 months for students, and another of 1 month for physicians.

The Swiss Medical Curriculum.—New regulations raise the minimum length of course to 5 years. Most students take 6 or 7 years. Examinations are to a great extent practical.

Increase of carcinoma is engaging attention in Hamburg. In 1872 there was one case in 1,396, in 1898, one in 1,022. An interesting point is that the mortality of males is increasing and bids fair to soon equal that of females.

A Beneficent Tax.—The Russian government, it is said, at the suggestion of the Czarine, has imposed 2 special taxes for the benefit of the Red Cross Society, which it is estimated will yield, \$425,000. One is a tax upon licenses to travel abroad, and the other a tax on railway tickets.

Raw-Meat Cure of Tuberculosis.—After a trial of about 3 months, the institution at Belgium for the purpose of carrying out Richet's alleged cure for tuberculosis by an exclusive raw-meat diet, has been closed. Those in charge assert that there is no efficacy whatever in the method.

Medical Coeducation in Austria.—The admission of women as students to the universities has been causing disturbance. Professor Nothnagel, of the University of Vienna, refused to deliver a lecture while young ladies were on the benches. At Graz trouble was also caused and the lady students retired from the class room. The Senate of the Austrian universities is endeavoring to prevent further disturbance.

Medical Progress in Turkey.—The celebration of the twenty-fifth anniversary of the Sultan's accession to the throne is important in its medical aspects. Medicine is

prominently represented in the new university. The creation of numberless hospitals in the provinces; a maternity hospital at Hasskien; a hospital for children at Chichli; an asylum for the poor; hospitals against the propagation of syphilis in the provinces; an antirabic institute; a vaccinal institute; the institution of local dispensaries—these are some of the evidences of medical progress.

The Descent of Man.—A despatch to *The Sun* from Berlin states that, at the recent congress of German anthropologists at Halle, Professor Klaatsch, of Heidelberg, read a paper contending that the direct descent of man from apes was no longer maintainable. His conclusion was based on the construction of the biceps muscle of the thigh. He contended that it was a mistake to regard man as the most perfectly developed mammal in all respects. His limbs and teeth do not show any high degree of development, and he is superior to other animals only in his extraordinary brain development.—[*Medical Record*.]

MISCELLANY.

Another Cancer Cure.—The latest claimant for this honor is the root of the *cynoglossum*. Striking results are said to have been obtained from its use.

Pasteur Institute at Simla.—The Indian Government will give an annual subsidy of £650 for 3 years to the Pasteur Institute at Kasouli. Major Semple is director of the institute.

Health of Kimberly.—The report of the medical officer of health for 1899 has been published. The death-rate was 17 per 1,000 for the first 9 months, and 42.6 per 1,000 for the entire year, including the 3 months of the siege.

Foreign University Intelligence.—Dr. Wauscher has been appointed extraordinary professor of surgery at Copenhagen.—Dr. Tigerstedt, of Stockholm, has been elected to the chair of physiology at Helsingfors.—At Tübingen Dr. Surrey has been chosen extraordinary professor of gynecology.—The successor to Professor Albert in the chair of surgery at Vienna has not yet been chosen. Maydl, of Prague, and Lorenz, of Vienna, are prominent candidates.

Combating Mosquitos.—Experiments are being made by Prof. C. Fermi and Dr. C. Lumbao, of the University of Sassari, Sardinia, to determine the effectiveness of various substances in driving away mosquitos from the human body, and also in killing these insects. But little success has attended their efforts, only a few substances protecting the body for from 1 to 2 hours. It is easier to kill the larva than the adult insect, petroleum being the best substance in the pools, it remaining active for about 6 days.

Obituary.—ALEXANDER S. BROWN, of London, October 17, aged 45.—ARTHUR SYMONS ECCLES, of London, October 22, aged 46.—EDWARD R. B. REYNOLDS, of London, October 20, aged 65.—WILLIAM DYSON WOOD, of Oxford, October 16.—ARTHUR ANDREW JAMISON, of Glasgow, October 17, aged 56.—SIEGENBEEK VAN HINKELOM, of Leyden, aged 50.—EUGENE KOTLYAR, of St. Petersburg.—HEINRICH ABEGG, of Danzig, aged 74.—J. H. REDMAN, of London, October 9.—SAMUEL H. SWAYNE, of Bristol, October 12, aged 79.—JAMES WASS, of Edinburgh, October 17.

The Plague.—The steamer *Ben Lomond*, arriving at London, October 30, from the Philippines, had a verified case of plague on board. No new cases are reported at Glasgow. The local government has issued a memorandum setting forth the sanitary conditions which foster the disease. A brief account of the symptoms are given and emphasis laid upon the importance of recognizing those types in which buboes are not found. Constantinople has been exposed to the disease, but no serious outbreak has occurred. A case was discovered on board the steamer *Marienburg*, that arrived at Bremen from Buenos Ayres, November 5. There has been a considerable increase in the mortality throughout India, especially in Bombay and Poona. There seems to be a recrudescence at Patua. An extraordinary rainfall in Calcutta has made conditions worse, and another outbreak is feared. Inoculation against the disease has almost ceased to be practised in Bombay, but thousands are being inoculated in Poona. Calcutta does not use inoculation, but it is popular in the Punjab.

Selection.

THE EXHIBIT OF THE AMERICAN MEDICAL ASSOCIATION AT THE ST. PAUL MEETING.

A MUSEUM of medical and surgical instruments, apparatus and dressings, pharmaceutical preparations, food and drink for the sick and for infants, utensils for chemical, microscopical and biological laboratories, sanitary and hygienic appliances and devices, ambulances, hospital and office furniture, and of the literature of the medical and allied sciences, has for many years been held in connection with the annual meeting of the American Medical Association.

This medical bazaar should be one of the most interesting features of the meetings, where every member can see the newest instruments, and the most recent additions to the pharmacopeia; where he can inspect books, and place his orders for any professional supplies he may be in need of. The time devoted to a careful study of such an exhibition is always profitably spent, as something must be seen which is new to every one. The exhibitor cannot find anywhere a means of advertising his wares which will bring them under the most favorable conditions to the attention of so many medical men from all parts of the United States, at an equal cost. If visited in his office by an agent the practitioner's only wish is to see the back of his unwelcome guest, but while strolling through the exhibit he is just in the humor to examine anything that is of interest.

The privileges offered at each meeting to those whose business it is to supply the profession with its manifold professional needs were gradually encroached upon by those whose chief occupation is to destroy legitimate medicine by scattering broadcast over the land patented and secret specifics, drugs and apparatus, for every human ill. These intruders, with the effrontery of quackery, than which earth knows nothing more brazen, forced their way into this exhibit hoping to find weak brethren, who would blow their trumpets for them and defend them in the lists if need be, because forsooth they had been endorsed by the American Medical Association. Whereas the truth of the matter is, that the Association has never exercised any control over the exhibit, which has always been in the hands of the local committee, to whom it has been a source of considerable income. The money derived from the sale of space has been a very grateful financial assistance to the committee charged with the important and costly duty of properly entertaining the Association. Hence the temptation has always been strong to increase the revenue obtained from the exhibit even at the cost of lessening its value and dignity, by selling space to concerns that had no business there. This sort of thing could go on only to a certain extent when reaction was certain to follow; and it has come in complaints from members of the Association and in threats from houses doing an open and ethical business, that they will not in the future patronize the exhibit unless it is cleansed of this very undesirable element.

If the members of the Association know that all the exhibitors are worthy of their confidence and that everything in the exhibit has been carefully scrutinized by the committee, then it will receive much more attention from the members, and be correspondingly more valuable to the exhibitors than it ever has been. The exhibit at the St. Paul meeting is to be of this character. Nothing can be exhibited here which cannot be advertised in the *Journal of the Association* or in the *St. Paul Medical Journal*. The editor of the *Journal* has consented that all applicants to the local committee for space can be referred to his office, where they will be passed upon, and if rejected there the committee in St. Paul have agreed to abide by his decision. This arrangement is final and it will guarantee to the Association an exhibit without an objectionable feature, and to the exhibitors that they will not find themselves in bad company.—[*St. Paul Medical Journal* for November, 1900.]

The Latest Literature.

British Medical Journal.

October 13, 1900. [No. 2076.]

1. The Training of Body and Mind for the Profession of Medicine. SIR JOHN WILLIAMS.
2. A Discussion on the Treatment of Internal Hemorrhages. W. G. SMITH, W. E. DIXON, E. KINGSCOTE, E. L. FENN, R. M. LESLIE, W. E. WYNTER, and T. H. MORSE.
3. A Contribution to the Study of the Vascular Mechanism of the Testis. W. E. DIXON.
4. The Chemistry of the Jaborandi Alkaloids. H. A. D. JOWETT.
5. The Pharmacology of the Jaborandi Alkaloids. C. R. MARSHALL.
6. Remarks on Extractum Jaborandi Liquidum (B.P.). H. A. D. JOWETT and C. R. MARSHALL.
7. Treatment of Asthma and Hay Fever. E. KINGSCOTE.
8. A Discussion on Serumtherapy. T. J. BOKENHAM, F. W. FORBES ROSS, J. HADDON, D. SOMMERVILLE and F. J. L. HART.
9. A Discussion on Diet in the Treatment of Disease. H. CAMPBELL, L. SCOTT, D. SOMMERVILLE, S. K. MULLICK, J. HADDON, and W. R. GORE.
10. The Treatment of Gouty Eczema. G. J. K. MARTYN.
11. Contribution to Our Knowledge of Proteid Metabolism in Children. F. W. TUNNICLIFFE and OTTO ROSENHEIM.
12. The Medicinal and Dietetic Treatment of Heart-Failure in the Aged. F. W. FORBES ROSS.
13. Some Work Bearing Upon the Preventive Treatment of Oxalate of Lime, Gravel and Calculus. L. SCOTT.
14. A Discussion on the Therapeutics of Open Air. F. W. BURTON FANNING, J. W. MOORE, D. J. CHOWRY-MUTHU, E. KINGSCOTE, W. CALWELL, JANE HARRIET WALKER, ESTHER L. COLEBROOK, and D. SOMMERVILLE.
15. The Open-Air Treatment in Ireland. F. H. SINCLAIR.
16. Remarks on the Treatment of Town Phthisicals in the Country. H. DE C. WOODCOCK.
17. The Subcutaneous Administration of Oxygen. W. EWART.
18. A Discussion on the Treatment of Lachrymal Obstructions. G. A. BERRY, E. H. CARTWRIGHT, K. SCOTT, ST. CLAIR THOMSON, E. D. BOWER, S. EDIN, E. CLARKE, F. R. CROSS, S. STEPHENSON, E. E. MADDOX, H. C. ENSOR, H. W. DODD, and C. S. BLAIR.
19. Dacryocystitis Aggravans, Resembling Tumor of Face. K. SCOTT.
20. A Case of Leukosarcoma of the Iris, showing Fibrohyaline Changes. W. W. GRIFFIN.
21. Cerebral Tumor with Optic Neuritis. E. CLARKE.
22. Some Forms of Optic-Nerve Disease, Probably of Sympathetic Origin. F. FERGUS.

2.—Smith opened the discussion on the **treatment of internal hemorrhages** in the section on pharmacology and therapeutics of the British Medical Association. When in consultation on cases of hemorrhage, the remark is often heard, "We must do something." This is quite true, but let us not do a foolish or a useless thing merely to comply with popular prejudice. Of the vegetable astringents, represented by tannic and gallic acids, suffice it to say that there is absolutely no foundation for the reputation that gallic acid has so undeservedly obtained—not even is it a local styptic. Tannic acid is, no doubt, a local styptic by its albumin-coagulating power. But the careful researches of Stockman have demonstrated the futility of using it as a remote astringent. It is absorbed in the form of alkali tannate, which has no styptic power, as indeed is obvious from its presence in the blood. Without entering upon the difficult question of the action of ergot upon the gravid uterus, the author pointed out that even if we admit as proved the oxytoxic action of a drug upon a large and specialized mass of unstriated muscle under special circumstances, it is unwarrantable to assume that, therefore, it will cause contraction of the unstriated muscular tissue in the walls of the smaller bloodvessels. Moreover, the experimental evidence in support of the proposition that ergot does cause a widespread contraction of the

smaller bloodvessels is contradictory, and it is only by experimental pharmacology that such a point can be settled. Smith suggested the following rational treatment in an urgent case of hemoptysis: 1. Reassure the patient and calm his natural alarm and excitement and that of his friends by a few judicious words and simple directions, and emphasize the fact that hemorrhage *per se* is rarely a matter of urgency. It is curious to observe that gastric hemorrhages, which are often of much more serious import, have not the same depressing effect upon the patient as a slight tinge of blood in the expectoration. 2. Avoid irritation of the gastric ends of the vagus nerve. Therefore, do not administer cold drinks or pieces of ice to patients suffering from phthisis complicated with hemoptysis. Cold drinks irritate the gastric branches of the vagus, give rise to cough, and thus aggravate the bleeding. Moreover, by causing contraction of the bloodvessels of the stomach, they may tend to increase the flow of blood to the lungs, and intelligent patients, the subjects of hemoptysis, usually discover the truth of this by experience, and avoid cold drinks. Allow, on the contrary, warm mucilaginous drinks. An icebag to the outside of the chest is perhaps of use. 3. Keep the patient absolutely quiet in mind and body. 4. Give morphin hypodermically; this is the best thing of all to do. 5. Relieve the bowels freely by magnesium sulfate or by calomel. 6. Let the diet be simple and nutritious, reduce the amount of fluid, and give no alcohol. Dixon spoke of the results of some experiments performed by Brodie and himself on the vascular changes occurring in the lung. He was able to show that all drugs that raise the bloodpressure as a result of peripheral vasoconstriction increase the total blood in the lung, and hence he believes that such drugs are essentially wrong in the treatment of pulmonary hemorrhage. He discussed the value of urethane in hemorrhage of the bowel, showing that by the use of this drug the intestines, stomach, and bladder become completely paralyzed. He advocated the use of suprarenal extract in hemorrhage from the stomach. Kingscote recommended that in cases of internal hemorrhage endeavors should be made to attract the blood to other parts of the body by heat applied to the extremities or mustard to the nape of the neck. Leslie said the most important principle in the treatment of hemorrhage is undoubtedly the lowering of the bloodpressure. Morphin, especially subcutaneously, is by far the most important drug in the treatment of internal hemorrhage. Astringents are distinctly contraindicated in the treatment of hemoptysis. In every case of hemoptysis the patient should at once be turned on the affected side. Wynter has used a solution of sterilized white gelatin in normal saline solution having a maximum strength of 5%, for the purpose of increasing the coagulability of the blood; 250 cc. of this solution were injected at intervals of a week on 10 or 20 occasions, but the quantity injected was sometimes only 100 cc., while a 1% solution was occasionally employed. This method has been employed for the arrest of internal hemorrhage and as a preventive measure in operations on specially vascular organs. [J.M.S.]

3.—Dixon concludes from the **study of the vascular mechanism of the testis** that the organ is supplied with vasomotor nerves and that it undergoes changes in volume passively with the bloodpressure, and actively as a direct result of vasomotor activity. These alterations, although well-defined, are insignificant in comparison with the changes in other organs such as the kidney. The testis does not necessarily follow the vascular alterations of either the kidney or splanchnic area; thus, after injections of testicular substance the volume of the testis and intestine expands whilst the kidney contracts. On the other hand, after smaller injections of cantharidin the testis and kidney contract whilst the splanchnic area becomes dilated; in contrast to both these nicotin usually produces immediate constriction of both intestine and kidney, but induces dilation of the testis. Of the substances inducing vasodilation of the testis the following are among some of the most defined: cantharidin (late), valerian, gold (late), spermin and allied bodies, caffeine and fresh extracts of testis. The question of "internal secretion" and the significance of a dilated condition of the testis need not be discussed, but it is evident that, as in other glands, an active dilation of vessels will lead to increased activity. [J.M.S.]

4.—Pilocarpin was discovered by Gerrard and by Hardy in 1875, and shortly afterwards 2 other **alkaloids** (pilocarpidin

and jaborin) were isolated from the mother liquors. Of these latter alkaloids, pilocarpidin had a similar physiologic effect to pilocarpin but weaker, whilst jaborin had an antagonistic effect, resembling atropin in its action. The original source of pilocarpin was the leaves of the true *jaborandi*, but of late years this variety has become extremely scarce, and the leaves at present on the market are those of *Pilocarpus pennatifolius* and *Pilocarpus microphyllus*. The leaves vary considerably in the amount of pilocarpin they contain, rarely more than 0.5%, and sometimes none at all. Therefore, a salt of the alkaloid should replace the galenic preparations of the leaves. **Pilocarpin** is the principal alkaloid of the series. It yields crystalline salts, and of these salts the nitrate is the most convenient to use in medicine on account of its stability. Jowett has been able to find no alkaloid answering to the description of jaborin in the *jaborandi* of commerce. [J.M.S.]

5.—In Marshall's experiments after the injection of **pilocarpin** the heart-beats became slower and the blood-pressure fell, and after a short but variable interval both gradually returned to normal, the blood-pressure sometimes slightly beyond it. During the rise of the blood-pressure the vagus was generally less irritable, but on reaching its normal height it became, for a short time, slightly more sensitive. This effect was produced by an injection of $\frac{1}{2}$ to 1 cc. of a 1 in 5,000 pilocarpin solution; such a dose also produces distinct salivation. After somewhat larger doses the heart ceased to beat for a time, and then gradually returned to the normal. After still larger doses the heart was stopped permanently and the respiration was paralyzed. **Isopilocarpin** produced a similar but much weaker effect. **Pilocarpidin** was very slightly active. [J.M.S.]

6.—From experiments with **extractum jaborandi liquidum** (B.P.) Jowett and Marshall conclude that the substance gives only a pilocarpin action. Enormous doses were necessary to produce an effect. The inactivity seems to be due to the absence of pilocarpin rather than to the presence of an antagonistic alkaloid. [J.M.S.]

7.—According to Kingscote, there is only one way of artificially producing **asthma**, and that is to divide the left vagus in the neck and gently stimulate the proximal end with electricity. By this method asthma is produced in the right lung and spasmodic contractions in the right half of the diaphragm. We must look, therefore, for the cause of asthma in some tissue or tissues supplied by the vagi and the sympathetic nerves, or in a lesion of the nerves themselves. There are 3 pretty constant factors in cases of asthma of long standing—cardiac dilation, acute vesicular emphysema, and chronic congestion of the liver. These conditions must be dispersed, in addition to any other causes, in order to cure the patient. Having ascertained the vagal or sympathetic irritation, endeavor to remove it. To reduce cardiac dilation, the Schott treatment is the best; whereas emphysema may be reduced by breathing exercises. [J.M.S.]

8.—In the discussion on **serum therapy**, Bokenham said the best results from the use of serum would be obtained when serum (whatever its kind) was used early, often, and strong. It was not fair to any treatment to postpone its adoption until the patient was moribund. Early and free use of diphtheria antitoxin did certainly, in the author's experience, enormously reduce the risk, not only of visible paralysis, but also of cardiac failure at a later stage. [J.M.S.]

9.—In a discussion on **diet in the treatment of disease** Campbell said that the food of civilized man had much of its indigestible portion removed, and, furthermore, that it was cooked. It has, therefore, these two characters—concentration and softness. The concentrated state of our food explains the great frequency of constipation among the civilized; because the intestines are not sufficiently stimulated by voluminous contents. The softness of the food leads to defective mastication, and this, Campbell contended, was the chief cause of dental caries and adenoids. Sommerville said in diseases of the stomach one must make an accurate diagnosis, determine what constituents of the gastric juice are increased or decreased, and administer food accordingly, instead of, for example, in excess of hydrochloric acid to feed with proteids principally. In pulmonary tuberculosis the quantity of food ingested should be pushed to a very large degree; appetite here has no relation to digestive power, and on the recognition of this fact the out-

door treatment owes much of its success. In the treatment of fevers, where rapid metabolism leads quickly to degeneration of important organs, care should be taken to replace as easily as possible lost proteid material. Mullick called attention to the necessity of choosing the albuminates when we desire to check the waste of nitrogenous tissue, to regulate oxygen absorption, to build up muscular and nerve energies, and to create fat and heat. The use of hydrocarbons is to lessen tissue waste and also to bring about the storage of albumin. The guiding principles in the treatment of all febrile states are: (1) To administer food in the simplest form for absorption and assimilation, (2) to administer food in such a form as will not only build up tissue waste with the least effort, but also to flush out of the system the toxins that have accumulated in the body as a result of the excessive metabolic processes, especially of the albuminous tissues, from the high temperature and also partly from defective digestion. [J.M.S.]

10.—The types of **eczema** met with in **gout** are, the acute dry, the acute moist, the chronic, and what may be termed the latent. By this last Martyn means a burning, itching, tormenting sensation beneath the skin, with no visible lesion. The **treatment** consists in enforcing a rigid dietary. All those articles that experience has shown to produce dyspepsia must be avoided; alcohol especially must be prohibited. Bismuth and alkalies must be freely given; best for periods of 3 weeks with short intervals. To relieve the intense burning and itching, nothing answers so well as a lotion or ointment containing carbolic acid. The best underclothing is undoubtedly cotton in the cellular woven form or in the form of Lehmann's cotton-wool clothing. Climate in gouty eczema is of great importance. Of all localities the sea is the worst. The diet must be a typical gouty diet with the minimum of proteid and starchy foods, and all those articles that produce an acid fermentation. There are some forms of food that are particularly irritating in eczema and that must be altogether withheld. The forbidden articles include alcohol, all forms of raw or cooked fruit containing much fermentable sugar or acid, especially strawberries, gooseberries, apples, lemons, and rhubarb; and stimulating food. Those drugs that are used as gout specifics never have the slightest influence in controlling or curing the eczema; but, on the other hand, drugs that benefit dyspepsia and increase the alkalinity of the blood, such as bismuth, the alkalies, and the bromids are of real value. The less irritation there is, and the more the eczema inclines to the dry and scaly type, the more will arsenic be found of value. The daily use of some mineral aperient water should never be omitted. The local treatment is very important. For the very acute moist inflammatory type soothing lotions containing lead and opium should be constantly applied. As soon as the irritation begins to disappear, and the exudation lessens, the author always substitutes dusting powder of carbonate of magnesia and fullers' earth. For the dry, irritable type, he finds nothing excels the old-fashioned tar in the form of the liquor carbonis detergens. The great area of the body that eczema so often occupies renders the employment of lotions and ointments difficult and it is in these cases that the employment of baths is so valuable. Gouty eczema in the aged is often benefited by daily sponging with warm sulphur water, and the free use of a dusting powder after drying. Sleep must be procured. [J.M.S.]

11.—From a study of **proteid metabolism in children**, Tunncliffe and Rosenheim conclude (1) that milk-proteid (plasmon) is capable of replacing meat as a nitrogenous food in the mixed diet of children according to its nitrogen percentage; (2) that greater increase in body weight took place during the milk-proteid periods in all 3 cases than during the meat periods; (3) that the phosphorus of the milk-proteid is capable of being assimilated and retained in the body. The studies were made on 3 children, 2 of whom were typically healthy and one of whom was badly nourished and just convalescent from pneumonia. [J.M.S.]

12.—In the **medicinal and dietetic treatment of heart-failure in the aged**, Ross believes that the problem, is to see that an aged patient taking a cardiac tonic also gets the wherewithal to renovate the cardiac machine. This is quite apart from the generation of muscular energy, which has its origin in the muscular burning off of fats and carbohydrates with the production of carbonic acid. An accidental observation of Muiret and Combemale led the author to

adopt the plan of increasing the myosin albumin in senile patients who were taking a cardiac tonic. This method gave marked success. The heart, more than any other organ of the body, is peculiarly fitted for and able to effect almost instantaneous metabolic reparation, even under stress of work, provided the material be of proper character and in sufficient quantity. The myosin is obtained from raw minced steak, extracted by cold 0.5% sodium chlorid solution and then curdled out. It is tasteless when so made, and can be put into a rice or custard pudding, into milk, or made into meat panada with egg and cream. The author attaches no importance to stimulant beef teas or extracts containing only excretory extractives, as they tend to call out wear and tear which they are incapable of themselves repairing. The difficulty of gastric fermentation of starchy foods in senile cases is best met for the time being by malted foods such as extract of malt alone, or in combination with cod-liver oil, and, in the case of those who cannot take oil, in combination with bone marrow. Mellin's food, cane-sugar in small quantity, and a limited amount of alcohol, either as such or in an effervescent wine, will be found useful. [J.M.S.]

13.—There are a considerable number of people, sometimes children, but generally middle-aged subjects in good circumstances, who suffer from recurrent attacks of gravel, or who after outbursts of renal colic repeatedly pass small **oxalate calculi**. In such subjects the prolonged administration of small doses of magnesium, say 40 gr. of the sulfate, given in the afternoon and at bedtime, in a well-diluted solution or combined with some mild diuretic, such as the citrate of potassium, would seem to be a suitable form of treatment. Attention to general health, regimen, and diet must also be kept well in view. [J.M.S.]

14.—Burton-Fanning advocates the term **hygienic treatment** instead of **open-air treatment**. The chief feature of open air is its comparative freedom from micro-organisms, but allowance should probably be made also for the presence of ozone. The view is held by many that some peculiar property belongs to air in motion. Generally speaking, the effects upon a consumptive patient of life in the open air are increased sense of well-being, increased appetite and assimilation, resulting in gain of weight and physical development, reduced frequency and increased strength of the pulse, improvement of nerve-tone, encouragement of healthy sleep, improvement in the quality of the blood, increased activity of the lungs, and comparative immunity from respiratory catarrh. Among other diseases that respond to **open-air therapy** are the other tubercloses, typhoid fever, smallpox, scarlet fever, measles, whooping-cough, certain nervous diseases, such as neurasthenia, anemia, rickets, marasmus, and diarrhea. Chowry-Muthu said that certain cases of pulmonary tuberculosis are not suitable to be subjected to open-air treatment. These include: 1. The chronic cases that have run a mild course, and in which the system has been vitiated by the toxin of the tubercle bacilli and other pathogenic organisms. 2. The cases in which the stomach is feeble with a tendency to nausea and vomiting, and in which the stomach trouble is much more serious than the lesion of the lung. 3. The cases associated with bronchial catarrh. The speaker referred to the value of inhalations of formalin (igazol) in phthisis, and thought that patients undergoing sanatorium treatment were cured a few weeks earlier after its use than they probably could have been without it. Kingscote said that pure air stimulated the red-blood corpuscles and invigorated the phagocytes, and, therefore, made them better able to combat the bacilli, while impure air did the reverse. [J.M.S.]

15.—The reputed moist character of **Irish weather** has been no hindrance to the successful carrying out of the **open-air method of treatment** in Ireland. There is great advantage in treating patients in their own climate, however. Sinclair believes that, as in every other form of treatment of disease, the adoption of any rigid system, or any empirical rule that necessitates indiscriminately the administration of so many ounces a day of food to every patient must in the long run prove unsatisfactory. In sanatorium practice the idea that must always be paramount is that the reason of the patient's being there is to get well and not to amuse himself. But while this is so it is the physician's duty to map out each patient's life in the sanatorium so that his individual partialities are considered, and if one could find congenial occupation for every patient, the ideal

principle of a "consumption colony" would be worked out. Too much emphasis cannot be laid on the infectivity of sputum. [J.M.S.]

17.—Ewart has administered hydrogen dioxid by subcutaneous injection and he has also given oxygen gas in the same way. The two series of observations show that it is possible to set up a local oxygen emphysema of the areolar tissue without evil result, and that the gas will be gradually absorbed, though the process is a slow one. The diluted hydrogen dioxid infusion is, perhaps, the less risky of the two methods. On the other hand, the oxygen-gas injection is easier to carry out, and the possibility of wounding a vein seems to be its only danger. This may be readily guarded against with sufficient care; and the remote risk is much limited by the preliminary precaution of applying a ligature to the upper part of the limb. The clinical value of the **subcutaneous administration of oxygen** as a general stimulant has yet to be made out. [J.M.S.]

20.—Griffin reports a case of **leukosarcoma of the iris** occurring in a patient 19 years of age. The case was especially interesting because of the age of the patient, most intraocular sarcomas occurring much later in life; also because of the hyalin changes found in the growth. These changes, with its nonvascular character, gave the tumor a dense white appearance. [G.B.W.]

21.—Clark reports a case of **cerebral tumor** accompanied by postneuritic atrophy in the right eye, and choked disc in the left. The symptoms presented led to a diagnosis of tumor situated on the left frontal lobe, limited behind by the ascending parietal convolution and below by the third frontal convolution and the speech-center. The special interest in the case lies in the confirmation of the diagnosis by postmortem and in the absence of serious symptoms until within 48 hours of death, and in the microscopic examination showing the tumor to be a psammoglioma. [G.B.W.]

October 20, 1900. [No. 2077.]

1. Presidential Address on the Study of Clinical Medicine. DOUGLAS POWELL.
2. Presidential Address on a Clinical View of Some of the Mechanisms of the Heart and its Valves. WILLIAM EWART.
3. A Clinical Lecture on the Prevention of Valvular Disease of the Heart in Cases of Acute Rheumatism. RICHARD CATON.
4. On the Resting Position of Anopheles. L. W. SAMBON and G. C. LOW.
5. Antistreptococcus Serum in Pulmonary Tuberculosis. THOMPSON CAMPBELL.
6. Note on the Treatment of Abscess of the Liver. EUGENE LAURENT.
7. Unusual Case of Malignant Disease in Early Infant Life. H. J. CLARK.
8. On Oophorectomy in Cancer of the Breast. STANLEY BOYD.
9. Four Cases of Recurrent Mammary Carcinoma Treated by Oophorectomy and Thyroid Extract. G. ERNEST HERMAN.
10. The Surgical Treatment of Exstrophy of the Urinary Bladder. PROFESSOR JOHN BERG.
11. On the Substitution (when practicable) of Subastragalar for Syme's Amputation. J. HUTCHINSON.
12. Observations upon Injuries to the Internal Lateral Ligament and to the Internal Semilunar Cartilage of the Knee-joint. JOSEPH GRIFFITHS.
13. Three Cases in which the Superior Cervical Ganglion of the Sympathetic was Removed, with Remarks upon the Operation. F. F. BURGHARD.
14. Plastic Operation for Incontinentia Ani. K. G. LENNANDER and MARTIN RAMSTROEM.
15. Prostatectomy in Two Stages, with an Account of Seven Cases. W. BRUCE CLARKE.
16. The Open Operation for Talipes (Equino Varus). A. M. PHELPS.

2.—Ewart believes that the **systolic action of the heart** is mainly constrictive; it approximates almost every point in the heart-wall to the septum. Locally, slight shortening of the longitudinal fibers must take place to adapt at every point the considerable convexity of the heart-wall to the

length of the septum; but there are 3 situations at which a perceptible shortening occurs, namely, the anterior wall of the conus arteriosus, the muscoli papillaris, and the auriculoventricular orifices, which are carried downwards and backwards, thereby aiding auricular aspiration and ventricular compression. Whatever the precise mechanism of the mitral closure may be, it must be credited with considerable adaptability to varying conditions. The normal mitral closure is due to the contraction of the orificial fibers and to close adaptation under blood pressure of the valvular membranes. The mitral membrane is not made up of separate flaps, but is a single membrane extending continuously all around the orifice. It forms a shallow wide-mouthed funnel, of which the narrowing funnel of stenosis is merely an exaggeration. Nevertheless the anterior and posterior flaps are well individualized both in their anatomy and in their function. The great anterior flap fulfils various purposes, but it never ceases to be a ventricular partition, and during systole it is kept spread out and smooth. The posterior flap, which forms the greater part of the circular membrane, but is much shorter in the vertical direction than its fellow, is essentially mobile, being attached to the entire length of the fibrous loop and of the contractile border of the ventricular wall. During systole it is folded into numerous pleats like a purse; but the pleating is done not by the pull of a string, but by the contraction of the orificial fibers, and the pleats are arranged by the chordae from below. The stretching of the great flap is effected by its 2 strong diverging chordae and higher up by the 2 mitral insertions which connect it with powerful muscles and with the aortic roots and fibrocartilages; its lower part and its fringe alone are capable of flapping to the extent which orificial space and chordae will allow, but during complete oblitative systole there is neither much space nor much rope, and this flap as well as the posterior flap is drawn almost vertically downwards. The high closure and the low closure of the mitral valve are the two extreme types associated respectively with an uncontracted and a contracted orifice. The first, seen in dilated, in partly paralyzed, and perhaps in some peculiar normal hearts, is relatively precarious. The second, which is distinctive of thoroughly normal and strong hearts, is made doubly secure. Should the systole fail to empty the retromitral pool or to obliterate the muscular orifice, the closure will be almost exclusively membranous. This is the high closure, or purely membranous closure by horizontal adaptation. In the normal type of low closure the orifice is contracted, the membranes are vertical, and they are in apposition not only at their fringes, but over a considerable part of their surfaces, which are pressed back to back and applied to the outer ventricular wall by the intraventricular blood pressure, whilst their attachments may either meet if the muscular orifice should be tightly closed or be separated by a small wedge of auricular blood, and at the same time bulged slightly upwards by the ventricular blood. This is the perfect and secure musculomembranous closure of a completely contracting and emptying heart. As soon as the auricular systole and the early presystolic contraction of the ventricles have overstretched everything, the powerful and rapid papillary contraction probably takes place simultaneously with the first sound. By this the chordae and their membranes would be stretched downwards and made taut, helping to depress the ventricular orifices. Another important function of the papillary muscles is their share in the production of the first sound, which is largely one of muscular vibration. Not the least of the papillary functions seems to be that of steadying and of adjusting the aorta from below and of providing for its patency. Continuity of muscular fibers across the auriculoventricular groove does not seem to obtain in man. Possibly the regulation of the rhythm may be in part mechanical, and analogous to that of most of our muscular adjustments, namely, essentially myotactic. A different explanation is that by a direct overtension of the heart-wall, its various fibers being unevenly stretched by the growing ventricular charge, and therefore successively excited according to the different length of their course in the ventricle. In both cases the regulation as to time and as to energy of contraction of various parts of the heart would be under the influence of the highly variable scale of internal pressures, one of great delicacy and capable of affording some explanation for the great variations of the cardiac rhythm in health, and for some of its remarkable patholog-

ical abnormalities. The common systolic functional murmurs are still imperfectly explained. Their eventual disappearance suggests that the valvular structures are sound, and that there is merely some muscular or neuromuscular derangement, with temporary failure of orificial closure as a result. Orificial defects may also arise from structural causes. The murmurs are then organic, but more commonly these murmurs are associated with valvular deformities. Leaving aside vegetative valvulitis and ruptured valves, the structural changes at the onset may be so slight as to elude a superficial inspection, and they may produce little more than transient limitations of movement. But, unlike the rheumatic joint, the heart can never be absolutely rested, and if the infiltration is not merely myocardial, but should also affect the valve, it is likely to progress to the verrucose stage, and to those roughenings, thickenings, puckeringings, and obstructions that we all know tend to leakage by faulty apposition. Myocardial stiffness is one cause of valvular defect and epicardial stiffness is another. Assuming as a common factor in the evolution of early mitral disease into opposite types, the inevitable fibrosis and retraction incidental to all warty valvulitis, the direction of the progressive change will vary with habitual attitude of the valve. If the valve be constantly kept well down in the ventricle, fibrosis and shortening are likely to overtake the chordae. But if from abnormal patency of the orifice the flaps be raised high at each systole, the flaps and not the chordae will be the chief seat of shrinkage. The chordae will be submitted to a systematic elongation at the time when, owing to rheumatic or inflammatory softening, they are most easily stretched, their weakness thus becoming a protection against all danger of stenotic shortening. Stenosis, according to this slightly paradoxical view, would be the disease overtaking strong, normally-acting hearts; incompetence the disease of yielding, atonic myocardia. And this, I believe, will agree with your experience of the great prevalence of the stenotic affection, and of its predilection for young and healthy hearts with good cardiac sounds. While normally the auricle is intended to contract independently of the ventricle, in mitral stenosis it permanently invades the upper ventricular space and is in reality an auricle inside the ventricle, and it is thenceforth subject not only to its own contraction, but to that of the ventricle also. The most obvious fact in this condition is the encumbrance of the space of the ventricle. The auricle plays the part of a foreign body wedged into the ventricular orifice, and distending it at the moment when it should be contracting. Great delay must follow, and there is little wonder that an unusually long presystole should be a distinctive, and in the matter of impulse, a tangible feature of stenosis. Of the normal behavior of the mitral valve little is left but the tension of the stiffened membrane by papillary effort, which to the author's mind is a sufficient cause for the loud first sound. In those cases where the ventricle is still struggling successfully, and manages to empty the funnel, the first diastolic bruit is due to the sudden descent of the blood dammed up in the auricle into the capacious funnel. The "rumble" kept up in some hearts throughout the diastole is due to the injection of a strong stream of blood from the often irregular and rough orifice across the stiffened papillary tackle. The presystolic murmur is, the author believes, that of a fluid vein likewise making for the apex. It might be compared to the stream from a syringe forcibly emptied under water, for the ventricle is already nearly full and the chordae less apt to vibrate. Its crescendo character may be explained by the growing pressure of the ventricular orificial presystole upon the funnel. During the presystole, there are 2 streams from the funnel, the auricular systolic pressure preventing, however, much regurgitation, but that as soon as the first sound marks the cessation of the intraventricular flow the reflux is so much increased and accelerated as to cause an audible fluid vein. According to this view there is no absolute reversal of current; some blood was previously being driven back into the auricle, and therefore there need be no interval between the first sound and the murmur. If the contractile fibers of the ventricular orifice had been worn out by the invincible resistance of a permanently distended auricle and funnel some of the murmurs would be obscured. This is precisely the condition observed at the later stages. Not only the presystolic murmur disappears, but with it the second sound at the apex. The influence exercised upon the arterial system is

not limited to the aorta and to its valvular sound, but may be traced in the pulse. The pulse of mitral stenosis is of 2 opposite kinds, according as compensation is perfect or failing. In the former case it closely resembles that of moderate aortic stenosis, and the author believes that it is due to a slight obstruction in the aortic current. In the compensated stage the funnel merely encroaches upon and narrows the infra-aortic space, but when compensation fails, its increasing size sets up a dangerous obstruction. [J.M.S.]

3.—In order to exert any influence on the endocardium in cases of **acute rheumatism**, to prevent or assuage rheumatic inflammation, to remove the products of such inflammation, and to prevent the crippling of the valve we must stop the rheumatism as rapidly as possible, and prevent all aggravation of it by chills. We therefore keep the patient, absolutely at rest in bed; clothe him from head to foot in a warm flannel garment. We further give salicylates in full dose, often with alkalies, and cholagoges in such measure as to cause free evacuations but no diarrhea. The diet is confined to milk and light farinaceous food; no red meat is given for a long time. The patient is kept in bed long after all pain and fever are gone, for it should never be forgotten that the salicylate treatment, while removing pain and fever in 24 or 48 hours, does not remove the rheumatic entity itself after less than 2 or 3 weeks of steady administration. If the mischief in the heart has begun before you see the patient keep the patient most stringently at rest; no raising the head, no excitement; he must have the most perfect physiologic repose you can devise. In order to give any help to the natural powers in their strife with the rheumatic dyscrasia in the endocardium, small blisters the size of a shilling may be applied in the course of the first 4 intercostal nerves, or over the upper part of the chest between the clavicle and the nipple. In order to absorb and remove all inflammatory exudation from the endocardium and valve cusps as early as possible, it is advisable to give iodids and mercury. During the last 15 years Caton has treated 85 cases of valvulitis in hospital on the plan above described. Of these 54 already had signs of cardiac trouble, apparently recent, when they came under his charge; after being subjected to the treatment above detailed, 34 of these left hospital with apparently sound hearts, while 20 had valvular disease. Thirty-one cases came into hospital with sound hearts (or at least having no bruit) and valvulitis occurred in hospital. Of these 27 went out with apparently sound hearts, 3 lapsed into permanent disease of the valve, and 1 remains under treatment. [J.M.S.]

4.—The statement that the relative **positions assumed by culex and anopheles** are so strikingly different is erroneous, and it is to be regretted that it has been incorporated in all recent literature on malaria, because it is likely to linger long in the writings of copyists. When Sambon and Low first came to the Roman Campagna this year they observed thousands of anopheles in the houses and stables of intensely malarial places, but none of them ever assumed the position described by the members of the Liverpool Malarial Mission. These anopheles belonged to the species *claviger*. They were usually found in the darkest corners, not infrequently beneath tables and chairs or behind pictures. On painted ceilings they were generally found on the darker colors, which protected them best. A very favorite haunt were the cobwebs, especially in the stables, the ceilings of which were always heavily curtained. But wherever found the anopheles never stood on their heads, but rested on their feet with the posterior part of their body slightly inclined away from the support on which they were resting. The inclination of the body was less when the insect rested on its 3 pairs of legs and formed a maximum angle of about 45 degrees when it poised on the 2 first pairs and stretched out the last pair free. Both *culex* and *anopheles* frequently sit with the last pair of legs lifted away from the support. But while the legs of *Anopheles claviger* stretch out with the tarsi pointing downwards, those of the various species of *culex* which came under their observation presented the tarsi curled upwards in a very characteristic manner. Lately, having brought up a number of *Anopheles pseudopictus* from larvæ, the authors observed that in this species of anopheles the body forms a much wider angle with the surface of support. The angle is so wide at times that one might almost be justified in saying that the insect holds its body perpendicular to the wall. It is evident, therefore, that the observations made by Ross and

Austin in Sierra Leone were quite correct, but that unfortunately these 2 authors erred in extending to the whole genus a character which is peculiar to a few species which they had observed only in *Anopheles costalis*. [J.M.S.]

6.—Campbell reports the case of a girl of 18, who was suffering from **pulmonary tuberculosis**. The morning temperature was 101.6°, the evening, 102°. During the first week of residence, when the only antipyretic measure employed was cold sponging of the whole body 2 or 3 times daily, the average morning temperature was 101.2°, the afternoon record 102.4°, and the evening average 102°. During the ensuing 3 weeks, quinin salicylate, 2 grains, and phenacetin, 5 grains, were administered at 10 A.M. and 3 P.M., to keep the pyrexia within moderate limits and allow the patient to take a proper amount of nourishment with comfort, the average evening record then was 100.8°, including one register of 104.4°. A day or 2 before the commencement of the serum treatment the antipyretic powders were discontinued, leaving the evening register running at 102°. Ten cc. of the **anti-streptococcus serum** was injected subcutaneously in the anterior abdominal wall. This apparently caused an exacerbation of the evening temperature to 103.4°. Then 4 days elapsed and during this time the average evening temperature was 102.5°. At the end of this period 10 cc. were injected, giving rise to an evening record of 103.4°, as on the previous occasion. Then a day's intermission was allowed, as the patient complained of tenderness at the site of injection. During the ensuing 7 days the administration was continued at 11 A.M. each day, and on one occasion only the injection was repeated tentatively in the evening. In all, 10 injections were given, and during this period the average morning temperature was practically 101°, and the evening average 103.8°, although cold sponging of the body was carried out 3 times daily. With regard to the effect of the serum, it cannot be said that it has proved beneficial; indeed, judging from the temperature records of the first week of residence, the treatment has apparently caused a slight increase in the pyrexia, without having much effect on the pulse and respiration-rates. All that can be deduced from this trial is that if the marked habitual evening exacerbation of temperature in cases of pulmonary tuberculosis is really due to the action of pyogenic organisms, the antitoxin treatment is apparently of little value. [J.M.S.]

6.—Laurent has devised a **trocar and canula** for exploration in cases of supposed hepatic abscess. It is flat (oval on section) and consequently penetrates more readily between the ribs than the ordinary circular form. It is one inch longer than the ordinary trocar and canula of Dieulafoy. It is also grooved on either side, which grooves are valuable directors insuring safety, precision, and rapidity of subsequent operations. [G.B.W.]

7.—Clark reports a case of columnar cell **carcinoma**, occurring in the testicle of a **child** 10 weeks old. [G.B.W.]

8.—Stanley Boyd has been able to obtain more or less full details in 41 cases of **oophorectomy in cancer of the breast**. The cases are in no way selected, but include all which the surgeons to whom he is indebted for them, had done to a certain date. He knows the results of 13 other cases, making a total of 54. Of these, 19 (35%) were more or less markedly benefited by the oophorectomy, and 34 were not at all or only doubtfully benefited, and 1 died of exhaustion. Of the 46 cases most accurately described there were 17 (37%) in which there was a marked decrease, often amounting to disappearance of superficial disease. These statistics seem to prove that atrophy of cancer masses after oophorectomy is no accidental occurrence, as some would have us believe, and any one who has seen a successful case will decline to allow that the result is due to chance. In regard to the length of time the improvement lasts Boyd remarks that a year or more of useful life seems often to have been gained, and that there is reason to think that progress of disease is sometimes delayed when it is not arrested. He has never given thyroid extract until satisfied that oophorectomy was failing in its effect and then it was without obvious benefit. So far as Boyd has observed, cancers other than mammary are not benefited by oophorectomy; even uterine cancer is not, though atrophy of the uterus follows more quickly and certainly upon oophorectomy than does atrophy of the breasts. There would seem to be differences between cancers not hitherto suspected. Stranger still it is that all mammary cancers are not affected by oophorectomy; either

mammary cancers or the ovaries differ in the different cases. His theory is that certain ovaries, probably by pathologic variation in their internal secretion, favor the growth of cancer by action either upon the growth or upon the tissues; the removal of such ovaries alone will be of benefit, but he has discovered no clue to their recognition, for the ovaries removed have usually been normal to the eye. He thinks that oophorectomy should be offered in cases other than the very acute, in women over 40, with no visceral or bony lesions, in fair condition, and before the menopause. In extensive primary cases and recurrences it seems advisable to remove what is possible of the disease; but healing should be attained, lest the oophorectomy fail in its object and malignant ulceration be started. The surgeon must decide what it is right to do in each case, and the patient or the patient's friends should understand the experimental nature of the treatment. Boyd also refers to the fact that arms so heavy with edema as to be burdensome are sometimes amputated to the great relief of the patient; and he mentions 2 cases thus treated, 1 of which was thus enabled again to busy herself with her home and children, whereas before she could scarcely get about. He thinks, therefore, that if a patient in a fair condition, who is suffering severely from the weight of a swollen arm, desires relief at the cost of a high amputation, it should not be withheld. [W K.]

9.—Herman adds 2 more cases of **mammary cancer treated by oophorectomy and thyroid extract** to the 2 previously reported. Of these the one operated on in 1897 is still entirely free from cancer, and the others were all greatly benefited. He believes that the favorable result was not due to oophorectomy alone, but that the thyroid extract contributed to the good results. The first thing is, if possible, to define the cases in which benefit may be expected from the combination of the 2 methods of treatment, and when this has been done, then there will be time to discover how much is due to oophorectomy and how much to the thyroid. [W K.]

12.—Griffith reports some **observations upon the structure of the knee**, namely the internal lateral ligament and the internal semilunar cartilage, based upon clinical data and upon experiments on the knee-joints removed after death. He found that bending inwards of the knee-joint is prevented by internal lateral ligament in the extended position and by crucial ligaments in the flexed position. It therefore follows, that if there is a strain thrown on the one side, resistance is offered by the internal lateral ligament when the joint is extended, and by crucial ligaments when it is flexed. In his experience, this internal lateral ligament is the most frequently damaged structure in the knee-joint, as the knee is not only bent inwards to a more or less degree owing to the obliquity of the femur inwards and the tibia outwards, but it is also subjected to severe strain whenever the knee is abducted and the foot planted on the ground, as in boxing, tennis playing, etc. Overstretching or rupture of this ligament may be recognized first by locating the exact spot of tenderness, which is usually at one or the other end of the ligament, and secondly by testing whether there is any lateral movement of the joint in the extended or somewhat extended position. There is generally associated, tearing of the capsule and synovial membrane, hence a more or less effusion in the joint cavity is always present. The severe symptoms clear up in from 2 to 6 weeks, but the patient may suffer from what he terms "a weak knee," for months or even years. Griffith has devised an apparatus which affords absolute support to the injured structure, consisting of 2 flat bars of steel, about an inch in width, fixed together by a free hinged joint which lies horizontally at the middle of the back of the knee. These bars are split longitudinally into equal halves, and these halves gradually diverge so as to almost encircle the limb. Pads and straps are applied to the anterior ends of the bar. Before a displacement of the internal semilunar cartilage can take place an accident which is frequent in athletes, it is necessary that the internal lateral ligaments be rendered noneffective either by the overstretching of its fibers or by rupture partial or complete. After rupture of the internal lateral ligament, the articular surface may be separated for $\frac{1}{2}$ inch from each other, making a space sufficiently large to allow the passage of the cartilage in between the 2 bones. Griffith suggests that instead of adopting the usual procedure of full flexion followed by sudden extension of the joint, for the purpose of reducing displaced internal semilunar cartilage, the surgeon should

rather try lateral flexion to relieve the cartilage from pressure, for as soon as this occurs, it is most probable that the cartilage will then with its own elasticity spring back to its proper place. [G.B.W.]

13.—Burghard reports 3 cases in which the **superior cervical ganglion of the sympathetic was removed**. The constant symptoms observed following this operation were ptosis, severe pains in the head on the side operated upon, congestion of the vessels of the face, and contraction of the pupil. The headache and congestion of the face varied both in degree and duration. Among the variable symptoms may be mentioned the decrease of intraocular tension and the presence of enophthalmos or the reverse. [G.B.W.]

14.—Lennander reports 3 cases in which, by **plastic operation**, he restored the proper function of the **anus**. In the first case the incontinence followed phlegmonous inflammation, destroyed the sphincter ani and part of the rectum. In the second case the incontinence was due to extirpation of a tubercular prostate and urethra; and in the third case the incontinence arose through the removal of a rectal carcinoma. The operation consisted briefly in the following steps: An incision is made over the lower part of the sacrum and coccyx and continued in horseshoe-shape around the ischrorectal region. The posterior part of the levator ani and the anterior part of the coccygeus muscles are opened up. The levator ani is completely separated from the coccyx and coccygeus muscle, care being taken to avoid the nerve supplying the levator ani. This opening in the pelvic diaphragm should be filled up by the medium part of the glutei maximi. These fibers are loosened from the sciatic ligament and the sacrum and coccyx; then portions of the levator ani springing from the coccyx and coccygeus muscle are brought forward and fixed to the posterior surface rectum in such a way that they will brace the rectum on either side. The glutei muscles previously removed from their origin are now stitched back in the middle line anteriorly to the levator ani, and the skin at the anus; and posteriorly with the peritoneum upon the sides of the coccyx. These united muscles sink deeply between the point of the coccyx and anus and form a horizontal foundation for the pelvis, and at the same time embrace the anal portion of the rectum posteriorly and anteriorly. All 3 of the patients were much benefited by the operation. [G.B.W.]

15.—Clarke advises, in **operating on the prostate**, that the operation be done at 2 sittings. At the first the bladder is opened suprapubically and a couple of stitches passed through the bladder-wall, one on either side, and a good-sized tube left in the suprapubic opening to prevent so much contraction that the surgeon would not be able to pass his finger into the bladder for examination. The drainage of the bladder thus established allows the patient to rapidly improve in health, and in a week or ten days he is ready for the second part of the operation. This time an incision is made in the perineum as for lateral lithotomy, until the prostate is reached. The finger of the left hand is then introduced into the suprapubic opening, and the prostate pushed down towards the perineum, which procedure greatly aids the removal of the gland itself. The hemorrhage in all the cases reported was insignificant, this being attributed to the subsidence of the congestion around the prostate and the base of the bladder, occurring between the 2 operations. [G.B.W.]

16.—Phelps concludes his article on the open operation for **talipes equinovarus** briefly as follows: All feet at any age after the fourth month with shortened skin and ligaments, should be operated on by open incision. This is much better than prolonged mechanical treatment. The operation is not completed until the foot is placed in the supercorrected position, flexed upon the leg and the heel prominent so that it strikes the ground in walking before the anterior segment of the foot does. Clubfoot shoes should be discarded for massage and manipulation, accompanied with fixation of the foot in the supercorrected position by a plaster-of-paris shoe or adhesive plaster. Treatment begins immediately after the operation is completed. Osteoclasis should be performed in all cases of inward twist of the tibia, or a relapse may be looked for. Bone operations should never be performed primarily. Tendons and ligaments should be cut and not stretched. No case is cured until the heel strikes the ground first in walking. Open incision should never be performed unless the skin resists and will

not stretch sufficient to allow the supercorrection and the proper unfolding of the foot. The weight of the body falling upon any clubshoe or brace nullifies the action of the apparatus. [G.B.W.]

Lancet.

October 13, 1900. [No. 4024]

1. Introductory Address. Delivered at the Commencement of the Winter Session of the Faculty of Medicine of the University College of South Wales and Monmouthshire. SIR JOHN WILLIAMS.
2. Some Problems of Tropical Medicine. WILLIAM MACGREGOR.
3. The Romance of Surgery. J. H. MORGAN.
4. Notes on 31 Cases of Diphtheria Treated with Antitoxin. JOHN MACKENZIE.
5. Dacryocystitis Aggravans Resembling Tumor of the Face. KENNETH SCOTT.
6. Eighteen Consecutive Cases of Abdominal Hysterectomy; Technic and Results. A. A. WARDEN.
7. Bilateral Resection of the Superior Cervical Ganglion of the Sympathetic for Glaucoma. H. WORK DODD.
8. Two Illustrative Cases of Sinus Pyemia with Unusual Results. JAMES KERR.
9. Two Cases of Arteriovenous Aneurysm Caused by Mauser Bullets. J. T. LEWTAS.
10. Two Cases of Bullet Wounds. H. T. COX.

3.—Morgan discusses the **recent advances** which have been made in **surgery**, mentioning, among other things, the removal of tumors of the liver, the suture of wounds of the heart, operation for perforated gastric ulcer, the surgery of the brain, the use of the x rays, etc., without mentioning anything especially new. [M.B.T.]

4.—Mackenzie summarizes **31 cases of diphtheria** that he **treated with antitoxin**. He divides the cases into 7 groups: 1. Three cases of laryngeal diphtheria extending to the pharynx. 2. Six cases of pharyngeal diphtheria gradually extending to the larynx. 3. Three cases of laryngeal diphtheria confined to the larynx. 4. Nine cases of pharyngeal diphtheria confined to the soft palate, pharynx, and posterior nares. 5. Six cases of post-scarlatinal diphtheria. 6. Three cases in which serum was given for diagnostic purposes. 7. Two cases of diphtheria of the conjunctiva. [J.M.S.]

6.—Warden reports 18 consecutive cases of **abdominal hysterectomy** performed by Doyen, of Paris, with uniformly favorable results. Doyen's technic is very simple and the resulting mortality very small, from 2 to 4%. The technic comprises 7 steps, as follows: (1) Abdomen is opened and the tumor drawn out above the pubes; (2) perforation of Douglas' pouch and seizure of the cervix; (3) isolation of the cervix; (4) removal of the uterus; (5) arrest of hemorrhage; (6) closure of the pelvic peritoneum; (7) closure of the abdomen. Warden gives interesting remarks on special maneuvers. 1. The broad ligaments. Frequently the broad ligaments are unduly short owing to their attachment high up on the lateral parts of the tumor, and it is difficult to get the latter elevated well out of the pelvis. These tight bands, as it were, of the broad ligaments are at once felt by the index finger and may be caught either by the assistant or with long curved elastic forceps and cut through close to the uterus. It is rarely necessary to apply pressure-forceps to the uterine surface. If necessary the left broad ligament is similarly treated. 2. Hemorrhage from the uterine artery during the isolation of the cervix uteri. This usually occurs while the cervix is being drawn up with the tenaculum, but the surgeon is prepared for it, and it is as easy to catch it with the pressure-forceps as to catch an artery of similar caliber, say, in an amputation of the breast. As the patient is in the Trendelenburg position and is more or less congested it is frequently of use to proceed with the removal of the tumor and then return to the ligation of the 2 uterine arteries which have served the purpose of a venesection. 3. Difficulty in reaching Douglas' pouch on account of adhesions or a posterior subperitoneal fibroid blocking the pelvis. Doyen remarked upon this difficulty in 1892 and showed how slight were the changes which it was necessary to introduce into

the technic. The tumor is drawn up as high as possible, any adhesions are separated, and if there are multiple posterior fibromas present, the peritoneum and uterine tissue are incised and these fibroids easily enucleated with the fingers or the screw. If the posterior culdesac remains inaccessible the forceps in the vagina are simply pushed toward the right broad ligament, and the right lateral vaginal culdesac is perforated as close as possible to the insertion into the cervix of the lower edge of the right broad ligament and the operation is proceeded with as in more ordinary conditions. 4. Isolation of the cervix from the vagina before the abdomen has been opened. This is a maneuver that considerably facilitates the operation, especially to those undertaking it for the first time. It is well, at any rate, during the preparation and toilet of the vulva and vagina, to examine carefully the exact position and relations of the cervix. The higher it is and the more difficult of access by the vagina, the easier it will be to reach it from the abdomen. The lower and more normal it is the easier will be the preliminary circular incision of the mucous membrane per vaginam. Undoubtedly the most delicate step in the operation is the section of the lateral attachments of the cervix and of the mucous membrane of the posterior vaginal culdesac, and when this is done as a preliminary step by the vagina the extirpation of the uterus by the abdomen is of the greatest simplicity. 5. Drainage. Though not habitual it is sometimes well to drain Douglas' pouch, either after an exceptionally laborious operation or when the vaginoperitoneal wound has been plugged and not sutured. The best method is by a glass-drain introduced from the most dependent part of Douglas' pouch into the vagina and covered externally by a small pouch of thin rubber or skin to collect aseptically any fluid that may thus drain. 6. After-treatment. The patient is well purged on the second day, and sometimes on the first day, after the operation. If the temperature rises ice chopped in small pieces and placed in bladders is laid over the abdomen. He has yet to find the patient who will not find this soothing and comfortable. These are the 2 details in which the after-treatment differs from that followed in all laparotomies. [W.K.]

7.—Dodd reports **bilateral resection** of the superior **cervical ganglion** of the **sympathetic** for chronic **glaucoma** in a woman of 62, who had been under treatment for 14 years. As yet, not sufficient time has elapsed to make it possible to form a definite opinion as to the success of the operation. He considers the operation a severe and dangerous one because of the proximity of great vessels and nerves of the neck. It requires operative experience and great care for successful performance. If the operation does prove permanently satisfactory, arresting glaucoma, preserving the vision and relieving pain, he considers it justifiable. [M.B.T.]

9.—Lewtas reports 2 cases of **arteriovenous aneurysm** caused by the wounds of Mauser bullets in the South African campaign. In one case the aneurysm was located between the popliteal space and artery. The popliteal vein was tied above and below the aneurysm and a typical ligation of the artery was performed; good recovery followed. In a second case the aneurysm was at the upper end of Hunter's canal. The femoral artery was ligated just above the communication with the vein and a good recovery followed. He considers the practice which has existed of tying both artery and vein above and below the aneurysm and then dissecting out the sac, unnecessarily elaborate and severe. [M.B.T.]

10.—A case of fracture of the humerus with division of the **musculospiral nerve** by a Mauser bullet is reported. About 3 months after the injury, operation was undertaken. The ends of the nerve were dissected out of the cicatrix, freshened and **sutured** with catgut. About $\frac{1}{2}$ inch of the nerve had been destroyed, and on suturing it could be brought together within about $\frac{1}{4}$ inch. Two and a half months after the operation sensation was completely restored. All muscles supplied by the musculospiral nerve responded to the galvanic current; there was considerable increase in power in the extensors of the thumb, but wrist-drop persisted. In a second case, aneurysmal varix of the femoral artery and vein was caused by a Mauser bullet wound. The femoral artery was ligated about $\frac{1}{2}$ inch above and below the wound in the vessels, and excellent recovery resulted. [M.B.T.]

October 20, 1900. [No. 4025.]

1. John Locke as a Physician. WILLIAM OSLER.
2. The Clinical Study of Heart Disease. NORMAN MOORE.
3. Three Cases of Gastrotomy for Hematemesis. C. W. MANSELL MOULLIN.
4. The Prophylaxis of Malaria and the Destruction of Mosquitoes in the Island of Asinara. C. FERMI and TON-SINI.
5. Operation vs. Truss in the Inguinal Hernia of Childhood. R. HAMILTON RUSSELL.
6. The Treatment of Severe Cases of Diphtheria with Saline Infusions. E. E. LASLETT.
7. The Value of Antistreptococcic Serum. GERALD S. WALTON.
8. A Case of Anthrax; Excision of Pustule; Recovery. EDWARD C. BOUSFIELD.
9. A Rare Case of Fracture of the Os Calcis by Muscular Force. ROBERT THOMSON.
10. A Point in the Diagnosis of Aneurysm of the Aorta. WALTER BROADBENT.
11. A Case of Hydatid Cysts of the Liver recurring after an Interval of 10 Years in the Pleural and Peritoneal Cavities; Drainage; Recovery. EUSTACE SMITH and J. F. C. H. MACREADY.

2.—Moore calls attention to some important features in the **physical examination of cardiac disease**. The notes should always state the time, quality, place of maximum intensity, and distribution of the murmur. In addition, all accessory facts, particularly the pulse, should be carefully considered. If the murmur is faint it can often be made more intense if the patient is allowed to inhale a capsule of amyl nitrite. When hypertrophy has been determined it is necessary to find its cause. It is not always possible to distinguish it from mere dilation. Among the interesting facts to which he calls attention may be mentioned the following: If the apex beat is in the sixth interspace in the nipple line, the heart may be twice its normal weight; the thrill of aortic stenosis may be felt at the apex and the base, and occasionally only at the apex, a condition possibly to be explained by the fact that the aortic cusp nearest the mitral leaflets is the one chiefly diseased. The murmurs of aortic lesion of either kind are sometimes far more distinct at the apex than at the base. Any systolic murmur distinct at the apex can probably be heard at the angle of the left scapula, but presystolic murmurs are never heard in the back. In cases of malformation of the pulmonary valves, there is a systolic murmur loudest at the left base, whilst the pulse is normal in all respects. In cases of mitral disease developed early in life, the differential diagnosis from congenital pulmonary stenosis with defect of the septum is difficult. In the latter, however, the pulse is normal, but the child does not develop as well. Pericarditis is a common complication of juvenile valvulitis. All cases of rheumatic fever in childhood should be treated as if they were cases of acute endocarditis. [J.S.]

3.—Three cases of **gastrotomy for hematemesis** are reported. A woman of 42 was admitted to the hospital suffering from recurrent hematemesis. Her first attack was 6 years previously and it has been followed by other attacks at intervals of about six months. The vomiting came on soon after eating, the epigastrium was tender, and there was a burning sensation in the stomach. The woman was not particularly anemic. She improved considerably under medical treatment, but as soon as her diet was increased the vomiting recommenced and the stools became black. The abdomen was opened in the middle line above the umbilicus; the stomach was drawn into the wound and sponges packed about. It was opened by a vertical incision on the anterior surface. The contents were sponged out and the mucous membrane was examined systematically. Two small superficial ulcers were found on the posterior wall nearer the cardiac than the pyloric end. They were triangular in shape with sharply cut edges. Silk ligatures were passed in 2 directions underneath these ulcers with curved needles and tied so as to strangulate the bases. The stomach wound was closed by double silk sutures and the abdominal wound sutured with silkwormgut. Recovery was uneventful except that vomiting persisted for the first 10 days. It then ceased entirely and the woman left the hospital free from pain and sickness, taking ordinary diet. In the second case a woman

of 34 had vomited a half pint of blood 4 days previous to entrance to the hospital. Hemorrhage recurred 4 times, twice on one day, and her stools were black. There was no history of dyspepsia or vomiting, but there had been a certain amount of pain. The abdomen was not tender, the patient looked anemic and her pulse was 132. A similar operation to that just described was performed. A small bleeding point was found on the posterior wall near the pylorus. Owing to the great loss of blood before operation, convalescence was slow, but the patient rallied and left the hospital 4 weeks after the operation, taking ordinary diet. In a third case a man of 42 had suffered from dyspepsia 5 years previously, from which he recovered. He had remained well until 7 months before admission when his old symptoms returned with hematemesis and melena. There was considerable pain and tenderness in the epigastrium. Celiotomy was performed for suspected malignant growth. Nothing was found and the abdomen was closed. On recovering from the anesthetic the patient began to vomit blood and continued through the night. The following day the abdomen was reopened. The stomach was incised and a large irregular surface was found at the cardiac end, from which blood was pouring freely. An unsuccessful attempt was made to ligate the tissues of the base of the ulcer by silk sutures. The hand was then introduced into the peritoneal cavity, the ulcerated portion of the stomach-wall was invaginated and the silk suture was tied tightly around the base of the invaginated cone. This controlled the bleeding at once. Three Lembert sutures were inserted across the puckered spot on a serous surface and the incisions in the stomach and in the abdominal wall were closed. There was no sign of fresh hemorrhage and everything went well for 15 days, when the patient vomited again. He soon began to improve rapidly, however, and left the hospital perfectly well. Two points are considered of special importance with regard to treatment of gastric hemorrhage; the finding of the ulcer and the method of dealing with it. The most satisfactory way is to inspect the entire mucous membrane through an incision in the anterior wall. No one method of treating the ulcer is available for all cases, but excision is considered the ideal method. [M.B.T.]

4.—Fermi and Tonsini record their experiments upon the **transmissibility of malaria** in the convict island of Asinara. On this island there were 11 malarial localities, in 6 of which the types of fever were severe. Three methods were employed to destroy the mosquitoes: first, covering the surfaces of the lakes and ponds with petroleum and cleansing thoroughly the drinking tanks; second, destruction of the adult mosquitoes by a mixture of powers, or by chlorine gas; and finally the exclusion of the mosquito from the dormitories. As a result of these measures, during a period of 9 months in the malarial season, no cases occurred on the island, the 9 in the hospital having all been imported. [J.S.]

5.—Russell is unable to find evidence of any kind in favor of the belief that **oblique inguinal hernia** ever occurs at any age independently of the presence of congenital sac. He believes that there is no such thing as acquired inguinal hernia. Oblique inguinal hernia in childhood is invariably associated with a congenital sac. Children may possess the sac but remain free from hernial descent throughout life or up to any period of life, but children possessing such a sac are predisposed to hernia throughout life. All cases of oblique inguinal hernia occurring at any time during the course of life occur in people who are possessors of the congenital sac and those who have never possessed congenital sac or in whom the sac has been efficiently removed can never have hernia. He considers the use of trusses in children bad surgery and the removal of the sac the only good surgery, and advocates routine operation in children. Simple removal of the sac is all that is considered necessary for permanent cure. [M.B.T.]

6.—Laslett reports the results of **saline infusion in diphtheria**. Six cases were treated in the late stage, and all died; life, however, appeared to have been prolonged. In the acute stage, 15 cases were treated. From 10 to 15 oz. were injected into the loose skin below and outside the right breast. The immediate effects were very satisfactory, the children being soothed, and often falling asleep. All cases were also treated by large doses of antitoxin. Seven died, and 8 recovered. The cases were those of the severe type in which cardiac complications appeared probable. [J.S.]

7.—Walton reports 2 cases, 1 of puerperal sepsis, another of ulcerated sore throat, in which antistreptococcus serum was used with satisfactory result. [J.S.]

8.—A case of **anthrax** over the sternomastoid is reported occurring in a man whose business involved handling hides. The pustule was excised $\frac{3}{4}$ inch wide of the growth and cauterized with pure carbolic acid. Very few bacilli were found on bacteriologic examination, but these resembled anthrax. Recovery followed. [M.B.T.]

9.—A woman of 57 overbalanced while standing on a chair and was thrown to the ground suddenly, and forcibly flexed her left foot. There was pain up the back of the left leg, and inability to extend the ankle following the accident. The tendo-Achillis was felt ending in a hard movable mass 5 inches from the sole of the foot and between the mass and the os calcis was a considerable depression. The fragments could not be approximated. They were cut down upon and retained by a silver wire suture, and at the end of 2 months the woman could walk quite well. [M.B.T.]

11.—A man of 24 had had an **hydatid cyst** of the liver incised and drained on 2 occasions 11 years previously and one year later. He came to the hospital with physical signs indicating a large collection of fluid in the right chest. Exploratory puncture was made. No hooklets were found in the aspirated fluid. This gave some relief, but a few days later the patient suddenly coughed up offensive smelling purulent greenish-yellow fluid. A portion of the tenth right rib was excised in the axillary line. A large quantity of foul fluid and a number of hydatid daughter cysts of various sizes were removed. After this operation the patient improved in some respects, but his cough and expectoration became more troublesome, and 2 weeks later celiotomy was performed and the region of the liver explored. It was found adherent to the abdominal wall, but otherwise apparently normal. A swelling the size of an orange was palpated in the left iliac fossa and incised. The results of this operation were also unsatisfactory and a number of punctures were made to locate the troublesome remaining cyst which was eventually found and evacuated. Gradual healing resulted and the patient left the hospital feeling quite well. [M.B.T.]

New York Medical Journal.

October 27, 1900. [Vol. lxxii, No. 17.]

1. Supplementary Report on a Recurrent Tonsilar Tumor. R. P. LINCOLN.
2. "Thimbles" for Massage and Stripping of the Seminal Vesicles. J. RILUS EASTMAN.
3. Fractures of the Nose. THOMAS AMORY DEBLOIS.
4. A Case of Total Eventration. CHARLES G. SCHMIDT.
5. Disturbances of Gastric Motility and their Significance. ANDREW MACFARLANE.
6. The Suture and the Value of Dry Sterilized Catgut. J. H. CARSTENS.
7. The Management of Normal Labor, Including the Use of the Forceps. AUSTIN FLINT.
8. Effects on Digestion of Food Prepared by the Use of an Alum Baking Powder. E. E. SMITH.

1.—Lincoln reports a case of a **recurrent tonsilar tumor**. At the first removal the growth was examined and the tonsil was supposed to be syphilitic and the case was treated with potassium iodid, but within a year following the operation the growth had attained its former size, and when examined was found to occupy half the pharyngeal space. The second operation consisted in removing the whole mass by enucleation under general anesthesia. Eighteen months later there was no symptom of return. Microscopic examination of the specimen obtained at the second operation seemed to prove that the process was one of simple hyperplastic inflammation. [G.B.W.]

2.—Eastman says that the main difficulty in the **massage of the seminal vesicles** is that the finger is unable to reach above the lower half of the vesicle in even the most favorable cases, and as the disease is by no means limited to this portion of the organ, the maneuver can readily stand improvement. This he proposes to do by the use of a thimble made to fit on the end of the first finger, which adds the proper length. The end of the thimble is made to represent the tip of the finger when slightly bent, and the shank of the

instrument is a little curved. The instrument is made of nickel-plated brass and should be about 3 inches in length, which adds about $1\frac{1}{2}$ inches to the finger. The massaging with the thimble should be done only after a careful examination has been made with the naked finger to determine the true state of affairs. [G.B.W.]

3.—De Blois says that in most cases of **broken nose** there is really no fracture at all, but rather a dislocation of the nasal bones at their internal borders from the nasal processes of the superior maxillaries. The most important part in treatment is in reduction of the dislocation, and which, unless ether is used, should be attempted only after prolonged and frequent applications of cocain. In many cases apparatus for holding the nose in position can be dispensed with, but if the septum bulges, or the nasal bones show a tendency to slip, an internal splint should be used, occasionally combined with the use of external splint. He reports 5 cases. [G.B.W.]

4.—Schmidt reports a case of **congenital -total splanchnectopia**. The viscera were covered with only peritoneum and the child died from peritonitis on the fourth day after birth. [G.B.W.]

5.—According to Macfarlane the most reliable sign of motor insufficiency is the presence of food in the stomach when that organ should be empty. Having determined gastric insufficiency by the dilation of the stomach and the retention of food, the question arises, What is its nature? Is it myasthenic, due to a primary muscular weakness, or stenotic, the result of a mechanical obstruction at the pylorus? When the condition is purely myasthenic, the pylorus is normal, but the muscles are thin, atrophic, and show fatty or colloid degeneration. When there is a mechanical obstruction, a stenosis at or near the pylorus is present, and the muscles at first hypertrophy, then later undergo atrophic changes. The myasthenic dilation is commonly developed from a simple atony, and the most important cause is a chronic hypersecretion which induces dilation by the prolonged and incomplete digestion of the starches and the accompanying spasm of the pylorus inducing retention. Eleven cases of gastric disease are briefly reported in order to emphasize the importance of motor disturbances; 3 are cases of carcinoma, one involving the pylorus, 2 affecting the lesser curvature; 3 are cases of pyloric stenosis after ulcer; 4 are cases of gastroneuroses; and one is a case of perigastritis with pyloric stenosis due to carcinoma. [J.M.S.]

6.—Carstens **prepares catgut** for use in the abdomen in the following manner. The fat is removed from the catgut with ether and the gut cut into strips 18 or 20 inches long. Three of these strips are wrapped in fine tissue paper, and are then placed in small envelopes put in a sterilizer and subjected to a dry heat of 300° F. for 3 hours. The heat is shut off and the apparatus allowed to cool. In from 12 to 18 hours later, the sutures are again subjected to a heat of 300° F. He says that this gives a pure sterile animal fiber which is ideal for intraabdominal work. [G.B.W.]

7.—The points made by Flint in regard to the **management of normal labor** are briefly as follows: 1. The importance of making a diagnosis and a complete physical examination about 1 month before the onset of labor. This not only will give a great deal of information which may be utilized during the labor, but it affords ample time in which premature labor can be induced if there is any abnormality. 2. Infrequent examinations during labor; if the delivery of women could be regarded as a surgical operation, requiring as full and complete antiseptic details as other surgical procedures, we could confidently expect nonfebrile convalescence. The fact that sterilization of the external genitals, the thighs, and the lower portion of the abdomen is sufficient, deserves mention. An antepartum douche is not only unnecessary, but it is actually harmful, as has been shown by Leopold and others. The use of gloves has not been satisfactory. 3. The use of anesthetics should be more general in private practice. Ether possesses many advantages over chloroform, and should be used, as a rule, when the pains are of moderate intensity. We have not had enough experience with the new method of spinal anesthesia to justify its use in more than an experimental way; and if added experience shows freedom from complications, we shall have at our command a method that is nearly ideal. 4. In the hands of the general practitioner, a low forceps operation should be performed with greater frequency. It is easy of execution,

is devoid of danger, saves unnecessary suffering on the part of the patient, and often actually enables us to preserve the perineal floor intact. On the other hand, however, median operations, within the cervical canal, and high operations should be done only for some special indication. 5. Non-febrile convalescence and freedom from local discomfort in cases in which the parturient canal is intact; it is of the greatest importance in the management of normal cases to acquire skill in so guiding the passage of the head and shoulders over the perineum that the risk of even a slight laceration may be reduced to a minimum. In addition to the danger of a mild puerperal fever, lacerations have a tendency to interfere with the involution of the vagina and uterus, and they predispose to many conditions requiring treatment by a gynecologist. Too many obstetricians are careless in this respect, relying upon the usually good results of an immediate repair. [W.K.]

8.—Smith has studied the effects on digestion of food prepared by the use of an alum baking powder. He concludes that the evidence of his experiments is that food prepared by the use of a so-called alum baking powder does not interfere with secretion in the stomach; and, even when it makes up the major part of the diet, it is utilized by the body in the same way and to the same extent as an acceptable control diet. The investigation does not reveal any reason for believing such food at all injurious or unwholesome. [J.M.S.]

November 3, 1900. [Vol. lxii, No. 18.]

1. An Operation for Laceration of the Perineum; Failure of Medullary Narcosis. HERMAN J. BOLDT.
2. Fulminating Appendicitis. CHARLES A. WHEATON.
3. The Modern Cesarean Section. An Ideal Method of Treatment for Placenta Prævia. A. PALMER DUDLEY.
4. A Southern Health Resort: Climatic Advantages of Asheville, N. C., as a Temporary Residence for Tuberculous Patients. B. T. WHITMORE.
5. A Case of Paralysis of the Recurrent Laryngeal Nerve; Recovery. JOHN F. CULP.
6. Supposed Glioma of the Retina; Enucleation; No Return in Twelve Years. DAVID WEBSTER.
7. A Case of Sudden Death, Probably Due to Pulmonary Embolism. J. SHELTON HORSLEY.

1.—Boldt, after stating that he had recently two failures in the attempt to use **medullary narcosis** in surgery, in the first of which no analgesia was produced at all, and in the second it extended only to the thighs, reports in detail a third case in his own clinic, in which the cocaine injection was a total failure, and he had to resort to general anesthesia before operating for laceration of the perineum. From his own experiments with cocaine injections on animals, he thinks great care should be used. The symptoms observed in these experiments corresponded to those observed in the human subject, only they were greatly intensified, much larger doses being used. The action on the respiratory center always became manifest first. The effect upon locomotion was seen to be dragging of the hind extremities, as though they were paralyzed, which sometimes was noticed almost immediately after the injection was given. The postmortem findings were of the greatest interest in the central nervous system. The vessels of the pia of the brain and spinal cord were intensely congested, and there were minute extravasations of blood throughout the brain. The gray substance was distended with blood. The numerous convulsions, which were present when fatal doses of the alkaloid were given, may account for the overdistention of the bloodvessels in the central nervous system. Such intense symptoms being present when cocaine was injected in other parts of the body, we should be doubly careful when it is injected into the spinal canal. [W.K.]

2.—Fulminating appendicitis is a condition which comes rather under the category of surgery than of a general medicine, and Wheaton says that the sooner this is recognized, the better for the patients suffering from this malady. In all probability less than 1% of the cases of this character would end in recovery if it were not for surgical intervention. In operating in these cases, it is a very good rule that if the patient is not worse after 48 hours of observation, let him alone; let him get well. But, it is also very important that the patient should be carefully watched by a surgeon during

these 48 hours, and if any serious symptoms developed, operation should at once be proceeded with. There is one symptom in connection with peritonitis which does not appear in textbooks, and which Wheaton believed occurs in almost all cases, and is an unfailing sign of general abdominal suppuration; this is an apparent vasomotor paralysis which brings about a cyanosis of the trunk, notably of the abdominal region. High temperature and high pulse, associated with local pain and rigidity in the region of McBurney's point, are strong presumptive evidence of malignancy in the attack, and if associated with the vasomotor disturbance just referred to, are practically proof positive of the condition of the perforation. The surgeon should feel it his duty to operate in all cases, no matter how desperate, unless death is actually coming on. To sum up, in every fulminating case of appendicitis, operate first and philosophize afterwards. [G.B.W.]

3.—Palmer Dudley considers the **modern cesarean section** as the **ideal method of treatment for placenta prævia**, ideal because thus the lives of both mother and child may best be saved. He endorses the conclusions of Reynolds: 1. That when the mother's vitality has been seriously lowered, by either septic infection, prolonged labor, or complicating conditions, the mortality of the cesarean section is so high that he deemed it an unjustifiable operation, and advises resort to other methods. 2. That when the mother is in good condition, uninfected, not exhausted by long labor or prolonged efforts at instrumental delivery, the cesarean section is so safe an operation that it may be resorted to unhesitatingly. Dudley considers that the physician should be able to make a certain aseptic antepartum diagnosis of the existence of a placenta prævia before hemorrhage or other untoward symptoms have appeared, and then a properly performed cesarean section is the most certain means of saving 2 lives. He considers the life of a child as good a reason for the performance of a simple abdominal operation, as the chronic backache for which such operations are daily performed. [W.K.]

4.—Whitmore's article deals with personal impressions of Asheville, N. C., and with facts obtained from conversations with the resident members of the medical profession. [J.M.S.]

5.—Culp reports the case of a lawyer, aged 36, who recovered from an attack of **paralysis of the recurrent laryngeal nerve**. [J.M.S.]

6.—A case of supposed **glioma of the retina** reported by Webster, occurred in a child 2 years old. The tumor had grown out and produced a bulge at the supranasal and anterior aspect of the globe. The patient was seen 12 years after the operation, having had no return of the tumor. [G.B.W.]

7.—Horsley reports a case of sudden death which he believed was due to **pulmonary embolism**. The patient had been operated on for vesical calculi by the suprapubic route about 15 days before. He was unable to verify his opinion by an autopsy. [J.S.M.]

Medical Record.

October 27, 1900. [Vol. 58, No. 17.]

1. Puerperal Sepsis; Its Pathology and Treatment. WILLIAM R. PRYOR.
2. Foreign Bodies in the Esophagus. GEORGE W. KING.
3. Report of Three Cases of Intestinal Obstruction Due to Meckel's Diverticula. JOHN F. ERDMANN.
4. Electric Light; Its Physiologic Action and Therapeutic Value in Tuberculosis of the Throat and Lungs. W. FREUDENTHAL.
5. The Importance of Preliminary Treatment for Intranasal Operations. CARL SEILER.
6. A Contribution to the Diagnosis of Suppurative Appendicitis. A. ROBIN.
7. Intestinal Obstruction Complicating Appendicitis, with the Report of a Case. THOMAS M. PAUL.

1.—Pryor divides **puerperal sepsis** into septic thrombosis and pelvic lymphangitis. The most rapidly fatal cases are thrombic. In regard to treatment, he concludes that repeated irrigations do harm; curettage gives 20% mortality

and serumtherapy gives 33% mortality. He says perform rapid hysterectomy in cases of thrombosis, and in cases of true puerperal sepsis, curettage and the culdesac operation. [W.K.]

2.—While playing, a girl aged 6 years, allowed a whistle to slip into her throat. It was located by x-rays and an unsuccessful attempt was made to remove it through the mouth. **Esophagotomy** was performed, the incision being made along the anterior border of the sternomastoid muscle. The whistle was dislodged and removed by forceps. A good recovery resulted. [M.B.T.]

3.—Three cases of intestinal obstruction by Meckel's diverticulum are reported. A feature of interest was the pronounced resemblance in all the cases to appendicitis and in 2 cases this condition really existed as a complication. In one case of but 24 hours' standing, the condition of the patient was such that the gut was simply liberated and left on the abdomen. Death resulted and at the necropsy 7 feet of intestine were found strangulated. In the other 2 cases the diverticulum was excised and the opening closed by tiers of sutures; the appendix was also removed. Uncomplicated recoveries followed in these cases. [M.B.T.]

4.—Freudenthal reviews the most important work that has been done in the **therapeutic effect of electric light**, particularly referring to Bengel's demonstration that darkness caused the motion of ciliated corpuscles to cease while sunlight set them in motion once more. He then describes a lamp (a modification of Voltolini's) which he has used in the treatment of laryngeal tuberculosis. The results which have been obtained by this method have undoubtedly been encouraging, though in some cases they were not equal to expectations. Freudenthal thinks that an improved lamp will give better results and make the treatment a very valuable one. The lamp is applied externally. [D.L.E.]

6.—Robin emphasizes the importance of a white-blood count in the diagnosis of **suppurative appendicitis**, though he points out that in some cases the advent of toxemia is so rapid that no increase of the leukocytes is present. He cites a case in which he found the discovery of hyperleukocytosis an important aid in early diagnosis. [M.B.T.]

November 3, 1900. [Vol. 58, No. 18.]

1. Modern Quarantine in Its Relations to Passengers, Crew, and Cargo. ALVAH H. DOTY.
2. Incineration vs. Earth Sinks and Chemical Disinfection. WILLIAM G. BISSELL.
3. Some Cases of Acute Appendicitis. ALEXANDER B. JOHNSON.

1.—Doty states that rules which are theoretically based upon sound scientific principles are not always found to be practically useful or necessary. For instance, it would seem from general principles that clothing worn by well persons would be a medium of infection. This he considers entirely undemonstrated and states that but one case has ever come to his attention in which the clothing actually worn by a well person caused infection. He also thinks that there has been no demonstration that **ship cargoes ever cause infection**. He makes the wise suggestion that all persons on a ship suspected of carrying infection should have their temperature taken before they are allowed to pass quarantine, and states that this procedure has been enforced at the New York station with most gratifying results. He mentions an instance in which several cases of yellow fever were discovered in this way when they would have been passed over by the usual inspection. [D.L.E.]

2.—Bissell describes an **incineration** which he has devised and which has been successfully used in destroying the excrement in camps. The Sixty-fifth regiment, N. Y. N. G., used 2 of the wagons described, each carrying 8 incinerators, destroying the excrement of over 500 men for a period of 7 days with entire success, and other favorable reports are detailed. [D.L.E.]

3.—Johnson reports the results of his experience in treating 40 cases of **acute appendicitis** during the past year and gives brief histories of the cases. The points of chief interest in his article are his views as to the treatment of general peritonitis. In several cases recovery took place in spite of extensive involvement of the peritoneum in the in-

flammatory process. These appear to demonstrate fairly well the value of abundant saline irrigation of the peritoneal cavity through a moderate incision without evisceration, in cases of widespread purulent peritonitis. The number of cases which may be described as cases of general purulent peritonitis were 8; 3 of these were fatal—a mortality of 37.5%. Several of the patients who recovered appeared at the time of operation to be in a most unfavorable condition; not only were there present the signs of severe sepsis, but the appearance of the interior of the abdomen was in several instances exceedingly unfavorable. Johnson is inclined to think that had the intestines been removed from the belly and washed and wiped, the patients would not have recovered. He considers that at the present time it is hardly necessary to mention this method of treatment in cases of purulent peritonitis except to condemn it, yet several prominent surgeons in this country are still practising it. Granting that a certain proportion of these patients recover after evisceration, yet he is inclined to think that the same good result might have been accomplished by less dangerous means. All who have tried this method must admit not only that the immediate effect of such procedures is a severe strain upon the lowered vitality of the individual, but that subsequent paresis of the bowel is a not uncommon and dangerous sequence. [M.B.T.]

Medical News.

October 27, 1900. [Vol. lxxvii, No. 17.]

1. The City and its Consumptive Poor: A Plea for a Municipal Sanatorium Outside of the Corporate Limits. ALFRED MEYER.
2. Repairing the Abdominal Wall in Ventral Hernia: A New Operation. CARL BECK.
3. A Plea for the More Frequent Avoidance of Exsection of the Ovaries in Connection with Operations upon Diseased Tubes. PHILANDER A. HARRIS.
4. The Importance of Rest in Pulmonary Tuberculosis. CARROLL E. EDSON.
5. Present Status of Interstate Reciprocity Concerning Licenses to Practise Medicine. EMIL AMBERG.

1.—Meyer believes that it is to the interest of the city to take care of the consumptive poor in **municipal sanatoriums**. In addition to the fact that this will supply to some extent the inadequacy of the present accommodation for this class of patients, it will prevent infection and promote in some cases, at least, a cure. He does not think that it would mean necessarily a great expense to the city; at present an appropriation of \$300,000 is asked for, and he believes that \$3,000,000 would be sufficient to provide the requisite facilities, and the annual cost need not exceed \$1,000,000. He assumes from the fact there are about 8,000 deaths every year in Greater New York from this disease, that there are probably 25,000 or 30,000 cases of the disease in various stages in this same area. He concludes with some statistics regarding the cases at present under hospital treatment, and urges the real economy and necessity of separate institutions. [J.S.]

2.—Beck reports a **new operation** for covering in defects of the abdominal cavity left after operations for appendicitis, in which wide packing had been necessary, and the thin scar resulting easily gave away and allowed the formation of a **ventral hernia**. In the case reported, Beck made use of the rectus muscle for closing in the muscular gap. An incision was carried along the inner border of the rectus, separating it from the linea alba and allowing it to be split, so that the outer fibers might be turned hinged-like over the gap which laid external to the muscles' external border. Two months later the patient was operated on for congenital inguinal hernia, and the recovery from both operations was very satisfactory. [G.B.W.]

3.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1280.

4.—Edson calls attention to the importance of **rest** in the severe stages of **pulmonary tuberculosis**. He thinks that it is always important when there is fever, and that it acts by diminishing the degree and depth of respiration, and giving more opportunity for healing in the diseased lung. He advocates placing the patient in a steamer chair in the open air for long periods, and notes that under those circum-

stances his appetite is often excellent, and that he gains in weight. [J.S.]

5.—Amberg urges a **State control** of medical colleges, believing that in this way there is the greatest likelihood of obtaining uniformity in medical education, so that it will be possible to do away with the existing barriers between the States. [J.S.]

November 3, 1900. [Vol. lxxvii, No. 18.]

1. Treatment of Puerperal Eclampsia. J. B. KILLEBREW.
2. Observations Upon the Quartan Malarial Parasite and Upon the Staining Reactions of the Tertian, Quartan and Estivo-Autumnal Parasites. CHARLES F. CRAIG.
3. Is Living Animal Tissue Capable of Neutralizing the Effects of Strychnin and Venom? An Experimental Study. S. J. MELTZER and G. LANGMANN.
4. Eye-Work in General Practice. S. W. S. TOMS.
5. Present Status of Interstate Reciprocity Concerning Licenses to Practise Medicine. EMIL AMBERG.

1.—Killebrew divides the **causes of eclampsia** into the predisposing, the essential, and exciting. The greatest interest is centered in the essential cause, because it is by preventing or removing that, the physician is able to prevent or cure the disease. As the phenomena characteristic of eclampsia are due to an excess of toxins in the system, which toxins are produced in the body, the most rational method would be to arrest the formation of these bodies. But as it is not known what they are or how they are formed, efforts at prevention are often unavailing. But as these poisons are undoubtedly eliminated by the excretory organs the best practical treatment is that which will dilute the toxins circulating in the blood as much as possible and at the same time increase the activity of the excretory organs. The best agent for accomplishing this is normal salt-solution. If there are strong indications that toxemia is present and that convulsions are impending, then the use of normal salt-solution is important as a prophylactic measure, giving it as a high enemata in quantities varying from 1 to 3 pints once or twice in every 24 hours. If, however, this does not prevent convulsions, or if the patient is having convulsions when first seen, more active measures must be taken. The convulsions should be controlled with inhalations of chloroform. One of the superficial veins at the elbow should be exposed and opened and the dark toxin-laden blood allowed to flow from the distal end of the divided vein, while normal salt-solution at the temperature of about 100° F. is injected into the proximal end. Ordinarily from 12 to 24 ounces of blood should be withdrawn and from 2 to 3 times that amount of salt-solution injected. Empty the uterus. Some physicians empty the uterus before giving the salt-solution, but Killebrew considers this a mistake; for the intravenous salt-solution may itself be sufficient to prevent any further convulsions. [W.K.]

2.—Craig has had the opportunity of studying 12 cases of **quartan malarial infection** apparently with a view to determine the differences of the plasmodium of this disease from that of the tertian and estivoautumnal forms. The chief peculiarities are as follows: In the quartan organism the pigment is motile only in the very young forms; it is always dark brown, and in the form of round granules. After the first 24 hours the outline is very distinct, and the organism appears to be stamped into the corpuscle; the ameboid movements are slight at all times, and cease at the end of 36 hours. The corpuscle that has been invaded is somewhat shrunken and greenish in color, but rarely crenated. It resembles in general the estivoautumnal parasite more closely than the tertian. For staining, Craig prefers Romanowosky's or Chenzinsky's methods, the latter giving often very beautiful results; he also mentions Futcher's recent method in which thionin is used, and the whole process can be accomplished in less than 5 minutes. Morphologically the plasmodium, when stained, exhibits a dark ectoplasm and a pale endoplasm, really the nucleus, a nucleolus is also often present. Later it stains more homogeneously; the pigment apparently never invades the nucleus, it is found at the periphery in the younger stages, and in the center in the stages just before segmentation, in the crescents the area immediately surrounding the pigment is often paler than the other parts. [J.S.]

3.—Meltzer and Langmann have made a series of experiments with the **'poison of rattlesnakes**, and with strychnia in order to determine whether the statements of von Cyzharz and Donath are correct. These authors have maintained that animal tissues are capable of neutralizing poisons, particularly strychnin, and have attempted to prove it by injecting a lethal dose into the leg of a guineapig that had been isolated by a ligature. With rattlesnake poison Meltzer and Langmann found that a feeble dose injected into the ligated leg of the guineapig did not cause death as rapidly as when injected into the general circulation. The retardation varied from a few hours to more than a day; the local reaction was always very severe, varying approximately with the duration of the ligation. The experiments with strychnia were exceedingly interesting. Upon frogs a dose of .0001 gm. would cause tetanus several minutes later in the frog with the ligated leg than in the normal frog, otherwise the results were the same, and if larger doses were employed there was no retardation. Upon rabbits even a simple retardation as a result of the ligature could not be demonstrated. Upon guineapigs, however, the results were somewhat different; the effective minimal dose injected into an animal whose leg had been ligated produced no characteristic symptoms, or only those of an exceedingly mild nature. If after the removal of the ligature the subminimal dose were injected, characteristic convulsions were produced, showing that part of the original dose remained unaltered in the tissues, some of the strychnia was therefore neutralized. If this were due to the action of the tissues, the more tissue to which the drug was exposed the greater the amount of neutralization. Therefore injections of portions of the minimal dose into several ligated extremities should have a less effect; as a matter of fact, however, such injections invariably produced tetanus. Finally, if the dose were injected immediately after the removal of a ligature that had been kept in position for several hours, the effects are considerably retarded; the authors therefore, conclude that constriction of a limb retards the fatal outcome of snake-poison and diminishes the effect of a minimal dose of strychnia by impairing the power of absorption within the constricted leg. [J.S.]

4.—Toms calls attention to an important fact, that many cases of **nervousness and general debility** are often treated in vain, until the **eyes are examined** and muscular disorders corrected. He quotes a number of cases to show this, especially one case of insanity, due to eye-strain, which the attending physician had failed to recognize. [G.B.W.]

5.—Amberg continues his paper, giving the replies of the various boards of health regarding the nature of their examinations, and their willingness to practise **reciprocity in medical privileges** with the other States. He suggests that the medical societies should appoint committees to study this question, and to disseminate knowledge upon it, believing a qualified medical practitioner should be available for any patient who desires his services. [J.S.]

Boston Medical and Surgical Journal.

October 25, 1900. [Vol. cxliii, No. 17.]

1. Congenital Dislocation of the Hip-joint. E. H. BRADFORD.
2. The Coroner System in the United States at the Close of the Nineteenth Century. S. W. ABBOTT.
3. Autopsies and Physical Examinations. R. O. HARRIS.
4. A Case of Contracting Scar of the Palm of the Hand Remedied by a Flap from the Abdomen. F. M. BRIGGS.
5. Physiologic Dilation and the Mitral Sphincter as Factors in Functional and Organic Disturbances of the Heart. MORTON PRINCE.
6. Removal of the Greater Part of the Stomach for Carcinoma; Closure of the Pyloric End; Anastomosis between Jejunum and Cardiac End; Recovery. W. A. BROOKS.

1.—In many cases of **congenital dislocation of the hip-joint** reduction has been performed apparently successfully, yet relapse has followed. Relapse is more frequent after operation without incision than after operation with incision. An important obstacle exists frequently in the fold of the capsule of the joint which is attached to the lower

part of the acetabulum and which may be called the acetabular hymen. This is often pressed in front of the entering head of the femur allowing apparent reduction but preventing complete reduction and favoring relapse. Bradford's experience led him to favor operation by open incision. He states that his results have been constantly improving during the past 10 years. He has operated upon children of ages ranging from 1 to 14 years, but most satisfactorily in children over 2 and under 7. It is not claimed that operation by incision can be permanently successful in all cases, but it is successful in many cases and it can be expected that it will be without danger to the patient and with a reasonable chance of success. During the past year Bradford has had 7 cases, 10 hips in all being reduced, first with the bloodless operation. All of these relapsed; 9 were operated upon again by radical reduction with incision; 4 remained firmly replaced as shown by x ray; 2 were firmly replaced, but as yet no x-ray photograph has been secured; one was apparently reduced; 2 relapsed after radical operation and one relapsed after bloodless operation without attempt at radical reduction. [M.B.T.]

2.—The office of coroner has probably existed for a thousand years, possibly for a longer period. Many singular customs were connected with the system. Any personal chattel, animal, or thing, forfeited to the king for pious uses, on account of its having caused the death of a human being, was termed a **deodand**. This became deservedly unpopular and the Act of 1846 did away with it. The term *felo de se* is nearly synonymous with suicide. It had, however, occasionally a more restricted significance when applied to any one who committed an unlawful malicious act, the consequence of which was his own death, as if, attempting to kill another, he ran upon his antagonist's sword, or shooting at another, the gun burst and killed himself. For many centuries it was the custom in England to bury each *felo de se* on the highway with a stake driven through his body. This ignominious form of burial was abolished in the reign of George IV, by an Act of Parliament which ordered the burial of the body of a *felo de se* within 24 hours after the inquest, between the hours of 9 and 12 at night, and without the rites of Christian burial. A condensed statement of the **coroner system as it now exists throughout the United States** follows. It was shown after a 3 years' experience in Massachusetts that the abolition of the jury, and the introduction of a system requiring investigations by skilled practitioners of medicine in every case of violent death, had not only wrought a marked improvement in the method of work, but had resulted in a material financial saving to the State, so that the cost was only $1\frac{1}{2}$ cents per capita, or less than $\frac{1}{2}$ as great as in New York, and this to over a territory of 8,000 square miles. The old-time coroner is a foe to medical progress, and it is time to "move on his works." [J.M.S.]

3.—District Attorney Harris read a paper before the Massachusetts Medicolegal Society on **autopsies and physical examinations**. In making an autopsy in a case of violent death the examiner should approach his case with mind open, unbiased and unwarped by theories and opinions. He should note every normal appearance. He should also note carefully the appearances following upon his own operations. The contents of stomach, bowels, bladder, and other organs should be accurately observed. Surrounding objects ought not to go unnoticed. Very many of these things may be noticed and not reported. Above all, in a case when, by any possibility, a charge of unlawful killing may be made, judgment as to the manner of the killing ought to be suspended. The medical examiner is not a prosecutor; he has no power to commit or examine parties. His duty is to ascertain facts within a certain field, and instruct the officers of the law in regard to them. He cannot anticipate explanations or defences. If careful and thorough in his work, however, he can pass upon them when offered, and tell whether they are good. In the matter of physical examinations the expert has become a partisan. He cannot treat his case as he does his patients, disinterestedly. He is bound to one side of the case, and is always a plaintiff's or defendant's expert. The author, speaking of his relation to the medical profession, says: "I try on both sides; I have to consult your profession; and I can see no reason why, if it chances that, when trying for the plaintiff, I meet a physician whose opinion seems to me to be entitled to weight, I should not consult him when I need a man for the defence to

instruct me as to medical facts or probabilities. All I want is his best knowledge; when I get that I shape my own course. As in the case of the autopsy, the physical examination is for the purpose of gaining information, evidence; of establishing that a condition does or does not exist, and testifying accordingly. It is not intended for the purpose of enabling you to ascertain conditions, and then raise theories to account for them that have no foundations except in theory. You come to us for opinions in law, based on facts stated, and you do not want us to suppose some other facts and give opinions based on them, and you do not want us to tell you that your facts are mere imagination. I am moved to say what I have, only by my desire that our two great professions may be held in the esteem to which they are entitled." [J.M.S.]

4.—A woman of 24, while working in a steam laundry, had her left hand caught between 2 rollers. The back of the hand came in contact with a felt roller and was badly lacerated, but not burned. The palm came in contact with the heated roller, and was both badly burned and lacerated. She was treated at a hospital for 2 months, and left with a delicate cicatrix on both surfaces of the hand. This slowly contracted, producing flexion of the fingers and thumb until at the end of the year the ring and little fingers were drawn down on the palm, and the thumb was strongly flexed. The hand was practically useless and quite painful as well. The **palmar cicatrix** was wholly dissected off; the palmar tendons were not adherent. An outline of the freshened surface was made and the **flap** was dissected up from the left side of the **abdomen**. This was fastened to the palmar surface by sutures, and the hand was held in position by adhesive plaster straps. Fourteen days later the abdominal pedicle was cut, and the abdominal wound was allowed to heal by granulation. The result is considered successful. [M.B.T.]

5.—Prince's paper on **physiologic dilation and the mitral sphincter as factors in functional and organic disturbances of the heart** is an abstract and seems so important that we give it almost as it appears: "This subject is of great practical importance, not only in examinations for civil service, life insurance, etc., but for a clear understanding of diseased conditions. I used to reject many men whom I now would not think of rejecting because of this evidence of regurgitation. Sir William Broadbent has lately called attention to the great number of murmurs heard over the various cardiac orifices in candidates for civil service examination, and this, I am pleased to think, has corroborated the accuracy of my own observations, although he has not undertaken to give an explanation of the mechanism of the murmurs. He calls attention to the unnecessary rejection of candidates for civil service because of murmurs of this kind. The recognition of this principle of physiologic dilation whenever the heart is called upon to do an increased amount of work, no matter from what cause, is of the utmost importance. This dilation within normal limits may be so great that the volume of the blood thrown out at each contraction may be trebled or quadrupled. At the end of systole the heart may be larger than it was before at the end of diastole. The sphincters may be so dilated that the valves cannot close the auriculoventricular orifices and thus physiologic regurgitation may result. Normally this is observed under nervous excitement and severe physical exercise. The same law of necessity applies as much to diseased hearts as to healthy hearts and, for example, the dilation observed in aortic stenosis may be physiologic rather than pathologic. In general systemic conditions, such as the febrile diseases, anemia, Bright's disease, etc., the dilation and regurgitation are of the same sort, due either to an absolute increase of resistance or a relative increase; in the latter case because of a weakened heart working against normal resistance. Unless this is recognized there is great danger of confusing this purely physiologic condition, which probably exists in a great many such cases with serious cardiac disease and in consequence giving an unfavorable prognosis. As to the absence, notwithstanding the dilation, of murmurs in the contestants of the last Marathon race, I agree with Dr. Williams in his explanation. To this I would add the fact that the heart was not beating with the force which I think is necessary to produce murmurs. It did not seem to me the heart was beating very strongly in any of them. They were examined so long after the race that the heart had quieted down besides being weakened by

fatigue. The heart's action did not compare with the action in the men who were under the nervous stress of the civil service examination. Besides that, the absence of murmur does not so frequently denote the absence of regurgitation, as is frequently assumed. Every one admits, in principle, that you can have regurgitation without murmur, but, in practice in the consulting room the tendency is to say: 'No murmur, no regurgitation.' It is well recognized that even in organic disease, where there is mitral regurgitation, when the heart becomes weakened the murmur ceases, but when the heart recovers strength the murmur appears. In the cases of the Marathon runners I think the weakened force of the heart is a perfectly satisfactory explanation of the absence of murmurs. As a matter of fact, and this Drs. Williams and Arnold showed last year, they are fugitive, and only appear when the hearts are beating strongly. This was my experience. In most of the cases they are very fugitive and have got to be caught 'on the fly.' I feel fairly confident there was regurgitation in the Marathon runners, even in the absence of murmurs. I base this on the cyanosis present, the feeble circulation, and the condition of the kidneys, showing passive congestion, as well as on the dilation of the heart." [J.M.S.]

6.—A man of 44 was taken with epigastric pain 2 years previous to the time when first seen. About a year later he began to be troubled with attacks of vomiting and began to lose in weight. Examination of the stomach-contents showed that there was no retention of food, but HCl was absent. There was no blood or shreds of tissue. A median incision was made from the ensiform to the umbilicus and the stomach was found to be occupied by growth which extended from the pyloric end a considerable distance toward the fundus. A loop of jejunum was brought up and lateral anastomosis was established between it and the top of the fundus. Lembert sutures were used. Two ligatures were then passed around the pyloric end of the stomach and the stomach-walls were severed between them. The greater and lesser omenta were tied off and divided. The stomach walls were then cut loose to the place where the anastomosis had been made and nearly the entire organ removed. The free edges of the stomach were then united with a series of Lembert sutures. The patient made a good recovery from the operation and has gained considerably in weight. Sufficient time has not elapsed to determine the ultimate outcome of the case. [M.B.T.]

November 1, 1900. [Vol. cxliii, No. 18.]

1. Gunshot Injuries by the Rifles of Reduced Caliber. LOUIS A. LA GARDE.
2. Purpura Hæmorrhagica, or Morbus Maculosis of Werlhof. STEPHEN SMITH BURT.
3. Eye Strain as a Cause of Gastrointestinal Neuroses. M. P. SMITHWICK.
4. A Note on Rectal Feeding in Peptic Ulcer. GEORGE G. SEARS.
5. Achlorhydria: Its Effects and their Treatment. H. F. HEWES.
6. Phthisis: Some Causes of Failure in Its Climatic Treatment. WILL HOWARD SWAN.

1.—La Garde gives some observations on the effects of the 7 mm. Mauser rifle bullet, drawn from a study of 1,400 wounded in the Spanish-American war. The shock on impact from the reduced caliber bullet is always less than that of the 7 caliber leaden bullet. As a rule, men fall when hit at once, and the Mauser seems to have sufficient stopping power for the ordinary purposes of war. Explosive effects were seldom witnessed. The flesh wounds generally heal rapidly and infection was seldom noticed. Out of 1,400 wounded none died of external hemorrhage nor was it necessary to ligate a vessel for alarming hemorrhage on the field. Three ligations were performed for aneurysm and in 5 cases amputation was required for gangrene from injury to bloodvessels. Injuries of the diaphyses were, as a rule, attended with but little comminution. It was rarely necessary to remove loose fragments of bone. Clean-cut perforations of joints without fracture were the usual injuries; 58% of the injuries of the head resulted fatally and 24.5% of the injuries of the thorax were fatal. It has been found, however, that of those who recovered 37% developed complications like hemothorax, pyothorax, etc. Penetrating gunshot

wounds of the abdomen were very fatal. Of 41 recorded cases 29 died. The value of x-ray diagnosis was early recognized and no attempt was made to locate projectiles except with the x-ray. Orders were given not to remove lodged projectiles except for urgent reasons. [M.B.T.]

2.—Burt reports the case of a boy, aged 11, who presented a family record of tuberculosis. A sister and 2 brothers of the patient were alive and well, except that 2 of the children had recently had a mild purpuric eruption upon the lower extremities. One year ago the patient was operated upon for enlarged glands in the neck, said to be tuberculous. On December 27, the boy began to bleed from the gums, and shortly afterwards the mother noticed a number of small hemorrhagic spots scattered over his body, but more especially upon the lower extremities. The patient was anemic; the pulse weak and rapid; the temperature 101°; blood oozed from the gums, which were not swollen. There was a purpuric eruption, moderate in extent and amount, chiefly on the legs and thighs. Both heart and lungs were normal; there was no swelling or tenderness of the joints, no edema, no pain, no soreness of the throat and no gastrointestinal disturbance. The urine contained a trace of albumin, but no sugar. Microscopic examination showed abundant hyalin and finely granular casts; a moderate number of cellular and coarsely granular casts; a few red and white blood-corpuscles, and bacteria. During the first 4 days that the patient was under observation he continued to bleed more or less from the gums, and finally from the nose, despite temporary relief from plugging the nostrils and the application of astringents. On the fifth day he bled freely from the nose, vomited considerable blood, and passed blood from the bowels, at first in the form of black stools, and then in clots of pure blood. Transfusion of a normal saline solution was performed and stimulants were administered, but in spite of treatment he was delirious by midnight. The following day his temperature ranged between 99° F. and 100° F., and his pulse between 120 and 140. He had 2 small black stools. On the seventh day he had 6 bloody stools, and vomited blood. He was in a stupor with intervals of delirium. His temperature was from 100° F. to 101° F. On the eighth day he had a small stool of blood and mucus; his pulse was weak, rapid and irregular; the delirium continued. On the ninth day his temperature ranged from 99.8° F. to 102° F., his pulse from 140 to 150, and his respirations from 30 to 40 per minute. Finally, upon the tenth day, he died. There was no autopsy. A diagnosis of **purpura hæmorrhagica** was made. [J.M.S.]

4.—Theoretically, the best treatment of peptic ulcer is by complete rest of the stomach, for the longest possible time, but this cannot be obtained in every case, owing either to the patient's objections to the incidental discomforts, of which the chief is thirst, or to the intolerance of the rectum which may soon come on; yet, in an experience with a considerable number of cases requiring **rectal feeding**, during the past 3 years, intolerance has not seemed to be acquired sooner with the larger than with the smaller amounts injected, while the comfort of the patient is certainly enhanced and thirst alleviated by the larger quantity of fluid. Sears' routine method has been to give a high enema of plain water, early in the morning. This is retained by the patient, if possible for an hour, at the end of which time, if it has not come away, an enema of soapsuds is given to cleanse the rectum for the work of the day. The nutrient injection of peptonized food is then given through a half-inch soft rubber tube. The patient's buttocks are raised and an attempt is made to get the fluid beyond the sigmoid flexure. It is possible to insert a tube of this caliber, which is almost too stiff to bend up on itself within the narrow limits of the rectum, from 8 to 12 inches. The fluid is injected slowly, the tube being gradually withdrawn. Efforts at expulsion are restrained by a pad in the usual way. The enemata are repeated every 6 hours. It is not claimed that all the necessary nourishment can be given in this way, yet in one of the cases reported the improvement in the anemia and the apparent gain in weight were encouraging signs, and show that it is possible to prevent the patient at least from losing ground. [J.M.S.]

5.—Of 250 cases of disorder of the stomach which Hewes has treated during the last few years, the condition of **achlorhydria** was present as a constant condition investigated by several analyses at considerable periods of time in 15. Of these, 6 were cases of simple chronic gastritis, 4 of gastritis,

with carcinoma of the stomach, 1 achylia gastrica, and 3 in which the achlorhydria was the only abnormal objective sign. The **results** of the absence of hydrochloric acid in the stomach are: (1) an absence of peptic digestion; (2) an increase of bacterial fermentation in the stomach and intestine. The first aim in the **treatment** of this condition is the preservation or adjustment of the motor function of the stomach. The proteid diet must be in such a form and given in such a manner that it can be easily passed through the stomach; the starches with the cellulose envelop broken so that salivary digestion may occur freely in the stomach. In some cases the achlorhydria has existed for years, and it is only when the motility of the stomach becomes affected that the patients have symptoms of stomach-trouble and come for treatment. A proper regulation of the diet, with a regimen of rest after meals, and regular outdoor exercise and exercise of the abdominal muscles, with strychnin or hydrochloric acid and strychnin given internally, soon causes in these, as well as in the more numerous cases of hyperchlorhydria, a relief of symptoms, and presumably a readjustment of function. The device of supplying the hydrochloric acid for peptic digestion by the administration of the artificial acid, often useful in cases of hyperchlorhydria where the deficiency of acid is slight, cannot be utilized with success in achlorhydria, as it would be necessary to use excessive amounts of the acid. The primary treatment of cases in which the motility is affected should be the adjustment of the motility of the stomach. Where this function is intact, antiseptics destined to act in the stomach (salicylic acid, resorcin, or large quantities of hydrochloric acid given frequently throughout digestion) or in the intestine (salol) may be useful in limiting fermentation. Cases in which intestinal sepsis is suggested by the symptoms the antiseptic treatment must be applied and foods which do not easily undergo fermentation must be given. [J.M.S.]

6.—Swan has been many times impressed with the **unsatisfactory results in the cases of some pulmonary invalids sent to Colorado** either from the far advanced stage of their disease, or because they were landed with little or no means of support, unable to work and among strangers, or because of an erroneous idea of the sort of life they should live. The three classes of invalids spoken of, unless the conditions named are changed, would be much better off and be much happier, were they to remain at home, among their friends and associates. The outlook for patients with far advanced disease is much less favorable, and they require much more prolonged rest and careful feeding than those in earlier stages of the disease. It is not an unusual occurrence to see a patient, after 3 or 4 months' residence in Colorado, in a materially worse condition than on his arrival, and to find that he came with the belief that if he could "live out of doors," exercise, ride horseback, play golf, tennis,—do anything to keep him in the open air,—he would get well. It is a definite fact that a person coming to Colorado from a lower altitude, until he is adjusted to the change, fatigues much more easily than at home. At the same time the bracing, exhilarating air often acts as a constant nervous stimulant which spurs one on to excessive exercise until at length his physical limit is exceeded, his powers of resistance depressed to such a degree that the tubercle bacilli or other germs within him seize their opportunity, a fresh or extended infection occurs, and a partially quiescent process is fanned into activity, which may require weeks of absolute rest and careful nursing and attention before the patient can safely go about again. The writer would urge, then, 3 points. 1. Do not send patients with far advanced phthisis to Colorado unless they are able to make the change without serious fatigue, and unless they can live here in the manner they should for a *prolonged period*. 2. Do not send *early* cases, unless there are assured means for proper hygienic living for a period sufficiently long to get the patient well enough to earn, in part at least, his living, and to find employment. How long will depend upon the individual case and his progress, but, roughly speaking, 3 or 4 months at least. There are many openings for employment, but more people looking for the desirable ones. 3. Most important of all, instruct the invalid to rest and *keep* quiet after his arrival until some one competent to advise him considers it safe to begin to exercise, and then have his manner of life and hygiene directed from time to time, according to his progress and condition. [J.M.S.]

Journal of the American Medical Association.

October 27, 1900. [Vol. xxxv, No. 17.]

1. Laryngeal Stenosis Due to Complication of the Thyroid Cartilages. EMIL MAYER.
2. Papilloma of Larynx in Children. EDWARD T. DICKERMAN.
3. Unusual Papillomatous Growth in the Larynx. JOSEPH S. GIBB.
4. The Reciprocal Relations between Consumptives and Society. S. G. BONNEY.
5. The Serums in Tuberculosis. PAUL PAQUIN.
6. How Shall We Induce Immunity in Tuberculosis? H. B. WEAVER.
7. Case of Fatal Fetal Ichthyosis. ANNIE STURGIS DANIEL, and LOUISE CORDES.
8. Gastrointestinal Hemorrhage in the Newborn. EDWARD H. SMALL.
9. Chronic Inflammation of the Tear Passages. WILLIS O. NANCE.
10. A Few Points on Appendicitis. J. HENRY BARBAT.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1952.
2.—“ “ “ “ “ “
3.—“ “ “ “ “ “
7.—“ “ “ “ “ p. 1284.
8.—“ “ “ “ “ p. 1283.
10.—Barbat believes that over 90% of all patients who have true appendicitis and who are not operated on have recurrences. We should operate in all cases of chronic recurrent appendicitis, if possible between attacks. In practically all patients that die after operation we find at least 48 hours between the onset of the attack and the time of operation, therefore it is reasonable to assume that if these cases had been operated upon inside of the 48 hours the patients would have been cured. As soon as a diagnosis of acute appendicitis is made he believes we should operate immediately. Pulse and temperature are not taken into consideration in making a diagnosis of appendicitis. In acute cases the diagnosis must be based on the symptoms which were manifest during the first 3 or 4 hours. [M.B.T.]

November 3, 1900. [Vol. xxv, No. 18.]

1. Acute Senile Endometritis. L. H. DUNNING.
2. Disease of the Fallopian Tubes. With Special Reference to Specific Infection. J. R. GUTHRIE.
3. Tubercular Peritonitis. A. H. CORDIER.
4. Portable Compressed Air Atomizer. GEORGE F. COTT.
5. Estivo-Autumnal Malarial Fever. Some Typical Cases of Quotidian and Tertian Forms, with a Study of the Temperature Curves and of the Parasites Observed in the Blood. CHARLES F. CRAIG.
6. Clinical Observation in Malaria as Seen in the Mississippi Delta. FRANK A. JONES.
7. Hypertrophy of Pharyngeal Tonsil. Its Anatomy and Physiology. NORVAL H. PIERCE.
8. Connell's Operation of End-to-End Anastomosis of Small Intestine. For Repair of Enterotomy. Performed to Relieve Acute Obstruction. First Case Reported on Human Subject. FRANKLIN H. MARTIN.
9. Receptive Quiescence of the Stomach During Mastication. Gastronomic Phenomenon Not Previously Described. EVAN O'NEIL KANE.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1280.
2.—“ “ “ “ “ “
3.—“ “ “ “ “ “
4.—“ “ “ “ “ 1296
5.—“ “ “ “ “ 1264
6.—“ “ “ “ “ “

Chronic Parenchymatous Nephritis.—Billings (*Medical Standard*, November, 1900) doubts the usefulness of cupping over the loins, because the blood going to the kidney comes from the aorta and has absolutely no relation to the bloodvessels of the loins, and therefore the procedure can have little effect on congestion of the kidney. Caution must be observed in the use of pilocarpin, as the drug may produce edema of the lung. Morphin may help to overcome this ill effect, although morphin also must be used cautiously because it diminishes the secretion of the kidney. Digitalin hypodermically he thinks of doubtful value. [G.C.C.H.]

Practical Therapeutics.

Under the charge of

A. A. STEVENS, A.M., M.D.

Laryngeal Tuberculosis.—Fasano (*Klinisch-Therap. Wochenschrift*, No. 23, 1900) states that he has employed Heryng's method of treatment by scraping the affected part and applying lactic acid in 15 cases. The ulcer was completely healed in 5 of these cases. In 3 of the latter there was no return after a period of 3 years; in 2 there was a relapse after 2½ years. In the other 10 cases the results were not so lasting. During the last year he has obtained better results from the use of thiocol, which he applies locally and administers internally. The following insufflation is recommended:

R.—Thiocol..... 1½ to 2½ grains.
Cocain hydrochlorate..... 6 grains.
Boric acid..... 15 grains.

In 3 cases of primary laryngeal tuberculosis he obtained a speedy and permanent cure with this method of treatment. Of 11 cases of secondary laryngeal tuberculosis there was rapid healing in 7, and considerable improvement in the other 4.

Drug Values as Observed in the Treatment of 752 Cases of Whooping-Cough.—Kerley (*Archives of Pediatrics*, April, 1900), concludes: 1. That every case of whooping-cough may be ameliorated by modifying the severity or by diminishing the number of paroxysms. In many cases both the severity and the number of paroxysms may be favorably influenced. 2. That remedies sedative in character, with fresh air, furnish the best results. 3. That if a remedy is to be of service its beneficial effects will be noticed in 24 hours, always within 48. 4. That the best results are obtained when antipyrin and bromid are commenced at the height of the paroxysmal stage, and then pushed. 5. That these remedies being sedative in character, the effect may be lost in a prolonged case requiring a change of treatment. 6. That children may have whooping-cough and never whoop.

Psoriasis.—Dublitz (*Journal de Méd. de Paris*) recommends the following:

R.—Oil of cade..... 2 drams.
Zinc oxid 3 drams.
Vaselin 1 ounce.

The Treatment of Thrush.—Escherich (*Rev. Men. des Mal. de l'Enfance*, June, 1900, suggests the following method of treating thrush in infants. A small pledget of sterile cotton is thoroughly impregnated with about 3 grains of finely pulverized boric acid and to which a little saccharin has been added. The pledget is then placed in a little bag made of silk and given to the child to suck. The saccharin being pleasant, the child is quite willing to retain the sac in the mouth, and so the boric acid acts continuously upon the parasite. A new sac is used each day. Cure is said to be promptly effected.

The Association of Trional with Paraldehyd.—Ropiteau (*Thèse de Paris*, 1900) states that trional is freely soluble in paraldehyd, and that the mixture is 4 or 5 times as active as a hypnotic as trional alone. The following formulas are recommended:

R.—Trional 15 grains.
Paraldehyd 30 grains.
Oil of sweet almonds 4 drams.
R.—Solution of trional and paraldehyd..... 2 to 4 drams.
Yolk of one egg.....
Milk..... 4 ounces.
To be used as an enema.
R.—Trional..... 3 grains.
Paraldehyd..... 6½ grains.
Oil of theobroma..... 1 dram.
For one suppository.

A Cream of Carbonate of Zinc.—Skinner (*British Journal of Dermatology*, May, 1900) suggests the use of carbonate zinc as a substitute for commercial calamin, since

the latter is often impure, and hence objectionable as an application to inflamed surfaces. He suggests the following combination for a cream of carbonate of zinc:

R.—Glycerite of starch }
Lanolin } of each..... ½ ounce.
Zinc carbonate }
Glycerin }

The first two are mixed together, then the second two, and last both together.

Anesthesia by the Injection of Cocain under the Lumbar Arachnoid.—According to the *Medical Review*, August, 1900, Cadol (*Gaz. Hebdom. de Med. et de Chir.*, June, 1900) states that the method holds a place between the administration of a general anesthesia and the superficial injection of cocain, and permits of major operation on the lower part of the body. Its mode of action is the temporary paralysis of the spinal cord, as if divided transversely, with perfect restoration of function after a period depending on the dose employed. Doses up to ½ grain produce anesthesia lasting 50 minutes, and this may be prolonged to 1 hour 40 minutes by doses varying from ¼ to 1 grain. This is sufficient for all operations on the pelvis and lower limbs, amputations, excisions, vaginal hysterectomy, radical cure of hernia, etc. The patient is placed on his side at the edge of the operating table, he flexes his hips and knees so as to make a "broad back," thus separating the laminae of the lumbar vertebra as far as possible. A pillow is put under his loins to support the concavity between his ribs and the table, and keep the spinal column straight. The surgeon then finds the space between the third and fourth lumbar spines, through which the injection is performed. The skin having been rendered aseptic it is anesthetized by the chlorid of ethyl spray in order to avoid a reflex movement on the introduction of the needle, which by the overlapping of the lamina might prevent its entrance into the spinal canal. The needle employed is similar to that used in lumbar puncture, from 3 to 4 inches long, and capable of adjustment to a hypodermic syringe. In children a stout hypodermic needle is sometimes sufficient. The left forefinger is placed on the spine corresponding to the space chosen, and the needle is entered about ¼ inch outside it, and thrust steadily forward, being slightly inclined upwards and inwards. Should the needle encounter bone it is usually found to be the upper lamina, and it should be slightly withdrawn and introduced less obliquely. To thus impinge upon the lamina has the advantage of allowing the depth of the puncture to be gauged and by slightly lowering the point the spinal canal is readily found. When successful a drop of cerebrospinal fluid escapes by the needle, and until this takes place no injection should be made. After 8 to 10 drops of fluid have escaped the anesthetic may be injected. The solution of cocain should be freshly prepared, and very dilute, 1 or ½% being preferable to 2%. The quantity of fluid necessary with these weak solutions need cause, if desired, no fear of raising the subarachnoid pressure, but an equal bulk of cerebrospinal fluid may be allowed to run off by the needle before injection. The solution should be sterilized by being heated several times in a water bath to 60° C., and should be warmed to body-temperature before injection. The injection should be made very slowly, as it is important that diffusion should not immediately take place throughout the cerebrospinal fluid, or reach the upper nervous centers, but act on a limited portion of the cord, of which it produces a temporary physiologic section. The injection completed, the needle is withdrawn and the site covered with a little colodion. Subjective phenomena, such as tingling and numbness, commence in the lower limbs, then a sensation of cold and heaviness. Sensibility to pain first disappears, and is followed by thermic and tactile sensation. The motor system is then affected, but there is no paralysis of the lower limbs, but a loss of muscular sense, the patient being unable to localize the position of his limbs. In 8 to 10 minutes after injection anesthesia is established below the level of the umbilicus. It lasts 1 to 1½ hours, and then sensibility returns in the inverse order to its disappearance, the sole of the foot being the first affected and the last to recover. The writer regards the method as likely to have a wide field of application not only in hospital and civil practice, but in obstetrics and military surgery.

Original Articles.

ANEURYSM OF THE HEART WITH THROMBOSIS OF
THE LEFT CORONARY ARTERY.

By JUDSON DALAND, M.D.,

of Philadelphia.

Instructor in Clinical Medicine at the University of Pennsylvania; Assistant Visiting Physician to the University Hospital; Professor of Clinical Medicine at the Philadelphia Polyclinic; Visiting Physician to the Polyclinic Hospital, and Consulting Physician to the Kensington Hospital for Women.

THE occurrence of cardiac aneurysm as a late manifestation of syphilis is so unusual and interesting that I venture to report this case, which occurred in the practice of my friend, Dr. Isaac Leopold, to whom I am indebted for the following clinical notes:

The patient was a married man, aged 54 years, and presented nothing of importance in his family nor early personal history. Twenty-seven years before his death he contracted syphilis and one of his children now shows signs of having inherited this disease. Two years before his death an ulcer appeared on the side of the tongue, extending from the tip to the base, which yielded to specific treatment. He was a chronic alcoholic for 30 years, but most of the time only to a moderate extent. The family state that 4 years before his death he nearly died of "heart trouble." One year later he suffered leukoderma of the hands, wrists, neck, face and chest, and the following year he was examined for life insurance and considered a good risk. Five years before his death he complained of occasional attacks of epigastric pain and a sense of fulness after eating. He also complained of moderate deafness, due to thickening of the membrana tympani and calcareous deposits, especially in the drum of the right ear. The nasopharyngeal mucous membrane showed atrophic changes. Later the leukodermic areas became darker in color.

He retired one evening in his usual good health and spirits, but complained of wakefulness and restlessness during the night. At 6.30 the following morning he was unconscious, the lips, face and finger tips cyanotic, and the feet, face and surface of the body cold. There was no radial pulse and the heart-sounds were indistinguishable. Respirations were shallow, regular and numbered 25 to the minute. The pupils were contracted and gave no response to light. A few moments later he arose to a sitting posture and endeavored to leave the bed, stating that he desired to use the commode. After voiding a large stool he again became unconscious, with complete muscular relaxation, and the attending physician thought he was dead. The free use of strychnin and brandy hypodermatically, and strong counter-irritation over the precordia was followed by partial reaction. Vomiting then occurred and each act of emesis was followed by syncope. Again recourse was had to the hypodermatic use of brandy, strychnin, aromatic spirits of ammonia, and a rectal injection of hot water; and the pulse, which had disappeared, could now be felt at the wrist. The pulse-beat from 25 to 30 a minute between 7 and 8.15 A.M., but no distinct cardiac sounds were audible. The respiratory sounds were clear in the anterior portion of the chest, but over the base there were moist rales. Nitroglycerin, in doses of $\frac{1}{30}$ of a grain, aroused the patient on one or two occasions and appeared to lessen the lividity of the extremities. The skin was not clammy, but the entire exterior of the body was cold from the beginning of the attack until death.

Two hours after the onset of this attack his family physician arrived, at which time the patient was able to converse and stated that he felt very bad, but had no pain, excepting that produced by slight burns from a hot water bottle used as a counter-irritant in attempting to arouse him from his syncopal attacks.

Every 15 to 20 minutes there was an unsuccessful attempt to urinate and, by the introduction of a catheter, a half-ounce of a clear, pale urine, containing no albumin nor sugar, was secured. After an injection of nitroglycerin, $\frac{1}{30}$, and strychnin, $\frac{1}{30}$, the pulse fell from 40 to 30, and the

cyanosis disappeared, but returned upon the slightest exertion. He was catheterized at 7 and 11 P.M., but no urine was obtained. Vomiting persisted at varying intervals during the entire day, and was chiefly composed of yellow mucus, which, upon one occasion, was slightly blood-stained. There was considerable thirst and, as water seemed to excite vomiting, ice was given.

Sixteen hours after the beginning of the attack the patient was resting fairly well, but the face and finger tips were still cyanotic, the extremities cold, the pulse beating at the rate of 55 a minute and, at times, disappearing. The mind was clear, the pupils small, and there was a constant disposition to vomit and frequent unsuccessful attempts to urinate. Three hours later the patient's distress increased, the radial pulse disappeared, the extremities were cold, cyanosis deepened and respirations averaged 45 to 50 a minute. While discharging into a bed-pan, three tablespoonfuls of dark, bad-smelling blood, he suddenly expired.

The autopsy was performed at midnight, 20 hours after death, with the assistance of Dr. Isaac Leopold. The body was of moderate size and weighed about 148 pounds. The ascending vena cava was overfilled with dark, venous blood. The thoracic aorta showed advanced deforming endarteritis and a few calcareous plates. The orifice of the right coronary artery was almost occluded by a deposit of lime-salts and was only sufficiently large to permit the passage of a very small probe, of the thickness of a hairpin. The wall of this artery throughout its entire length was greatly

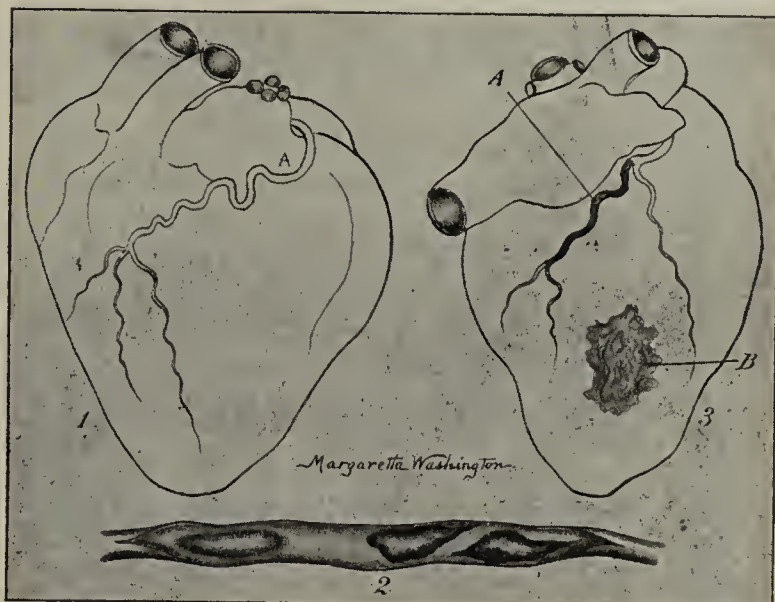


Fig. 1.—Extreme tortuosity of the right coronary artery.
Fig. 2.—The right coronary artery laid open so as to make visible the masses of fibroid material in the wall, which projected into the lumen of the vessel to such an extent as to cause almost complete occlusion. When the artery was emptied of blood a very fine probe could be passed through it by lifting the thinner portion of the wall away from these masses.
Fig. 3.—(A) A moderately tortuous left coronary artery, the shaded portion of which represents the regions filled by a thrombus; (B) shows the location of an area of chronic pericarditis, immediately overlying the aneurysm of the heart.

thickened and in places the vessel is twisted upon its own axis. (See Fig. 1.) About two inches from its origin there was a localized, irregularly shaped mass of soft atheroma, about $\frac{1}{4}$ of an inch in length, and immediately below this was another, somewhat similar in size, shape and appearance. These masses almost completely occlude the lumen of the vessel. With the greatest difficulty a very small probe could be passed through this portion of the artery by lifting away the anterior wall of the bloodvessel. (See Fig. 2.) During life the stream of blood flowing through the artery must have been very small. The left coronary artery was patulous, of a normal caliber, and the walls showed well-marked fibrosis. Below this point, where the left coronary artery gives off the left interventricular branch, the vessel is entirely occluded by a thrombus, which extends for a distance of one inch. (See Fig. 3.)

The left auricle was moderately dilated, its muscular walls slightly thickened and here and there were localized areas of fatty degeneration.

The left ventricular cavity was moderately dilated and the walls hypertrophied, measuring fully 1 inch to 1 $\frac{1}{4}$ inches in

thickness. The muscular fiber was of fair consistency and there was evidently considerable fatty degeneration. The columnæ carneæ and papillary muscles showed hypertrophy. On the interventricular wall of the left ventricular cavity there was a large white fibroid patch, measuring 2 by 2½ inches, irregularly rounded in shape. Most of the interventricular septum is included in this region of fibroid degeneration. The septum was reduced to ½ of an inch in thickness. This sclerosis extends through to the right ventricle, where it is visible as an irregular fibroid area, measuring 1 inch by ¾ inch, with the long diameter corresponding to the long axis of the heart, and extending well down to the extreme apex of the right ventricle. One of the fleshy columns passing from this patch to the opposite wall had also undergone the same change. The fibroid degeneration of the interventricular septum and wall of the left ventricle had permitted a sacculated dilation of two-thirds of the septal side of the left ventricular cavity to take place, into which could be placed a large English walnut. (See Fig. IV.) The pericardium at the base of this sacculatation was firmly attached to the parietal pericardium by an old, firm adhesion, covering an area about the size of a silver half-dollar. (See Fig. III, B.) At the extreme tip of the left ventricular cavity, corresponding to the left apex, there was an area of ulceration, which had involved the endocardium and

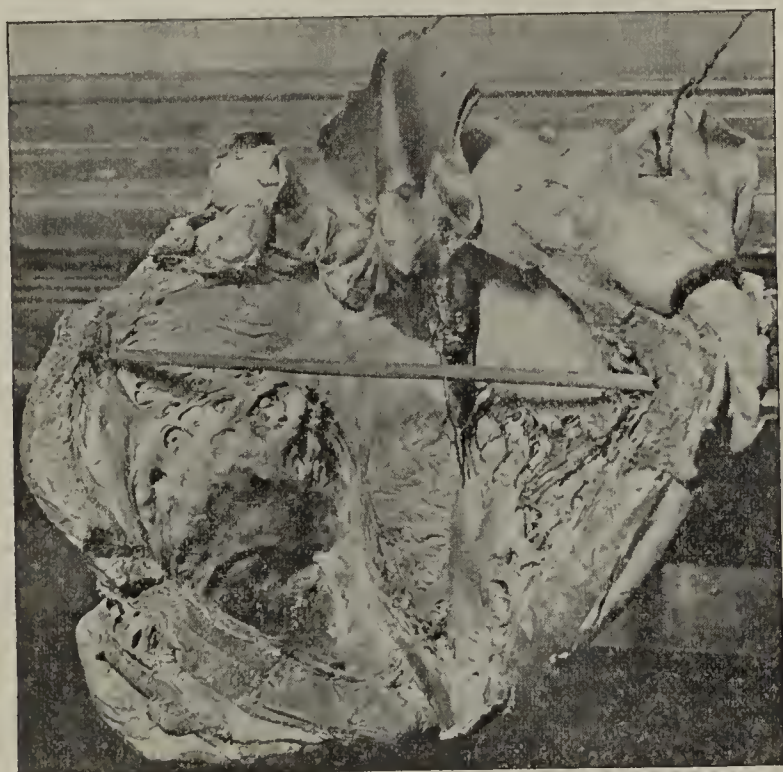


FIG. 4.—The left ventricular cavity: the darker portion shows the aneurysm and dilation of the apex, covered with a thrombus.

myocardium, having a diameter of about ½ inch, to which was attached a fresh thrombus and, when this was removed, an old thrombus partially decolorized was revealed. (See Fig. IV.) The base of this region was composed of thick, fibrous tissue, over which is spread a thin layer of fat, and constitutes, anatomically, the extreme tip of the apex.

The aortic valves were normal and competent, as shown by the water test. With the exception of a small yellow patch of soft atheroma, at the base of the anterior leaflet of the mitral valve, these valves and orifice were normal. The right auricular and tricuspid valves and orifices were normal, as was also the right ventricular cavity with the exception of the sclerotic area already described.

The lungs showed marked edema, but were otherwise normal. The kidneys, with the exception of congestion, showed no pathologic change. The liver was slightly enlarged and its consistency was increased. The under surface of the left lobe showed a small scar. The gallbladder contained a small quantity of bile, black in color, and also a small quantity of mucus, in which were found six small gallstones, faceted and presenting a mulberry appearance. The spleen was three times its normal size, but otherwise normal. The omentum was loaded with fat. The stomach, duodenum, and jejunum were normal, but, in the region of the ileum, the mucous membrane showed acute inflammatory changes.

The brain, so far as size, shape and appearance of the con-

volution were concerned, seemed normal. The pia mater, covering the cerebrum, was opaque and thickened. There was a moderate serous exudate and the arteries forming the circle of Willis showed numerous small, white patches of atheroma. Further examination of the brain was negative and no cerebral nor meningeal hemorrhage was present.

A study of recorded cases shows that fully 60% of all cases of left ventricular aneurysms occur in the region already described.

Examination of the 81 cases reported by Legge¹ shows that the greatest number occurred between the ages of 51 and 60, in which class this case would fall.

In 85 of the 87 cases reported by Pelvet² the apex was the seat of the aneurysm.

Fifty-nine of the 74 cases of cardiac aneurysm reported by John Thurnam³ affected the left ventricle, of which 9 were the size of a nut, 20 the size of an English walnut, 7 the size of a fowl's egg, 14 the size of an orange, and 9 the size of the heart. Here again this case agrees with the rule that the majority of aneurysms of this region are the size of a walnut. In 25 of these 74 cases the wall of the aneurysm was composed of the endocardium and pericardium, which was true in this case; and in 21 cases pericardial adhesions were observed. In the 24 cases in which the mode of death was stated, none was reported as having been caused by a thrombus.

Certain of the cases reported by Dr. Whipphan⁴ resemble the one here described in the total absence of previous cardiac symptoms and the occurrence of sudden death.

Rokitansky⁵ reports 6 cases of aneurysm of the left ventricular cavity, 3 occurring in men and 3 in women, between the ages of 70 and 74, and, in 2 cases, the aneurysm encroached upon the right ventricular cavity.

Most authors are agreed that aneurysm of the heart is more frequent in the male than in the female, and that rupture is not uncommon.

Dr. Wills⁶ reports a case of cardiac aneurysm the size of a pigeon's egg, the walls of which were calcareous and the cavity completely consolidated.

Dr. Ludvig Hektoen⁷ reports a case of sudden death due to embolism of the left coronary artery.

Dr. J. G. Taylor⁸ reports a case of sudden death, occurring in a woman aged 25 years, due to obliteration of the right coronary artery at its origin.

That syphilis existed 27 years before death is clearly shown by the history of the case, and that the syphilitic virus continued to exert its effects up until a few years before his death, is also proved from the appearance of hereditary syphilis in one of his children. The occurrence of a lingual ulcer two years before his death, which promptly yielded to specific treatment, also corroborates this view. It is more than probable that the chief cause of the widespread disease of the arteries was this same poison, but it must not be forgotten that chronic alcoholism also acted as a contributory etiologic factor. It is quite likely that the cardiovascular changes began years before his death and were slowly progressive. The almost complete substitution of fibroid for muscular tissue in the interventricular septum began months or years before the symptoms of his last illness.

The extreme obstruction of the right coronary artery, near its orifice, which was narrowed to the size of a hair-pin, and the localized thickening of the wall of this vessel, must have required months or years, during which time there was a progressively increasing interference with the supply of blood to that portion of the

heart supplied by this artery, constituting a reasonable explanation for the development of the fibroid changes in the septum and later of the occurrence of the aneurysm. It is particularly interesting to note the method by which nature attempted to strengthen the weakest portion of the wall of the left ventricular cavity, above the apex, by the formation of an organized clot on the ventricular side and of chronic localized pericarditis upon the pericardial side of the heart. Despite similar changes in the left coronary artery, no symptoms were complained of by the patient, with the exception of an indistinct history of heart trouble 4 years before death, and no abnormality was detected 3 years before death, at which time he was examined for life insurance. It is also true that the heart was able to meet all the ordinary demands of life, and it seems clear that the occurrence of sudden death, in 20 hours after the first symptoms of cardiac failure, is best explained by the slow formation of a thrombus in the left coronary artery, which finally completely shut off the blood-current from the region supplied by this vessel. In view of the widespread changes in both coronary arteries and the extensive secondary changes in the myocardium, it is interesting to observe the complete absence of cardiac pain or angina pectoris. This case clearly shows that widespread and advanced coronary and myocardial changes may take place without producing a single cardiac symptom, and it also shows how easily these changes are overlooked when the heart is examined, as is demonstrated by the fact that 3 years before his death he was considered a good risk by a life-insurance examiner. This case also demonstrates the necessity of thorough, complete, and long-continued specific treatment in every case of syphilis.

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THE TREATMENT OF SYPHILIS—A NEW AND TOLERABLE FORM OF ADMINISTERING MERCURY, WITH REPORT OF 65 CASES TREATED AT BELLEVUE HOSPITAL.

A Preliminary Report.

By WINFIELD AYRES, M.D.,

of New York.

Instructor in Genitourinary Surgery at the New York Post-Graduate Hospital, and Attending Genitourinary Surgeon at Bellevue Hospital, Out-door Patients' Department.

My attention was called to mercuriol nearly a year ago, when it was highly recommended as an antiseptic and of special value in the treatment of gonorrhea, one of the properties claimed for it being that it was non-irritant. As such, it occurred to me that it would be a first-class preparation for the treatment of syphilis. Until then, so far as I am aware, the medicine had never been used as an internal remedy, and some time was necessarily spent in finding the proper dosage. I began with $\frac{1}{8}$ of a grain three times daily, and gradually increased the dosage until it was found that the average amount required to control the disease was 3 grains.

The highest amount I have given is 7 grains, and the lowest amount I have found to control the disease is $\frac{1}{8}$ a grain. In starting a patient on a course of mercuriol I would advise beginning with half-grain or grain doses. Salivation has been produced by 2 grains; and yet several patients have taken as high as 6 grains with no disagreeable symptoms. The same may be said of mercuric chlorid; one patient may require $\frac{1}{4}$ of a grain, while the next will require only $\frac{1}{32}$ of a grain, to control the symptoms.

A short review of the preparations now in general use may not be out of place. Unguentum hydrargyri is followed by the best results in secondary syphilis; but no patient can properly use it himself, and it is extremely nasty, so that very few will submit to that course of treatment. The pills of mercuric protoiodid are probably used more than any other remedy at the present time. I rarely use it myself, owing to its irregularity of action and to the fact that it is so apt to cause gastric and intestinal disorder. Furthermore, 33% of the cases are not benefited by it in the least. What I have said of mercuric protoiodid applies also to the tannate. The chlorid gives much better results; yet it must be administered well diluted, and it frequently causes gastric irritation.

Mercuriol is a nucleid of mercury. It was discovered by Dr. Karl Schwickerath, of Bonn, Germany. Shortly after I began my experiments, Dr. Kopp, of Munich University, entered on similar investigations, and in a letter he has sent to Dr. Schwickerath he says:

DEAR DOCTOR:—May I ask you to send me a large quantity of those chocolate-coated tablets of mercuriol for further experiments? These tablets have rendered me such good service in the treatment of a few cases of secondary syphilis that I desire to continue my researches in that direction. However, large doses are required—10 to 12 tablets a day, which, by the way, are very well borne.

Dr. Kopp's dosage was much smaller than I have been using; probably it was about a $\frac{1}{4}$ grain a day. I think he will find, as I have done, that is desirable to use a much larger dosage. Dr. Kopp is the director of the Royal Polyclinic for Genitourinary Diseases, and has the reputation of being an excellent authority and a rather conservative man.

At present I would not advise giving mercuriol in solution with potassium iodid for the reason that there are still some doubts as to the best method of rendering it stable in this form.

My experiments were begun at my clinic in Bellevue about 2 months ago. Since that time 65 cases have been put on mercuriol, in all but 5 of which the patients had taken no previous treatment. Of these, 13 did not return after the first or second visit, 14 did not remain long enough under treatment to give the preparation a fair trial, and 13 may be described as new patients. This leaves 25 who have been sufficiently long and regular in their attendance to enable me to say something of the results obtained.

CASE 1.—This patient had a chancre behind the corona, involving the glans. He was suffering from chronic alcoholic gastritis. On June 5 he was put on mercuriol, $\frac{1}{8}$ grain three times daily. He was continued on this until July 5, when a general papular eruption appeared on the body. The chancre had healed, but still showed sclerosis. He was then given 1 grain of mercuriol three times daily. One week later he reported again not having had medicine for 3 days. The eruption was decidedly worse—macular, papular, pustular and squamous syphilids covering the entire body, and there were several squamous syphilids on the face. He was

given $1\frac{1}{2}$ grains of mercuriol three times a day. Nine days later his eruption had begun to fade. He was given 3 grains of mercuriol hypodermically. He did not appear again for a week, when he was again given 4 grains hypodermically. Three days later he returned with an abscess over the site of the last hypodermic injection. The first injection, I may mention, was given subcutaneously; the second directly into the gluteal muscles. The eruption had faded to a marked extent. As I did not administer the hypodermic injection myself I am not positive as to the technic. August 9: The patient has not returned since July 31. This case is unsatisfactory because of irregularity of treatment.

CASE 2.—This patient had a chancre at the penoscrotal junction, and condylomata about anus, with macular and papular eruption on the body and face, and mucous patches on the tongue. On June 5 he was put on $\frac{1}{2}$ grain mercuriol three times a day, the dosage thereafter being steadily increased. Improvement began when he was taking $\frac{1}{2}$ grain three times a day, and I continued to increase the dosage until at the end of a month he was taking 2 grains three times a day. By this time all his symptoms had disappeared, and his hair, which had been falling out, had begun to grow again. August 9: There are no signs whatever of the disease, and the hair has nearly returned; no intestinal or gastric symptoms; he is now taking 3 grains three times a day.

CASE 3.—This patient came to the dispensary on November 28, 1899, with a hard chancre. He afterward developed secondary eruption and marked alopecia. June 9: He has been taking $\frac{1}{2}$ grain of mercuric chlorid ever since (his limit being $\frac{1}{2}$ grain), with the result that all eruption has disappeared from the body, but he has a marked moth-eaten scalp, with a deep mucous patch on each side of the tongue. He was put on $\frac{1}{4}$ grain of mercuriol, which was gradually increased until he was taking 6 grains three times a day, with the result that his hair returned perfectly, and the mucous patches were decidedly improved, though not healed. August 7: The mucous patch on the right side of the tongue is entirely healed, that on the left side decidedly improved.

CASE 4.—The patient has no history of chancre, but had gonorrhea four times. About three months ago he noticed spots appearing on legs, also sore throat, and hair beginning to fall out. *Status praesens*, June 9: Papulo-pustular syphilid on legs, moth-eaten scalp; axillary, cervical and inguinal adenopathies. He was started with $\frac{1}{2}$ grain mercuriol, which was gradually increased until 4 grains was taken, when the hair stopped falling and the eruption began to fade. On July 21 I noticed that he had deep syphilitic ulcers in the tonsils. Mercuriol was increased to 6 grains. On the 24th slight salivation was observed and the medicine was cut off. On the 31st he was again put on mercuriol, the dosage being 5 grains taken three times a day. On August 4 the ulcers on tonsils were nearly healed, the eruptions on legs had almost entirely faded, and the hair had begun to grow. On the 7th he complained of diarrheal movements every two hours with some cramps, when the medicine was stopped and he was given bismuth subnitrate. August 9: The ulcers are entirely healed; eruption has disappeared; diarrhea entirely checked; he was given 5 grains mercuriol three times a day.

CASE 5.—This patient had a chancre beneath the prepuce which could be felt but could not be seen. It appeared one month after connection and on June 14 had been present for three months. The patient had inguinal, epitrochlear, and cervical adenopathies, also a pustular syphilid over right groin. He was started on $\frac{1}{2}$ grain of mercuriol, which was gradually increased until 6 grains were taken three times a day. Two days after he had been taking the latter quantity the bowels became very loose and the patient ceased taking more than 5 grains at a time. One week later the gums became slightly spongy and red, and his medicine was reduced to 3 grains three times a day. August 9: The inguinal adenitis has decidedly diminished in size. The sclerosis of the chancre is also less. The eruption has entirely disappeared.

CASE 6.—About May 1 this patient had a sore on the penis followed by roseola. For two weeks before coming to me he had been taking nine protoiodid pills daily. *Status praesens*, June 14. Inguinal adenitis, headaches, mucous patches on tongue, and pains just below the knee, coming on in the afternoon. I put him on mercuriol $\frac{1}{2}$ grain. Two days later

the pains had disappeared. No change in eruption. Medicine was gradually increased until July 10, when he was given 3 grains three times daily. Under this treatment the eruption gradually disappeared, but the mucous patch in the throat still persisted. On August 2 he was taking 7 grains, and all his symptoms had disappeared, except a mucous patch on the right tonsil. August 9: There are no signs of syphilis, but he has slight diarrheal movements with a little colic; medicine is cut off and bismuth subnitrate given. When he resumes he will get 5 grains three times daily.

CASE 7.—When he came to the dispensary he had a chancre in the culdesac four months previously, and had been taking $\frac{1}{8}$ grain of mercuric chlorid for one month. *Status praesens*, June 16: Mucous patches on anus and tongue. Put on $\frac{1}{4}$ grain of mercuriol, which was increased until he was taking 1 grain, under which the mucous patches began to disappear. The process of gradually increasing the dosage was continued until he was taking 3 grains three times daily, when the tongue was entirely healed and the mucous patch about the anus had disappeared. August 2: For the last two weeks he has been taking 3 grains three times daily, with no return of the symptoms. August 7: There is no sign of the disease, except that the hair is still falling; 5 grains three times daily.

CASE 8.—This man had no history of chancre. *Status praesens*, June 16. General eruption on body, headaches, severe pains in bones. This patient was put on $\frac{1}{2}$ grain of mercuriol, and under that small dosage the eruption began to disappear, and the pains also, but medicine was increased steadily. On July 14 he reported with gonorrhea, and was given in addition Mixture Lafayette. At that time he was taking 2 grains mercuriol three times daily. On the 21st he reported no appetite and some vomiting, which was probably due to the Mixture Lafayette. There were no symptoms of syphilis. The mercuriol was continued, and he reported again on the 26th with a mucous patch on the under lip, and unable to retain either Lafayette or mercuriol; he was given 4 grains mercuriol, cutting off Mixture Lafayette, and came back on August 7 with gums slightly inflamed, and mucous patch still persisting on under lip. August 9: The gums were in normal condition, mucous patch slightly better; he was given 5 grains three times daily.

CASE 9.—This patient had a chancre on the cervix of the penis, extending the entire circumference; he complained of afternoon headaches. On June 19 he was given $\frac{1}{2}$ grain of mercuriol three times daily. Four days later the patient was given $\frac{1}{4}$ grain. On July 3, roseola appeared over the abdomen, and the dose was increased to $\frac{1}{2}$ grain three times daily. On July 10, the eruption changed to macular with pain over the heart; he was given $1\frac{1}{2}$ grains; eruption has begun to fade slightly; pain over the heart has disappeared; 2 grains. July 21: The eruption has entirely disappeared, but there are mucous patches on both tonsils; 3 grains. August 4: He still has mucous patches in the throat; medicine increased to 5 grains three times daily.

CASE 10.—Chancre in January; seven weeks later eruption; sores in the mouth one month afterwards; treated in dispensary with mercuric chlorid $\frac{3}{8}$ grain; some improvement. On June 21 has had no treatment for two weeks; tongue on both sides covered with mucous patches, with deep fissures running into the tongue from the sides; he was put on $\frac{1}{2}$ grain mercuriol, and the dosage was increased steadily until he was taking 2 grains, when improvement began to be noticed. On July 14 he was given 4 grains. July 21: The tongue is entirely healed; I have never seen a tongue in such a condition improve so rapidly under any other antisyphilitic treatment. August 2, he was still taking the medicine regularly (4 grains 3 times a day) with signs of the disease.

CASE 11.—Had two chancres on penis, which began two days after connection, and on June 23 had existed for about three months; two weeks before this date he began to have general pains in the body. *Status praesens*: Two sclerotic nodules on the left side of penis; mucous patch on scrotum; general macular eruption; severe pains all through the trunk, especially in the back, much worse at night; he was put on $\frac{3}{8}$ grain mercuriol three times a day. In the course of the following week the dose was increased to 1 grain, and his pain not having been relieved I asked the doctor in charge

of the medical room to see him; he thought the pains were probably due to malaria; large doses of quinin and phenacetin failed to give relief, as did also small doses of morphin, so that I was obliged to consider that the original diagnosis of syphilitic pains was correct, and he was kept on increasing doses of mercuriol. The result was that on July 10, when he was taking 3 grains, the chancres had nearly disappeared and the eruption had entirely vanished. The dosage was steadily increased until he was taking 7 grains, and he became slightly salivated on July 28; medicine was then cut off. On August 2 the pains had somewhat increased, the chancre, however, had disappeared and there were no signs of eruption. August 4 he showed a mercurial ulcer near the last molar on the under jaw, on the left side; the medicine was stopped, and he was given 15 grains of potassium iodid, increasing to 30 grains three times a day. On August 9 he reports no relief of his pains; ulcer of his gum improved; given tincture of myrrh locally and 30 grains potassium iodid internally. I consider this man a neurotic, who unquestionably exaggerates his pains to a great extent.

CASE 12.—This man gave a history of indiscriminate connection before sore appeared on the penis, which had persisted about two weeks; no pains. *Status praesens*, July 3: Sclerotic erosion about the size of a dime in the culdesac of the prepuce; glands on the right side enlarged to the size of a walnut, others normal; slight macular eruption. He was put on $\frac{1}{2}$ grain mercuriol, increasing gradually until July 24, when he was given 4 grains. August 2 he reported that the eruptions had entirely disappeared, chancre healed, though small sclerotic nodule still remained. August 9, body perfectly clear, no sign of the disease anywhere, taking 4 grains three times daily.

CASE 13.—This patient was treated at the dispensary May, 1900, for chancre with roseola, no pains. *Status praesens*, July 5: Mucous patch on the penis, inguinal adenitis; given $\frac{1}{2}$ grain mercuriol three times daily, increased to 1 grain. On July 17, after he had been taking 1 grain for a week, slight salivation was caused; the mucous patch had healed, and the adenitis had nearly disappeared. On July 28, his gums were still inflamed, while the adenitis was continuing to disappear. On August 7 the teeth and gums were in good condition; mucous patch had reappeared on penis; inguinal adenitis decreasing slowly in size; given $\frac{1}{2}$ grain three times daily.

CASE 14.—This patient came to the dispensary on July 5; he had had a chancre about 3 months before, followed by macular eruption, which had entirely disappeared; has been taking $\frac{1}{3}$ mercuric chlorid, and afterwards $\frac{1}{2}$ grain protoiodid. *Status praesens*: Hair continues to fall out, though not markedly; bowels very loose; put on mercuriol, 1 grain, gradually increased to 3 grains. Reported July 17, when I found a mucous patch on the anterior surface of the left anterior pillar of the fauces; he still had glandular enlargement; he was slightly salivated, and had mercurial breath; he was given, in addition to mercuriol, potassium chlorate. August 4: The throat is decidedly improved, no sign of salivation; given 4 grains mercuriol three times daily.

CASE 15.—The patient came to the dispensary on July 7 with a sore on the penis, which had existed about a month, and gave a history of indiscriminate connection. *Status praesens*: There is a dry nodule underneath the foreskin about the size of a dime, and $\frac{1}{4}$ of an inch thick; macular eruption appearing on the body; inguinal adenitis; he was put on 1 grain mercuriol three times a day, the dose being increased gradually. July 14: He was given 3 grains three times a day. July 17: He reported that the eruption had disappeared, and that the chancre was slightly diminishing in size; 4 grains produced salivation. July 28: there was no sign of the eruption, but gums were still slightly tender.

CASE 16.—This man came to the dispensary January 2 with gonorrhea and chancre; eruption appeared about a month later; has been taking $\frac{1}{3}$ grain mercuric chlorid three times a day ($\frac{1}{4}$ grain being his limit). *Status praesens*, July 10: He has palm-syphilid in both hands, squamous variety; he was given $1\frac{1}{2}$ grain mercuriol, increasing until he was taking 3 grains. Four days after being put on this dosage his hands had almost entirely healed. August 7: Eruption on hands entirely disappeared; taking 3 grains.

CASE 17.—The patient had 2 chancres, one on the frenum, and one on the preputial margin; chancreoid on the dorsum

of the penis; chancreoid appeared about a week, and chancre three weeks, after connection; no eruption, but had pains in the bones, and headaches in the afternoon; no sores in the mouth. July 10: He was put on 1 grain three times daily. July 14: He reported no pains; chancre healed, though still indurated. July 17: He had a few syphilitic eruptions distributed over the body; dose of mercuriol increased to 3 grains. August 2: All eruptions on the body had entirely disappeared; sclerosis of the chancre diminished in size; syphilitic angina. August 4: Mucous patch appeared on the right tonsil; given 4 grains three times a day. August 9: Throat decidedly improved; has been taking on an average 10 tablets per day, 1 grain each.

CASE 18.—The patient was treated at the dispensary two months ago for chancreoid, and reported on July 12 that two weeks previously he began to notice an eruption. *Status praesens*: Sclerotic nodule on side of penis; general papular eruption on body and face; put on $\frac{1}{2}$ grain of mercuriol, the dosage being increased steadily until, on July 24, he was given 4 grains three times a day. On August 2 the report was: Eruption slowly disappearing, sclerosis of chancre nearly gone; he is now taking 5 grains three times daily.

CASE 19.—This man had chancre one year ago, the eruption appearing one month afterward; he came to the dispensary in February with squamous and ulcerative syphilids over body and face; he has been taking since then $\frac{1}{4}$ grain mercuric chlorid and 15 grains potassium iodid, with the result that the eruptions had disappeared materially though not completely. *Status praesens*, July 14: Thickened red patches on the face covered by scaly eruptions; 4 grains mercuriol and 15 grains potassium iodid. July 26: He reported that medicine had lasted for one week and during that time the eruptions on the face had almost entirely disappeared; he was unable, however, to come to the dispensary to get the medicine renewed, and the consequence was the return of the eruption, which is now in much the same condition as on the 14th; he was given 5 grains mercuriol and 15 grains potassium iodid. July 31, very slightly improved. August 4: The thickening at the site of the old eruption on the face has almost entirely disappeared; 5 grains mercuriol with 15 grains potassium iodid.

CASE 20.—No history of chancre, though he had had several chancreoids. *Status praesens*, July 17: Macular eruption; inguinal, right epitrochlear, and postcervical adenopathies. Started on 1 grain mercuriol, increasing steadily until on the 21st he was given 4 grains three times a day. On the 24th he developed a mucous patch on the under surface of the tongue; he was given 5 grains. July 28, he had tenderness of the teeth, redness of the gums; mucous patch on the cheek; the eruption had disappeared, except one small spot on forearm. July 31, his body was absolutely clear; he was given 3 grains. On August 2, the mucous patch on the cheek had improved; the body was perfectly clear; still a few adenopathies. August 9: Mucous patch on the cheek entirely healed, still a little syphilitic angina; continued on three grains.

CASE 21.—The patient came to the dispensary on July 21 reporting that he had had chancre about three months before; the old scar of the chancre persisted; he had a mucous patch on inner side of the cheek and another on the under side of the penis; there were condylomata about the anus; he was started on 2 grains, gradually increasing until he was taking 5 grains. On August 2, the teeth were slightly tender; mucous patch on the inner side of the cheek still present; treatment was stopped for one day, and then continued. August 9: This case has shown wonderful improvement; the mucous patches have almost entirely disappeared; he is taking 5 grains three times a day.

CASE 22.—No history of intercourse since February, at which time he had sores which were evidently diagnosed as chancres; he had a few eruptions on body; the sores and eruption entirely disappeared under internal medication. *Status praesens*, July 21: For the last 5 weeks has had a sclerosis extending from the right side of the frenum around about an inch to the left side; this sclerosis is a typical chancre, consequently the primary diagnosis must be doubted; he has pains in bones, worse at night; 2 grains of mercuriol was prescribed. This was gradually increased to 4 grains with the result that the sclerotic nodule on the penis decreased in size. August 7: The pains in the bones are almost entirely relieved; he is taking 4 grains thrice daily.

CASE 23.—This patient applied for treatment on January 15; examination showed that he had a chancre on the scrotum; two weeks later an eruption was noticed on the body; there was inguinal adenitis; the hair fell out to a slight extent; there were mucous patches in the throat and mouth which were entirely removed by $\frac{1}{8}$ grain mercuric chlorid three times a day. He continued on this treatment until June 9. *Status praesens*, June 29: Mucous patches on the tonsils for the last 3 weeks; he was given $\frac{1}{8}$ grain mercuriol. This was gradually increased to 1 grain three times a day, and the mucous patches entirely disappeared by July 19. August 9: Did not return for his medicine from the 21st ult., has been out of it for 10 days; shows slight return of syphilitic angina of the throat; put on 1 grain three times a day.

CASE 24.—This patient came to the dispensary on January 2 with a sore which was at first thought to be a chancroid, but was afterwards diagnosed as a chancre; he was put on $\frac{1}{8}$ grain mercuric chlorid, with the result that his symptoms all disappeared except the sclerotic nodule; he stopped medicine about June 1. *Status praesens*, June 21: Phimosis with indurated nodule underneath; macular eruption all over body; general adenopathies; mercuriol, $\frac{1}{4}$ grain three times a day. On July 18 he reported that the medicine had caused nausea and cramps, giving him three movements a day; at this time he had been taking 1 grain. He was increased to $1\frac{1}{2}$ grains; July 24, the eruption had entirely disappeared; no intestinal or gastric disturbance. On August 4 he returned with his body perfectly clear, with some discharge under the prepuce, but phimosis and the sclerotic nodule persistent. August 7: There are no signs of eruption, but chancre persists; he is taking 2 grains three times a day.

CASE 25.—This patient came to the office on June 15 with a history that about 2 weeks previously he had noticed a small sore on the foreskin. When I first saw him he had induration on both sides beneath the prepuce, phimosis, general adenopathies, macular eruption on the body, and pains in the left knee. I put him on $\frac{1}{8}$ grain mercuric chlorid three times daily, and gradually increased the dose until he was taking $\frac{1}{4}$ grain, when he became salivated. It had no effect on the eruption whatever, though the sclerosis of the chancres had disappeared to quite a marked extent. On July 9 I gave him $2\frac{1}{2}$ grains mercuriol, and afterwards increased it 3 grains. July 30, the eruption had entirely faded from the face and was rapidly disappearing from the body; he complained of the syphilitic numbness of the fingers; the gums on that date were slightly tender; ordered $2\frac{1}{2}$ grains. On August 6 the patient reported that by mistake he had taken $12\frac{1}{2}$ grains three times daily for two days; this caused no disturbance of the stomach or diarrhea, but the teeth became tender and gums swollen; he stopped medicine for one day, and then took 8 grains a day. Two days after this visit the teeth had again become tender, and he had taken no medicine since. The eruption had entirely disappeared from the body, and there were no signs of syphilis anywhere. The gums were slightly red and tender, and the teeth also tender. He was given $2\frac{1}{2}$ grains three times daily with a mouth-wash consisting of tincture of myrrh 2 ounces, potassium chlorate 1 ounce, water 2 ounces.

In conclusion, I would remark, of course, 2 months is not a sufficient time to judge absolutely of any medicine in the treatment of syphilis; but the marked improvement shown by many of the cases in this brief time makes it certain that mercuriol is of great value. The preparation has caused gastric irritation in only one case, Case 17; and probably if the enteric-coated tablets had been given in this case the gastric disturbance would not have occurred. Diarrhea with colicky pains is reported in 4 cases. In one of these the troubles disappeared although the dose was increased, showing that, in that case, they were not due to the medicine. In another case the patient reporting diarrhea did not return after doing so. Of the other two cases one was taking 6 and the other 7 grains three times a day, with the probability that the dose was too much.

That mercuriol is superior even to mercuric chlorid in

controlling the symptoms of syphilis is proved, in my opinion, even by this short trial. Cases 3 and 25 illustrate this perfectly. Like all preparations given internally mercuriol has very little effect on the chancre; still it has hastened the healing slightly. It seems to be much more efficient in controlling skin-eruptions than mucous eruptions.

Two further remarks may here be made. First, that the number of patients who have returned for treatment is unusually large for dispensary work. And second, that of the 25 patients whose cases have been reported on, none required to be put upon potassium iodid to control the secondaries. In Case 11 the addition of potassium iodid had no effect in controlling the pains. In Case 19 the eruption was one of tertiary variety, that is, marked thickening of the skin.

It has seemed to me in the short time that I have used mercuriol (1) that it causes less disturbance of the gastrointestinal tract than any other preparation of mercury used internally; (2) that it controls skin-eruptions and pains much better than any other preparation, while it controls mucous eruptions as well as any other, and has equally good effect on the chancre; and (3) it is an advantage that it can be taken in pill form. These three points make the preparation one of great value.

VALUE OF POTASSIUM BICARBONATE IN COLDS AND INFLUENZA.*

By STEPHEN HARNSBERGER, M.D.,
of Catlett, Va.

POTASSIUM BICARBONATE, given early, will, in nearly every instance, abort a cold very effectually and almost at once. The remedy is well borne by both elderly and weak persons. Nor is it necessary for them to keep indoors as after the treatments commonly in use. Even when the case has advanced further and fever is present, this drug, with others indicated, will help greatly to reestablish the normal adjustments of the body. In those cases in which the tonsils are involved, or in which the catarrhal inflammation affects the other air-passages, or the alimentary canal, potassium bicarbonate will demonstrate its benign influence. Pneumonia is a less frequent result in such cases, and when it does come on, I find it runs a much milder and shorter course.

But it is in influenza that I wish to speak of potassium bicarbonate as a remedy of unusual value. I began its use in this disease in the autumn of 1889, and my observations of its beneficial effects through the epidemics of influenza since that year have convinced me that it is a therapeutic agent in which we can place the utmost confidence. According to my experience influenza is the only disease which seems to weaken the adult heart-muscle primarily, or from the very outset of the attack. This is why pneumonia is so frequent a complication. The patient either succumbs to pneumonia or is left in a weak condition, with lowered digestive function and an irritable condition of the heart, physical exertion being almost out of the question. I do not attempt to explain in what way potassium bicarbonate acts, but I find that my patients taking the drug get quick relief and make a more speedy and thorough recovery. Osler, in speaking on

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the treatment of influenza, says: "The depression following the disease is one of the most unpleasant and obstinate features." Tyson says: "Weakness following influenza may be extreme, and the slightest effort, physical or mental, promptly convinces the patient of this, and the duration of the weakness may be prolonged for months." Of course, as we all know from experience, it is this weakness or depression in the acute stage and subsequently that the danger chiefly lies. Exertion, diaphoretics, coal-tar derivatives, etc., only tend to increase the danger by still further lessening the resisting power of the system. Potassium bicarbonate, following a free action of the liver, rest, and a concentrated liquid diet is in my experience the best safeguard against the development of still more unfavorable and perhaps fatal prostration.

I give 30 grains of potassium bicarbonate in a cup of milk every 4 hours during the day, and no other diet for 48 hours, and find that this will, in most instances at least, quickly start the patient along to health. When milk is not well borne or readily taken, administer the remedy with a glass of cold water and allow only liquid diet, and in from 36 to 48 hours most patients will feel better and want to eat.

Nothing seems to assist the action of potassium bicarbonate so well as a cathartic, such as calomel, podophyllum, etc. In fact, there are cases in which it is extremely difficult to get the bowels to move on account of a temporary paresis of the muscular coats of the intestines. These patients do not show so much systemic weakness nor heart-depression, and when the functional activity of the bowels is restored they very rapidly return to health. But whether the disease affects the brain, the lungs, the heart, or the bowels, I am confident, from a considerable experience, that no treatment for influenza will do more genuine and permanent good than full doses of potassium bicarbonate.

The prognosis of influenza of a severe type is much worse in the weak and elderly, on account of the frequency and special tendency with which the heart-muscle is involved—especially the tendency to acute dilation and the liability of the attacks to be complicated with pneumonia. The tonicity and resisting power of the heart-muscle in adults seems to be lowered in this disease—a striking resemblance to a like condition of the heart-muscle in children suffering from severe acute infectious diseases. To obviate this danger, cases of this character of influenza in adults should be treated with maximum doses of potassium bicarbonate, and absolute rest in bed enjoined. I have now a patient who will round up 100 years of age on September 26 next, who is doing well on potassium bicarbonate, though she showed in the outset of the attack every symptom of beginning pneumonia and cardiac failure.

LOCALIZATION OF A BULLET-WOUND OF THE SPINAL CORD; REMOVAL OF THE BULLET FROM THE SPINAL CANAL.¹

By HOWELL T. PERSHING, M.D.,
of Denver, Col.

Professor of Nervous and Mental Diseases in the University of Denver.

Mrs. A., aged 42, was admitted to the Arapahoe County Hospital, in the surgical service of Dr. W. B. Craig, April 10, 1900. In the absence of both the visiting neurologists, it devolved upon me, as one of the consultants, to report the neurologic features of the case to Dr. Craig.

¹ Read before the Colorado State Medical Society, June 21, 1900.

On February 27, 1900, two bullet-wounds had been inflicted by her husband with a revolver at close range. One bullet passed superficially under the skin, and was easily extracted. The other entered the back about the level of the eleventh rib and 6 inches to the left of the median line; its course could not be ascertained.

At the time of the shots the woman remained conscious, but immediately fell, felt a numb sensation from the waist down and found herself unable to move either of the lower limbs. Severe pains in both buttocks and thighs soon set in. Control of the bladder and rectum was lost; the urine would accumulate for a number of hours, without dribbling, and then be spasmodically and unconsciously evacuated. These symptoms had persisted up to the time of examination.

Condition on Examination.—The muscles above the waist were under normal control, but there was complete absence of voluntary motion of all the joints of both lower limbs. Faradic irritability was entirely lost in the paralyzed muscles except a scarcely perceptible contraction of the right peroneal group. The muscles were flabby and somewhat wasted. There was a small bed sore on the right buttock.

The plantar reflex, Achilles reflex and knee-jerk were absent, but the anal and perineal reflexes were quite lively, although the irritation was not felt. All forms of sensibility were lost up to a definite line, passing across the external genitals, the front of each thigh, the buttocks and the sacrum. This line corresponded very closely with that marked in Head's diagrams as separating the sensory areas of the first and second lumbar segments of the cord. There was much complaint of pain in the thighs and buttocks, which could not be controlled without full doses of morphia.

The facts of the history and examination were not difficult to interpret. The distribution of the paralysis and sensory loss, together with loss of control of the bladder and rectum, and trophic changes made it certain that there was a lesion of the spinal cord. The limit of the sensory loss showed the upper limit of the lesion to be at the junction of the first and second lumbar segments, a part of the cord which is enclosed by the eleventh dorsal vertebra. The lowest sacral segments could not be involved because the perineal, anal and vesical reflexes, which are dependent on the integrity of these segments, were retained. That a considerable portion of the lumbar enlargement, including the lower four lumbar and at least the first sacral segments, was severely injured, was evident from the complete loss of reflexes and faradic reactions in the lower limbs.

An opinion was accordingly given that the cord was damaged at a part mainly opposite the twelfth dorsal vertebra, extending both upward and downward, but not so far as the upper border of the eleventh dorsal or the lower border of the first lumbar vertebra. This damage was evidently inflicted at the moment the shot was fired, but whether directly by the bullet itself or indirectly through fracture of a vertebra or hemorrhage could not be told. In either case it could not be affirmed that the persistence of the symptoms was due to persistent pressure on the cord. This was only a possibility, the probability being that the original damage was sufficient to account for all the symptoms, whether pressure was maintained or not.

Independently of the neurologic examination Dr. Stover took a skiagraph of the lower spine, which gave a faint and doubtful indication of a foreign body between the twelfth dorsal and first lumbar vertebrae. Dr. Stover was not willing to place much reliance on this indication, but as it harmonized with the neurologic localization it was accepted as corroborative evidence.

The patient had entered the hospital with the express purpose of having an operation performed. In consultation with Dr. Craig it was agreed, for reasons already indicated, that the possibility of restoring any

considerable degree of function was extremely slight. On the other hand, the localization was so definite and the risk attending an exploratory operation of so little moment that it was deemed wise to operate in the hope that at least the pain might be relieved. The whole matter was frankly explained to the patient and she unhesitatingly asked for the operation.

Dr. Craig operated April 21. The spine and laminae of the twelfth dorsal vertebra were first removed. Nothing abnormal could be detected except the absence of pulsation in the exposed dura. It was then decided to remove the spine and laminae of the eleventh dorsal rather than of the first lumbar vertebra, because a mechanical obstruction would be more likely to exist at the upper than at the lower limit of the lesion. This was rapidly done and the finger then detected a foreign body in the part of the spinal canal within the eleventh dorsal vertebra, a little to the right of the median line. This was seized with forceps and easily removed, when it was found to be a misshapen bullet of about .42 caliber. Nothing further was done except to dress the wound in the usual way.

On recovery from the anesthetic the patient gave surprisingly little evidence of shock and said she was to a great extent relieved of her pain. This relief continued for a number of days and much less morphia was needed than before the operation. There was no restoration of function, in spite of the patient's pathetic attempts to find some improvement in this respect, and after some days the pains began to return with their former severity. On April 29 and 30 it was noticed that the pulse-rate was rising and strength failing. Less food was taken and finally it was refused altogether. Death occurred from constantly increasing exhaustion, May 15. No postmortem examination was allowed.

This case seems to me to call for little comment. Notwithstanding the remoteness of the possibility of doing substantial good in such a case it was on the whole wise to make the attempt. The operation was rapidly and skilfully performed, and the unfortunate woman certainly lost nothing of the very little that it remained possible for her to lose.

STUDY OF A MUMMY AFFECTED WITH ANTERIOR POLIOMYELITIS.¹

By JOHN K. MITCHELL, M.D.,
of Philadelphia.

IN the Archeological Museum of the University of Pennsylvania is the skeleton of an Egyptian of a period about 3,700 years before Christ, which presents some problems of interest. Mr. Flinders Petrie found this mummy at Deshasheh, a village on the western edge of the plain, some 80 miles south of Cairo. Although the tomb had been rifled, the style of burial indicated sufficiently that the body was that of a man of the better class. The coffin is hewn out of a single great log of sycamore; in the end the rings of growth may still be counted with ease enough to determine the tree as not less than 300 years old when it was fashioned. A straight stick, about 4 feet in length and $\frac{1}{2}$ inch in diameter, lay alongside the body, broken in three pieces. It was at once observed by Mr. Petrie that the man had one leg much shorter than the other, and he

supposed the thigh to have been broken—but, as will be seen, there is no evidence of this.

The bones, which are exceedingly light and fragile from age, have been carefully articulated and, except for certain small losses of substance where they have crumbled away, are in good preservation, and their sizes and relations are readily studied.

The skeleton is that of a small male, the extreme height being 1 meter, 63 centimeters. Making allowance for flesh and cartilage, the subject in life could scarcely have exceeded 5 feet, $5\frac{1}{2}$ to 6 inches. That he was an old man is shown by the ossification of the rib cartilages, the obliteration of the sutures in the skull, and by the much worn grinding surfaces of the remaining teeth. The general capacity of the skull, the square and well-formed lower jaw, and the facial angle, all indicate character and intellect, and confirm the belief suggested by the methods of burial and preservation that the man belonged to the educated and wealthy governing or upper class.

One notices at once that the left leg is considerably shorter than the right, and at first sight the femur of the left side seems heavier and thicker than the right one. Measurement, however, makes it evident that the left femur's apparent greater circumference is only due to its shortening, and to strongly marked ridges at the site of the muscular attachments, which suggest that the muscles may have been hypertrophied on that side. With this exception the left femur is imperfectly developed in all directions.

The left femur is 8.2 cm. shorter than the right, round the middle of its shaft it is 1.2 cm. less, and the neck is 4 cm. less in circumference. Condylod measurements could not be compared, as the left condyles are somewhat crumbled. The necks of the femora are the same length on both sides. There is no sign of fracture or injury to the bone of the left thigh. Only a very minute and practically negligible difference can be made between the bones of the lower leg on the two sides, not more than .5 cm., an amount of difference often exceeded in healthy bones, but it should be said that though the shortening is very slight, it is on the left side.

So far as can be told the bones of the feet are unaffected, but as the terminal phalanges have crumbled almost entirely away, nothing can be stated with certainty about them.

The pelvis is perfectly formed and the vertebrae present no sign of unequal or imperfect development, so that evidence is wanting of any compensatory curvature, such as might be expected in a patient who had come to old age with one leg three inches shorter than the other. These facts and the marked prominences for muscle-attachment on the surface of the short thigh-bone, suggest that during life some means of compensating for the shortening must have been used, such as a high-soled shoe or sandal might afford, the additional weight of which perhaps aided in bringing about a certain degree of hypertrophy of the thigh-muscles on the affected side. Moreover, the stick found in the coffin, as my friend, Dr. Edward Martin, who at my request remeasured the bones and examined them for evidence of injury, ingeniously suggested, is too long and slender to have served as a support and must have been merely a balancing staff.

The impossibility of cross-examination of the patient on his early history leaves us free to conjecture as to the cause of the difficulty, but nothing seems so prob-

¹ Read at the meeting of the Association of American Physicians at Washington, D. C., May 3, 1900.

able as that the defect of growth is due to an attack of poliomyelitis, perhaps even an intrauterine one. It is certainly unusual, though not unheard-of, that only one segment of a limb should be affected; but this disease is notoriously apt to be irregular in its distribution; for example, when it occurs in the arms, it is sometimes limited to the upper, sometimes to the lower arm. Every one knows how constantly the anterior tibial muscles remain weak when other muscles make fair recovery from their palsy, insomuch that one is apt to depend upon this weakness as indicative of infantile paralysis where the cause of lameness is doubtful. Yet at this moment I am treating a patient in whom bilateral infantile paralysis of the anterior thigh muscles is present, while the anterior tibials on both sides are perfectly sound. No theory has been proposed which will account for the frequency with which these groups are

picked out nor indeed any one which will adequately explain why the disease should affect only the anterior cornua. What is curious is that I cannot find in the dozen great works of reference which I have consulted in the effort to settle this small point, any categorical statement as to whether the growth of one bone alone may be affected and its attached muscles escape, or be affected with it and recover later. The subject is one for larger discussion and study—and I have been concerned with the presentation only of what is, if my supposition of the causation is correct, the earliest known case of infantile palsy, although Dr. Osler has hinted his opinion² that the lameness of Jonathan's son, Mephibosheth, was due to this trouble, an opinion founded, I fear, on even slenderer basis of fact than the one here expressed.

² Osler's "Practice." Art. Infantile Palsy.

ANALGESIA IN OBSTETRICS PRODUCED BY MEDULLARY INJECTIONS OF COCAIN.

By S. MARX, M.D.,

of New York.

[Concluded from page 853.]

PARA.	PRESENTATION.	NATURE OF LABOR.	AMOUNT INJECTED.	REPEATED INJECTION.	ANESTHESIA COMMENCED.	ANESTHESIA LASTED.	ANESTHESIA AREA.	RESULT.	SYMPTOMS.	TREATMENT OF SYMPTOMS.	DURATION OF SYMPTOMS.
1. Multip.	V. L. O. A.	Normal.	Cocain, Gr. $\frac{1}{6}$.	No.	7 min.		Below umbilicus.	Excellent.	Slight headache.		24 hours.
2. Multip.	V. L. O. A.	Manual dilation.	Gr. $\frac{1}{6}$.	No.	5 min.		Below umbilicus.	Excellent.	Slight headache.		12 hours.
3. Primip.	V. L. O. A.	Forceps.	Inert cocain, Gr. $\frac{1}{6}$.	Gr. $\frac{1}{6}$ in 40 min.			Control test, none.	None.	Headache, vomiting. Temp. 102°.		8 hours.
4. Multip.	V. L. O. A.	Perineum repaired. Forceps.	Cocain, Gr. $\frac{1}{6}$.		5 min.	3 hours.	Below umbilicus.	Excellent.	Throbbing headache.	Nitroglycerin and morphin.	12 hours.
5. Cellulitis of leg. Multip.	V. R. O. A.	Version.	Gr. $\frac{1}{6}$.		5 min.		Below umbilicus.	Excellent.	Slight nausea.		
6. Primip.	Twins.	Version extraction.	Gr. $\frac{1}{6}$.	Gr. $\frac{1}{6}$ in 30 min.	29 min.	3½ hours.	Below umbilicus.	Excellent.	Slight headache.		
7. Primip.	V. L. O. A.	Forceps.	Gr. $\frac{1}{6}$.	Gr. $\frac{1}{4}$ in 3 hours.	9 min.	4 hours.	Below umbilicus.	Excellent.	Severe vomiting.		12 hours.
8. Primip.	V. R. O. A.	Axis traction.	Cocain, Gr. $\frac{1}{2}$. Morph., Gr. $\frac{1}{6}$.	Gr. $\frac{1}{6}$ in 3 hours.	10 min.	5 hours.	Below umbilicus.	Excellent.	Stupor from morphin.	Atropin.	12 hours.
9. Primip.	Breech.	Manual dilation. Extraction.	Gr. $\frac{1}{6}$.		9 min.		Below umbilicus.	Excellent.	Severe headache.	None.	9 hours.
10. Primip.	V. R. O. P.	Perineum repaired. Normal.	Gr. $\frac{1}{6}$.		3 min.		Below umbilicus.	Excellent.	Headache. Temp. 102°.	Ice-bag.	7 hours.
11. Primip.	Twins.	Forceps. Breech extraction.	Gr. $\frac{1}{6}$.	Gr. $\frac{1}{6}$ in 2 hours.	4 min.	3¼ hours.	Below umbilicus.	Excellent.	Severe headache.	Glonoin.	12 hours.
12. Primip.	Puerperal sapremia.	Exploration. Curettage.	Gr. $\frac{1}{4}$.	Gr. $\frac{1}{6}$ in 33 min.	10 min.		Below umbilicus.	Excellent.	None.		
13. Multip.	V. L. O. A.	Normal.	Gr. $\frac{1}{4}$.		5 min.		Below umbilicus.	Excellent.	None.		
14. Multip.	V. R. M. P. Reposition to R. M. A.	Normal.	Gr. $\frac{1}{6}$.		8 min.	3 hours.	Below nipples.	Excellent.	Severe headache.	Glonoin.	6 hours.
15. Primip.	V. L. O. A.	Forceps.	Gr. $\frac{1}{8}$.	Gr. $\frac{1}{6}$ in 3 hours.	7 min.	4 hours.	Below nipples.	Excellent.	Severe headache.	Glonoin.	12 hours.
16. Mitral murmur. Multip.	V. R. O. A.	Suture to cervix. Version.	Gr. $\frac{1}{3}$.		2 min.	1½ hours.	Below umbilicus.	Excellent.	Headache.	Glonoin.	15 hours.
17. Primip.	V. L. O. A.	Normal.	Eucain, Gr. $\frac{1}{3}$.	Eucain, Gr. $\frac{1}{3}$ in 1 hour.		40 min.	Below umbilicus.	?	Very severe headache.	Glonoin, morphin.	12 hours.
18. Primip.	V. L. O. A.	Perineum repaired. Normal.	Cocain, Gr. $\frac{1}{3}$.		4 min.		Below umbilicus.	Excellent.			
19. Primip.	V. R. O. A.	Perineum repaired. Normal.	Gr. $\frac{1}{4}$.	Gr. $\frac{1}{6}$ in 1¾ hours.	9 min.	2½ hours.	Below umbilicus.	Excellent.			
20. Primip.	V. L. O. A.	Forceps.	Gr. $\frac{1}{3}$.	Gr. $\frac{1}{6}$ in 2¾ hours.	5 min.	4 hours.	Below umbilicus.	Excellent.	Headache.	Ice bag.	
21. Primip.	V. L. O. A.	Perineum repaired. Normal.	Gr. $\frac{1}{3}$.	Gr. $\frac{1}{6}$ in 2 hours.	4 min.	4 hours.	Below nipples.	Excellent.			
22. Primip.	V. L. O. A.	Perineum repaired. Normal.	Gr. $\frac{1}{4}$.	Gr. $\frac{1}{4}$ in 2 hours.	4 min.	4 hours.	Below nipples.	Excellent.	Headache.	Hyoscin, gr. $\frac{1}{16}$.	20 min.
23. Primip.	V. L. O. A.	Perineum repaired. Normal.	Gr. $\frac{1}{3}$.	Gr. $\frac{1}{4}$ in 1 hour.	6 min.	2½ hours.	Below umbilicus.	Excellent.		Prophylactic. Hyoscin, gr. $\frac{1}{16}$.	
24. Multip.	V. L. O. A.	Forceps.	Gr. $\frac{1}{6}$.		3 min.		Below umbilicus.	Excellent.	Headache. Vomit.	Hyoscin, Acetanilid, Morphin.	6 hours.

PARA.	PRESENTATION.	NATURE OF LABOR.	AMOUNT INJECTED.	REPEATED INJECTION.	ANESTHESIA COMMENCED.	ANESTHESIA LASTED.	ANESTHESIA AREA.	RESULT.	SYMPTOMS.	TREATMENT OF SYMPTOMS.	DURATION OF SYMPTOMS.
25. Primip.	V. L. O. A.	Normal.	Gr. $\frac{1}{6}$.		10 min.		Below umbilicus.	Excellent.		Prophylactic, Hyoscin.	Slight. 24 hours.
26. Primip.	V. R. O. A.	Perineum repaired. Forceps.	Gr. $\frac{1}{4}$.		5 min.		Below umbilicus.	Excellent.	Severe headache.	Mageudie.	
27. Primip.	Breech.	Extraction.	Gr. $\frac{1}{6}$.	$\frac{1}{2}$ hour, gr. $\frac{1}{4}$. $2\frac{1}{2}$ hours, gr. $\frac{1}{4}$.	4 min.		Below nipples.	Excellent.	Severe headache.	Ice-bag.	
28. Primip.	V. L. O. A.	Perineum sutured. Version.	Gr. $\frac{1}{4}$.		2 min.		Below umbilicus.	Excellent.	Temperature, 102.4.	Prophylactic, Hyoscin, gr. $\frac{1}{100}$.	12 hours.
29. Multip.	V. L. O. A.	Forceps.	Gr. $\frac{1}{6}$.		6 min.		Below nipples.	Excellent.	Some headache.	Prophylactic, Hyoscin.	
30. Primip.	V. L. O. A.	Normal.	Gr. $\frac{1}{4}$.		8 min.	$1\frac{3}{4}$ hours.	Below umbilicus.	Excellent.	Some headache.	Prophylactic, Hyoscin.	
31. Primip.	V. L. O. A.	Normal.	Gr. $\frac{1}{4}$.		6 min.		Below umbilicus.	Excellent.		Prophylactic, Hyoscin.	24 hours.
32. Primip.	V. R. O. A.	Forceps.	Gr. $\frac{1}{4}$.		5 min.		Below umbilicus.	Excellent.	Headache.	Prophylactic, Hyoscin.	
33. Multip.	V. L. O. A.	Normal.	Gr. $\frac{1}{4}$.		8 min.		Below umbilicus.	Excellent.	Full stomach, vomit., headache.	Prophylactic, K. Br. gr. 30. Hyoscin.	
34. Primip.	V. R. O. A.	Forceps.	Gr. $\frac{1}{4}$.		$3\frac{1}{2}$ min.		Below umbilicus.	Excellent.	Headache.	Prophylactic, K. Br. gr. 30.	4 hours.
35. Multip.	Twins, both vertex.	Forceps. Version.	Gr. $\frac{1}{4}$.		9 min.		Below umbilicus.	Excellent.		Prophylactic, K. Br. gr. 30.	. .
36. Multip.	V. R. O. A.	Normal.	Gr. $\frac{1}{4}$.		15 min.		Below umbilicus.	Excellent.		Prophylactic, K. Br. gr. 30.	. .
37. Multip.	Breech.	Extraction.	Gr. $\frac{1}{4}$.		6 min.		Below umbilicus.	Excellent.	Intense headache.	Prophylactic, K. Br. gr. 30.	24 hours.
38. Multip.	V. R. O. A.	Normal.	Eucain B. Gr. 1	Repeated each hour till 4 grs. given.	3 min.	At first 30 min., then none.	Below umbilicus, slight.	?	Severe headache.	Prophylactic, K. Br. gr. 30.	$1\frac{1}{2}$ hours.
39. Primip.	V. L. O. A.	Manual dilation. Forceps.	Cocain Gr. $\frac{1}{4}$.	Repeated in 4 hours. Gr. $\frac{1}{4}$.	8 min.	$7\frac{1}{4}$ hours.	Below umbilicus.	Excellent.		Prophylactic, K. Br. gr. 30.	. .
40. Primip.	V. L. O. A.	Forceps.	Eucain B. Gr. 1	Repeated until patient received 4 grs. in 3 hours.	4 min.	?	Below nipples.	Absent, or at times evanescent.	Slight headache.	Prophylactic, K. Br. gr. 30.	5 hours.
41. Primip.	Puerperal aspremia.	Explorat'n. Curettage.	Cocain Gr. $\frac{1}{6}$.		$6\frac{1}{2}$ min.	?	Below umbilicus.	Excellent.		Prophylactic, K. Br. gr. 30.	. .
42. Primip.	V. L. O. A.	Forceps.	Cocain Gr. $\frac{1}{6}$.	$1\frac{1}{4}$ hours gr. $\frac{1}{6}$; 1 hr. gr. $\frac{1}{6}$; 3 hrs. gr. $\frac{1}{6}$.	10 min.	5 hours.	Below umbilicus.	Partial towards end.		Prophylactic, K. Br. gr. 30.	. .

Treatment of the Breasts.—George L. Brodhead (*New York Postgraduate*, October, 1900), when the breasts are not to be used for nursing after confinement, advocates the following: A tight breast binder should be applied with the patient in the horizontal position, immediately after nursing has ceased (or in case of stillbirth, on the second day after labor), the nipples being protected by small pieces of sterile gauze. Cotton should be placed in the axillae, around and between the breasts, and the binder applied as firmly as the patient can bear it with any degree of comfort. When once the binder has been evenly and carefully put in place it should not again be removed, except for purposes of cleanliness, until the breasts are soft and painless, because the breasts are often very tender and painful, and manipulation tends to increase the discomfort. In many cases the binder alone will be sufficient to accomplish the end desired, the milk drying up quickly and with little or no discomfort. In other cases it will be necessary to limit the amount of fluids taken in order to reduce the distention in that way. In all cases where the breasts become caked and tender it is a good plan to administer Rochelle salts, in plain water or in vichy, a half ounce every hour until the bowels have been freely evacuated. The large watery movements will relieve the distention to a great degree, and in the vast majority of cases these measures (binder, limited amounts of fluid, and salts) will prove successful. He has relied upon the plan to the entire exclusion of massage, the use of the breast pump, hot fomentations and belladonna ointment. [G.C.C.H.]

Significance of Blood-count.—Andrew J. Coey (*St. Paul Medical Journal*, October, 1900) bases upon more than 1,000 examinations of blood, the following conclusions: In suppuration the increase of white blood-corpuscles is proportionate to the intensity of the inflammation and falls as the pus escapes. As the inflammation disappears there is a diminution of the leukocytes which may be present in subnormal amount at the time of convalescence. In obscure suppurations and especially in pus collections in the peritoneal cavity, blood-examinations are of the greatest diagnostic

value. In malignant disease a leukocytosis is usually observed. The absence of leukocytosis in uncomplicated cases is, therefore, indicative of typhoid fever, tuberculous peritonitis, gallstone or renal colic, intestinal obstruction, fecal impaction, neuralgia, etc. Carcinomas are usually accompanied by a greater or less leukocytosis. Sarcomas have always a well-marked leukocytosis. Appendicitis furnishes the most marked example of the value of the leukocyte-count as regards operation. Cases of purely catarrhal appendicitis rarely present a leukocytosis. With pain in the region of McBurney's point and a stationary or increasing leukocytosis, imperative, immediate surgical interference, whether other symptoms and signs be present or absent, is indicated. A steadily increasing leukocytosis must always be considered as a bad sign and as demanding prompt operation. He has not observed a negative count in any pus-collection with the exception of pure cold abscess. His personal experience would lead him to exclude pus with a negative count. In septicemia and pyemia the leukocyte count is about on a par with the count in appendicitis. Streptococci and staphylococci may frequently be found in blood-cultures in many forms of infection. In surgical diseases leukocytosis with a rise in temperature would exclude hysteria and mental worry. In osteomyelitis and in all abscess formations, pure cold abscess alone excepted, there is always a high leukocytosis. [G.C.C.H.]

Treatment of Uterine Carcinoma.—Stansbury Sutton (*International Journal of Surgery*, November, 1900) advocates total vaginal hysterectomy whether disease of the appendages is marked or not, thinking it the safer procedure, although in the latter case cureting, biconical section, or trachelorrhaphy may sometimes prove sufficient. Treatment of uterine carcinoma after the disease is established is a failure, the only possibility of improvement on present conditions lying in more extensive repair of the cervix in the early years of childbearing and in the inauguration of radical hysterectomy when the conditions leading up to carcinoma are discovered. [G.C.C.H.]

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GEORGE M. GOULD, M.D., *Editor*

Collaborators

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Mental disease in military life may be more common and more productive of evil than we think. If an insane commander is given such a position that all subordinates cannot possibly criticise or make their suspicions known for fear of the swift punishment that follows lack of discipline, insidious and awful errors and wrongs may result and may continue a long time before superior and perhaps far-away officers suspect the true condition. It is said that during a recent war a balloon was sent up which, instead of defining the enemy's position, revealed that of the general ordering the balloon, and of his troops, to a hundred gunners, who only awaited the indication to play havoc with their shells. The commander, it is further said, is now known to have been insane, his father, mother and sisters having died insane. Suppose that chronic meningitis should exist in a General entrusted with the conduct of a campaign far from the seat of the central government, and that he should have delusions of grandeur, with other symptoms of profound but not easily recognized morbid mental action. Incalculable mischief would ensue before he would be suspected and before he could be recalled. The application of psychiatry to military life is a suggestion of possible tremendous significance in view of the wars existing in all parts of the world many thousands of miles away from the capitals of civilization.

An "Observation Committee," consisting of an "obese specialist," an "oral surgeon comparative anatomist," other specialists microscopical and macroscopical, some nonspecialists, a member of "la Faculté de Paris," "medical and scientific experts," but especially of "representatives of the medical and daily press of this city," was recently convened in New York City to witness the demonstration of the "improvement made in the last four weeks of 50 consumptive and cancer patients" as the result of some marvelous sort of mystic treatment. "The city editor of the PHILADELPHIA MEDICAL JOURNAL" was also invited to witness, but in medical journalism such an official does not exist, and it is very questionable if his creation would be of advantage in the progress of medical science. We would suggest instead that the medical profession should shake itself together, and through its medical societies put a stop to the abuses so frequently encouraged by city editors. "Observation Committees,"

even if composed of "microscopical presidents" and "obese specialists," are also greatly in need of being observed, and with such rigor that they shall become so very microscopical as to be utterly invisible, and so lean that death shall speedily result.

Progress in Michigan.—In the *St. Paul Medical Journal* for October Dr. Charles Lyman Greene epitomizes the history of the movement against the attempt to regularize and justify the "divvy-of-the-spoils" between general physician and specialist-consultant. Investigation showed the extensive prevalence of the base practice, and in the article by Dr. G. Frank Lydston, published in the PHILADELPHIA MEDICAL JOURNAL, November 4, 1899, it was made manifest to the whole profession. As a result of the crusade instituted by Dr. Greene and his associates the assurance is now given that in Michigan the practice is "virtually killed." Every State and other medical society should take similar action to that of the Minnesota State Medical Society, which in June 28, 1900, by unanimous vote, passed the following resolutions:

"WHEREAS, It has come to the knowledge of this society that the paying and receiving of commissions on cases referred by one practitioner to another is an established custom among a certain small number of physicians, and,

"WHEREAS, We, the members of this society, regard such practice or practices as reprehensible, degrading, unethical, and unprofessional, and believe that their maintenance threatens the very existence of scientific and humane medicine, it is hereby

"Resolved, That the giving or receiving of commissions as above described, after this date, shall be considered as constitutional grounds for expulsion from this society.

"Resolved, That our delegates to the American Medical Association shall be and are hereby requested to use their influence in every possible way to make the above described offense cause for expulsion from the national association."

The Nature of Acute Ascending Paralysis.—Acute ascending paralysis, as described by Landry, is characterized by the development in rapid succession, generally in ascending, rarely in descending, order, of paralysis of the lower and upper extremities, the diaphragm, the bulbar nerves, without sensory disturbances, tenderness, atrophy, electric changes, or involvement of the bladder or the rectum, terminating fatally in a few days or weeks, although rarely ending in recovery. No constant or distinctive lesion is known. There has been not a little discussion as to whether the symptom-complex represents a morbid entity, and

there have not been wanting those who have considered the condition a form of polyneuritis, while others have referred the disturbances to the spinal cord, the medulla, and also the brain. Now, the newer pathology seems to indicate that the same influences that exert deleterious effects upon one part of the nervous system are likewise capable of exerting similar effects upon other and even all parts; and, further, that disturbances in function may result from alterations in nutrition, or in structure even, not discernible by present methods of research. It should, therefore, not be surprising if at times symptoms of peripheral neuritis should be associated with those of poliomyelitis, and both with those of polioencephalitis. There would thus be corresponding variations in the clinical picture, and Landry's paralysis may be looked upon as the expression of one or more of these conditions, separately or in combination.

Surgical Operations upon Neurasthenic Women.

—Not a few of the reported marvelous cures wrought by the various mind-cures are of women who have been recommended to have major surgical operations for the relief of their supposed diseases; some other cases have already been subjected to repeated operations without relief. It is in this manner that the profession reaps the harvest which it has sometimes sown by indiscriminate resort to operative measures when no definite pathologic reason for such operations could be demonstrated. Recently such a neurasthenic woman came under observation who gave a history of seven successive celiotomies by various surgeons for conditions which at this time seem to have been largely simulative. Another woman was seen who had been subjected to five operations on the uterus and had had both kidneys anchored (by different surgeons); the neurasthenic conditions now point to the bladder, and she may yet find some enthusiast rash enough to make a suprapubic or vaginal fistula in that organ, thus adding another to her many miseries. These women may indeed be said to "have suffered many things of many physicians"; nor is it to be wondered at that when such a case, either through lapse of time or the substitution of an overwhelmingly interesting subject for the nervous system, happens to get well, mind-cure or christian science or some other divine afflatus gains great credit, while medicine is put to shame by the deeds that have been enacted in her name.

The Educated Suicide's Brain.—Dr. Burt G. Wilder, than whom no man is more competent to study the fissures and gyres of the human cerebrum, has at various times presented some most interesting observations on high-type brains. A few years ago, for instance, he demonstrated before the American Neurological Association the brain of an educated man who had committed suicide. In this brain Dr. Wilder announced

that he had discovered a duplication of the central fissure—a very rare anomaly and one well worthy of special note. Dr. Wilder, of course, did not claim that there was any relationship between this duplication of the central fissure and the suicide of the man in whom it was found, and he evidently intended nothing more than to point out a coincidence. The inferences, in fact, to be drawn from the case were left to the individual proclivities of the members of the Association, and we have never heard that there was any unanimity among them as to the significance of the case.

We regret now to have to announce that Dr. Wilder, with rare frankness and scientific fervor, has felt impelled to revise his conclusions in this case. At the last meeting of the Association he announced that but two cases of genuine duplication of the central fissure were on record—those of Giacomini and Calori—and that his own enthusiasm had caused him to think that his educated suicide was a third case. He was misled by the wound of exit of the bullet, which had somewhat marred the topography of the left cerebral hemisphere. He comes reluctantly to the conclusion that the fissure was not duplicated but merely interrupted, and that the wounded fissure was not a second central, but merely an unusually long postcentral fissure.

We may be permitted to hope that Dr. Wilder, who is unusually fortunate in being made the legatee of interesting persons who wish to dispose of their brains, will yet find a case of duplication of the central fissure; but we trust it will not be necessary for any illustrious individual to kill himself in order to furnish Dr. Wilder with this coveted prize.

An Emergency Ration for the United States Army.—An interesting experiment is being made in the United States Army in order to determine the value of certain condensed foods or rations for soldiers. The United States Army needs such a ration for the use of troops sent suddenly into a hostile country, beyond a base of supplies, where it would be impossible to forage on the enemy. This ration should occupy a minimum space, sustain the soldier's strength, preserve his health, and be palatable. A board of army officers is now testing several samples of such a food in actual practice in the field. This board has had numerous samples submitted to it, but has selected only three as deserving of a final test. A single ration is intended to keep a man in good condition for 24 hours. It is contained in an air-tight tin box. One of these three rations is prepared by the board itself, and consists of two cakes of sweetened chocolate, and three cakes of a meat and cereal compound. Another, sent from New Jersey, contains a cake of tea leaves and a meat and cereal compound. A third, from Chicago, has tea for a stimulant, and meat-extracts in its food-combination. Each ration has a small quantity of salt and pepper.

The board naturally regards its own ration with greatest favor. The chocolate weighs 4 ounces, and the meat and cereal 4 and 8 ounces respectively, a total of 16 ounces. This ration is contained in an hermetically sealed can, which has rounded edges like a flask and is opened with a key. It may be eaten dry, or cooked in several ways. The board gives the details of its preparation, and claims that it is an ideal ration for an American soldier, who requires both bread and meat, and does not, as a rule, like tea. Chocolate is substituted for coffee, because it may be either eaten as a candy or prepared as a drink, and because coffee, when roasted and ground, soon loses its strength.

These tests are now being made in Southwestern Oklahoma by Capt. Fountain, of the Eighth Cavalry, and Capt. Foster, of the Fifth Cavalry. The trial is being made with 25 troopers in the Comanche reservation, where the conditions are similar to those of real war. Accurate measurements and weights of the men are taken twice a day, and their condition carefully noticed while on the march.

Pain in the Back as a Symptom of Intestinal Disease.—It has long been a lay custom to attribute pain in the back—lumbago—to disease of the kidneys. The old soldier who has an ache in his back makes a claim for pension upon the ground of kidney-disease. Yet, physicians well know that very seldom indeed does a pain in the back indicate renal disease. It is true that pain in the back frequently accompanies renal disease, but cases of lumbago are far more frequent than cases of nephritis. Pain in the back is very frequently rheumatic in its nature, and it is so regarded by physicians in the great majority of instances. It will thus be recognized that this symptom is not characteristic of any special disease. Many times the cause will be found in the secretion by the kidneys of a high-colored concentrated urine, of high specific gravity, or at least urine of this character will be found as an accompanying phenomenon. No doubt in such cases there is a degree of passive congestion of the kidneys, increased by deficient ingestion of water. At least such cases are promptly relieved by prescribing the regular ingestion of definite and considerable amounts of pure water.

There remains a class of cases of lumbago in which the cause is very different, and which is not mentioned in the ordinary writings upon the subject. It is frequently observed that in from four to six hours after the administration of a purgative, the subject has marked aching pain in the small of the back and in the superior gluteal region. So too in diarrhea, dysentery, the choleras, and other conditions which are characterized or accompanied by increased peristaltic movement, there is likely to be usually quite severe backache. This pain is of such character as often to seem as if due to a tugging of the mesentery upon its attachment. Certainly it is due to irritation of the fibers of

the cerebrospinal nerves that go to the intestines, from whence the nervous irritation is reflected through the fibers of the cerebrospinal nerves that supply the skin and muscles of the back.

It seems to be usually overlooked that chronic intestinal disease is frequently accompanied by backache. In every case of aching back, in which the physician is unable readily to find a definite cause, careful investigation should be made as to the existence of even a mild grade of intestinal catarrh. Not a few cases of lumbago, which are relieved by the administration of salicylates upon the hypothesis of a rheumatic origin, are really benefited through the antiseptic action of the drug upon the infected gastrointestinal tract. It will readily therefore be seen that the careful physician must constantly be on the lookout for intestinal disease as the cause of backache, for the discovery of such origin will often enable him to bring about a brilliant therapeutic result. This observation is the result of clinical observation. After writing, accident brought to our notice a paper on this subject by Mr. Harding Freeland in the *Lancet* for April 21, 1900. This writer has made similar observations, particularly of sacral pain in cases of rectal disease, such as piles, ulcer, and cancer. He also notes, however, that simple intestinal catarrh gives rise to back-pain, and that he has found speedy relief from ichthyol in doses of from five to ten grains.

Suggestions to Writers: No. 63. Forwarding Manuscripts, Letters, Electrotypes, etc.—There is hardly a week that letters and manuscripts are not received by us without any indication whence they come. The writers either fail to mention the name of the city, State, and street at the head of their letters, or they fail to sign their names to the letters. Manuscripts are sent without a letter enclosed in the package, and the letter intended to be sent separately does not come for some time, or it never comes. There follow in weeks or months, inquiries, remonstrant or angry, as to our lapses of courtesy or our business ability. Altogether such things cause a deal of trouble, unnecessary work, and bad feelings. In one day we have received three sets of electrotypes without a word to tell by whom they were sent, what article they were to illustrate, etc., and with no proofs to show what the pictures represented.

Now, brethren, these things should not be! Have pity on the poor editor! May we not beg correspondents:

1. Never to write a letter without it shows who writes it and where it is written.
2. Never to use an envelope that does not have the address on the corner.
3. Never to send a manuscript without an accompanying note giving at least the address of the sender.
4. Never to roll manuscripts.

5. Always to retain a copy of manuscripts. Copying-ink and copying-paper are inexpensive.

6. In forwarding electrotypes to write on the back of each with a pencil the sender's name; send proofs of the same, if possible; at least designate the article they are to illustrate.

Medical Sermonets, No. 23. Hatred of the Medical Profession.—There are few social phenomena more puzzling and psychologically inexplicable than the blind and furious hatred of so many American citizens for the medical profession and for medical science. One who has not studied the fact has no adequate conception of its extent and intensity. All over the country there are societies, sects, journals, books, and preachers, of every variety, animated by it and giving their lives to it with a rage that is ferocious and unremitting. The emotion is the very heart of thousands, perhaps millions of otherwise sensible or half-demented people. It is the source of energy of the antivivisectionists and antivaccinationists, of the eddyites, and of the osteopaths, of the antidrugs, and of a hundred antis too complex and numerous to study or even to list. Whence has it come? Why is it so violent? Why does it continue? Will it ever end? What have we done to arouse it? What is our responsibility? How shall it be met?

With the best will in the world to explain the fact, we must confess that historically and sociologically the problem seems to us almost insoluble. As a profession we have no acute consciousness of social sin in our souls, and with the most searching self examination we cannot see that our feeling of guiltlessness is due to any exceptional moral obliquity or subnormal insensitiveness of conscience. Our incomes are not greater than those of other professions, not so great for instance as those of the lawyers, the manufacturers, the ward-bosses, not near so great as those of the lawmakers and law executors, newspaper publishers and editors, and who ever heard a doctor classed as a capitalist? The detestation, therefore, does not come from the same source as the hatred of the rich. We are not plutocrats.

We are not idle parasites of the body politic, because no class works harder, and none gives anything like so large a share of life gratis to hospitals, dispensaries, and private charity-work.

We have no power, not even as much as the antis, for we cannot get the most obvious laws enacted in our favor as a class, and we are hopelessly disunited and disorganized. The bitterness toward us is consequently not of that kind which produces rabid socialism or nihilism. We can compel no one to consult us; hardly any one pays us unless he wishes to do so, even after securing our services; every one is free to buy drugs of unknown powers (many millions of dollars' worth of nostrums are sold every year); or he may consult any one of a thousand types of quacks; or he may die as drugless as he desires.

The only thing in which we seem to have control of the actions of others or their bodies and wills, is in reference to vaccination, and a few vague and ineffective quarantine and hygienic laws. But in these things there is no one who sincerely desires it, alas! who cannot escape the laws, and as only fools deny the contagiousness of disease these "tyrannies" are merely poor devices for self-protection. We have as good a moral right to prevent others from firing brickbats or bullets at us, but we have not the legal right.

Perhaps the most constant charge against us, the one that most surely and persistently appears in anti-literature relates to drugs. Antidrugism is the single cry that will rally the greater number of antis to the standard of revolt. In reading the medical books of the middle ages we realize that the protest would then have been valid. The greater the dose, the more complex the prescription; and the more nasty the ingredients, the greater was supposed to be the efficacy. In answer to this it may truthfully be said that the medieval people demanded this sort of therapeutics as much or more than the so-called physicians, and that medical science, properly-speaking, had not arisen. It is to the credit of homeopathy that at one time it helped in the natural reaction against excess in medical therapeutics. But in encouraging the modern hatred, for which it is largely responsible, it exposes itself to three most ludicrous contradictions: First, it perpetuates a filthiness in therapeutics which only medievalism could exceed. We have the trade catalog of a homeopathic drug store in which are enumerated and priced hundreds of loathsome and nauseating products of nature and disease. Second, at its best, and even if the drugs were taken as Hahnemann advised, solely by smelling, and in the most attenuated and mystic potentization, no homeopathist would confess himself an out-and-out antidrug man. Third, an examination of actual modern homeopathic prescriptions at our drug stores shows that, whatever the theory, practically homeopathists often give the same drugs in the same doses as do we.

To the antidruggers it may also and lastly be said that there is no more uncompromising enemy of the nostrum traffic than modern medical science. It is not we who enacted the laws which encourage and protect this traffic; it is not we that spend millions upon millions for patent impotent medicines; it is not of our own free will that we give most of the prescriptions written, but because the popular prejudice demands them. Our danger rather lies in the direction of therapeutic nihilism.

So far as the scorn of us is born of scorn of drugs, it is logical only in so far as it reacts by emphasis and practice of hygiene, of public and private sanitary laws. Do we find such enthusiasm among the antis? Are they the workers in cleaning cities, abating unsanitary nuisances, and extinguishing the thousand breeding places and habits of disease? Not one, not once! These are matters to which they are utterly indifferent,—except sometimes in ungrammatical verbosity and rant springing from morbid egotism and ending in silly gush long before action begins or facts are touched.

It has long been remarked that nihilism born and bred of Continental despotism may emigrate to the United States and here illogically wreak its vengeance on a freedom from tyranny which should be called license, and upon financial and social conditions more favorable to the poor than have ever been known in the history of the world. So it may come about that a hatred of medicine born on the Continent of something akin to medical tyranny or monopoly, often of hospital brutality, may transplant itself to our soil and bloom with an absurd luxuriance, where hospitals advertise for patients and where medical monopoly would be a term as ludicrous as was ever coined by the overworked opera bouffe librettist. Our hospital manners may be sometimes bad, but they hardly generate very violent grudges in patients.

Perplexed by the anomaly, we might suggest that either antireligion, or superstition is to some degree account-

able for the unreasonable antimicrobial bigotry. At times this seems to throw a ray of light upon the problem, but it soon fades out, and accounts at best for a few individual and sporadic cases, leaving the etiology in a general and adequate sense as obscure as ever.

As a disappointing result it must be admitted that the student of morbid popular psychology has here a subject worthy of his best powers. One seems driven to adopt some temporary and unsatisfactory half-explanation. In all times, but especially in the uncontrolled expansiveness of an unlimited democracy, the illiterate mass of people seem driven to try wild experiments with their minds and with social evolution. Reckless of history and of all past experience they grasp wildly at any theory, fact, or clue, anything that places the blame for their unhappiness anywhere except upon fate and their own ignorance and their own consciences; thus then is got a satisfaction in rage and passion instead of by self-examination and patient adherence to duty.

Our own professional duty certainly remains clear; it is to perfect our conscience and our art; it is to heal disease; these who hate and revile us are diseased,—at least mentally—and we must cure them. We must pity and help them, but our pity must not go so far as to let them infect the innocent, enact their delusions into laws, and wreck the very bases of civilization. Such pity would be inexcusable weakness.

Reviews.

Physiologic Optics. Dioptrics of the Eye, Functions of the Retina, Ocular Movements and Binocular Vision. By DR. M. TSCHERNING, adjutant director of the Laboratory of Ophthalmology at the Sorbonne, Paris. Authorized Translation from the Original French Edition, Specially Revised and Enlarged by the Author. By Carl Weiland, M.D., former Chief of Clinic in the Eye Department of the Jefferson Medical College Hospital of Philadelphia. With 212 Illustrations. Philadelphia: The Keystone, 1900. Price, \$3.50.

The Charybdis and Scylla of the ophthalmologist are on the one hand a too great absorption in the theoretical aspects of his subject, and on the other, a merely mechanical application of the rules of the art in the daily routine of practice. For the student who counts on equipping himself for the career of a specialist in a six weeks' course Tscherning's volume has no interest. For one who hopes to master the abstract principles of his work some day this book is an excellent introduction to the more extended treatises of older writers. That it contains some false theories and false practical deductions is simply saying that like many other works on the eye it was not written under plenary inspiration. We congratulate the author on his American translator, who has disarmed criticism by pointing out in preface and footnotes the main divergences from what is held orthodox here. It is not simply a compilation of classical theories, but an exposition of valuable original research as well. The illustrations are excellent, and the book is published in attractive form.

Cancer of the Uterus, Its Pathology, Symptomatology, and Treatment; also the Pathology of Diseases of the Endometrium. By THOMAS STEPHEN CULLEN, M.B., of Toronto, Associate Professor of Gynecology in the Johns Hopkins University. With eleven Lithographic Plates and over three hundred

colored and black illustrations in the text, by Max Brödel and Hermann Becker. Pp. 693. New York: D. Appleton & Co. 1900.

America has been justly styled the birthplace of gynecology and the specialty has been deeply indebted in the past to American practitioners; but recently the brilliant contributions to gynecologic literature have added new luster and given increased impetus to our national surgical labors. There is no contribution in English, or in any other language, on cancer of the uterus that equals or begins to compare with this work which it is our pleasant task to review. There is no subject of greater import to general practitioners of medicine than the early recognition of malignant disease; there is no disease in which early diagnosis is so important to the patient. Dr. Cullen's work deserves the highest praise and the widest distribution, and we are not lauding it too highly if we term it a life-prolonging and a life-saving volume. The clear and lucid teaching it presents leaves no excuse or hiding place for the perfunctory practitioner who neglects to note the premonitory signs or to institute thorough investigation in cancer of the genital tract. In Dr. Cullen's book, cancer of the uterus, its pathology, symptomatology, diagnosis, and treatment are most accurately described as well as the pathology of diseases of the endometrium. Every gynecologist of experience can appreciate the words of the author in his preface: "That the number of cases of cancer of the genital tract coming too late for operation is so appalling that the surgeon is ever seeking to devise ways and means by which the dread malady may be more generally detected at the earliest possible moment, at a time when complete removal of the malignant tissue is still possible. The general practitioner as a rule is first consulted and upon him largely falls the responsibility of arriving at a timely diagnosis." In this work it has been the aim to give the family physician a clear idea of the early signs of carcinoma, in order that he may always be on his guard and may not treat too lightly any suspicious indications which may be present. Our only criticism is that probably the size of the volume will prevent its wide distribution among general practitioners, while it will most certainly be found in the library of every specialist. If the statement of Williams, that cancer is four times as common as it was 50 years ago, be true, the value of the work will be better estimated. After an introductory note and a chapter devoted to the anatomy of the uterus, a most important section treats of the removal and examination of uterine tissues for diagnostic purposes, the method of obtaining the suspected tissues, examinations of scrapings and technic. The unfortunate consequences that may arise from careless manipulation of tissues are carefully detailed. Nine chapters are then devoted to malignant disease of the cervix, treating of clinical aspects and differential diagnosis of squamous cell carcinoma and adenocarcinoma of that part of the organ. Then the malignancy of the body of the uterus is considered. Clinical histories of many illustrative cases are introduced. Sixteen pages are devoted to deciduoma malignum, presenting an excellent resume of our knowledge of this unusual condition. Dr. Cullen, in summing up the various analyses as to the causation of carcinoma, finds that heredity seems to have little influence; trauma as produced by parturition apparently bears a causal relation to cancer of the cervix, but not to that of the body. Neither the theory of Cohnheim nor that of Ribbert explains its origin, and the weight of evidence is against its parasitic theory. The results of the many investigations, while giving an increased knowledge concerning the histologic structure of carcinoma, have still left its etiology an unsettled question. The possibility of implantation is thus far conceded, that under favorable conditions cells of a new growth may be transferred from one part of the body to another and still continue to grow; and he considers it wise in performing hysterectomy to avoid as far as possible any chance of conveying particles of carcinomatous tissue to the healthy parts. This valuable work concludes with an eloquent appeal for early diagnosis of malignant disease of the uterus. The book is splendidly illustrated with 11 lithographic plates and 300 colored and black illustrations in the text. The fine work of the artists, Brödel and Becker, who added so much to Dr. Kelly's work, is here in evidence. The index is satisfactorily complete and the binding and typography excellent.

Correspondence.

OLD AGE.

By H. C. WOOD, M.D.,
of Philadelphia.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

MY attention has been strongly attracted by your editorial in the number of November 10th, in which you discuss "Old age" as an official return upon a death-certificate.

Old age is certainly not a disease, and scientifically should never be given as the cause of death. The individual really dies of senile atheroma, or senile nephritis, or senile something else. On the other hand, the theory that old age is connected with a definite number of years is incorrect. Nearly 40 years' experience in the practice of medicine has very firmly convinced me that as the human race has a general period, after which tissue-changes take place resulting in "death from old age," so do not only individuals but families have an allotted time. There are men whose tissues are not as senile when they are 80 years of age as others are at 70, or others at 60, or even at 50 or 40. I have seen the almost complete extinction of 2 generations of certain families by the death from senility of the various members when between 30 and 40 years of age; as the deaths in these cases were the result of changes in the tissues, commonly called "senile," it is just as correct to say that the subjects died of old age, though they were perhaps only 35 years old, as it is to say that certain other persons have died of old age at 75 years of age.

It would be of no improvement in our death-certificates to limit death from old age to a certain period of existence. If there is to be any change from the present plan it should be the abolition of old age as a recognized cause of death, and the requiring that the death-certificate should show that the subject died of senile atheroma or whatever was the cause of the taking off.

It seems to me a matter of very grave importance for the purposes of prognosis and practical treatment, that the medical practitioner should recognize that old age may commence at any time of life. Some of the so-called cases of neurasthenia are in fact only instances of premature senility; hence their hopelessness.

FOREIGN BODIES IN THE URETHRA.

By HERBERT D. JONES, M.D.,
of Decatur, Ill.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IN your journal of the 20th inst., Dr. C. M. Ellis reports a case of "hat-pin in the urethra," and states that only three prior cases have been reported. I can add one to the number; for about four years ago, in this city, I was called by an anxious wife to see her husband, who was about 24 years old, and in that same rather ludicrous predicament. He had a deep-seated stricture and when it became troublesome had paid a surgeon a small fee for the passage of a steel sound. To avoid this expense on subsequent occasions he had used a hat-pin with a glass bead end about the size of an ordinary rifle bullet. Of course, after one or two ventures the inevitable result followed and I was called to his relief.

In efforts for its removal he had caused the point of the pin to become imbedded in the urethral membrane near the

meatus, and finding myself unable to disengage it I pushed it through, embracing as little tissue as possible and reversed and pushed it out as did Dr. Ellis in his case, and no untoward results followed.

I was unaware that the accident or the method of relief were very unusual and hence have never reported it.

Allusion to my patient's false economy, which prompted him to so hazardous an experiment in self-treatment, recalls a more recent case in which a young farmer (in fact as well as slang) from similar pseudoeconomic motives concealed a condition which would have sent most men posthaste to a surgeon. Inquiring to find an explanation of his wife's apparently debilitated condition, I questioned him as to the frequency of their sexual indulgence, and he informed me he had not for over 2 months been capable of performing that function, and could only with great difficulty urinate on account of a stone lodged in the penis.

Assured that no exorbitant charge would be made he submitted to an examination and a separation of the lips of the meatus revealed the object which must indeed have been a source of discomfort. By enlarging the meatus with a slight incision and the use of a small scoop as a vis a tergo, having failed to grasp it with any available forceps, I soon removed a calculus in size and shape a little like an almond kernel. Whether this forced abstinence was productive of increased virility I cannot say, but at the next biennial increase in his household, his good wife presented to him her first twin product.

INGESTION OF ENORMOUS DOSE OF MORPHIN WITH RECOVERY.

By HERBERT R. GOODRICH, M.D.,
of Philadelphia.

Resident Physician, Eastern Penitentiary.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

PERMIT me to present to the readers of the JOURNAL a case which has come to my knowledge, of the ingestion of a surprisingly large quantity of morphin followed by no markedly evil effects and ultimately a complete recovery. The case did not come under my immediate observation, but is related to me by the patient himself—a man of middle age, in good health, who has a fair knowledge of drugs and chemicals, and in whose veracity I have every reason to believe. Some time ago he passed through a period of profound depression incident to business and social reversals, which were so intolerable to him that he attempted to end his life. He had been suffering from insomnia for a few weeks before, and to relieve this would occasionally take morphin combined with atropin, but was by no means an habitual user of the drug. He carried about with him a vial which originally contained 100 tablets of the combination morphin sulfate $\frac{1}{4}$ gr. and atropin sulfate $\frac{1}{100}$ gr. When at the crisis of his depression of mind, in which he determined to end his life, he counted the tablets remaining in the vial and it contained 81. Dissolving these in a small glass of water he drank the whole quantity and lay down upon the bed to a sleep which he supposed would end in his death. He remembers nothing for 48 hours, when he awoke with no worse effects than a condition of deep hebetude and pronounced soreness and pain on attempted motion—from having lain so long in one position. A country physician was called in by the alarmed family at the end of 24 hours of his prolonged sleep. He knew of the patient's period of anxiety and distress and gave the advice to let him alone, as nature was simply assert-

ing herself and demanding rest from an exhausted human body. A friend who saw him in his sleep said the breathing was very slow, somewhat shallow, but quiet.

I have never read of recovery from such an amount of these poisons, which must have been about 20 grains of morphin and $\frac{1}{2}$ grain of atropin. The patient, who knows of the physiologic antagonistic properties of morphin and atropin, attributes his recovery to the fact that they counteracted each other in their effects.

I present the case to you, asking you to estimate its value, solely upon the fact that I know the patient, that he is intelligent, well educated, has a knowledge of drugs and chemistry, and that I believe the statement to be true.

NEW WORD-COINAGES PROPOSED.

By D. RIESMAN, M.D.,
of Philadelphia, Pa.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

THE German language, with its plasticity and unlimited capacity for coining words, possesses numerous expressions, terse and descriptive, of which we have no English equivalent. Thus, there is a word "Verschlimmerung" for which we know no single word in the English language. We have the word "amelioration," corresponding to "Verbesserung;" but for the other there is no single English word. The deficiency can easily be remedied by coining a word that is etymologically analogous to "ameliorate," viz., the word "apeiorate," which might also be written "apejorate." The word is derived from *ad*, to, and *pejor*, a comparative of *malus*, bad, and signifies "worse." The noun would be "apeioration."

There is in the English language, also, no word antithetical to "magnify." The word "minify" is sometimes employed, but is not the exact counterpart of "magnify" nor is correctly formed. "Magnify" comes from the Latin word *magnus*, great, and *facere*, to make. The proper word would be derived from *parvus*, small, and *facere*, and would be "parvify," corresponding to the German word "verkleinern." The noun would be "parvification."

No special excuse is required for the coining of a new scientific term, but considerable temerity is necessary to coin words that shall become part of the vernacular. There is, however, such a distinct need for the two words, that I have taken the liberty to propose their adoption.

GRAPHIC STUDY OF GASTRIC PERISTALSIS.

By CLARENCE QUINAN, M.D.,
of San Francisco, Cal.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

I HAVE been informed by Dr. John C. Hemmeter, of Baltimore, that the method for the graphic study of gastric peristalsis recently published in this journal is in many respects similar to one proposed by him in 1895.

I have examined the work to which he refers, and find that we have independently employed the same principle.

My method was the result of a research, conducted to a conclusion in ignorance of Doctor Hemmeter's investigations, his work being unknown both to myself and those in whom I confided.

That the results are so like those obtained by him is an interesting coincident. Parallel instances are very common.

THE LOST ART OF PRESCRIPTION-WRITING.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

MAY I be permitted to call attention to a growing evil, which has not only resulted in a lowering of the art of our profession, but has done much to interfere with the prosperity of the doctor? I allude to the species of laziness which nowadays deters a great many physicians from writing original prescriptions, and prompts them to order ready-made, compounded preparations of drugs; to order tablets, etc. The pharmacy is rapidly falling to the level of the paint shop. In this city alone, the sale of tablets (of many kinds) over the counter to any individual who desires them, has reached enormous and dangerous proportions. The list of tablets which one well-known druggist has been obliged by the Government to affix revenue stamps to is entirely too large. Acetanilid and other dangerous drugs under one disguise or another are sold without restraint, as are tablets containing atropin and other alkaloids. Today many people never think of going to a doctor until they have to, and not only buy all the medicines they wish in a cheap form, but prescribe for each other.

I do not care to take your space to point out other evils with which most of us are perfectly familiar, but I hope you will urge your readers to revive the lost art of prescription-writing.

New York, September 14.

A. H.

DIAGNOSIS OF HEART-MURMURS.

By ALFRED GORDON, M.D.,
of Philadelphia.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

I WAS very much interested in reading Dr. Abrams' valuable paper on inhibition of the heart as an aid in diagnosis, which appeared in the columns of your JOURNAL September 29. I had the opportunity to apply the rules laid down by the author in inhibiting the action of the heart by irritation of the vagus in 5 cases. Two of them had a suspicious first sound at the apex, which after an inhibition maneuver gave a distinct murmur. The third case had a diastolic murmur at the apex, which became more pronounced during the procedure. The fourth case, which I have under my charge in the Neurological Clinic at the Jefferson College Hospital, has a distinct double aortic murmur and a systolic mitral murmur which is not entirely clear. The inhibition maneuver gave me a pronounced double aortic murmur and disappearance of the mitral murmur. The fifth case gave at two examinations a suspicion of a systolic murmur in a neurasthenic young lady. The blood-count showed 3,500,000 red corpuscles. I was then inclined to think it was a murmur of anemia. As soon as I became familiar with Dr. Abrams' inhibition procedure and applied it in this case, I saw to my surprise and satisfaction that the murmur entirely disappeared.

I believe that Dr. Abrams' method is extremely valuable for diagnosis, especially in obscure cases, and deserves therefore the entire attention of the profession. He advises to use a cushion on the neck and press hard with the chin. I used with equal results a thickly-folded towel, which is very handy in the office. I wish to make also the following remarks: In almost all my cases of mitral lesions, in order to ascertain whether a murmur is present or not, I use the following method. If I place my stethoscope in front of

the neck immediately above the superior border of the sternum, the mitral sounds are transmitted to my ear; a true murmur will be heard there even more distinctly, and any suspicious murmur of the apex will not be heard at all. The subsequent events in my cases proved that whenever a murmur was heard above the sternum, I had to deal with a true mitral lesion. When it was absent above the sternum, but suspiciously present at the apex, a course of an appropriate treatment removed it also from the apex. I submit this to the profession, as a result of two years' observation.

Special Article.

GUNSHOT WOUNDS OF 1898 and 1899.¹

By SURGEON-GENERAL GEORGE M. STERNBERG,
of Washington, D. C.

Of the 4,919 men injured by gunshot during the years 1898 and 1899, 586 were killed and 4,333 were wounded and received into the field and other hospitals. The killed constituted 11.9% of those struck; the wounded, 88.1%. In other words, 1 man was killed for every 7.4 wounded. The Mauser bullet must therefore be regarded as less deadly than the larger missile used during the Civil War. The Medical and Surgical History of the Civil War shows the following casualties:

	KILLED.	WOUNDED.
United States troops	59,860	280,040
Confederate troops	51,425	227,871
Total	111,285	507,911

In percentages the casualties were: Killed, 17.97; wounded, 82.03; or 1 man killed to every 4.56 wounded. The relative proportion of killed was therefore considerably larger during the Civil War than during our recent experiences. It is to be noted also that many of the wounds of the past two years were made by missiles of larger caliber. Of those reported in 1899, 471 were specially stated as having been caused by the Remington bullet of caliber .45. It is safe to say that had the whole number of wounds received been inflicted by the smaller Mauser or Krag-Jorgensen bullet the percentage of immediately fatal wounds would have been materially lessened.

The less deadly character of the injuries inflicted by the modern bullet is manifested also when we exclude the killed and regard only those wounds which came under the care of the surgeons. Of these, during the 2 years, there were 4,333, and 259 of the patients, or 6% of the whole number, died. The corresponding percentage from the records of the Civil War was 14.3. Table C in Part I of the Medical Volume of the Medical and Surgical History of the War of the Rebellion, shows that among the white troops of the army there were borne on the reports of the sick and wounded 230,018 gunshot wounds, of which 32,907, or 14.3%, proved fatal. The marked reduction of the ratio of killed to wounded may be placed to the credit of the small-caliber bullet; but the lessened mortality among the cases which came into hospital may not wholly be attributed to the humane character of the wounds inflicted by this missile. Due credit must be given to the improved surgical methods of the present day. Wounds of any region of the body may be taken in comparison and the result will always be found to show a decided lessening in the percentage of cases ending fatally among those of the past 2 years as compared with those of the Civil War. Take, for instance, gunshot wounds of the femur. During the Civil War surgeons in the field hospitals regarded a fractured femur as a serious menace to life, the danger from which was believed to be materially lessened by an immediate amputation. The field hospital surgical work after a battle consisted in great part of amputations, excisions, and resections. Of 6,576

fractures of the femur, 2,923 cases were treated by primary amputation, 186 by resection, and the remaining 3,467 by conservative or expectant measures, this conservative action being due in many cases to a want of favorable conditions for the performance of primary operations. The limb was promptly amputated in 44.4% of these gunshot fractures. On the other hand, during the past two years, 82 cases of gunshot fracture of the femur were reported, 6 of which were treated by primary amputation and 2 by resection, the remaining 74 cases being treated by conservative methods, not because the conditions were not favorable for the performance of primary operations, but because of a conviction that under present methods of treatment the limb could be preserved without adding materially to the danger to life. The limb was lost through surgical intervention in only 7.3% of the cases.

The smaller frontage of the jacketed Mauser bullet causes it to inflict flesh wounds of a corresponding diameter. Wounds of entrance and exit and the narrow target of the missile favor rapid healing. Infection was but seldom noticed and when present it was almost invariably about the wound of exit, and consisted of a slight slough and a drop or two of pus under a scab. Of the 1,400 wounded recorded in the Surgeon General's office, none died of external hemorrhage, nor was it necessary to ligate a vessel for alarming hemorrhage on the field. In gunshot wounds of the principal joints, clean-cut perforations without fracture were the rule. A remarkable case of lodged ball is that of a private of volunteers, in which the Mauser bullet entered above the left eye and remained lodged 15 months after the injury with no symptoms of paralysis. Penetrating gunshot wounds of the abdomen were very fatal. Clothing or other infectious substances were not generally carried into wounds to cause inflammatory disturbances. The small sectional area of the jacketed bullet of reduced caliber with its polished exterior that offers little opportunity for the lodgment of dirt and the fact that it slightly deforms adds very much to the absence of infection in the wounds which it inflicts. In the examination of gunshot wounds the x-ray has proved of great value and has especially aided in the interpretation of remote effects, such as paralysis, neuritis, loss of function, etc.

Not only limbs but lives were saved by the surgical practice of the past two years. In the 82 gunshot fractures of the femur the upper third was involved in 32, of which 5 were fatal, the middle third in 27, of which 3 were fatal, and the lower third in 23, of which 1 was fatal. The mortality varied from 43% of the cases in which the lower third was fractured to 15.6% of the cases in which the upper third was the site of the injury, whereas the corresponding percentages of fatal cases during the Civil War were respectively 42.8 and 49.7. The whole of the lessened mortality in these serious fractures may be credited to the protection given to the wound by the first aid-dressing and to the care exercised in the subsequent aseptic treatment of the fractured limb.

In penetrating wounds of the thorax the rate of mortality fell from 62.6% during the Civil War to 27.8% during the years 1898 and 1899. The Civil War reports show 8,403 cases in which the results were determined; 5,260 deaths occurred among the number. The reports for the later years, as already stated, show 193 cases, of which 55 were fatal.

There were during the Civil War 3,475 penetrating wounds of the abdomen in which the ultimate results were determined; 3,031 of these, or 87.2% of the total, proved fatal. During the years 1898 and 1899 116 cases, 81 fatal, were recorded, the fatal cases constituting 70% of the total. Of 10 cases in which laparotomy was performed 9 were fatal.

The alteration in the percentages of mortality in fractures of the cranium is less marked than in wounds of other parts of the body. Of 4,243 cases of cranial fracture during the Civil War, 2,514, or 59.2%, were fatal. In 1898 and 1899 68 cases were recorded with 37 deaths, the latter forming 54.4% of the whole number.

Registration of Plumbers.—A conference on this subject was held in Birmingham on October 24. Resolutions calling for parliamentary recognition were passed. Two grades of registration are proposed, one for operative plumbers and the other for master plumbers and inspectors. A higher standard of technical knowledge would be required of the latter classes.

¹ Advance abstract from the Annual Report of the Surgeon-General, U. S. Army.

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Calendar of Meetings of Philadelphia Medical Societies for the week ended November 24, 1900:

Tuesday, November 20.—College of Physicians, Section on Ophthalmology.

Wednesday, November 21.—College of Physicians, Section on Otology.

Thursday, November 22.—Pathological Society.

Anthrax.—As the result of being bitten by a fly while handling foreign hides at the Hoytville Tannery recently Michael Bednorick is threatened with death from anthrax. He is in the contagious ward at the Williamsport Hospital.

Record for Antitoxin.—During the past month 38 cases of diphtheria have been reported to the local Board of Health, of Lancaster, and of these but one terminated fatally. The Board attributes this light mortality to the use of antitoxin in every case.

Pennsylvania Sanitarium Company.—Articles of incorporation were filed recently by this company. The objects of the corporation are to treat tuberculosis, and it is proposed to establish an institution at Clifton Heights, Pa. The capital stock is \$50,000, with \$1,000 paid in.

State Hospital for Insane at Norristown.—The cost of maintaining the 2,100 inmates during the past year was \$3.29 each per week. The trustees have asked for one building for males afflicted with tuberculosis, two for nurses and attendants, a pathologic laboratory and a morgue.

Philadelphia Free Hospital for Poor Consumptives.—At a meeting of the board of managers the president's report showed that during the first 6 months of the present fiscal year 116 patients were cared for at an expense of \$4,584.97. The society now has 31 patients under its care.

The Bucks County Medical Society at its regular meeting at Doylestown, November 7, was addressed by Dr. Joseph Price, of Philadelphia, on **pelvic diseases**. The following officers were elected: President, Dr. G. S. Parker; vice-presidents, Drs. J. A. Crewitt and G. M. Grim; secretary and treasurer, Dr. A. F. Myers.

Diphtheria in Woodbury, N. J.—There are seven cases of diphtheria thus far reported, which are said to be of a mild form. Investigation thus far has failed to reveal the source of infection, although it has been reported that the Board of Health had not made proper efforts to quarantine a case. This is denied by the Board of Health.

The Haddock Memorial Orphanage will be opened December 1 at 806 Pine Street, Philadelphia, formerly the residence of Mrs. Daniel Haddock, who in her will left it to be used as an orphanage for children under 3 years of age. She also bequeathed an endowment of \$125,000 for the support of the institution. A training school for nursery maids will be conducted in connection with the orphanage.

Drought May Bring Contagion.—Long-time residents along the Schuylkill say they do not recall a period when the river was so low as at present. Physicians say that unless there are copious rainfalls to wash out the stagnant pools and replenish the smaller streams cities along the river are in grave danger of contagion. The truth of this assertion is evidenced in Reading, where 19 new cases of typhoid fever were reported last week.

At the **Dauphin County Medical Society**, November 6, Dr. Hugh Hamilton presented a paper on the **mosquito's part in spreading malaria**. The paper reviewed the recent investigations in regard to malaria and yellow fever at length, and gave remedies for immediate treatment of the bite and the methods adopted to exterminate the pests in this country, the Indies, and Italy. The different species of mosquitos and their characteristics were illustrated by charts and drawings.

Plans for the new Jefferson Hospital to be erected at Tenth and Sansom Streets, Philadelphia, are now under consideration by the architect and trustees, who desire to incorporate the most desirable features in the new building. To this end the leading hospitals of Europe have been visited, and suggestions for the members of the College Faculty submitted, and it is expected that the result of this mass of preliminary work will be one of the most complete, convenient, and perfect structures of the kind ever built.

Filters in Schools.—Of the 10 public filter fountains for which contracts were awarded by the Department of Public Safety of Philadelphia, early last summer, 5 have been installed, and the work approved by the Chief Inspector of House Drainage, under whose supervision all the work is being carried out. Work on the remaining 5 was only recently begun. Contracts for the smaller filters to be installed in upward of 237 schoolhouses were divided between the Maignen Company and the United States Filter Company. The appropriation for the whole of the work amounts to \$30,000, and the several contracts closely approximate that sum.

Typhoid in Rural Pennsylvania.—Typhoid fever is raging in the cement region of Pennsylvania, where the malady baffles physicians and sanitarians. In Cementon, Egypt, Seigfrieds, Northampton and Coplay there are 130 cases, and the list is growing. Whole families are down, and the doctors are overworked. There have been but 8 deaths the past week, but the mortality list will be greatly increased, as many critical cases were reported. Health Officer Cawley, of Allentown, has been detailed by the State Board of Health to make an investigation as to the cause of the contagious spread and to take steps to remedy the conditions. It is suspected that the water used in the cement towns is the cause of the trouble.

Visiting Physicians Want to be Paid.—A movement is on foot among physicians officially visiting the public schools of Philadelphia to ask for payment at the rate of \$50 per month for each physician. There are about 200 visiting physicians now acting under appointment of the Board of Education. Those opposed to the movement say that when the visits were first begun it was clearly understood and stated that the services were to be entirely voluntary, so that any effort now made to obtain remuneration might result in the abolition of the visiting staff, contrary to the best interests of the schools and general public. Some argue that the sum named would be exorbitant for the services rendered. At another meeting to be held it is requested that the physicians present reports of the different grades of cases examined by them since their appointment.

Changes in the Philadelphia Hospital.—The hospital staff will be reorganized and enlarged, free clinics in all departments of medicine, surgery, and dentistry will be opened, a new clinical amphitheater will be built. It has been decided to increase the staff of resident physicians from 16 to 19, with an equitable apportionment of such positions among the various medical schools of the city. A school of children's diseases will be established, as will be new bacteriologic and pathologic departments and an x-ray department, all giving opportunities for free clinics. An ambulance service will replace the police-patrol wagons in which patients are at present transported. There are four new dental surgeons on the staff of the hospital: Dr. R. H. Nones, from the Medico-Chirurgical College; Professor M. H. Cryer, University of Pennsylvania; Dr. I. Norman Broomell, Pennsylvania College of Dental Surgery, and Thomas C. Stellwagen, Jr., Philadelphia Dental College.

Camden County Insane Asylum.—In the annual report the superintendent calls attention to an abuse, which, he says, should be remedied. There are in the institution, he says, a number of aged persons who are not vicious, nor destructive, would harm no one nor anything; they have simply grown old and, possibly, a little troublesome to those whom, perhaps, they have reared. Their weakness 30 or 40 years ago would have been termed childishness, and they would have been cared for at home, or on some home supported by philanthropists. An insane asylum is no place for them. Great benefits have been derived through the many recent improvements made by building a large mod-

ern addition and installing a new water system. He recommends several additional improvements, including lighting and refrigerating plants. The present number of inmates in the institution is 184, of whom 41 were admitted during the year, while a like number were discharged. The cost of maintenance was \$2.27 per week per capita.

A Remarkable Display of Nerve.—One of the most remarkable displays of nerve and will power ever witnessed at any of the Reading hospitals was that reported of Allen Wolfskill, the young man who had both of his legs crushed in attempting to jump from a moving freight train on the Reading Railway. In speaking of the accident, he said: "The moment I dropped to the tracks, I felt the wheels passing over my limbs, and that they were gone. I did not faint, but realizing the fact that I would bleed to death unless something was done quickly, I set to work with a view of stopping the flow. I first tied up my right leg with my handkerchief, and while I was doing this a companion who had been more successful in jumping the train than myself came along and let me have his handkerchief and with this I bound up the left limb." He urged the driver to hurry while on the way to the hospital and said if he did not he would take the reins himself. He did not want ether administered so that he might witness the amputation.

Gross Violation of Drug Laws Charged.—Dr. C. T. George, secretary of the State Pharmaceutical Examining Board, says that opposition to the manner in which the Board is enforcing the pharmacy laws is entirely the work of disgruntled druggists who are attempting to escape the penalties imposed by the laws to protect the public against unscrupulous druggists. He says the law in regard to the sale of poisons is violated to a shameful extent, and the ease with which morphin and laudanum can be obtained is alarming. There are about 30% of the druggists in Philadelphia who are doing everything in their power to evade the laws. The reputable druggists of Philadelphia who wish to see the laws enforced are willing to comply with the requirements. One of the Board's inspectors went into an Italian pharmacy in Philadelphia and bought a deadly poison of a young girl, who had to be helped in finding the bottle, and who allowed the inspector to take as much as he wanted of the poison without any prescription and without any question as to the purpose for which it was to be used.

Vital statistics of Philadelphia for the week ended November 10, 1900:

Total mortality	CASES.	DEATHS.
Inflammation of appendix 2, brain 6, bronchi 7, kidneys 16, heart 1, liver 2, lungs 37, pericardium 2, peritoneum 5, stomach and bowels 14, knee 1, spine 1		94
Lungs—tuberculosis of 40, abscess of 1, edema 2		43
Heart—diseases of 29, dropsy of 1, fatty degeneration of 3		33
Inanition 16, anemia 2, debility, 6		24
Diphtheria	153	21
Carcinoma of breast 2, bowels 2, kidney 1, pancreas 2, uterus 3, stomach 8, jaw 1, tumor of chest 1		20
Bright's disease 8, uremia 7, diabetes 2		17
Apoplexy 13, paralysis 3		16
Convulsions		13
Casualties		13
Measles		11
Old age		9
Typhoid fever	38	5
Brain—congestion of 2, hemorrhage of 1, softening of 2		5
Septicemia 2, pyemia 1		3
Alcoholism		3
Indigestion		3
Ulceration of stomach		3
Unknown Coroner's cases		3
Whooping-cough		3
Membranous croup		3
Scarlet fever	29	1
Abscess of neck 1, atheroma 1, burns and scalds 2, cyanosis 1, diarrhea 2, disease of spine 2, hernia 1, homicide 1, obstruction of the bowels 2, suicide—shooting 1, syphilis 1, teething 1, tetanus 1, gunshot wound 1.		

Pittsburg Academy of Medicine.—At a meeting held October 29, Dr. F. N. MURDOCH reported a case of

achylia gastrica. Dr. J. C. CHRISTY reported a case of **pulmonary tuberculosis** in which an abortion was produced at 6 months, and questioned the propriety of such a procedure. Dr. WILLIAMSON said it could only be justifiable if mother's life was endangered by a continuation of the pregnancy. Dr. J. M. J. McKENNAN read a paper entitled **Some clinical cases**, in which he reported 3 cases of **acute hallucinatory insanity**. Many of these cases give a history of alcoholism. In the vast majority of them circulatory and nutritional changes in the cortex are responsible for the condition. In endeavoring to correct this, rest, treatment in an institution, and the administration of digitalis has given good results. Thyroid extract has succeeded when digitalis failed. The other cases embraced one of **hysteria**, one of **spurious paralysis agitans** in a woman of 28, and 2 cases of **hypochondriasis**, in each of which a stricture of the urethra was found. In discussion Dr. THEODORE DILLER said he recalled 2 cases of acute hallucinatory and delusional insanity which he had considered paranoia and given a bad prognosis. Both recovered. He had read of acute paranoia, but was in doubt about it. Closing, Dr. McKENNAN said acute hallucinatory insanity is not very common and it does resemble paranoia. There is frequently a stage of hypochondriasis. He has become very cautious in giving a prognosis in any case of insanity, but especially in this class of cases. Has seen some cases which must be classed as paranoia get better. Dr. J. H. WILLIAMSON read a paper on **Some forms of pelvic disease in women—their causes and treatment**. Discussion was participated in by Drs. MOYER, CHRISTY, HECKEL, and MERCER.

NEW YORK.

Bequests to Charity.—By the will of the late Jacob Crouse, of Syracuse, N. Y., \$18,000 is divided among 9 local charities.

The Medical Society of the State of New York will hold its ninety-fifth annual session in Albany, January 29, 30, 31, 1901.

New Emergency Hospital.—A corporation has been formed for the purpose of erecting such an institution at Herkimer, N. Y.

The Austro-Hungarian Hospital of New York City has made application to the State Board of Charities for permission to incorporate.

Plague Laboratory.—The Board of Health of New York City recently awarded a contract for the building of a laboratory for the study of bubonic plague. It will be erected on the Willard Parker Hospital grounds, and will cost \$19,893.

A Prison Hospital for insane convicts has been erected at Dannemora for Clinton Prison. It will be ready for occupancy this month. The building is 300 long by 40 wide and most of the work on it has been done by the convicts. It will relieve the overcrowding at Matteawan Hospital.

The New York Association for Improving the Condition of the Poor appeals for \$60,000 to carry on the work during the coming year. It is dependent entirely upon the public for support. Last year 3,704 families and 881 homeless men and women were aided by the Association.

Society for the Prevention of Cruelty to Children.—Elbridge T. Gerry has resigned as president of this society. His retirement is reported to be due to the long contest with the State Board of Charities, as to the right of the State Department to subject his society, which received an annual appropriation of \$30,000, to the customary inspection. Vernon M. Davis will succeed Mr. Gerry.

Colonies for the Tuberculous.—It is reported that a society is being organized by Dr. A. J. Austen Kelly, of Brooklyn, for the purpose of establishing colonies for tuberculous individuals in northern New York. Something like 5,000 acres of land have been bought in the foothills of the Adirondacks. The purpose is to establish a number of small farms, each with its own house, and the patients will be given light work out of doors when the weather is favorable.

Rabies in New York City.—This disease appears to be on the increase in New York City, and the Health Department will take strong measures to stamp it out. There will be a special laboratory in the Willard Parker Hospital, where experts will be employed to study the treatment of rabies. It is also planned that the Pasteur treatment by the city shall be free to all residents of Greater New York.

The Buffalo Academy of Medicine.—The regular meeting of the Section of Medicine was held at the Academy Rooms, November 13. The following papers were read: A Review of the Modern Surgical and Medical Treatment of Epilepsy, by L. Pierce Craig; Paresis and Cerebral Syphilis, by Arthur W. Hurd; A Case of Asthenic Bulbar Paralysis, by William C. Krauss; and a Report of a Case of Pseudo-Hypertrophic Muscular Paralysis, by Fridolin M. Thoma.

Diphtheria.—The public schools of Lyons have been closed by direction of Health Officer Veeder, to prevent the spread of diphtheria. Within 10 days 2 deaths and 4 malignant cases have been reported. On November 9 several cases of diphtheria were discovered on board the North German Lloyd steamship *Kaiserin Maria Theresia* by the quarantine officials. One death occurred on the voyage. Several of the passengers were sent to North Brother Island.

Dr. Henry D. Noyes, an oculist and physician of high repute in New York, died November 13 of pneumonia, following an attack of bronchitis. Dr. Noyes was born in New York in 1832. He was a graduate of the College of Physicians and Surgeons in 1855, and supplemented his studies there with four years of special work in Berlin. He was visiting surgeon at the New York Eye and Ear Infirmary, and was a member of the Ophthalmic Society, the Academy of Medicine, and the County and State Medical Societies.

Boarding-house for Alcoholics.—Residents of an aristocratic neighborhood in New York have recently been much disturbed by the establishment of a "boarding-house for alcoholics" in the square. They say they heard shrieks at night, were disturbed by ambulances, and were otherwise distressed until they learned the cause, when they protested and were heeded. It is said the plan of the proprietor of the boarding house, who was a physician, was not to cure his patients, but to keep them sober—"to keep them from losing their jobs," as he expressed it.

Death of a Leper.—Lee Hing, one of the 4 Chinese lepers who were isolated on Ricker's Island in 1893, died at the almshouse in New York on November 3. At one time they all escaped, but were soon captured and returned to the island. By a decision of Health Commissioner Cyrus Edson, made after a consultation with prominent dermatologists, to the effect that leprosy is not a contagious disease in this climate, the 4 were at one time set at liberty. Lee Hing returned to his friends in Mott street, New York, but finding that he was practically ostracised, he applied to the city authorities to be taken care of. He was then sent to the almshouse, where he lived and finally died in a small isolated building set apart for his use.

Physician's Claim for Services in County Where He is Not Registered.—In an action brought by Michele Accetta against Teresa Zupa, of New York, it was lately held by the Second Appellate Division that a physician who has been regularly licensed by the Regents of the University of the State of New York cannot recover for professional services rendered by him, unless his license has been registered in the office of the clerk of the county in which the services were rendered, as required by section 149 of the Public Health Law which, in the absence of such registration, forbids him to practise in that county, it being made a misdemeanor. The plaintiff proved that he was a graduate in medicine of the University of Naples, and had been licensed by the Regents in 1896.

Camphor Produced by a Worm.—The discovery has been made recently that camphor, which has been known hitherto only as a vegetable product or made synthetically by chemists, is produced by a small animal slightly resembling a worm, though having a number of feet, and known as a diplopod with the scientific name of *polzonium rosabium*. The animal is found in Ontario County, New York, and upon

careful examination it has been ascertained that the substance which gives the odor of camphor is a milky fluid which is exuded from the dorsal pores. This liquid, in addition to possessing the odor of camphor, also has a similar taste. The study of the camphor worm which forms the subject of a paper in a recent issue of *Science*, presents many interesting chemico and biologic problems.

The Tuberculosis Hospital Site.—According to the *Medical Record* the efforts by the residents of Clinton County, New York, to induce the State authorities to erect the proposed hospital for the treatment of incipient tuberculosis at Dannemora, and their opposition to a site at Lake Clear, have aroused the residents of the Saranac Lake region to vigorous protest. At a recent meeting resolutions were adopted and ordered to be forwarded to the State board of health and the forest preserve board, by whom the site is to be selected. These resolutions indorse the selection of the Lake Clear site and condemn that of Dannemora. They object to the latter on the ground that "the surroundings in a penal colony are incompatible with cheerfulness" and "have a tendency to produce melancholia, a condition most to be avoided in tuberculous patients." They also object to the employment of convict labor, which would be used in the construction of the buildings if the latter were erected at Dannemora.

Loomis Sanitarium for Consumptives.—At a recent meeting of the board of managers of this institution, at Liberty Heights, Liberty, N. Y., it was decided to increase the charitable work in connection with the institution, and that the present sanitarium should be known as the Self-supporting Division; the new plant to be erected to be known as the Charitable Division. Ever since the sanitarium was started, there have been a limited number of free patients provided for, and a few have always been carried at greatly reduced rates, but the managers have not been able to meet the great demand made upon them by people of very limited or no means, for free treatment. It is their purpose, at first, to have the Charitable Division accommodate 22 patients, and the rates are not to exceed \$5.00 a week per capita; this rate will include board, lodging, and medical attendance. They also guarantee to make a certain number of these original 22 beds free each year, and within 5 years to have the whole number free. Additions to the Charitable Division will, of course, be made from time to time, and the rates charged will in no instance exceed \$5.00 a week, and as many free beds will be established each year as possible. The Charitable Division will be located about half a mile distant from the Self-supporting Division, but they will be managed under a single administration. The Medical Board heartily endorsed the action of the managers, promising them all possible support. During the 4 years of existence of the Self-supporting Division, this sanitarium has grown from 5 to 21 buildings, and from a capacity of 12 to 125 patients, and is still growing.

The Craig Colony Prize for Original Research in Epilepsy.—Dr. Frederick Peterson, president of the Board of Managers of the Craig Colony for Epileptics, at Sonyea, N. Y., offers a prize of \$200 for the best original unpublished contribution to the pathology and treatment of epilepsy. The prize is open to universal competition. All papers received will be submitted to a committee, consisting of 3 members of the New York Neurological Society, and the award will be made upon its recommendation at the annual meeting of the Board of Managers of the Craig Colony, October 8, 1901. Manuscripts should be sent to Dr. Frederick Peterson, 4 West Fiftieth Street, New York City, on or before September 30, 1901. The successful essay becomes the property of the Craig Colony and will be published in its annual report.

The committee of the Craig Colony Prize for Original Research in Epilepsy for the year 1900, reports that it cannot recommend that the prize be awarded. This year but one essay was submitted. In view of its failure for 2 successive years to recommend the awarding of the prize, the committee feels called upon to state what, in its opinion, is necessary for an essay to be considered deserving.

By the terms governing the competition, original research is a primary requisite. Research as to the pathologic anatomy, the chemistry, the symptomatology, the causation,

the treatment, or the nature of epilepsy, as to the position occupied by epilepsy in regard to social economics—or, in short, anything which will advance our knowledge of the disease, is what the prize calls for. It is, of course, necessary that the facts advanced be presented in a way to convince an unbiased critic of their accuracy, and that the conclusions drawn be justified by the facts. No essay submitted either this year or last year has attained this standard. In view of the fertility of the field, of the constantly increasing number of investigators, and of the present perfected facilities of research, the committee believes that the prize having failed to attract more meritorious contributions is to be explained by its not having been sufficiently called to the attention of original workers.

NEW ENGLAND.

Appointment of Dr. Schaper.—Dr. Alfred Schaper has been appointed to a professorship of anatomy at Breslau, Germany. He was formerly assistant professor of histology at the Harvard Medical College.

Congressman Charles A. Boutelle, of Maine, is still at the McLean Asylum in Waverly. He has been at the hospital several months. There is little probability of his taking his seat in Congress next month.

Yale University.—By the will of Prof. James Campbell of the medical faculty, the university has received a bequest of \$700 to maintain the senior prize, known as the Campbell gold medal, for which he had annually provided since 1888.

Dangers of the Telephone.—The Health Department in Boston has completed a bacteriologic test of public telephones and advises care to avoid actual contact of the lips with the transmitter. Cleansing with a 5% carbolic-acid solution after each use is recommended.

Beriberi Victims to be Sent to Calcutta.—Of the 4 Hindus who have been under treatment at the Boston City Hospital for this disease, 1 has died and the other 3 have been sent to New York by the British Consul, whence they will be sent home to Calcutta. They came to Boston some weeks ago in the British steamer *Arara*.

Suit for Change in Complexion.—A lady of Bristol, Conn., has brought suit against a physician of New Haven for \$10,000 damages, alleging that her complexion has been changed from blond to brunet by the excessive doses of calomel prescribed for her by the physician. The doctor denies this charge and ascribes the change of her skin and hair to the bronze shade to lead poisoning due to handling type while engaged as a typesetter. The case will soon be tried in Waterbury.

Textbooks May Carry Disease.—In a contribution to the columns of the *Boston Evening Transcript* doubt is thrown on the wisdom of the policy of furnishing free textbooks in the public schools. The objection is the danger of the communication of disease. Books pass from pupil to pupil, year after year, without disinfecting, as long as they hold together, and in many cases they must be unwholesome. Many public libraries disinfect books as they are returned to the library, and certainly the need of disinfecting the more-used school-books is greater. That would meet the sanitary criticism of the free textbook system.

CHICAGO AND WESTERN STATES.

An epidemic of diphtheria exists at East Alton, Ill., which has necessitated the closing of the public schools. The origin is not known, but the disease has spread rapidly.

Hershey Hospital.—Miss Mira Hershey, daughter of the late millionaire lumberman, Benjamin Hershey, has purchased ground for the site of the public hospital which she will erect and donate to the city of Muscatine, Iowa.

The Wisconsin State Board of Agriculture will ask the State Legislature to create a sanitary commission to deal with contagious diseases among cattle, and especially to take measures to prevent the spread of tuberculosis.

High Birth-Rate.—The births in Milwaukee County, Wis., by the last annual report, exceed the deaths by 6,000, there being 16,494 births, while the deaths numbered 10,550. This indicates a remarkable natural increase in population.

Plague in San Francisco.—From Angel Island, Cal., are reported 2 deaths from plague. The mother, a Chinese woman, femoral bubo; child, probably pneumonic. The typical organism has been found in each case. The house has had bad sanitary history.

The Denver and Arapahoe Medical Society met, November 13, at Brown Palace Hotel, Denver. An address was made by Dr. W. A. Jayne on the **Diagnosis of tubal disease**, and a paper was read by Dr. C. D. Spivak, entitled **The cestodes**, with report of cases and microscopic exhibition of specimens.

The Arkansas Insane.—Superintendent P. O. Hooper, of the Arkansas State Lunatic Asylum, has completed an investigation, which shows that there is an average of 6 insane persons in each county throughout the State, or 450 in all, unable to secure admission on account of the crowded condition of the institution.

Smallpox in Wyoming.—The Indian Bureau has received a telegram from the Shoshone Agency, in Wyoming, announcing that smallpox has broken out at Lander, near the Indian reservation. Vaccine virus for 1,700 persons, which the agent asks to have dispatched him immediately, has been forwarded. The disease also prevails in Wichita, Kansas, 20 cases having been reported in less than a week, and placed in a detention hospital.

Poor Eyesight in Chicago Schools.—From a total of nearly 5,000 tests made of pupils in the public schools of Chicago it has been learned that in the case of 32% of the boys and 37% of the girls, the keenness of eyesight is less than two-thirds of normal. It is further found that among dull and refractory pupils the percentage having poor eyesight is even larger. The conclusion is drawn that defective eyesight is the cause of the dulness in many cases, and is even responsible for pupils being declared incorrigible.

The Jewish Hospital for Consumptives at Denver, Col., claims to be the only institution in the world where tubercular and pulmonary diseases are treated gratis. The hospital—buildings, equipment and ground—cost about \$50,000 and the yearly expenses are about \$20,000. A wing will be added soon at a cost of \$30,000. The trustees of this hospital met at Cincinnati, November 11, and perfected a permanent organization. There are 35 members and heretofore they have had only a provisional organization.

A City's Right to Establish Pest-Houses.—Owners of land near the smallpox hospital, which was opened in 1896 on Lawndale Avenue, Chicago, recently brought suit against the city to recover damages alleged to have been sustained by their property in consequence of the proximity of this hospital. It was not asserted that it was any more of a nuisance than such an institution must be of necessity nor that the city had been negligent in the care of the hospital. The supreme court held that there is no difference in principle between the right of a municipality to establish a pest-house and its right to build a jail or fire-engine house.

Millers for Pure Food.—The board of managers of the Millers' National Association, which met in Chicago, November 8, took important action regarding adulterants used in the product of mills. The board decided, so far as its power goes, to throw out of the market ground clay, sawdust, ground corn cobs and other adulterants that are being at present extensively used in the various kinds of feed and milling stuffs now on the market, greatly to the detriment of the legitimate trade. A copyrighted label, under bond, will be issued by the National Association for the use of its members, and a fine of \$500 will be imposed on any member who is discovered and convicted of misusing this label by placing it on anything but the pure product.

The Visiting-Nurse Association of Chicago has recently been granted a charter. The object is to furnish trained nurses to those otherwise unable to secure skilled attendance in time of illness, and to teach cleanliness and

the proper care of the sick. During the first year there were only 4 nurses in employ and 771 cases were cared for. This is the eleventh year of the Association's life, 14 nurses are in employ and more than 500 cases a month are cared for. A corps of 20 untrained or emergency nurses, who work under the supervision of the doctor and visiting-nurse, has proved of untold value to hundreds of cases where the daily visit of the visiting-nurse is not sufficient for the proper care of the case.

Chicago's Drainage Canal.—Chicago has officially tendered its \$34,000,000 drainage channel to the United States Government. The memorial contains a direct tender from the sanitary district of the channel to the general Government under the terms of the sanitary district law of Illinois, which contains a clause reading as follows: "When such channel shall be completed and the water turned therein, to the amount of 300,000 cubic feet of water per minute, the same is hereby declared a navigable stream, and whenever the general Government shall improve the Desplaines and Illinois rivers for navigation, to connect with this channel, said general Government shall have full control over the same for navigation purposes, but not to interfere with its control for sanitary or drainage purposes."

SOUTHERN STATES.

Tulane Medical School, of New Orleans, which in 1893 increased its course from two to three years, has this year adopted the four years' course. The number of students is also increased.

To Examine Children's Teeth.—A movement has been started in the Maryland State Dental Association which may lead to the examination of the teeth of children in the public schools of Baltimore.

"The Phagocyte."—Volume I, No. 1, November, 1900, recently reached us. It is published monthly in the interests of the students and alumni of the Medical Department of Tulane University, at New Orleans, La.

Richmond (Va.) News.—The movement started some time ago to erect a monument to the late Hunter McGuire has taken definite shape, and the citizens generally are responding liberally. Not only are the various committees actively at work, but such organizations as Lee Camp, C. V., have given liberally. It is now proposed to raise \$10,000 and erect a bronze statue in one of the public parks. Typhoid fever still seems to hold its own; out of 48 cases reported in October, there were 15 deaths.

A New Medical Association.—Invitations have been issued by a committee of the El Paso County (Texas) Medical Society to the members of the regular profession of Texas, New Mexico, Arizona, and Mexico to meet in El Paso on January 17, 1901, for the purpose of organizing a territorial medical association. Volunteer papers are requested from all who are willing to contribute. The names and titles of papers should be submitted early that the program may be completed and sent out in due time. The members of the committee are Drs. I. T. Turner, W. N. Vilas, and F. W. Galagher.

Smallpox in West Virginia and Maryland.—A negro from a Harrison County railroad camp, where the quarantine was recently raised, has been sent to the Municipal Hospital at Wheeling, W. Va. For 4 days, while suffering from smallpox, he has been in the negro colony. An order for everybody to vaccinate has been issued by the health officers. Several cases are reported in Prince George's County, Md. The cases at College Park are near the Maryland Agricultural College. Every precaution has been taken at the college to prevent further spread of the disease. All the students have been vaccinated and Dr. Fulton, of the State Board of Health, does not think there is any danger of smallpox invading the institution.

CANADA.

Toronto University.—Dr. J. J. Mackenzie, formerly lecturer in bacteriology, has been appointed professor of pathology in succession to Dr. John Caven. The faculty is

spending several thousand dollars on the equipment of this department and it is to be thoroughly organized and brought up to date.

A Literary Research Society has been formed at McGill University. It is presided over by Dr. Wesley Mills, professor of physiology, and is intended to keep its members posted in all the recent advances and researches in the various departments of medicine. Abstracts of papers and studies are given by several members each evening and there is a short discussion.

Sanatorium for the Tuberculous.—This much-talked-of institution has at last assumed a tangible form. A small building has been acquired in one of the suburbs of the city of Toronto and 9 beds are now in operation. Part of the cost is being defrayed by the city and part from patients' fees. It is hoped by this means to meet all expenditures and in time it is expected that the institution will grow and become self-supporting.

Medical Defence.—This subject is now beginning to be a live one in Canada. Several cases of attempted blackmail directed against surgeons have come up in the past year or two, and the profession at large is beginning to realize the danger. Dr. R. Powell, in his presidential address at the Canadian Medical Association meeting at Ottawa this year, drew attention to the subject, and a committee was appointed to report at the next meeting, to be held in Winnipeg.

The Montreal Medico-Chirurgical Society met October 21, Dr. J. W. Stirling in the chair. Two cases of **Cesarean section** were described by Drs. W. Gardner and F. L. Lockart. Both cases did well, mother and child in each case being saved. The reason for operation in one case was a fibroid in the pelvis originating from the cervix uteri, in the other for disproportion between the pelvic outlet and the child's head.

Dr. J. W. Elder showed a boy aged 12, with **carcinoma of the cervical glands**. These were much enlarged but not slender. The boy was rapidly emaciating. The primary growth was situated in the vault of the pharynx. Considerable interest and discussion was elicited over a plan to acquire a permanent home for the Society, and the indications are that shortly such will be provided.

Montreal Milk-Supply.—Much interest has been elicited in Montreal lately over the question of obtaining a purer milk-supply. In common with most large cities in America, the infantile death-rate is very high. This is largely due to ignorance on the part of parents, but also to a deficient and badly inspected and controlled milk-supply. The Montreal Medico-Chirurgical Society have taken up the matter and have ventilated the subject in the public press. They have drawn up a series of rules for the guidance of milkmen and purpose to establish a proper board of control. Dr. R. F. Ruthan is consulting chemist and Drs. Wyatt Johnston and J. Allan Williams are the bacteriologists. The herds will be tested and the dairies examined from time to time. Those milkmen who conform to the regulations of the society will receive certificates to that effect. Already 2 large milk-firms have combined and are erecting commodious premises. No doubt the movement will result in a better milk-supply. At least it will indicate to the general public when they may obtain pure and uncontaminated milk. As the arrangement is a purely voluntary one between the Medico-Chirurgical Society and the dealers, it is likely that the benefits will be only partial, and probably the poorer classes who need protection most will be the least likely to get it. Still it is a sign of progress and no doubt will in time lead to greater results.

McGill University.—The winter session in medicine at McGill University, Montreal, began the last week in September and the classes are larger than ever, about 123 being enrolled in the first year and 461 in all classes. Some difficulty is being experienced in dealing with the larger classes inasmuch as the space for teaching purposes is more restricted this year than usual, owing to the building operations which are now being prosecuted. Extensive improvements in the buildings are being projected, involving the completion of the present irregular mass of buildings into one compact and harmonious mass. The chemical and

pathological departments are now under way and it is hoped they may be ready for use by Christmas. The total improvements look to the increase in the space for the library, museum and a larger dissecting room. In order to interfere as little as possible with the work of the year the contemplated changes will be spread over the period of 2 years. The present capacity of the buildings will be more than doubled when the operations are complete. This great advance was made possible through the munificence of the chancellor of the university, Lord Heathcona, and his daughter, the Hon. Mrs. Howard, who donated \$100,000 for the purpose. It is pleasant to note a great increase in the scientific spirit among the students at McGill this year. An experiment was tried during the summer of appointing certain of the senior class to the position of externe assistants at the outdoor and clinics of the various city hospitals, besides assistants in the departments of pathology, neuropathology, and bacteriology. The result was very gratifying and much good work was done.

MISCELLANY.

Famine in a Province of Mexico.—There is great suffering in the Higuera district, State of Sinaloa, on account of the crop failures and prolonged drought, and hundreds of people are reported on the verge of starvation. Many of them are living on roots of mountain shrubs.

Monitors Unhealthful.—Owing to their peculiar construction the monitors are notoriously unhealthful, and the Navy Department has adopted the policy of relieving officers and men on them at short intervals. The vessels are particularly uncomfortable places of habitation in warm climates.

Dr. Manuel S. Yglesias, health officer of Vera Cruz, Mexico, recently visited the State Quarantine Station at Marcus Hook. Dr. Yglesias came to the United States as a delegate from Mexico to the American Public Health Association at Indianapolis. Since the meeting he has been investigating matters in this country.

Obituary.—STANLEY M. STUART, at Santa Cruz, Luzon, November 6.—JAMES P. CLEAVER, of Philadelphia, at Lakewood, N. J., November 8.—J. S. WALTERS, of Pittsburg, aged 54.—WILLIAM MARSHALL, of Milford, Delaware, November 10.—WILLIAM T. COLLINS, of Camden, N. J., November 10, aged 71.—J. G. WELTMER, of Lititz, Pa., November 10, aged 55.

A Remedy for Rheumatism.—It is said that throughout all Spanish-speaking America a belief prevails that the small hairless dog, familiarly known as the "pelon" dog, can cure rheumatism, and that it is quite common for people afflicted with this disease, living in Cuba, Central America, and Mexico, to keep one or more of the animals in bed, the theory being that the malady passes from the man to the dog.

Test of Khaki Colors.—An interesting and important test is in progress at Fort Myer, Va. Some complaints have been received at the War Department that the shade of garment known as khaki color offers more of a target than blue, which was the color of the former shirts issued by the quartermaster's department. The test at Fort Myer is for the purpose of ascertaining the relative protection offered by the 2 colors. The tests include observations of garments of different colors at various distances.

Disease Among Alaskan Natives.—Officers of the United States revenue cutter *Richard Rush* report that the Aleutian Island Indians, as well as those of the Alaskan peninsula and mainland, are dying off at an alarming rate. The *Rush* was engaged during the summer in Indian census enumeration. Attu Island, in past years densely populated with Alaskan natives, contains only 73 persons, and Atka, the largest island of the group, has an Indian population of but 173. This island half a century ago supported a great tribe. During the past season measles and pneumonia carried off the Indians by the score, and should these diseases become epidemic again next year, the archipelago will become almost depopulated.

Rubber Heels for the Army.—The soldiers of the army will not possess the luxury of rubber heels on the shoes which are furnished them by the quartermaster's department. Some consideration has been given to the subject and it is found that while this equipment possesses merit, it is not practicable to issue rubber heels to the army. The detachment of the heel from shoes of soldiers who are at remote points from the base of supplies would cause a great deal of inconvenience. It is found impossible to replenish such missing articles without much trouble. The idea has, therefore, been abandoned.

Inspection of Cattle.—Dr. T. A. Geddes, Chief of the Miscellaneous Division of the Bureau of Animal Industry of the United States Department of Agriculture, has been detailed as a special inspector, and ordered to Great Britain to inspect cattle intended for importation into the United States. Dr. Geddes will make his headquarters in London, and will go to such parts of the United Kingdom as may be required for examination of animals before shipment. The increasing prevalence of contagious diseases, and particularly of tuberculosis, has made this action necessary for the protection of the animal industry of this country.

Yellow Fever.—Surgeon A. H. Glennan, chief quarantine officer for the island of Cuba, has made a report to the Treasury Department on the yellow-fever situation in Havana. He says that the number of cases decreased in the last week of October, and that there were only 13 deaths in that week. He quotes Major W. C. Gorgas, United States Army, chief sanitary officer, as saying that, notwithstanding the general distribution of the disease, infecting localities not heretofore infected, and the large number of people attacked, an epidemic condition does not exist, and that such a situation in Havana is impossible. He says that from June 1 to October 19, there were 789 cases officially recorded; that the official maps of the city show that there are 857 square blocks in the city, and of this number 525 square blocks have had no cases at all. In a population of 242,000, the average in Havana in October was 10 new cases of yellow fever a day. It is reported that General Wood has informed all the representatives of the steamship firms in Havana that if yellow fever does not abate the medical congress which is to be held in Havana will be transferred elsewhere. The presence of the disease may prevent many tourists from visiting the island. Recently 2 cases of yellow fever have been reported at Natchez, Miss., with 1 death. A surgeon of the United States Marine-Hospital Service is now in the city endeavoring to trace the source of the infection. On account of the lateness of the season no serious epidemic is apprehended. Surgeon-Major Reed and a board of experts will continue the investigation concerning the propagation of yellow fever by mosquitos, and an experimental station will be established outside Havana.

Sickness in the Philippines.—General Bates, commanding the department of Southern Luzon, in his annual report says that the duties of the medical department have been ably performed under many adverse circumstances. The various posts are all supplied with hospitals, and 2 large base hospitals have been established, one at Bacoor and the other at Calamba, to which serious cases are sent for such treatment as may not be available at the post hospitals. Careful and constant attention has been given to the hygienic conditions at the different posts, and especial care has been devoted to the matter of food and pure drinking water. Of the prevailing diseases the most serious are malarial fevers and dysentery. On July 31 the sick report of the department, not including reports from the more isolated posts, show a total of 1,863 men sick. Though this is about 18% of the strength of the command from which reports have been received, it is to be remembered that the conditions of the climate and the nature of the duties performed by the troops are such that a small sick report cannot reasonably be expected. He says that the size of the medical corps of this department is insufficient, there being 18 posts without medical officers, 8 of which stations are without hospital stewards or even privates of the hospital corps. There are in round numbers 2,000 men without adequate medical attendance and of this number 1,000 men are without medical attendance at all. "This condition of affairs is in no wise due to the chief surgeon of this department, who has brought the

matter to my attention and to the attention of the chief surgeon of the division and who has labored zealously, intelligently and unremittingly to obtain the best results with the limited personnel at his disposal. The matter cannot be remedied until a sufficient number of medical officers is sent out from the States."

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General, Marine-Hospital Service, during the week ended November 9, 1900:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
COLORADO:	Arapahoe Co.	Oct. 13-25	5	
"	Elber Co.	Oct. 19	1	
"	Sagnache Co.	Oct. 14	1	
DIST. COLUMBIA:	Washington	Nov. 3	1	
KANSAS:	Wichita	Oct. 27-Nov. 3 . . .	3	
KENTUCKY:	Lexington	Oct. 27-Nov. 3 . . .	2	
LOUISIANA:	New Orleans	Oct. 27-Nov. 3 . . .	2	
MASSACHUSETTS:	Taunton	Oct. 27-Nov. 3 . . .	1	
MICHIGAN:	Detroit	Oct. 27-Nov. 3 . . .	1	
OHIO:	Cleveland	Oct. 28-Nov. 3 . . .	1	
OREGON:	Portland	Oct. 21	1	
S. DAKOTA:	Sioux Falls	6 months ended Oct. 31	1	
UTAH:	Salt Lake City	Oct. 27-Nov. 3 . . .	5	
TENNESSEE:	Memphis	Oct. 27-Nov. 3 . . .	1	

SMALLPOX—FOREIGN.

BOHEMIA:	Prague	Oct. 13-20		
ENGLAND:	Liverpool	Oct. 13-20		
"	West Hartlepool	Oct. 13-20		
FRANCE:	Paris	Oct. 13-20		11
GREECE:	Athens	Oct. 6-13	1	
ITALY:	Resina	Oct. 24	Black	small-
			pox reported	present.
MEXICO:	Mexico	Oct. 14-21	1	
"	Vera Cruz	Oct. 20-27	3	1
RUSSIA:	Moscow	Oct. 6-13	1	2
"	Odessa	Oct. 13-20	4	4
"	Warsaw	Oct. 6-13		18
SCOTLAND:	Glasgow	Oct. 19-26	29	2
SPAIN:		Oct. 13-20		1

YELLOW FEVER.—UNITED STATES.

MISSISSIPPI:	Natchez	Nov. 6	1	
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YELLOW FEVER.—FOREIGN AND INSULAR.

COLOMBIA:	Barranquilla	Oct. 13-21	2	2
"	Bocas del Toro	Oct. 24	1	
CUBA:	Gibara	Oct. 16		1
"	Havana	Nov. 2	16	1
"	Sagua	Nov. 2	1	
MEXICO:	Mexico	Oct. 14-21		1
"	Tampico	Oct. 21-28	3	1
"	Vera Cruz	Oct. 20-27	12	7

CHOLERA.

INDIA:	Bombay	Oct. 9		30
"	Karachi	Oct. 7	3	2

PLAGUE—UNITED STATES.

CALIFORNIA:	San Francisco	Oct. 14-Nov. 6 . . .		4
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PLAGUE.—FOREIGN AND INSULAR.

GERMANY:	Bremen	Nov. 6	Onedead from plague, seaman, vessel from Buenos Ayres.	
INDIA:	Bombay	Oct. 2-9		87
JAPAN:	Kobe	Nov. 2	Reported pres- ent.	
"	Osaka	Sept. 11-Oct. 7 . . .	25	20
MAURITIUS:	Port Louis	Sept. 7	7	4
SCOTLAND:	Glasgow	Oct. 19-26	10	

Changes in the Medical Corps of the U. S. Army,
for the week ended November 10, 1900:

WAKEMAN, Major WILLIAM J., surgeon, is relieved from duty at the First Reserve Hospital, this city, and will report to the commanding general, department of Northern Luzon, for assignment to duty.
EDGER, Jr., First Lieutenant B. J., assistant surgeon, will report before retiring board for examination.
WOODSON, Captain R. S., assistant surgeon, is granted leave of absence for 1 month, on surgeon's certificate, with permission to visit Japan.

LEWIS, Captain W. F., assistant surgeon, is relieved from duty as member of examining board.
SCHREINER, First Lieutenant E. R., assistant surgeon, is relieved from duty as member of examining board.
WILSON, First Lieutenant J. S., assistant surgeon, is detailed as member of examining board.
FORD, First Lieutenant C. S., assistant surgeon, is detailed as member of examining board.
CALVERT, First Lieutenant W. J., assistant surgeon, will proceed to Hong Kong to study the bubonic plague.
NICHOLSON, JOHN L., acting assistant surgeon, is relieved from temporary duty at the Army general hospital, Presidio of San Francisco, and assigned to and will report for temporary duty on the transport "Port Stephens" during the voyage of that vessel to the Philippine Islands. Upon arrival at Manila he will report for assignment to duty.
NEWLOVE, GEORGE, acting assistant surgeon, is granted 3 days' extension of his 7 days' leave of absence.
ASHBURN, First Lieutenant PERCY M., assistant surgeon, is relieved from temporary duty at the Army general hospital, Presidio of San Francisco, and assigned to and will report for temporary duty with troops on the Army transport "Sherman." Upon arrival at Manila he will report for assignment to duty.
BARRY, EDMUND, acting assistant surgeon, is relieved from temporary duty at the Army general hospital, Presidio of San Francisco, and assigned to and will report for temporary duty with troops on the Army transport "Sherman." Upon arrival at Manila he will report for assignment to duty.
CARR, Major LAWRENCE C., surgeon, U. S. Volunteers, chief surgeon, department of Eastern Cuba, is relieved from further duty in the division of Cuba, and will repair to this city and report to the Surgeon-General for instructions.
WOLFE, First Lieutenant EDWIN P., assistant surgeon, is relieved from further duty in the department of Eastern Cuba, and will proceed to Fort Hamilton, N. Y., and report for duty.
BROOKS, WILLIAM H., acting assistant surgeon, is relieved from duty at Fort Hamilton, and will proceed to San Francisco, and report for duty with troops destined for the Philippines, and upon arrival at Manila will report for duty.
TURNER, SAMUEL S., acting assistant surgeon, is relieved from duty at the recruiting office, Chicago, and will proceed to Fort Sheridan, Illinois, and report for duty to relieve Acting Assistant Surgeon Walter Whitney.
WHITNEY, WALTER, acting assistant surgeon, will proceed to Fort Walla Walla, Wash., and report for duty to relieve Acting Assistant Surgeon John E. Bingham.
BINGHAM, JOHN E., acting assistant surgeon, will report for annulment of contract.
WINN, First Lieutenant ROBERT N., assistant surgeon, is granted leave of absence from November 1 to November 30, inclusive. Upon expiration of his leave he will proceed to Fort Riley, Kans., and report for duty.
WARREN, STANLEY S., acting assistant surgeon, is granted leave of absence for 1 month.
LONGINO, THOMAS C., acting assistant surgeon, now on duty at Fort Sam Houston, will proceed to Fort Clark, Tex., and report for duty during the absence of Acting Assistant Surgeon Stanley S. Warren.
SHAFFER, J. J., acting assistant surgeon, is granted leave of absence for 1 month.
BARNEY, CHARLES N., acting assistant surgeon, will proceed from Fort Monroe, Va., to Fort Dade, Fla., and report for temporary duty during the absence of Acting Assistant Surgeon Shafer, and upon completion of duty will return to his station.
KEAN, Major JEFFERSON R., surgeon, U. S. Volunteers, par. 12, S. O. 256, October 31, this office, relating to, is revoked.
NEWGARDEN, Captain GEORGE J., assistant surgeon, par. 12, S. O. 256, October 31, this office, relating to, is revoked.
CARTER, Jr., HENRY R., acting assistant surgeon, orders of August 31 relating to, are revoked and he is relieved from temporary duty at Seattle and will proceed to Vancouver Barracks for duty.
MCALL, JAMES H., acting assistant surgeon, is granted leave of absence for 1 month and 15 days from December 1.
BROOKS, WILLIAM H., acting assistant surgeon, upon being relieved from duty at Fort Hamilton, will proceed to Fort Schuyler in time to report in person to the commanding officer at that post on December 1 for temporary duty, and upon completion of this duty will comply with the instructions in orders of November 2.
NORMAN Major SEATON, surgeon, Volunteers, recently appointed (from captain and assistant surgeon, Thirty-ninth Volunteer Infantry), with rank from October 30, is assigned to the Thirty-ninth Infantry.
BEESON, Captain EDWARD G., assistant surgeon, Volunteers, recently appointed (from first lieutenant and assistant surgeon, Thirty-ninth Volunteer Infantry), with rank from October 30, 1900, is assigned to the Thirty-ninth Infantry.
BREWER, Captain ISAAC W., assistant surgeon, Volunteers, recently appointed (from first lieutenant and assistant surgeon, Thirty-sixth Infantry, U. S. Volunteers), with rank from October 12, 1900, is assigned to the Thirty-sixth Infantry.
A board of medical officers, to consist of Lieutenant-Colonel BENJAMIN F. POPE, deputy surgeon-general; Lieutenant-Colonel A. C. GIRARD, deputy surgeon-general; Major S. O. L. POTTER, surgeon, U. S. Volunteers, is appointed to meet at the Army general hospital, Presidio of San Francisco, October 29, to examine into and re-

port upon the present physical condition of Captain JOHN A. PERRY, Thirteenth Infantry, now at the Presidio of San Francisco.

The following-named medical officers and acting assistant surgeons, U. S. Army, are relieved from duty at their present stations, and will report to the commanding officer, transport "Meade," to leave for San Francisco, Cal., for duty on vessel en route, reporting upon arrival to the commanding general, department of California, as indicated: Major HENRY D. THOMPSON, surgeon, U. S. Volunteers, First Lieutenant LOUIS T. HESS, assistant surgeon, U. S. Army, and Acting Assistant Surgeon CHARLES F. DEMEY, U. S. Army, for instructions to return to this division; Acting Assistant Surgeon JONAS S. WHITE, U. S. Army, for annulment of contract.

Changes in the Medical Corps of the U. S. Navy, for the two weeks ended November 10, 1900.

MCCORMICK, A. M. D., surgeon, commissioned surgeon from November 11, 1899. October 29.

LEDBETTER, R. E., assistant surgeon, ordered to the "Constellation." October 30.

BIDDLE, C., surgeon, detached from the "Texas," when put out of commission, and ordered home to wait orders. October 31.

WHITE, C. H., medical director, detached from the Naval Museum of Hygiene, Washington, on reporting of relief, and ordered home to wait orders. November 1.

BRADLEY, G. P., medical inspector, ordered to duty in charge of the Naval Museum of Hygiene, Washington, November 15.

AMES, H. E., surgeon, detached from the "Kearsarge" and ordered to the "Massachusetts."

BOYD, J. C., medical inspector, detached from the "New York," when out of commission, and ordered to the "Kearsarge."

BOGERT, JR., E. S., passed assistant surgeon, detached from the "New York," when out of commission, and ordered to the "Massachusetts."

ELLIOTT, M. S., passed assistant surgeon, detached from the Naval Station, Port Royal, and to duty on the "Annapolis" when placed in commission.

GARTON, N. M., assistant surgeon, detached from the "Massachusetts" and ordered to the "Indiana."

BUTLER, J. St. J., assistant surgeon, appointed assistant surgeon from October 26, 1900.

MOORE, J. M., passed assistant surgeon, ordered to Naval Station, Port Royal.

SHIPP, E. M., passed assistant surgeon, detached from Norfolk Hospital and ordered to the "Michigan."

WILSON, H. B., passed assistant surgeon, detached from the "Michigan" and ordered to Naval Hospital, Norfolk, Va.

SPRATLING, L. W., passed assistant surgeon, detached from Yokohama Hospital, and ordered to Naval Station, Cavite, P. I.

DOUGLASS, S., pharmacist, ordered to additional duty on the "Massasoit."

Changes in the U. S. Marine-Hospital Service, for the two weeks ended November 8, 1900:

NYDEGGER, J. A., passed assistant surgeon, is relieved from duty in the Philippine Islands and directed to return to the United States at once. October 31.

COPER, L. E., assistant surgeon, is relieved from temporary duty at Philadelphia, Pa., and directed to proceed to Washington, D. C., for examination for promotion. November 1.

CORPUT, G. M., assistant surgeon, will proceed to Cairo, Ill., and assume temporary charge during absence of medical officer. November 1.

KING, W. W., assistant surgeon, will proceed to San Juan, P. R., on special temporary duty. October 26.

HOLT, J. M., assistant surgeon, is granted leave of absence for 7 days. November 1.

BOGGESE, J. S., assistant surgeon, is relieved from duty at Chicago, Ill., and directed to proceed to Philadelphia, Pa., and report to medical officer in command for duty. November 1.

GOLDSBOROUGH, B. W., acting assistant surgeon, is granted leave of absence for 4 days. October 27.

CARMICHAEL, D. A., surgeon, granted leave of absence for 30 days from October 23.

MAGRUDER, G. M., surgeon, granted leave of absence for 7 days from November 17.

WERTENBAKER, C. P., passed assistant surgeon, to proceed to Natchez and Jackson, Miss., on special temporary duty.

YOUNG, G. B., passed assistant surgeon, granted leave of absence for 2 days. November 3. Granted leave of absence for 5 days on account of sickness. November 8.

FOSTER, M. H., assistant surgeon, to proceed to Seattle and Tacoma, Wash., on special temporary duty. November 3.

GIBSON, R. H., hospital steward, granted leave of absence for 30 days from December 7.

The sale of morphia by pharmacists without a prescription is being considered by the Council of the Medical Association of the Seine at Paris. The development of "specialties" has also made it possible for druggists to sell any forbidden drug under the guise of these preparations. One pharmacist has been imprisoned 8 days and fined 1000 francs for habitually selling morphia to a lady without the sanction of a physician.

Foreign News and Notes.

GREAT BRITAIN.

Edinburgh Royal Infirmary.—The new pavilion of this institution was formally opened October 26, by Princess Henry of Battenberg.

Surgeon-Major Babbie, of the Royal Army Medical Corps, has received the Victoria Cross in recognition of his valuable services and conspicuous heroism in South Africa.

Prof. A. W. Hughes, of King's College, who recently returned from South Africa with enteric fever, is seriously ill. Engorgement at the base of the right lung has improved, but was followed by phlebitis.

Compulsory Notification of Phthisis in Dublin.—The Public Health Committee has sent a report to the corporation recommending that for one year as an experiment pulmonary tuberculosis be made a compulsory notifiable disease.

Black Smoke Nuisance.—An effort is being made to abate this nuisance at Manchester. Deficient boiler accommodation and bad stoking are stated as causes and manufacturers have been notified to remedy these defects. When this is done the stokers themselves will be held responsible for the excess of smoke.

Women and Medicine in Manchester.—The Owens College is to admit women students to the infirmary and medical department. A woman has been appointed resident medical officer to the Clinical Hospital. The Pathological Society, by an overwhelming majority, has decided to admit medical women to its membership.

Infection from Seborrhea.—A certain hospital reports a series of postoperative suppurations, the cause of which was finally traced to the fact that the house-surgeon was suffering from seborrhea. In such cases it is stated that dipping the hands for 15 seconds in chirol forms a protective covering through which sweat or germs cannot pass.

Winds and Tuberculosis.—Dr. W. Gordon, of Exeter, has demonstrated that the mortality from phthisis is uniformly higher in districts most exposed to the wind. This has an important bearing on the climatic treatment of tuberculous patients. The editor of *The Medical Press* emphasizes the value of such investigations in every district to locate the unhealthy areas.

Liberality of Physicians.—Though physicians give gratuitous services to hospitals it has been said that they rarely subscribe to the funds of these institutions. A notable instance as disproving this statement is found in the case of Dr. A. Garrod Thomas, who donated £5,000 as the nucleus for a fund to erect a new hospital at Newport. A new building costing £30,000 is the outcome of this generosity.

Fees of Medical Witnesses.—It is stated that the new Government will have to deal with a question that is assuming great importance in the medical world, viz, the remuneration of medical witnesses. A physician now receives 1 guinea for attending an inquest, adjourned perhaps and thus lasting several days, and 1 guinea for making a post-mortem. In police courts the pay is a half-guinea per diem. This is a pecuniary loss to a busy practitioner.

Typhoid Fever and Mangles.—Dr. Joseph Priestly reports an epidemic of 41 cases of typhoid fever in Lambeth Vestry, the outbreak being confined to 3 streets. The spread of the disease could not be traced to the ordinary channels of infection, but the cause was finally discovered to be the promiscuous use of mangles. There were 4 in the affected area and 26 cases of fever were among the customers of these mangles. Clothes which had not been properly disinfected were washed with those of the neighbors, and thus spread the infection. Of the 41 cases, 21 were in children under 12 years of age. Dr. Priestly believes that a positive Widal reaction is of great diagnostic value.

The new science laboratories of King's College, London, were opened October 30 the principal address being made by Lord Lister. It was stated that this addition was a happy coincidence, coming, as it does, when King's College is becoming one of the colleges of the reconstituted University of London. Lord Lister would prefer to keep the examining and teaching duties separate, as they were formerly when the old university was the imperial examining institution.

The Presidency of the Royal Society.—Lord Lister's tenure of office having nearly expired, great interest is being manifested in the choice of his successor. Several prominent candidates are mentioned. The society has made great advances during Lord Lister's presidency and it will not be easy to fill his place. The International Catalog of Scientific Literature is an important work undertaken by the Society during his term of office. This project is so far advanced that cataloging will be commenced with the new century.

Vaccination in Gloucester.—At the meeting of the Gloucester Board of Guardians held on October 23, it was decided to forward to the Local Government Board full particulars respecting the continued neglect of the vaccination officers to carry out the order of the Local Government Board. It was stated that in 1898, out of 1 600 births there were between 200 and 300 vaccinations, and in 1899 there were 700 vaccinations, but since then, owing to the loose manner in which the Act was administered, the number had greatly diminished.—[*The Lancet*]

Gifts to Leeds Medical Charities.—The late Mr. Robert Arthington, who recently died at Teignmouth, made an order shortly before his death transferring the sum of £20 000 to the names of the treasurer of the Leeds General Infirmary and of a member of the Committee of the Leeds Hospital for Women and Children. Of this sum £12 000 is to provide a semi convalescent hospital for woman in connection with the Leeds Infirmary, and the remaining £8 000 is to go to the fund for rebuilding the Hospital for Women and Children.—[*British Medical Journal*.]

Fees for Lunacy Certificates.—At the meeting of the Davenport Board of Guardians held on October 26 it was stated that letters had been sent to 25 medical practitioners asking whether they would accept half a guinea as the fee for the examination of pauper lunatics. Replies were received from 18; 6 agreed to accept the fee, 10 were against doing so, and 2 declined to express an opinion. After some discussion the guardians resolved to write to the bench of magistrates asking them to appoint one of the 6 medical practitioners to examine supposed cases of insanity in paupers.

Alleged Dissecting Scandals.—The Lambeth Guardians having raised a question as to the disposal of bodies used for dissecting purposes at St. Thomas's Hospital the instructor of anatomy, in answering their letter of inquiry, said in part: "In answer to your letter to the steward of this hospital, I beg to inform you that a burial service is read over the remains of bodies which have been dissected. They are all treated in the same way as parish cases which have not undergone anatomical examination, that is to say, the friends and relatives, if any, assemble in the church to hear the service, after which they proceed to the grave for the committal of the body."

CONTINENTAL EUROPE.

Cancer in Hamburg.—The rate of mortality from cancer in Hamburg rose from 71.63 per 100,000 persons in 1872 to 97.82 in 1898.

Jenner Exhibit at Paris Exposition.—This was designed by Professor Hubert, of Russia, and is a history of vaccination with special reference to Jenner himself.

An Annual Congress of Russian Surgeons has been organized, the first meeting to be held at Moscow, December 28-30, 1900. Professor Diakanow has been elected the first president, and Professor Bobrow vice-president.

The collection of utensils pertaining to the care of the sick now at the University of Berlin, are to be made into a museum, under the direction of Prof. Martin Mendelsohn.

Smallpox Decreasing.—Since the year 1862 the mortality from smallpox has decreased in Prussia and Bavaria from 51.6 to 0.7; in Austria from 75.2 to 38.6; in Belgium from 79.5 to 18.2; in England from 25.6 to 2.9; and in Sweden from 26.9 to 0.5.

Iodoform and Calomel.—Dr. Toth, of Brunswick, has used this combination, recommended by Prof. Sprengel, with gratifying results, especially in suppurating scrofulous glands. One advantage is that the mixture can be used on persons who have an idiosyncrasy to iodoform alone.

Smallpox in Paris.—Some isolated cases of smallpox have been reported and the Prefect of Police has advised the vaccination of the inhabitants. The disease appeared earlier in the year and was supposed to have been entirely suppressed. There are no fears of an epidemic.

Dr. Cajal's Laboratory.—It is announced that the Spanish Government has made substantial contributions for the enlargement of Dr. Ramon y Cajal's laboratory at Madrid, also for its yearly maintenance, and has, in addition, bestowed a not insignificant pension on the distinguished scientist.

Leprosy in Switzerland.—A case of leprosy has been discovered in Zürich, the patient having come from Brazil in search of treatment at the hands of a specialist "who, discarding drugs as poison, makes a therapeutic specialty of vegetarianism and hydrotherapeutics." The bacillus of lepra was demonstrated.

Notification of Infectious Diseases in Rome.—The following is the municipal law governing physicians in Rome: Physicians, surgeons, and midwives who treat or assist patients with smallpox, malignant pustule, measles, scarlatina, enteric fever, typhus, diphtheria, croup, whooping-cough, puerperal fever, cholera, dysentery, or other disease which is contagious or suspected to be so, as well as cases of hydrophobia or of syphilis transmitted by a hired wet-nurse, are required to give immediate notice of such to the Municipal Bureau of Hygiene.

The Immunities and Proclivities of the Arab Races.—At a recent meeting of the Société de Biologie in Paris, M. Remlinger called attention to the immunity of the Arab to typhoid fever and other diseases of the digestive tract, and his susceptibility in regard to pneumonia, phthisis, and other affections of the respiratory organs. He attributed these peculiarities to the fact that the Arabs were accustomed from infancy to drink contaminated water, and that they had thereby undergone a kind of immunization relative to enteric fever and kindred diseases. On the other hand, from always breathing the pure air of the deserts their lungs were particularly liable to suffer from atmospheric impurities.—[*British Medical Journal*.]

The Cellular Diagnosis of Tuberculous Meningitis.—M. Widal and others have reported the results of researches into the histology of the serous effusions of the various forms of meningitis. Normal cerebrospinal fluid contains no morphologic elements, neither are any present during the course of many of the acute diseases. In acute meningitis various morphologic elements are present. In 12 cases of tuberculous meningitis, the diagnosis being confirmed by autopsy, lymphocytes were numerous in the fluid. In 2 cases of cerebrospinal meningitis the polynuclear cells were to a marked degree more numerous than the lymphocytes. Lymphocytosis is, therefore, considered characteristic of the effusion of tuberculous meningitis.

MISCELLANY.

Leprosy in Asia.—It is stated that India has about half a million, China probably as many, and Japan 200,000 registered cases of leprosy; and these lepers, young and old, are treated as unclean and turned adrift upon the highway and shown neither mercy nor kindness.

Malarial fever is unusually prevalent at Delhi. Many of the cases are thought to have been caused by the collapse of so many of the servants' houses during the recent heavy rains and the consequent lack of shelter.

Bhagvat Sinbjee, ruler of the Indian State of Gondal, is a medical man. He holds degrees from Edinburgh, London and Oxford. A visit to his sons in England was given up in order to help avert the famine disaster in his State.

Cancer in New South Wales has been increasing much faster than the growth of the population. For the years 1860-64 the rates for males and females were 1.84 and 2.17 per 10,000 respectively. During 1895-99 the rates were 5.18 for males and 5.08 for females.

Enteric Fever in India.—The authorities are attempting to lessen the great mortality from this disease among the British troops in India. During the past this has amounted to about half the total mortality. Beginning with January, native cooks will be abolished and Europeans substituted, it having been shown that enteric fever lessens rapidly when soldier cooks are employed. The Army Medical Service in India is accused of thinking itself superior to the dictates of common-sense modern science, but recent developments point to the awakening of its members in this regard.

Birth-rate After Famine.—The vital statistics of the provinces in India which suffered from famine in 1897 show a remarkable increase in the birth-rate during the 2 years following the famine. The districts which suffered most showed the greatest increase. A question is whether the cause is physical or social. Many marriages may have taken place after postponements due to the famine. The cause may be physiological and a proviso of nature to replace the loss by famine. It will be interesting to note whether this increase in birth-rate follows the severe famine which is now abating.

Foreign University Intelligence.—BERLIN: Dr. Moritz Litten has been appointed extraordinary professor of internal medicine. BRESLAU: Dr. Alfred Schafer, formerly of Harvard University, succeeds the late Professor Born as extraordinary professor of anatomy. HEIDELBERG: At the beginning of the summer semester of 1901, Professor Rossel of Marburg, will succeed the late W. Kühne as professor of physiology. GÖTTINGEN: Dr. Meissner retires from the chair of physiology on account of bad health.

Mr. W. W. Astor has made a donation of £10,000 to the University of Cambridge. A new building for pathology and medicine will be erected.

Obituary.—MR. WILLIAM ANDERSON, surgeon at St. Thomas' Hospital and professor of anatomy in the Royal Academy of Arts, October 27. He served as principal of the Naval Medical College, Tokio, from 1873 to 1880, and was one of the chief authorities on arts in Japan.—GEORGE THOMAS GALBRAITH, at Stirling, October 24, aged 83.—JONES LAMPREY, at Southsea, October 29, aged 78.—PROFESSOR VAN HENKOLM, of Leyden, Holland.—DR. TOMASHEVSKI, for 40 years director of the Children's Hospital in St. Petersburg.—DR. MAXIMINO TEJEIRO, professor of clinical surgery in the University of Santiago, Spain.—DR. SEATON, inspecting officer of the Royapuram Emigration Department, November 1, of cholera.

The Plague.—There are at present only 8 inmates of the plague hospital in Glasgow and these are all convalescent. No suspected cases occurred during the month of October. The case on board the *Ben Lomond* at London from the Philippines has given rise to no new cases. The mortality in India has slightly decreased, probably due to the lessening in severity of the famine. The mortality in Bombay this year is but half that of the average for the preceding 4 years. Maudvie is the district always furnishing the greatest number of cases, and entire evacuation has been suggested as the remedy. In Mysore city the alarming increase previously reported continues. A great outbreak is reported from the Kolar gold fields. A slight increase in cases but a decrease in deaths is reported from Mauritius. The plague seems to be subsiding in Hong Kong. It has usually subsided in the autumn and there is reason to believe that this year will prove no exception.

South African Medical News.—Dr. J. Lynn Thomas writes very entertainingly of his hospital experience. Lodged bullets should be left for 2 or 3 weeks before extraction, even if only under the skin. A peculiar result of Lee-Metford and Mauser bullet-wounds is a small skin scar and a relatively large, subcutaneous scar in the soft tissues. This result is believed to be due to the impairment of tissue vitality by hydrodynamical displacement of the tissue-fluids caused by the great velocity of the bullets. Thomas doubts the efficacy of steel breastplates to protect the heart during battle, for the reason that the soldier is as likely to receive a heart-wound from the rear or side as in front, owing to the great penetrating power of modern firearms. One soldier narrowly escaped penetration of the heart by a bullet which entered through the right ileum.

The practitioner's duty in the treatment of acute intestinal obstruction is summarized by Maylard (*The Practitioner*, November, 1900). He says there are no cases which occur in general practice that present greater difficulties in diagnosis than the subject here treated. Various symptoms and signs are enumerated which he says might easily apply to one of many intraabdominal disorders. He says, however, that the general practitioner can in almost all cases determine when there is "peritonism," whatever may be its cause. This being determined there remains but one thing to do—open the abdomen. It is necessary that operation be done early to prevent disastrous consequences not only from the lesion but from the absorption of toxins. When acute obstruction occurs the general practitioner should inject cocain and open the abdominal cavity, bring the intestine into the opening and form an artificial anus which will relieve the condition temporarily. If need be a general surgeon can deal with the trouble later. The author suggests, however, that gastric or intestinal perforation presents a very different problem. But even here the general practitioner should operate if the surgeon cannot be had on short notice, for delay means certain death. Maylard has devised a portable operating table which is especially suitable for the practitioner not connected with a hospital. If the condition has passed beyond the initial stage and vomiting has supervened, the stomach and large bowel should be thoroughly washed out and a nutrient enema given before operation. Maylard believes in opening the gut and drawing it up the pent-up contents before seeking for the obstruction. In case of perforation, whether the abdominal cavity shall be flushed out or merely wiped out depends on the general or local condition. If in doubt flush out thoroughly. Before closing the bowel an injection of $MgSO_4$ in solution directly into the bowel-lumen acts well. [A.B.C.]

Suprapubic vs. Vaginal Section.—A. E. Benjamin (*St. Paul Medical Journal*, October, 1900) advocates the suprapubic incision because it minimizes the danger of incomplete operation, since the operator is more likely to detect unsuspected lesions. Since the wearing of gloves has become almost imperative in surgery the vaginal sectionist is deprived of part of the sense of touch by wearing them, making the method less accurate. In general all abscesses low in the pelvis are best drained through the vagina. When this is done early the appendages are frequently saved, the adhesions above melting away as the pus disappears. When pyogenic multilocular cystic tumors are opened from below, they should be examined bimanually in order to open into all the compartments. Small cysts, simple or dermoid, small subserous fibroids of the uterus, not large, may be removed by the infrapubic route if the patient should have thick abdominal walls and a large vagina. These same growths, however, under ordinary circumstances are more easily removed from above. Extrauterine pregnancy diagnosed before suppuration occurs, or at the time of rupture, should always be operated on from above, as it is the safer plan. Adherent and diseased tubes, when attacked through the vagina, are not readily pulled down nor the stump firmly ligated. Concealed secondary hemorrhage may occur. When adhesions are broken up through the vagina they often recur and have to be operated again and from above to be cured. The original operator often loses sight of these cases and the curative work is done by another surgeon who recognizes the limitation of vaginal operations. [G.C.C.H.]

The Latest Literature.

British Medical Journal.

October 27, 1900. [No. 2078.]

1. Signs and Symptoms of Bubonic, Pneumonic and Septicemic Plague. JAMES CANTLIE.
2. The Introduction of a Case of Plague into the Neighborhood of Cardiff. E. WALFORD.
3. A Case of Plague from a Clinical and Pathological Point of View. WILLIAM G. SAVAGE and D. A. FITZGERALD.
4. The Bacteriology of Plague. DAVID C. REES.
5. Some Practical Notes on the Bacteriological Diagnosis of Human Plague (*Pestis Hominis*). SHERIDAN DELEPINE.
6. Methods of Making Antitoxic and Preventive Fluids, with Special Reference to those of Plague. C. BALFOUR STEWART.
7. A Method of Using Haffkine's Prophylactic. MARGARET M. T. CHRISTE.
8. A Note on the Organization and Conduct of Plague Laboratories. WALTER C. C. PAKES.
9. Plague and Influenza: Mixed Infection in Houses. WILLIAM C. HOSSACK.
10. Pandemic Plague.
11. Dr. Calmette on the Prophylaxis of Plague by Preventing Inoculation.
12. M. Yersin on the Prophylaxis of Plague.
13. Plague Checked by Destruction of Rats.

1.—Cantlie believes that the **most potent agent in the spread of plague** is undoubtedly **contact** with persons suffering from the disease. The skin is at the present time considered by the majority of observers to be the channel by which the plague-bacillus finds entrance to the system. The exact method by which human beings become exposed to plague is not, however, definitely known. The average period of incubation is from 3 to 5 days. The onset of plague is generally sudden. A few cases in every extensive epidemic exhibit a rash almost identical with that in malignant typhus. The temperature in a typical case of **bubonic plague** of moderate virulence follows a fairly constant course. During the first 2 days the temperature rises gradually until perhaps it attains a maximum of 104° or 105°. During the third and fourth days it usually remains high, but toward the end of the fourth day it falls, and may approach or even fall below the normal. Toward the end of the fifth day or on the sixth day of the illness an increase in temperature is again to be expected, but the fever gradually subsides after the bubo has burst and discharged. When, after the second rise and fall in temperature, fever recurs, it generally signifies a septic infection, and is usually followed by a fatal result. **Pneumonic plague** is usually ushered in by a rigor, dyspnea, cough, a high temperature, and marked prostration. Blood does not usually appear in the sputum until after 24 hours' duration of the illness. The signs and symptoms are peculiarly evanescent; and a patch of pneumonic tissue, dull today, clears up tomorrow, and another part of the lung becomes affected. The pneumonic variety of plague is a most rapidly fatal form of the disease, the patient usually dying on the third or fourth day. In **septicemic plague** the severity of the onset is such that the patient seems struck down as if by an active poison, and the prostration from the first is so extreme that the strength of the patient seems unable to resist the depressing influences at work. There may be no bubo. As a rule every gland in the body, whether in the limbs, abdomen, or thorax, is found, postmortem, to be somewhat enlarged; and the name "polyadenitis" well describes the condition. The lungs, after death due to pneumonic plague, appear edematous, engorged with venous blood, and are the seat of basal congestion and of patchy consolidation. The pleural surfaces are usually dotted with petechiae, and occasionally with fair-sized subpleural hemorrhages. The linings throughout the respiratory tract are reddened, injected, and show here and there hemorrhages in the submucous tissue; a frothy blood-tinged mucus is commonly found occupying the passages. In septicemic plague the glands over the whole body are congested and swollen, in most cases to only a small extent, but in one group, and frequently in one gland of the group, adenitis has advanced considerably. [J.M.S.]

2.—Walford describes the sanitary measures adopted at Cardiff after the occurrence of a case of plague in one of the crew of the steamship *South Garth*. [J.M.S.]

3.—Savage and Fitzgerald describe the **clinical and pathologic features of the above case**. The patient was a donkeyman aged 38 years. His illness began on September 21, with pain all over the body, lassitude, weakness, and severe headache. Six days afterward he took to his bed with pains in the groins and back, faintness, constipation, and fever. On the fifth day afterwards he was seen by one of the authors at his home. He was then obviously very ill, with high temperature, rapid pulse and respirations. There was an enlarged gland about the size of a small walnut in the right inguinal region. At 6.15 on the same evening he was admitted to hospital in a state of collapse. His trunk and extremities were covered with a dusky-red macular rash, which disappeared on pressure. The spleen was considerably enlarged, and the liver could be felt below the ribs. There was diarrhea of a yellow, offensive character; the urine was copious and passed involuntarily; specific gravity 1.018, acid; no albumin. The patient died October 4. On October 2 cultures were made from the bubo, from the blood that exuded from the wound made by tapping the bubo, and from the blood from the finger. The next morning it was possible to make a provisional diagnosis of plague. This was founded upon examination of the films from the blood and from the cultures. Both coverslip preparations made from the blood showed bacilli in considerable numbers, quite indistinguishable from *B. pestis*. Of the cultures, the only one that showed any growth was an agar slope made from the bubo fluid. To complete the bacteriologic diagnosis the growth on the agar slope, after 24 hours, was scraped off with a sterile platinum loop, made into an emulsion with sterile broth, and 2 cc. was injected subcutaneously into the neighborhood of the left knee-joint of a young guineapig. Widal's test was made; but no signs of reaction were obtained in 2 hours with dilutions 1 in 30 and 1%. The inoculated guineapig showed no symptoms until 2 days later, when it became very quiet. It died nearly 3 days after the inoculation. Great swelling and hemorrhagic exudation were found in the left groin. The individual glands could not be separated. Films from this exudation, stained by carbol fuchsin, showed numerous bacilli. *B. pestis* in pure culture was obtained from the spleen, the left lymphatic glands, the liver, the kidneys, and the heart-blood. At the postmortem the glands in the right groin were visibly enlarged; these were removed *en masse*, and subsequently it was a matter of great difficulty to separate the individual glands owing to the great infiltration around them. In some places this infiltration was hemorrhagic. The larger glands when cut across were of a pinkish-red color. The spleen was a dull purple color, and very considerably enlarged; its under surface was hyperemic and bloodstained; its veins were engorged and its substance softened. The entire surface of the liver was studded with a number of whitish, irregularly-shaped bodies, varying in size from that of a pea to that of a bean, which on section showed a soft, friable, caseous, pinkish-white material. These areas were sharply marked off from the surrounding liver-substance and no signs of inflammation, visible to the naked eye, were seen around them. No macroscopic hemorrhages were seen. Sections of one of the enlarged right inguinal glands stained by eosin and hematoxylin showed great vascular engorgement with numerous blood extravasations, both in the gland and especially in the periglandular tissues. Throughout the gland, but especially in patches, there was well-marked infiltration of the tissue proper with small cells, apparently leukocytes, with deeply-staining nuclei. The well-defined whitish areas found throughout the liver were further examined in sections. They showed a varying amount of degenerated liver-substance, present for the most part as isolated strands of a few cells, while between the cells were very numerous small cells, apparently leukocytes and pus cells. In these areas were a number of small, more deeply staining masses, which, examined with a very high magnification, could be seen to consist almost entirely of *B. pestis*. In the enlarged glands of the right groin coverslip preparations showed a few bacilli, but they were by no means numerous. Cultures from the spleen and kidneys showed a mixed growth of *B. pestis* and other bacilli; from the liver a pure culture of *B. pestis*, and from the heart-blood and lungs a well-marked growth of foreign organism, but no plague.

bacilli. Coverslip preparations from the liver, kidneys, and spleen showed scarcely any plague bacilli. [J.M.S.]

4.—Rees discusses the **bacteriology of plague**. Inasmuch as the microorganism does not produce spores and possesses such low powers of resistance outside the body, it is improbable that infection takes place to any great extent through the air; it must under ordinary circumstances take place by close contact. The microorganism may gain entrance to the body by any or all of the following ways: (1) By the skin or mucous membrane; (2) by the respiratory tract, and (3) by the gastrointestinal canal. In order to obtain material for bacteriologic examination in bubonic cases a sterilized needle of an antitoxin syringe should be plunged into the gland, when a sufficient quantity of fluid can be readily obtained. In mild cases it is preferable to make a small incision and remove a small piece of the gland. In pneumonic cases the sputum should be collected in the ordinary way. In septicemic cases it is best to remove a sufficient quantity of blood directly from a vein by means of an aseptic hypodermic syringe. It is good practice to examine the blood in all cases of plague. The infective material obtained from one of the above-mentioned sources should be dealt with in the following way: Two coverglass preparations should be made, and one stained with an ordinary aniline dye, such as weak carbol-fuchsin, and the other by Gram's method. The presence of short bacilli, exhibiting bipolar staining and tending to arrange themselves in pairs, or short chains, and which are decolorized by Gram's method, is highly suggestive. Negative evidence, however, is of less value, and should never be relied upon in suspicious cases. In blood examinations it is best to make the preparations on slides. The bacilli are usually present in very small numbers in the peripheral blood, and a larger amount of blood can be reviewed more rapidly than if a coverglass preparation is employed. Ordinary broth and agar-agar cultures should be made, and their characters studied both macroscopically and microscopically. Haffkine's stalactite growth should also be tried. Guinea pigs should be infected. The diluted blood-serum obtained from a case of plague is said to cause clumping with plague bacilli, although hitherto this has not proved of practical value. The reaction can usually only be obtained late in the disease, and even then it is not always present. Rees is of the opinion that the plague bacillus is best regarded as belonging to the septicemic group of pathogenic microorganisms. The plague bacillus does not produce pus, but it can cause necrosis of tissue. Buboes that contain the bacillus as a pure infection may resolve or slough. If they suppurate it is generally due to staphylococcal and streptococcal infection. [J.M.S.]

5.—Delepine believes that the **varieties of plague** depend (1) on the channel of entrance; (2) on the virulence of the microorganisms; and (3) on the quantity of the bacilli. The bubonic type is produced in the guinea pig by infecting slight cutaneous wounds with a virulent culture of the bacillus (or by injecting subcutaneously various quantities of an attenuated culture). Septicemic plague was produced according to Roux's method by applying the bacilli with a small soft camel's-hair brush to the nostrils of guinea pigs. In one case the author used an agar culture which had been kept for nearly 5 months in a cupboard at the temperature of the laboratory. For another case he selected an agar culture that had been isolated 9 days previously from a fatal case. In both cases there was evidence of general discomfort before the end of the third day, and both animals died between the fifth and sixth day after the painting of the nostrils. The most interesting feature of plague pneumonia is that it can be produced with bacilli, the virulence of which is so attenuated that they do not produce the disease by subcutaneous inoculation. The gastrointestinal form was induced in some mice, of which the author placed 2 in a cage that had been occupied by 2 guinea pigs that had died of plague, and 2 others that he kept in a clean cage, and that he fed on materials that had been mixed with some of the excreta of a guinea pig also dead of plague. The first 2 mice died in about 96 hours; the last 2 died in about 72 hours. They all seemed to have succumbed to some mixed form of infection. The bacillus was recovered in one case only. A gastrointestinal form of plague is not usually recognized as a clinical form of human plague. Delepine has not yet been able to produce localized cutaneous lesions, not followed by

lymphatic extension. The 3 chief types of human plague correspond to the 3 types of infection, the first 2 being determined by the channel of infection, the last being capable of arising whenever the resistance of the tissues is considerably reduced, or the virulence or quantity of the bacilli very great. It will be noticed that in all cases the lymphatic glands are liable to be affected, but that typical axillary and inguinal buboes are produced chiefly in connection with cutaneous infection of the extremities, whilst cervical buboes may be produced as a result of infection of the skin of the head and neck, or of the nasal or buccal mucous membranes. In the case of infection through the air-passages the most characteristic bacteriologic feature is the presence of plague-bacilli in the bronchial and nasal discharges. Finally, in the rapidly fatal forms, without marked localization of lesions, the blood contains a large number of bacilli. In the experiments recorded above, the blood was invariably found to contain bacilli easily demonstrable by direct microscopic examination and cultivation, whatever mode of infection had been adopted. In the cases of mixed infection which were produced artificially, the plague bacillus could be easily separated from the associated cocci. Two methods of infection may be used for diagnostic purposes: 1. Subcutaneous inoculation, for which mice and guinea pigs are especially suitable. 2. Infection through the air-passages, obtained by painting the nostrils with the products under investigation. This method is especially suitable when products of low virulence are being studied. For this method of experimental infection the guinea pig is specially suitable. In practice, the first steps to be taken would be to make a microscopic examination (1) of material obtained from a bubo or from the edematous tissue surrounding it; (2) of blood obtained from the tip of a finger or from the lobe of an ear; (3) of expectoration in suspicious cases of pneumonia. In ordinary cases such an examination presents no difficulty and can be carried out very rapidly. Almost any of the anilin dyes in common use can be used for the purpose of staining coverglass preparations. The slightest carelessness in such work is dangerous. Animals under observation should be kept in a separate room, in glass jars covered with fine gauze, weighted lids. For additional security the jars should be placed in a larger case, constructed very much like a meat safe, but entirely made of metal and glass. This outer case should entirely prevent rats, mice, or even insects, from having access to the animals or their food. The skin of animals which have to be dissected should be well soaked with an acid solution of perchlorid of mercury (1 in 500) before the animal is opened, and the dissection should be made over a tray containing some of the same solution. The body and organs which are not preserved in suitable preservative fluids should be at once destroyed by fire. Laboratory attendants should not be allowed to touch any infected animal or products before these have been thoroughly disinfected. [J.M.S.]

6.—Stewart contributes a paper on **The methods of making antitoxic and preventive fluids**. The intracellular poisons of the dead microorganisms are mostly concerned in conferring protection, but Haffkine injects the broth in which they have grown as well. The object is to counteract an attack of plague in an inoculated person—supposing he became infected—by previously accustoming the tissues to the poison given out by the microorganism in the cultivation medium. This theory assumes that the intracellular poisons induce a bactericidal power in the tissues, and that the extracellular poisons induce antitoxic properties that would come into play supposing the bactericidal power were insufficient to prevent infection; that is to say, if the person did contract plague. Since a dead culture only is used the prophylactic is in no sense a serum. The false use of the word serum for what is really a vaccine is to be deprecated, for it gives a wrong notion of what the fluid really is. The vaccine is a sterilized culture of the plague microorganism in broth. The microorganism should be obtained fresh from a case of plague, or from a culture in which the virulence has been kept up. In India, where the religious prejudices of Hindu and Mohammedan have to be allowed for, the broth is made with goat's flesh. The antitoxic serum of Yersin is used as a curative agent for plague. It also acts as a prophylactic agent, but the immunity conferred only lasts about 15 days. The principle of this serum is the same as that of antidiphtherial serum and others of like

nature. Living cultures of the plague bacillus were administered to a horse by intravenous injection. The best results from the use of antitoxic serum thus made were obtained at Canton and Amoy in the summer of 1896. Later, cultures killed by heat, and toxins formed in the cultivation media were used. The results with this serum gave the least good results. On account of the inferior results of this serum and considering the progressive encroachment of plague the Pasteur Institute decided to prepare several horses vaccinated first with cultures killed by heat and afterward with living cultures, as was done in the first instance. This serum was used at Oporto in 1899, and gave somewhat better results. Lustig's method of preparing vaccine is based on the observation that a nucleoproteid which he succeeded in separating from the bodies of plague microorganisms is a substance that induces immunizing properties when injected; neither the metabolic products of growth nor toxins are used. Lustig proposes to use this solution as a prophylactic. He also immunizes horses with it by repeated inoculations during a period of 3 or 4 months. The serum has been prepared in Bombay and tried at the Arthur Road Hospital. So far, there has been no report of the use of the nucleoproteid used as a prophylactic, if it has been tried. The results of the curative serum were not at first very satisfactory, but lately better results seem to have been obtained. Dr. Polverini, in a report to the Bombay Municipal Committee, states that in 475 cases treated a recovery percentage of 39 was obtained. [J.M.S.]

7.—Christie used **Haffkine's prophylactic** in Calcutta in 1898. For an adult male the ordinary dose of the fluid then provided was 5 cc. She used to give a woman 4 cc., girls, aged from 10 to 14 years, 3 cc., and children from 2 to 10 years old, from 1½ to 3 cc., according to age. The reaction in many cases began at once with a pricking sensation at the site of inoculation and the gradual formation of a hard, tender, red swelling a few inches in circumference. The temperature rose, in the cases in which it was taken, within 6 hours of the inoculation, and it was highest on the night of inoculation. In a few cases it only reached 99.6° or 100° F. In the majority of instances it rose to 102° or 103°. The fever rarely lasted more than 2 days, though the arm remained more or less painful and tender for a week or 10 days, and a small, hard nodule often remained for a few weeks. The day after the injection a red, hot, hard swelling of the skin and subcutaneous tissue of the arm was noticed, that rarely spread above the shoulder, however, but which often extended to the elbow or even to the wrist. The margin of this swelling was as well-defined in many cases as in erysipelas. The axillary and cervical glands were sometimes swollen and tender. Many patients complained of shooting "rheumatic" pains in the shoulder and elbow-joint. Some subjects vomited or had diarrhea, others suffered from nausea, syncope or shivering. [J.M.S.]

8.—In the **organization and conduct of plague laboratories** it must be remembered that comparatively little is known as to the methods of infection; more than that the disease is extremely infectious. The mere handling of a rat dead of the plague has been sufficient to cause death, and flies and fleas are quite capable of conveying sufficient virus to cause the disease. As this is so, no precautions can be too elaborate, and the minutest details in the construction and furnishing of the laboratories, and in the technic of the postmortem examinations upon man and animals, must be attended to. According to Pakes, a laboratory for the investigation of plague should consist of 3 rooms: (1) An anteroom for the preparation of media, cleaning of used vessels (after sterilization), and for the many other duties which devolve upon a laboratory assistant; (2) the laboratory proper; and (3) a room wherein to keep all infected animals. If the laboratory forms part of a larger building, it should be isolated, as regards communication, from the rest of the building, and so arranged that the only ingress to the laboratory is through the anteroom, and to the animal room through the laboratory. The walls and ceilings should be made of nonporous material, and should have a glazed surface without break; the floor should be of cement or of grooved tiles well set in cement. The windows must be large, and so arranged that the lighting is uniform; the window-sashes of iron, and not projecting into the room. All corners must, of course, be rounded off. The ventilation of each room should be separate, and the outgoing air made

to pass a gas flame. The source of heat should be, whenever possible, a gas stove, and the source of artificial light gas or electricity. Every endeavor must be made to prevent the formation and collection of dust, and to this end it is advisable to have the floor moistened with a solution of corrosive sublimate containing a little glycerin. The amount of furniture necessary is not great. In the conduct of the laboratory the bacteriologist himself should alone handle the infected material, cultures and animals, even to the extent of feeding the animals. Both the principal and assistant should wear macintosh overalls that must be frequently washed with strong disinfectant solution. When an animal is to be inoculated it should be prepared in the anteroom, only the actual inoculation being performed in the laboratory. During the inoculation both the principal and the assistant should wear rubber gloves, which can be easily disinfected. Unless the hands are covered they would have to be thoroughly disinfected after every inoculation; and in dealing with plague-bacilli, this should be done as seldom as possible in order to prevent the peeling and cracking of the skin, which is the usual sequel to the constant use of disinfectants. Upon the death of the animal it is removed with forceps and fastened on a suitable block of wood, carrying small wooden plugs at the side, by means of string or wire. The cage should at once be placed in the autoclave and sterilized. In making the necropsy gloves should be worn. Upon the conclusion of the necropsy the principal should sterilize all the instruments, calcine the animal, and thoroughly disinfect the bench with the disinfectant solution. All discarded cultures must be at once incinerated, or sterilized in the autoclave before leaving the laboratory. Lastly, the laboratory should be used only for the investigation of plague, no other work of any description should be undertaken. [J.M.S.]

9.—Hossack gives histories of 2 houses in Calcutta in which **plague and influenza occurred simultaneously**. In Calcutta the registration of plague depends in great part on investigation of all deaths made subsequent to death by responsible European medical officers. If along with plague we have influenza contemporaneously epidemic, with a knowledge that both may coexist in the same house, the task of these officers in deciding from the history whether a given death is due to plague or influenza becomes an almost impossible one; for even with every opportunity for full medical examination and observation of the patient, no diagnosis can be more difficult than that of virulent influenza from nonbubonic plague. The leading characteristics of both are identical—suddenness, intensity, cardiac weakness, and a great tendency to nervous developments, meningitis and various paralyses. In both, pneumonia is one of the manifestations of the disease rather than a complication, and in both it tends to be accompanied by indefinite physical signs. Cerebrospinal meningitis is also extremely difficult to diagnose from plague. Altogether, with the 3 diseases all at present sporadic in Calcutta, the task of the district medical officer is not an easy one, particularly as owing to the prevalence of false information he cannot place much reliance on the alleged absence of buboes. Fortunately, cerebrospinal meningitis is practically confined to one locality, and the proportion of influenza to plague, so far as known, is insignificant. But, if the two former diseases increase, the problem of how to register plague will be a difficult one to solve. Cultural and microscopic appearances of microorganisms obtained from some of the patients were those of the bacillus of influenza described by Pfeiffer. [J.M.S.]

11.—Calmette presented to the International Congress of Hygiene and Demography held in Paris last month, a report on the **Part that prophylactic inoculations might play in preventing the spread of plague**. The antiplague serum conferred very strong immunity, which commenced almost immediately after the injection. Unfortunately this immunity lasted for a very short period, rarely exceeding 10 to 14 days. Consequently, when the antiplague serum was used during epidemics as a preventive measure, it was necessary to inject a dose of 10 cc. of the serum every fortnight to give an efficient protection to exposed subjects. The advantages of the method are: (1) The immunity conferred is immediate and almost absolute; (2) the injection of serum being painless, it was readily accepted by every one, even by children; (3) it was never harmful; (4) when the serum was prepared aseptically, the

activity of the preparation remained the same for a long period; in fact, almost indefinitely. The drawbacks are: (1) The resulting immunity was of too short duration; (2) the high price of the serum, and the difficulty of obtaining it in large enough quantities to permit of the population of a whole town being vaccinated every fortnight; (3) the difficulty in making compulsory or general a vaccination which had to be repeated so often. Its use, however, is indicated in the following circumstances: (1) On infected vessels, during the voyage, to prevent the disease spreading among the passengers and crew; (2) in lazarettos temporarily to protect the employes who had to discharge and disinfect the cargo brought by a suspected vessel, or on board of which cases of plague had occurred during the voyage; (3) in docks, custom houses or warehouses (exceptionally) when suspected goods were manipulated; (4) in times of epidemic, for the immediate vaccination of any persons who had been in momentary contact with the patients, or were possibly already infected. The method of vaccination with cultures of *Bacillus pestis* killed by heating to 70° C., which have been applied during the last 3 years on a huge scale in India by Haffkine, possess the incontestable advantage of conferring a longer immunity than that produced by the antiplague serum. The exact duration, however, of this immunity is very variable. It depends on the quantity of microorganisms in the culture, on the age of the culture or its toxicity, and on the method of its preparation. Calmette has undertaken a research, vaccinating by Haffkine's method several series of monkeys, guineapigs, and rats, in order to determine not only the duration of the immunity after 1, 2, or 3 injections of heated vaccinal cultures, repeated at weekly intervals, but more especially to determine at what time after the vaccination immunity began. The author arrived at the conclusion that after a single injection of 3 cc. of a bouillon culture one month old, heated during one hour at 70° C., immunity was established on the seventh day. This immunity lasted on an average 3 weeks in the guineapig and one month in the monkey. Haffkine's vaccination was most useful in infected countries, and for the following reasons: 1. It was possible to prepare in a few weeks, without any difficulty, and at very small cost, large quantities of cultures of the plague-bacillus and, consequently, of the vaccine, since it was only necessary to heat those cultures, one month old, for an hour at 70° C. 2. Persons endured the inoculation of these heated cultures fairly well; it only caused a little swelling and lymphangitis around the seat of inoculation, which lasted 5 or 6 days. 3. It was possible with the heated cultures to vaccinate the population of an entire city or district, and thus suppress the receptivity, and, consequently, all chances of the spread of the disease. The method is, however, open to serious objections, of a nature to prevent public authorities making its application obligatory in infected countries. 1. With M. Salimbeni, Calmette has shown, during the recent epidemic in Oporto, that animals during the period of immunization with heated cultures are extremely sensitive to very small doses of the virus, doses which were rarely mortal to non-vaccinated animals. It followed that a person in the period of incubation for a slight attack of plague would find the disease considerably aggravated if he submitted during this period to a preventive inoculation of Haffkine's vaccine. The case would almost certainly end fatally. 2. The injection of heated cultures causes a more or less sharp rise of temperature, usually of short duration, but in some cases sufficiently high to make the patients stop work. 3. The heated cultures can be kept for a much shorter period—it did not exceed 6 months—than the serum. The combined action of air and light quickly attenuates the toxicity of these cultures. The cultures therefore must be frequently renewed; old vaccine must not be used. In spite of these objections it must be recognized that the method of vaccination with heated cultures is capable of rendering immense service in times of epidemic, since it is possible to limit almost immediately extension from a focus. Calmette thinks, however, that the use of antiplague serum, which does not present the dangers of Haffkine's vaccination, is more to be recommended for vessels, lazarettos, hospitals, and observation centers, not only because it is an excellent preventive measure, but because, while it is a vaccine, it is at the same time the only efficient remedy that can be employed in the treatment of declared plague. [J.M.S.]

12.—Yersin recently returned from the Far East, and the special correspondent of the *British Medical Journal* was able to find out from him his views as to the **preventive measures** to be adopted in a threatened epidemic and the best means of preventing the spread of the disease. In a village or restricted community the only effective means of preventing the spread of the disease is to evacuate the infected village. Yersin cited the case of one village in which there were 7 cases of plague when the village was evacuated. On the first day after this measure 2 new cases developed, on the second day no case, on the third day 1 case, on the fourth day no case, on the fifth day 1 case, after which no fresh cases occurred in the population. The disinfection of a house, even when carried out under scientific supervision, affords no guarantee that fresh cases will not occur on the house being again inhabited. Even burning an infected house does not prevent the spread of the disease. The inhabitants must not be permitted to return to an infected district for at least 6 months. The ideal plan would be for the inhabitants to have 2 villages—one for the cold weather, which should be vacated for the mountains as soon as spring returns or the disease shows signs of recrudescence. In a large city or town in Europe, such drastic measures are impracticable. In these conditions, in addition to isolation of the sick, the only means of limiting the disease is the inoculation with antiplague serum of all persons who have been exposed to infection; such of these as may be in the incubation period will have a mild attack, or they may die. Disinfection must be carried out as demanded by the sanitary authorities, but its protective powers are not absolute. The serum confers immunity for 15 days only, but if there is further fear of infection, or fresh exposure, the injection of serum should be repeated. With Haffkine's method of vaccination with dead bacilli, or bacilli that has been heated for 1 hour at 70° C., it is impossible to say for how long a period immunity is obtained in man. By this method Yersin has never been able to obtain immunity in animals. He has seen this method of vaccination give rise to great suffering and constitutional disturbance. Possibly a mixture of antiplague serum with a small portion of an attenuated culture of plague bacilli and inoculating man with this mixture may produce a better and more desirable result. Yersin is of opinion that no conclusions can be drawn from the exceedingly mild type of the disease in the recent epidemic of plague in Oporto and in the outbreak in Glasgow as to the severity of possible future outbreaks in the British Isles or elsewhere in Europe. With the plague we must be prepared for any type of the disease. It is quite possible, when in the course of the next few years the bacilli have become acclimatized in their new surroundings, that their virulence will increase, and that we shall see the same severe form of plague as visited Europe in the Middle Ages. [J.M.S.]

13.—At a recent meeting of the Académie de Médecine of Paris M. Vallin made a report on the **epidemics of plague** at Kōbé and Osaka, being a summary of the official report by Professor Kitasato, of Tokio, assisted by Drs. Takaki, Shiga, and Moriya. In the town of Kōbé (230,000 inhabitants) there were, from November 3 to December 21, 1899, 23 cases of plague, 19 being fatal; while in Osaka, the second city of Japan (750,000 inhabitants), there were, from November 18, 1899, to January 11, 1900, 39 cases, with 37 deaths. Rats, it would seem, played an important part in the development of these two local epidemics. The municipality of each of these two towns paid 10 centimes for every rat dead or alive, and from the middle of November till the end of January 20,000 rats were taken at Kōbé and 15,000 at Osaka. Many people also, in order to avoid the disinfection of their houses, either burnt or threw into the canal or river all the dead rats they found. The investigators, on careful examination of the dead rats, found that at Kōbé 1 rat in 5, and at Osaka 1 rat in 10, were infected by plague bacilli. [J.M.S.]

Lancet.

October 27, 1900. [No. 4026]

1. The Forces Opposed to Harvey and His Researches. T. CLIFFORD ALLBUTT.
2. Appendicitis. HARRY LITTLEWOOD.
3. On the Role Played by the Spleen in the Pancreatic Digestion of Proteids. HENRY F. BELLAMY.

4. Some Remarkable Cases of Sarcoma. A. MARMADUKE SHEILD.
5. The Anemia of Dyspepsia Consequent on Dirt eating. A. J. B. DUPREY.
6. The Differential Diagnosis in General Practice of Plague and Typhoid Fever. THOMAS COLVIN.
7. A Case of Complete Coarctation of the Arch of the Aorta; Necropsy. W. LEE DICKINSON.
8. A Case of Separation of the Epiphyseal Head of the Femur. J. JACKSON CLARKE.
9. Notes on Cases of Injury by Lightning: One, Fatal. PHILIP EDWARD HILL.
10. Case of Gangrenous Femoral Hernia; Enterostomy; Subsequent Anastomosis by Halsted's Method and Occlusion of the Gut. LEONARD A. BIDWELL.
11. A Case of Presentation of the Head, Cord, and Foot; Contracted Pelvis; Cesarean Section; Recovery. W. ALEXANDER.

1.—Allbutt contributes an abstract of his address before the Royal College of Physicians of London, upon the subject of **Harvey's discovery**. It is chiefly an analysis of the various philosophic movements from the time of the ancient Greeks until Harvey's day, the different systems as they became crystallized, acting as forces antagonistic to new ideas or theories. To all these Harvey appeared as an iconoclast, and, as a matter of fact, his work did perhaps more to overthrow the old speculations and barren metaphysics than that of any other man. To use Allbutt's own words: "Harvey's discovery, under such conventions, burst like an earthquake—under corrupt Galenism, venerable sophistries, current abstractions bequeathed by realism, and long-winded dialectics on critical days, coctions, derivatives, or revulsives, and dogmas based on uncritical subservience to texts." That philosophic speculation is not dead in medicine the following quotation from another portion of the paper may suffice to show: "The content of notions is indeed in inverse proportion to their universality. We may discuss the causes of typhoid fever and bewilder ourselves by forgetting that there is no such thing as typhoid fever, and that the only causes of a general notion are the psychologic causes of its generation in the mind of the thinker at the time; that which is due to objective causes is of course not the general notion but the particular case, a very different matter." [J.M.S.]

2.—Littlewood reviews the entire subject of **appendicitis** and cites cases from his experience without adding much that will be new or of special interest to American readers. He urges that if no improvement is seen in 48 hours from the onset of an attack that the patient should be seen by a surgeon, who will then decide as to the advisability of operation, and states that he has never regretted early operation. [M.B.T.]

3.—Bellamy gives a detailed account of the experiments that have been performed by Schiff and Herzen, in order to prove the important role played by the spleen in the production of pancreatic ferments. The experiments of Schiff, which are given in detail, are now old, having first appeared in 1868. They were undertaken as a result of the observations made by a number of physiologists, that, at a certain period after digestion, about 5 hours, the spleen became congested, and increased considerably in weight. Various experiments were performed, all of which seemed to prove that dogs, whose spleens had been extirpated, or whose splenic vessels had been ligated, were unable to produce an active pancreatic fluid. Later, the discovery of zymogen by Heidenheim, and the fact that it could be converted into trypsin by the action of oxygen, seemed to disconcert the apparently obvious results of Schiff's work, but Herzen suggested that possibly the spleen secreted a substance which was poured into the general circulation, and coming in contact with the zymogen, converted it into trypsin. He, therefore, believed that it should be possible to obtain this tryptogenic substance from the spleen itself at the period of its greatest congestion. He found that by mixing a pancreatic infusion and infusion of congested spleen together an actively digesting solution was produced that would dissolve fibrin and albumin; whereas the pancreatic infusion mixed with extract of anemic spleen was without effect. It having been suggested by Heidenheim that this was probably merely due to the excess of oxygenated blood in the splenic extract, a series of experiments were undertaken with extract of anemic

spleen mixed with arterial blood; they were, however, inefficient. It, therefore, seems conclusively proved that the spleen, during its period of turgescence, does secrete some substance which acts upon zymogen and converts it into trypsin, and that this substance has a specific and peculiar action. It is possible that the zymogen excreted by the pancreas before the splenic ferment is elaborated, is gradually converted into trypsin by oxidation in the intestinal tract. In splenectomized animals, proteid digestion appears to be accomplished chiefly in the stomach. [J.S.]

4.—Sheild reports a case of huge **cystic sarcoma of the femur**, in which the diagnosis was obscure. An incision had been made by another surgeon causing infection and converting it into a huge abscess cavity. The patient was seen by several eminent surgeons, and necrosis with abscess, and actinomycosis were suspected. The abscess was opened and part of the growth was removed, revealing its true character. The patient refused amputation at the hip and died from exhaustion a short time later. Another case is reported of ulceration of a toe followed by melanosis of the glands in the groin, and a third case of sarcoma of the tibia simulating abscess. [M.B.T.]

5.—Duprey believes that the **anemia occurring in ankylostomiasis** is often due to the habit frequently associated with the disease, of **eating dirt**. This alone will often give rise to the characteristic symptoms of the disease, particularly the edema of the face and feet, the profound anemia, emaciation, and exhaustion. He mentions several cases in which the worms are not found, although the symptoms of the disease were present. The habit of eating dirt is apparently as irresistible as that of morphia or other drug habits, and the patients will not only deny it, but use all sorts of means to obtain the substance. [J.S.]

6.—Colvin, having had the opportunity of studying several cases of **plague** during the recent epidemic in Glasgow, calls attention to the **difficulty of diagnosis** in the early stages of the disease, particularly when the presence of an epidemic is not suspected. The respiratory symptoms rarely exceeded slight congestion at the base of the lung; the nervous symptoms were often severe, the patient would be very restless, delirious, or dull and apathetic. Diarrhea was frequently present. In one case there was tenderness in the right iliac region, the tongue is not characteristic; the general condition was one of extreme prostration. Of course the characteristic symptom is the appearance of buboes; these, however, are not present in the pneumonic and septicemic forms. In nearly all epidemics the earliest cases are bubonic in type, and the glands most frequently affected are those in the groin. The Widal action is always negative. [J.S.]

7.—The patient, a man of 29, had had 2 attacks of influenza and scarlet fever in youth. After the second attack of influenza he suffered from persistent shortness of breath. The area of cardiac dulness was increased and the action of the heart was irregular. There was a faint systolic murmur over the whole precordium, and a greatly accentuated second sound over the aortic cartilage. A diastolic murmur could also be heard, traceable down the sternum and audible in the back. The arteries pulsated vigorously; the pulse showed the Corrigan type. He improved slightly, but then dropsy occurred and he died. At autopsy it was found that the aorta was moderately dilated at its commencement, then became contracted at the origin of the innominate artery; this contraction increased until a point just beyond the origin of the subclavian artery, where it was totally occluded. Beyond this point the thoracic and abdominal aorta was thin-walled, but otherwise healthy. The aortic valve had 2 cusps. The anastomotic circulation had been carried out chiefly by the internal mammary and first 4 intercostal arteries. The diagnosis in this case should be possible. There should be excessive pulsation in the arteries in the head and neck, diminished pulsation of the abdominal aorta, retardation of the femoral pulse, excessive enlargement and pulsation of the intercostal, scapular, mammary, epigastric, and other superficial arteries. A heaving impulse beneath the angle of the scapular has also been described. Altogether, **complete coarctation of the aorta** has only occurred in 14 cases. It is often associated with valvular and arterial anomalies. It usually occurs just beneath the subclavian artery. [J.S.]

8.—A case of **separation of the epiphyseal head of the femur** is reported occurring in a girl of 15. The cause

of the injury was a fall in the street. The patient was operated upon for the relief of lameness and pain, the head of the bone and much callus being removed. The result was in every way successful. [M.B.T.]

11.—Alexander reports a case of a woman of 25 who was admitted to the Liverpool Workhouse Hospital after she had been in labor 3 days and was beginning to show signs of exhaustion. On examination the os was found to be fully dilated, the membranes had ruptured, and the liquor amnii had all drained away. The head was presenting with one foot beside it and the cord was prolapsed and pulseless. The bony pelvis was contracted in all diameters and the vagina also was very dry and contracted, so much so that it was impossible to introduce 2 fingers without great force and much pain to the patient. The pains were feeble and the patient much exhausted and crying out for delivery. After a short but futile attempt to turn the child, it was delivered by **cesarean section**, having evidently been dead for some time. The mother made a good recovery. [W.K.]

New York Medical Journal.

November 10, 1900. [Vol. lxxii, No. 19]

1. Endothelioma of Bone, with many Metastases. FRANZ H. BRANDT.
2. Facial Neuritis, Associated with Unilateral Retroorbital Neuritis. WILLIAM M. LESZYNSKY.
3. Ruptured Urethra, with Report of Cases. NATHAN JACOBSON.
4. A Case of Congenital Ocular Defect (?). E. E. BLAAUW.
5. What the Law Requires of the Surgeon. DUDLEY S. REYNOLDS.
6. Mastoid Abscess; Recovery without Operation. JOSEPH D. HARRIGAN.
7. An Unusual Case of Meralgia Paresthetica with Intermittent Lameness (Claudication Intermittente—Type Charcot). ALFRED GORDON.

1.—Brandt reports an interesting case of **endothelioma**. The patient was a man, 58 years of age. The disease was quite rapid, lasting 8 months from the time of its appearance until the death of the patient. The primary growth was situated on the right arm in the region of the tuberosities of the humerus. At the postmortem the primary growth was found to involve the upper part of the humerus, reaching below the tuberosities, being $5\frac{1}{2}$ inches in length and 5 inches in breadth, and had caused complete destruction of the head and neck. During life the tumor was fluctuating and had a systolic bruit. The skin, muscles, and periosteum were not involved. Other organs showed numerous metastases. The pleura was dotted with a number of nodules, varying in size from that of a pea to a walnut. The lung was greatly involved, showing metastases of all sizes, from minute spots up to those of 3 inches in diameter. The larger tumor masses seemed to lie in the central part. The ribs were also involved, and in one to the extent of causing spontaneous fracture. A pedunculated nodule was found in the diaphragm. The liver was sparingly involved. While both kidneys showed metastases, the right organ was more intensely involved, being almost completely changed into tumor tissue. [G.B.W.]

2.—Leszynsky reports the case of a woman, aged 38 years, who suffered from **facial neuritis with unilateral retroorbital neuritis**. The optic nerve was in a condition of advanced atrophy. [J.M.S.]

3.—Jacobson reports four selected cases of **ruptured urethra**. He says that the laceration is, as a rule, subcutaneous. An early diagnosis is very necessary, as immediate relief to the condition is imperative, as urinary leakage is to be anticipated, and skin infections of the soft part averted. He says that the best method of treating these cases is to drain the bladder by perineal incision. He does not believe in suturing, nor in the wearing of a permanent catheter. He says that the continuous irrigation of the bladder through the perineal wound keeps the parts in good condition, and that nature builds up a new canal by repairing the break in the old one, after the granulation tissue has been covered in by mucous membrane growing from the several ends of the urethra. The surgeon should shape the canal by the daily passage of a full size curved sound into the bladder. [G.B.W.]

4.—In the case reported by Blaauw, all abductive power of the left eye was absent, the patient being absolutely incapable of following an image with this eye into the temporal part of the visual field. There were, besides this, a few minor defects in the eye. He said that the condition had lasted a long time, but was not sure whether it was congenital or acquired. [G.B.W.]

5.—Reynolds reviews the various circumstances or conditions under which the surgeon may be arrested for malpractice. [G.B.W.]

6.—Harrigan reports a case of **mastoid abscess** occurring in a child 7 years of age, and apparently following an attack of grip. It has been the decision of several physicians, all men of repute, that the patient was suffering from mastoid abscess, and urgently needed operation. The parents, however, objected, and it was decided to temporize. Treatment consisted in the introduction of peroxid of hydrogen (15%), and in syringing the ear with copious injections of hot water. Internal dry heat was also applied. One morning considerable pus was found on the removal of a flaxseed poultice. This was followed by relief in all the local symptoms, and the patient was ultimately discharged cured. [G.B.W.]

7.—Gordon reports the case of a man, aged 45 years, who had typhoid fever 4 years ago. During convalescence he began to suffer intense pain in the neighborhood of the fourth sternocostal articulation. On account of suppuration, operation was performed. At the same time pain appeared in the anteroexternal and posterior surfaces of the left thigh. The pain was present for 2 years, but after an interval of one year returned. Again it disappeared, until 17 weeks ago, when it reappeared. The patient had varicose veins, and at two different times resections of the internal saphenous vein, first on the leg, then on the thigh, were performed. The patient is distinctly neurasthenic. There is no syphilis or alcoholism. His family history shows that there is a strong neurotic element. The actual symptoms developed during the attack of typhoid fever. While seated and while walking the patient complains of a burning sensation over the anteroexternal surface of the upper two-thirds of the thigh. The whole paresthetic area is in isolated patches with intervals, and the tactile sensation over the diseased portion is very much diminished. The case is atypical because in addition to the anterior branch of the external cutaneous nerve, the posterior is also affected, one or two cutaneous branches of the anterior crural nerve are involved, and there is a phenomenon called **intermittent lameness**. The external cutaneous nerve is placed in a muscle indispensable to standing and walking (the psoas) and in connective tissue (fascia lata), the contraction of which in walking presses upon it and stretches it. The musculoaponeurotic relation and the superficial position of the nerve expose it to traumatic injuries, especially in individuals predisposed to painful paresthesias. A slight neuritis, that perhaps would remain latent in any other territory of the nervous system, is marked in the sphere of the anterior branch of the external cutaneous nerve. [J.M.S.]

Medical Record.

November 10, 1900. [Vol. 58, No. 19.]

1. Some Clinical Aspects of Gout. BEVERLY ROBINSON.
2. The Relief of Prostatic Enlargement. JOSEPH B. BISSELL.
3. The Constant Quantity in the Various Climatic Treatments of Tuberculosis. C. G. CAMPBELL.
4. Chronic Copper Poisoning Among Artisans. HENRY A. KURTH.

1.—Robinson believes that no especial form of diet is always useful in **gout**. Some cases will do well on strictly "anti-gout" diet, while others will show better results from a diet that contains articles usually thought to be especially bad for gouty subjects. He considers that no case of relapsing appendicitis should be operated upon until there has been treatment used against a possible gouty or rheumatic condition, and gives brief accounts of cases to show that throat, ear, and skin troubles, and other affections that have resisted other treatment may subside upon the use of treatment directed toward the improvement of such diatheses. [D.L.E.]

2.—Bissell discusses in a thorough manner the various procedures which have been used for the relief of **prostatic hypertrophy**. Among the various radical operations which have been proposed he favors perineal prostatectomy by the lateral incision. He considers perineal prostatectomy with drainage an operation—in competent hands—no more dangerous to life than an interval operation for appendicitis, provided cases are properly selected, in which degeneration of the general and special tissues of the body has not gone on to a hopeless extent, in which the bladder and kidneys are not too seriously damaged, and in which septic infection, if present, is not too profound. But, even under part or all of these adverse conditions, complete removal of the prostate with free drainage is the rational and scientific method of radical treatment, and offers the best hope of relief, and the most favorable chance for a permanent cure, with the least danger to life. [M.B.T.]

3.—Campbell considers that the constant factor active for good in various **climates favorable to tuberculous subjects** is the prevention of reinfection. There should always be measures taken for disinfection of the sputum and the like in tuberculous patients where they must be treated at home, in order that so far as possible the lack of proper climatic conditions may be offset by such measures. [D.L.E.]

4.—There is much question whether **chronic copper poisoning** really exists as a definite condition (see recent abstract of Lewis's article from *Deutsche medicinische Wochenschrift*). Kurth believes that it does. The symptoms which he describes are chiefly those of irritation of the gastrointestinal and other mucous membranes. Anemia with a sallow color, extreme nervousness or restlessness, and greenish discoloration of the hair and teeth. [None of these is characteristic of any special intoxication. The discolorations are merely stains]. The treatment is chiefly prophylaxis and change of occupation. Strychnia is a good tonic. [D.L.E.]

Medical News.

November 10, 1900. [Vol. lxxvii, No. 19.]

1. Some Observations on Anesthesia by Intraspinal Injections of Cocain. S. ORMOND GOLDAN.
2. Further Experience with Subarachnoid Injections of Cocain for Analgesia in all Operations Below the Diaphragm. JOHN B. MURPHY.
3. The Examination of Stomach-Contents. W. A. BASTEDO.
4. The Hydratric Treatment of Tuberculosis. J. H. KELLOGG.
5. Bronchial Disease Not Invariably a Contraindication for Ether Anesthesia in Abdominal Surgery. THADDEUS A. REAMY.

1.—Goldan says that **anesthesia by intraspinal injections of cocain** is not superior in safety or in advantages to ether, chloroform, or nitrous oxid. He sums up the deductions of his own experience and of others as follows: Cocain introduced into the subarachnoid space acts in the same way as when injected into the general circulation, being possibly less toxic. There is no definite quantity which will answer in all cases. The degree of action of the drug does not seem to depend on any apparent individuality of the patient, and there is no method of determining how any particular dose will act in a particular case. Therefore large doses should never be used until the individual susceptibility is determined. He says the place for intraspinal cocainization is at the end of the list of anesthetics, when speaking of its general practicability. In individual cases, when chloroform, ether or nitrous oxid are contraindicated, the use of cocain injected into the spine is often of great service, and in this way is a useful addition to the armamentarium of surgery. [G.B.W.]

2.—Murphy says that the danger of **failure in the technic** regarding the use of **subarachnoid injections of cocain** are due either to the fact that the cocain solution is not fresh, or that the needle escapes from beneath the dura, or is forced through the dura in making connections with the barrel of the needle. In the two latter events, the fluid would escape in front or behind the dura, and no analgesic effect could follow. He says that in minor operations upon the foot, leg, knee, and hip, 10 m. of a 2% solution will be sufficient. It is best that the syringe should have a slide

and not a screw connection, as a twist of the barrel is likely to dislodge the tip of the needle from the dura. Cocain has decided advantages in cases of intestinal obstruction, first, the patient is quickly prepared for operation; second, the danger of inhalation-pneumonia is nil, a matter of great importance; third, the prolonged depression so general in this operation from general anesthesia is avoided. [G.B.W.]

3.—Bastedo gives a brief account of some of the **simpler methods** by which the **gastric contents** may be **analyzed**. He advises for a test breakfast, a good dry hard breakfast roll without butter, and 12 ounces of water. For estimating the free HCl he recommends dimethylamidoazobenzol. He adds a few drops of this to 5 cc. of the filtered contents bitrates with and decinormal NaOH; he then adds a few drops of congo red, and determines the quantity of free organic acids in the same manner. Finally he adds a few drops of phenolphthalein and determines the combined acids. This, of course, is a modified Tuffier method. He also gives the usual tests for blood, lactic acid, etc., and a few simple directions regarding treatment. [The author fails, apparently, to take into account the different points in the scale of alkalinity, at which the indicators that he employs react. This, of course, interpolates a small error into the results. J.S.]

4.—Kellogg, in discussing the **treatment of tuberculosis**, calls attention to the fact that at present it is impossible to destroy the tubercle-bacilli in the lung. Even if it were possible there would be every likelihood of the recommencement of the disease in the damaged tissue. The open-air treatment is probably the most efficient, but a method of considerable value is the application of cold in the form of moisture to the skin. This stimulates the vasomotors, and may be considered as a form of vasomotor gymnastics. The three methods suggested by Aberg consist of cold sponging to the head, neck, back, and chest, cold douching of the same parts, and a full cold bath for from 2 to 6 seconds. Kellogg suggests the following methods: Dry friction either with the hand or mitten, followed by friction with the water at 60°; cold wet friction, commencing at 60° F. and gradually decreasing, and finally, the wet sheet which is wrapped around the patient whilst he is being vigorously rubbed. The initial temperature of this should be about 60°, and subsequently it may be decreased to 50°. The entire application should not last for more than 2 or 3 minutes. Sometimes it is more efficient if preceded by heat, such as sun-baths, dry friction, or vapor baths. Another method is a warm rain douche; the water being at 100° F., while hot sprays of higher temperature are applied to the legs. [J.S.]

5.—Reamy is convinced that **ether is a much safer anesthetic than chloroform**, and should be selected in all cases, except in the presence of strongly-marked contraindications, as in serious disease of the kidneys or respiratory organs. He says that his clinical studies justify him in the belief that in properly selected cases, ether-inhalation is positively curative of bronchitis. To avoid any unpleasant complications and to secure the desired results, the following points in etherization are essential: (1) Proper preparation of the patient; (2) preparation of the operating-room with the temperature of 98° to 100° F.; (3) pure ether; (4) the proper inhaler; (5) the proper methods of administration; (6) due caution against exposure in removing the patient from the operation-room to her own room; (7) proper care of the patient during convalescence. [G.B.W.]

Boston Medical and Surgical Journal.

November 8, 1900. [Vol. cxliii, No. 19.]

1. A New Test Meal. A. E. AUSTIN.
2. Spinal Caries with Abscess: Analysis of Cases. ERNEST B. YOUNG.
3. Celluloid as a Material for Flat-Foot Supports. ALBERT H. FREIBERG.
4. The Agglutination by the Patient's Serum of the Bacteria Found in Cystitis and Pyelitis, with a Consideration of the Pleomorphism of the Bacteria Found in these Infections, Especially as Regards Chromogenic Properties of the Staphylococci. THOMAS R. BROWN.
5. The Management of Abdominal Testicular Ectopia Associated with Inguinal Hernia. CHARLES A. POWERS.

1.—Austin has devised a **new test-meal for exact work**, which consists of 2 grams of dried egg albumen in the form of tablets, and 2 glasses of water. This has the advantage of being liquid, so that solid masses never clog the tube; the contents filter readily, and lactic acid, when found, is of much more diagnostic importance. Moreover, it is very conveniently administered, and of practically invariable strength. The disadvantage is that starch digestion cannot be determined. A number of tests, amounting in all to 73 examinations upon 34 patients, were made. Usually Ewald's breakfast was employed alternately with the albumen, and the results in both cases were remarkably similar. Austin gives a number of interesting data concerning some of these individual examinations, which we cannot repeat. It is remarkable how frequently lactic acid was present as determined by a modified Uffelmann's test; altogether 40 times in 9 cases without free HCl, in other cases when free HCl was present in the proportion of 1.8 per mille. Renin was also determined in the majority of cases. The stomach contents were diluted in various proportions, and then an equal quantity of boiled and cooled milk, and a small amount of calcium chlorid solution was added. Coagulation usually occurred in dilutions of 1 to 80 or higher, in less than a half an hour. Austin believes that lactic acid is of little value as a diagnostic symptom, for it is often present when there is a superabundance of HCl. [Our own results have been so at variance with those of the author that we feel certain there must be some serious error in technic in our work or in his. J.S.]

2.—Young has collected 78 cases of **spinal caries complicated with abscess**, and has obtained reports from the condition of the patients living at periods of from 1 to 35 years after the beginning of the disease. The condition seems to be about twice as frequent among males, 52 males and 26 females being affected. From 20 to 30 years of age, however, the males outnumber the females nearly 5 to 1. The dorsal region was the seat of disease in 43 cases, the lumbar region in 31, the sacral region in 2, and the cervical region in 1 case. Deformity was present in 30 cases, no deformity in 18 cases, medium deformity in 16 cases, and great deformity in 13 cases. Abscess formation seems to have little relation to the extent of deformity. Psoas abscess was found in 63 cases, lumbar abscess in 21, sacral abscess in 2 cases, and cervical abscess in 1. It is impossible to get reliable information concerning the duration of abscess or the date of first appearance. Pain becomes a prominent feature only when the abscess has reached a size to produce psoas contraction. Most of the patients were treated by incision, some by aspiration, and in a few cases the abscess opened spontaneously. The prognosis appears to be very slightly influenced by the treatment. The mortality is about 35%. There seems to be decided danger of general tuberculous invasion, and in both children and adults the most common cause of death seems to be gradual deterioration in the whole system. [M.B.T.]

3.—Freiberg states that the use of **celluloid** as a material for **flat-foot supports** was first suggested by Kirsch. Its advantages are lightness, absence of tendency to corrode, cleanliness and elasticity. It is less durable than steel, however. The plates may be made by taking an impression of the foot upon cardboard and from this paper pattern another is cut in sheet lead. The sheet lead pattern is then moulded to the shape of the foot. The celluloid is cut out in the proper shape and fastened to the lead pattern with clips. It is then lowered into boiling water and as soon as it has begun to soften is pressed down to the pattern and moulded into shape. The plate is then immersed in cold water for a few minutes and is then ready to apply. [M.B.T.]

4.—Brown has obtained **microorganisms from the urine** in various cases of **cystitis**, and tested them with the patient's blood, for the purpose of determining whether the **reaction of agglutination** was present. In the first case the colon-bacillus was found in the urine, and reacted within 10 minutes; in the second case the infectious organism was the proteus vulgaris; in the third, the same organism caused cystitis and pyelitis; in the fourth, the typhoid-bacillus was found and reacted positively, although the patient did not have, and apparently had not had, typhoid fever. It is possible that the infection was due to catheterization. The commonest cause of cystitis is the colon-bacillus. Among the other microorganisms are staphylococci, tubercle-bacilli, and those already mentioned. [J.S.]

Journal of the American Medical Association.

November 10, 1900. [Vol. xxxv, No. 19.]

1. Tuberculosis of the Testicle. JOHN B. MURPHY.
2. Tubercular Tumor of Orbit. HOWARD F. HANSELL.
3. Ossification of the Choroid Leads to the Identification of the Body in an Insurance Case. ROBERT L. RANDOLPH.
4. Measles and the Exanthemata. C. F. WAHRER.
5. Rötheln. HENRY KOPLIK.
6. A Clinical and Pathologic Study of the Rash of Scarlet Fever. JAY F. SCHAMBERG.
7. Some Experiments on the Relation Between Audition and the Circulation on the Blood in the Head. HAM-ILTON STILLSON.
8. Etiology and Prognosis of Adenoids. A. M. CORWIN.
9. Treatment of Lupus Vulgaris with X-Rays. J. T. KNOX.

3.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1442.

4.— " " " " " " " 1283.

5.— " " " " " " " "

6.— " " " " " " " "

7.— " " " " " " " 1296.

9.—Knox reports the case of a young woman of 20, who was affected with lupus of the nose and upper lip which had progressed so far as to produce perforation of the nasal septum. She was treated by application of x-rays for from 6 to 10 minutes every other day, placing the affected parts from 4 to 8 inches from the tube. The whole number of applications made during the treatment was 74, and improvement was apparent very soon after beginning the treatment. The unaffected parts of the face and head were shielded by means of a mask, thus preventing the possibility of producing dermatitis and loss of hair. A photograph taken since the x-ray treatment shows almost entire absence of scars, or any condition of the tissues that would indicate that the disease had ever existed. [M.B.T.]

Annals of Surgery.

August, 1900. [Vol. xxxii, No. 2.]

1. The Best Method of Collecting the Urine from the Ureters for Diagnostic Purposes. MALCOLM L. HARRIS.
2. A Critical Survey of Ureteral Implantations. J. WESLEY BOVEE.
3. The Pathology of Fracture of the Lower Extremity of the Radius. FREDERIC J. COTTON.
4. Tetanus: A Study of the Nature, Excitant Lesions, Symptomatology, and Treatment of the Disease, with a Critical Summary of the Results of Serum Therapy. ALEXIS V. MOSCHCOWITZ.
5. Malignant Diseases of the Stomach and Pylorus. WILLIAM J. MAYO.
6. Note on the Relation of the Os Magnum to Tuberculosis of the Wrist-Joint. DAVID EDWARD MUNDELL.
7. A Method of Excision of the Shoulder-Joint. JOHN FAIRBAIRN BINNIE.
8. Report of a Case of Strangulated Obturator Hernia. JOHN MUNRO ELDER.
9. Report of a Case of Irreducible Backward Dislocation of the Bones of the Leg at the Knee-Joint. LEONARD C. HALL.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1001.

2.— " " " " " " " 995.

5.— " " " " " " " 985.

6.—Mundell reports 3 cases of **tuberculosis of the wrist-joint**, the pathologic conditions in which led him to consider the os magnum the bone chiefly concerned in the development of the disease. The reasons for this are probably that the os magnum is the main bone of the wrist, the earliest to ossify and is so situated as to receive the effects of injuries from 3 metacarpal bones. It performs more movement in flexion and extension than any other bones and in these movements greater strain is thrown on it than on any other carpal bones from the numerous ligaments connected with it and resisting such movements. The cancellated structure of the os magnum is uneven, the inner portion has wider spaces and is less strong. Vibrations from traumatism affect the os magnum more than the other carpal bones, and it is probable that tubercle-bacilli from the blood or lymph would

be more prone to concentrate there. In the treatment of these cases he prefers Ollier's method. Instead of removing the carpus entire the neck of the os magnum is divided so as to permit freer access to the semilunar and scaphoid bones which with the other bones are easily removed with the assistance of a dental stump elevator. [M.B.T.]

7.—Binnie calls attention to the fact that in **excising the shoulder-joint** the principal difficulty is in the separation of the tendinous insertions into the major and minor tuberosities of the humerus. In cases of disease of the hip and ankle-joint König has overcome similar difficulties by chiseling a shell of bone from the trochanter major or malleoli. This has much to recommend it on account of its simplicity, and Binnie advises a similar operation for the shoulder-joint, the steps of which are described. [M.B.T.]

8.—Elder reports a case of **strangulated obturator hernia**, occurring in a woman of 73. Three days previous to the time when first seen she received a sudden jar by missing a step. This was followed by severe pain in the lower part of the abdomen, shooting down the right thigh of the knee. She became nauseated and vomited, the vomitus having a fecal character. There was decided abdominal distention and obstinate constipation. As a definite diagnosis as to the cause of the obstruction was impossible, an exploratory median incision was made below the umbilicus. The intestine was deeply injected, but there was no evidence of peritonitis. Collapsed small bowel was seen, which was followed down into the pelvis behind the right pubic ramus. This intestine was tightly grasped at the upper part of the obturator foramen. This distended bowel was traced to the same spot. By pulling on the ends of the bowel it was disengaged with some difficulty. The strangulated knuckle was black and occupied three-fourths of the circumference of the bowel. Hot towels were applied which restored the circulation, and the bowel was dropped back into the abdomen. No attempt was made to close the obturator opening. The abdominal cavity was filled with salt-solution and closed without drainage. Uninterrupted recovery followed. [M.B.T.]

9.—Hull reports a case of **backward dislocation** of the bones of the knee, caused by falling from a horse and alighting on the feet. Prolonged attempts were made at reduction without success, and 8 months after the injury, resection of the knee-joint was performed. [M.B.T.]

American Gynecological and Obstetrical Journal.

September, 1900. [Vol. xvii, No. 3.]

1. Reflex Neurosis from Disturbed Pelvic Mechanism. BYRON ROBINSON.
2. The Causes, Diagnosis and Non-Surgical Treatment of Pelvic Inflammation. EDWARD J. ILL.
3. Some Local Nutritive Influences in the Pelvic Disorders of Women. O. B. WILL.
4. Ventral Hernia; Report of a Case. MARIE RENNOTTE.
5. Uretero-Intestinal Anastomosis and Its Place in Pelvic Surgery. REUBEN PETERSON.

1.—Robinson holds that the testimony in favor of the production of **reflex neurosis from dislocated genitals** is ample for the gynecologist. Distorted mechanism of the pelvic structures causes genital dislocation. Dislocation of structures compromises circulation by the strangulation of vessels and thus induces malnutrition. Dislocation of structures causes trauma to nerve-trunks and nerve-periphery, causing pain and reflexes which radiate over nerve-tracts to other viscera and there disturb motion, secretion and sensation. Tension placed on a woman through dislocated genitals, by compromising circulation and by trauma of nerve-periphery, devitalizes her system and exposes her to intercurrent disease and to the great functional neuroses (neurasthenia and hysteria). Menstruation is a vascular periodic wave and belongs to the uterus and oviducts, not to the ovary; hence, menstrual neuroses are cured by removal of the menstrual organ, and not by removal of the ovary. It is an error to perform castration because the menstrual process coincides with the neurosis. In such a case, should an operation be performed, it ought to be hysterectomy and not ovariectomy; the organ which induced the neurosis should be attacked. In the diagnosis one must observe local diseases in the body which are not of sexual origin.

The sexual organs are not the only viscera capable of producing neurosis. We should be always on the alert for visceral ptosis, tuberculosis, nephritis, and appendicitis. The non-sexual disease may be coincident with sexual diseases, and both influence the neurosis and general nourishment. We should make careful examinations for diseases outside the genitals; and should not overlook heart lesions, which allow congestions; hepatic sclerosis which induces ascites; chlorosis which induces paleness, with a large glandular system, yet coexists with a well-developed panniculus adiposus, headaches, and breathlessness, anemia, etc. In the author's experience nothing has been so successful as draining the skin by salt baths, the kidneys by drinking ample fluids, and the bowels by salines, with set hour for evacuation. Drainage of the bowels, skin, and kidneys is the base of the therapeutics which will benefit the vicious sexual circle. It is rational hydrotherapy. Thus, by treatment, we are often enabled to run over one difficulty after another until the etiologic factor is reached, which is disturbed pelvic mechanism, the beginning of the vicious sexual circle. In other words, the microscope aids to diagnose tuberculosis, or mercury to diagnose syphilis. In diagnosis and treatment the gynecologists must always hold in his mental grasp every abdominal organ. [W.K.]

2.—According to Ill the causes of **inflammation of the pelvic peritoneum** are: infectious diseases and traumatism. Under the first we have to consider gonorrhea as by far the most frequent. While an infection of purely gonococcus origin is thought rarely to produce an extensive peritonitic inflammation or abscess, a mixed infection, *i. e.*, gonococcus with streptococcus or staphylococcus, will commonly produce such, and is often the cause of a fatal peritonitis. There is no doubt that the mixed infection is more frequently a so-called secondary infection by pyogenic bacteria. The gonococcus seldom, if ever, affects the cellular tissue. There is no doubt, however, that it may pass through the tissue of the tubes, probably, for instance, by way of the lymphatic channels, and infect the peritoneal covering. Among the most frequent causes of traumatism are the rupture of the fallopian tube containing a growing ovum, an extraperitoneal hematocoele, a disturbance in the circulation of an ovarian or uterine tumor by torsion or otherwise, an intraperitoneal hemorrhage not due to ectopic pregnancy, and, lastly, the leaving of large raw surfaces denuded of peritoneum after intraabdominal operations. Extensive traumatism after labor, with opening of the pelvic peritoneum and secondary infection should not be forgotten. Ill considers medical treatment only, and says our aim should be to conserve the pelvic organs of the woman so long as there is hope of a subjective cure. In treating an acute gonorrheal case, the patient should be kept quietly in bed, the bowels thoroughly emptied by a saline cathartic or one of the bitter waters. This should be repeated every second day. The diet should be a bland and liquid one so long as the temperature is above 101°. The pain is most readily controlled by an icebag placed over the hypogastrium. It is not wise to prolong the application of the icebag, as the writer has seen a slough follow its long-continued use. Nor does the patient bear it well when her temperature has fallen below 101°. The vagina should be douched with hot permanganate of potash solution (1 to 2,000 of water) several times daily. When the discharge is very copious it is sometimes wise to fill the vagina with iodoform gauze. When the fever has abated, but the pain still continues, nothing will relieve it so much as a fly-blister 1 by 2 inches square, placed directly over the pain. When the swelling in the roof of the vagina is very great with sensitiveness to the touch, apply cantharidal collodion around the cervix, covering it with dry cotton with directions to remove it in 4 hours. A very copious purulent discharge follows, which lasts 2 or 3 days and should be washed away with douches several times a day. This should be followed with daily applications of a 10% solution of ichthyol in glycerin, the tampons being applied in the evening and removed in the morning. The blisters, both external and internal, may be resumed in from 5 to 8 days. The relief they give is so great that the patient rarely objects to their use. In chronic cases we may begin by painting the roof of the vagina with the compound tincture of iodine and applying the glycerin-ichthyol tampon. During the 2 days following the removal of the tampons the patient should

be directed to take a large, hot vaginal douche night and morning, preferably in the knee-elbow position. In these cases much good has resulted, in the hands of the writer and his assistants, from the Thur Brant method of pelvic massage. It consists of treating these chronic cases, *i. e.*, the adhesions and chronic thickening of the tubes, uterus and broad ligaments, by systematic massage. [W.K.]

3.—The object of Will in this paper is, in the first place, to add a mite of personal testimony in maintaining the theory that the female **ovary furnishes a product** concerned in modifying the **tissue-forming** processes of the general system during the mid-period of life and more markedly of the tissue anabolism of the generative organs themselves; and, in the second place, to assist in formulating a course of treatment in consonance with this view and more directly and specifically efficient in correcting the constant aberrations of structure and function. [W.K.]

4.—Rennotte reports a case of **ventral hernia** which was instructive in these points: First, the resistance of catgut sutures; second, the prompt efficiency of carbolic acid in gum camphor in killing the staphylococci and inhibiting the progress of the infection; third, the good results from free injection of the fistula with normal salt-solution followed by 1% carbolic acid solution. [W.K.]

5.—The advocates of **uretero-intestinal anastomosis** claim that the urinary and digestive tracts below the pelvic brim may be united permanently in 3 ways: (1) The ureters severed from the bladder may be anastomosed with certain portions of the intestinal tract, preferably some segment of the large bowel; (2) the anastomosis may be accomplished by implanting in the intestine the vesical trigonum with its ureteral orifices; and (3) the ureter-intestinal union may be established by the formation of a permanent communication between bladder and rectum in the male, and between bladder, vagina and rectum in the female. But Peterson fails to understand how anyone can see any place whatever for the operation of bilateral ureteral implantation in human surgery, if his opinion be based upon experimental results, which may be summarized as follows: (1) The vast majority of the animals operated upon die from the operation itself, either from acute general peritonitis or an acute septic nephritis; (2) the animals surviving the operation usually die from an acute ascending pyelonephritis, or from pyemia from secondary infection; (3) in a very few instances they overcome the infection and survive, with resulting contracted kidneys; and (4) as one could expect, when a small compressible tube like the ureter is implanted in a large muscular tube like the intestine, contraction at the uretero-intestinal junction results, to be followed by dilation of the ureter and hydronephrosis. He has been able to collect 33 cases of uretero-intestinal implantation, with a primary mortality of 37%. If to these be added the cases dying later of kidney infection, the mortality would be increased to 52%—not a promising mortality for these days of aseptic surgery. [W.K.]

Münchener medicinische Wochenschrift.

August 21, 1900. [47. Jahrg., No. 34.]

1. Pneumonia After Laparotomy in the Vicinity of the Diaphragm. GEORG KILLING.
2. The Alexander-Adams' Operation in Retroflexio Uteri Mobilis. CARL PETERS.
3. The Occurrence of Potassium Sulfocyanid in Nose and Conjunctival Secretions. O. MUCK.
4. Infection from the Conjunctival Sac. GEORG MAYER.
5. The Therapeutic Application of Iodipin. SEESOUS.
6. Sugar as a Means of Strengthening Labor-pains. MAX MADLENER.
7. The Recumbent Position in the Treatment of Abnormalities in the Form, Shape, and Size of the Uterus. BECKERS.

1.—Killing says that **pneumonia** is the most dangerous of the **complications which follow operations** on the gastrointestinal canal. The causes ordinarily assigned as responsible for the development of the postoperative pneumonias are: (1) The inspiration during the narcosis of putrid secretions or contents of the stomach; (2) the lodging of emboli in the vessels of the lung; (3) the continued dorsal position while the resistive powers of the patient are at an extremely low ebb, causing a hypostatic congestion,

and (4) the ordinary infective processes causing a pneumonia in the sick just as well as in a well person. To this last class belong cases in which the inflammatory condition of the lung comes on directly after the operation without any assignable reason, the first symptoms being manifested within 24 hours. Here it is most probable that the patient was infected during the operation in some way or other. Killing says that the etiology of these cases is dependent on the admission of air to the abdominal cavity so that it strikes against the under surface of the diaphragm, allowing numerous bacteria to accumulate there and be carried by the lymphatics through the diaphragm to the lungs. This explanation is substantiated by the fact that since his operating-room has been so constructed as to provide for practically germ-proof air he has not had a single case of unexplainable pneumonia. [G.B.W.]

2.—Peters believes that the operation of shortening the round ligaments for the **reduction of the retroflexed uterus**, discovered almost simultaneously by Alexander and Adams, is an extremely valuable measure when used in suitable cases. It is only applicable when the uterus is mobile, and in no way affects the utility of the various other operations on cases where this procedure is not preferable. He reviews the literature relating to this operation and describes the method of performing it used in the Kiel clinic where he was a resident for a long time. [W.K.]

3.—Muck has been able to demonstrate the presence of **potassium sulfocyanid** in the nasal and conjunctival secretions. Its presence in the saliva has, of course, been known for a long time. He uses both the ordinary reaction with chlorid of iron and dilute hydrochloric acid, and one discovered by Solera, which is performed as follows: Chemically pure filter paper is saturated with a concentrated solution of iodic acid, dilute sulphuric acid, and starch paste. After the water has evaporated the strips are introduced into the nose, and are then colored blue if potassium sulfocyanid is present in the watery secretion. The mucus of the nose does not give the reaction. The secretion of the conjunctiva also reacts, and the author was able to prove that the potassium sulfocyanid in the nasal secretion does not come from the conjunctiva. [D.R.]

4.—A number of experiments were made to determine the possibility of **general infection** when the **conjunctival sac** is the **portal of entry**. The author employed the organisms of anthrax, plague, psittacosis, chicken cholera, mouse typhus, tetanus, diphtheria, Staphylococcus pyogenes, cholera, typhoid fever, actinomycosis, tuberculosis, glanders, and pseudotuberculosis. The result in a majority of cases was a general, fatal infection of the body of the animal through entrance of the bacteria into the circulatory stream. This occurred rapidly in anthrax, plague, chicken cholera and mouse typhus, and in glanders and psittacosis; more slowly in pseudotuberculosis; and chronically in young animals in psittacosis and glanders, and in tuberculosis. Tetanus and diphtheria were fatal by intoxication. In diphtheria and Staphylococcus pyogenes local infections were produced. Cholera, typhoid, and actinomycosis were unable to penetrate into the organism. The course taken by the bacteria is as follows: They enter the lacrimal canals and thence pass into the lacrimal sac. Here there is a transient arrest favoring multiplication of the bacteria, and from the sac they are able to penetrate into the deeper tissues. A similar arrest and penetration occur in the lacrimal duct, on account of its folds and valves. From the canal the process may extend to the nasal cavities. The bacteria in their wanderings from the lacrimal sac enter the lymph-capillaries. There was no evidence of any retrograde transportation of the bacteria along lymph-capillaries. With the lymph they passed into the lymph-glands, particularly those of the neck on the side of the inoculation. This constituted a primary lymphogenic infection of the lymph-glands. Later a secondary hematogenic infection of the glands was also produced. [D.R.]

5.—**Iodipin** is a combination of iodine and fat containing 25% of the former. It is useful in **tertiary syphilis** and other affections in which potassium iodid is generally employed, and has the advantage that it is borne when the latter is not tolerated. It can also be used subcutaneously, and as its elimination is slow, the iodine effect persists longer. Administered by the mouth, it may be given in coffee or milk. The dose is from 2 to 3 teaspoonfuls a day. [D.R.]

6.—After studying the wonderful effect of sugar upon wearied muscles, as shown in the work of Payer, Madlener conducted a series of experiments with it in obstetric cases. He found that labor-pains were much accelerated and strengthened by its use. After the beginning of labor he had always, by the patient's side, water or tea strongly sweetened, which was administered at intervals during the confinement. He believes that it is likely to be a valuable aid to the obstetrician and says it can at least do no harm. [W.K.]

7.—Beckers believes that the **recumbent position**, habitual in sleep and during illness and the **lying-in period**, is responsible for many malpositions of the uterus. He advises women to sleep directly upon the abdomen, and particularly to use this position during the puerperium, as he believes the uterus will thus much more rapidly regain its normal size and position. [W.K.]

August 28, 1900. [47. Jahrg., No. 35.]

1. Immunity. H. BUCHNER.
2. The Tonometer. GUSTAV GAERTNER.
3. Remarks Upon the Prognostic Significance of the Diazo-Reaction in Tuberculosis. F. BECKER.
4. Acute Osteomyelitis of the Atlas. EICHEL.
5. The Topography of the Stomach and the Diagnosis of Its Diseases. GEORG ROSENFELD.
6. Failure of the Dührssen Tampon in Atony of the Uterus. F. SPAETH.
7. A Further Contribution to the Origin of Skin-Emphysema After Laparotomy. KARL HEIL.
8. The Treatment of Tetanus Uteri. JACOB.
9. A Case of Gonorrheal Joint-Metastases and Skin-Metastases Dependent Upon Ophthalmia Neonatorum.
10. Traumatic Tetanus Through Stoppage of the Bowels. (Laparotomy; Recovery Without Serum-Injection.) KREY and SARAUE.
11. The Treatment of Tetanus With Antitoxin. REUTER.

1.—A brief resume concerning the present status of **immunity**, in which Buchner shows that neither the phagocytic nor the humeral theory is a sufficient explanation of the phenomena, but that both are in part correct. The protective bodies normally present (the alexins) are probably the result of secretion by the leukocytes. Specific immunity is dependent upon specific bodies characterized by their resistance to a temperature of 60° C. There is a multiplicity of names for these specific bodies. Buchner proposes a greater uniformity of nomenclature and suggests that these substances in general be called **antikörper** (antibodies), and their varieties, **antitoxins**, **antithematins**, etc. [D.R.]

2.—Further study with the **tonometer** (an instrument for measuring blood-pressure in the living body) has led Gaertner to the conclusion that the tonometric values correspond quite closely to the absolute values of the average blood-pressure, and that the variations in the readings shown by one and the same individual are indicative of corresponding variations in the actual pressure. [D.R.]

3.—The **diazo reaction** in the urine in phthisical cases has been looked upon as a bad prognostic omen. Becker has applied the test to 29 patients, and concludes that a positive reaction is not always a bad prognostic sign. The occurrence of a positive reaction in conditions in which it is usually absent is indicative of an infectious complication. In 2 cases of the author's there was chickenpox in one and a staphylococcus in the other. [D.R.]

4.—**Osteomyelitis of the vertebral column** is rare, especially that involving the **atlas**. Four cases of disease of the latter have been reported, to which the author now adds one of his own. In the other 4 there were large collections of pus in the neighborhood of the vertebrae, which had destroyed the musculature and had penetrated through the tissues up to the skin. A collection of pus in the posterior wall of the pharynx, which theoretically is possible and is common in tuberculosis of the vertebrae, was not present. In 3 cases the pus was evacuated, but in none was the bony focus of disease found. Bacteriologic examination was made only in the author's case, and yielded the *Staphylococcus aureus*. The **portal of entry** for the bacteria in osteomyelitis of the vertebral column is but seldom found. In 6 cases there was a trauma. In 1, a case of osteomyelitis of the base of the skull, a furuncle on the lower lip seemed to

be the infective atrium. The clinical features are twofold. In one group of cases the disease sets in under the picture of a **grave general infection**, with high fever, delirium, and hebetude. A diagnosis is scarcely possible. Such cases have been diagnosed as cerebrospinal meningitis, typhoid fever, or cryptogenic sepsis. Even when spinal symptoms are present, they may be misleading. Thus, there have been paraplegia and paralysis of the bladder and rectum, which are suggestive of Landry's palsy. When the pus passes along the anterior surface of the spinal column, it may lead to a posterior mediastinitis, and finally to a psoas abscess. In its passage along the anterior surface of the spine the pus may penetrate into the chest or abdominal cavity. In other cases the disease begins with **local symptoms** chiefly. This happened in the author's patient. The abscesses in these cases have often produced difficulty in swallowing and breathing, and have led to inspection and palpation of the pharynx, although in osteomyelitis of the atlas the pus seems, as a rule, to burrow toward the back of the neck rather than toward the throat. The author's patient was a soldier of 27, whose first complaint was pain in the neck, which was intensified by sitting up or going down stairs. A few days later the neck became stiff and swallowing was somewhat difficult. There was mild fever; the head was slightly flexed and turned toward the right, and active movement of it was impossible. At the right side of the neck there was a swelling, beginning a little below the mastoid process and extending halfway down. It did not extend beyond the median line behind, and reached forward to the posterior border of the sternocleidomastoid muscle. Under chloroform anesthesia the abscess was opened and was found to be situated beneath the sternocleidomastoid and trapezius muscles. The right side of the arch of the atlas was destroyed, and 2 sequestra were removed. Culturally the pus contained *Staphylococcus aureus*. The patient made a complete recovery. Another case is reported in which there was **osteomyelitis of the base of the skull**. In this condition the abscess is usually located at the lowest part of the skull, directly beneath the superior occipital line. The patient was a sergeant, 26 years old, who had a boil on the right lower lip at the beginning of December. At the end of December he complained of tearing pains over the right eye, radiating to the ear, and worse at night. They gradually became more intense and extended more widely. Fever developed. There was no paralysis. Movement of the head was somewhat limited, and there was a doughy swelling beneath the superior occipital line. Operation revealed an abscess, and at its bottom the roughened bone could be felt. After the discharge of some sequestra, the patient recovered. The first symptom in this patient was pain in the distribution of the right supraorbital nerve, which was treated as neuralgia of obscure origin. This pain was probably transmitted by way of the occipitalis major and minor and auriculotemporal nerves. The **diagnosis of osteomyelitis of the atlas** can be made if, with or without preceding neuralgia, a limitation in movement of the cervical vertebrae develops, with localized pain. Whether the disease is osteomyelitis or tuberculosis is not easily determined. Radical operation is discountenanced by von Bergmann in tuberculous disease, but Eichel advises an early operation, so as to prevent involvement of the spinal cord and its membranes. In cases in which the symptoms suggest osteomyelitis he would operate, even in the absence of fluctuation, so as to remove the danger of extension to the spinal canal. If tuberculous lesions were then found, he would tampon the wound and depend upon fixation and rest in bed. [D.R.]

5.—Rosenfeld believes that the **normal position of the stomach** in human beings is **vertical**. In 167 cases he found only 12 in which the position was horizontal. [D.R.]

6.—Spaeth questions the correctness of the dictum of Dührssen, that after the introduction of an iodoform-gauze tampon the uterus will contract satisfactorily. In his own experience he has known cases in which, after the use of such a tampon, the hemorrhage has recurred and the relaxed condition continued, making other remedies necessary. Other authors have reported cases in which infection has resulted from the use of tampons to control hemorrhage. Hence, Spaeth concludes that one is not justified in considering the iodoform-gauze tampon as an unfailing remedy for

atonic postpartum hemorrhage. Moreover, if it appear effective for a moment, the patient requires a longer observation, since a return of the hemorrhage is not entirely excluded. [W.K.]

7.—Heil reports a case of **emphysema** of the skin following the removal of the uterus and adnexa. The emphysema was first noticed on the fifth day after the operation and was then very extensive, spreading in both directions from the line of incision. The healing of the wound was not disturbed by the emphysematous condition, being firmly united in 14 days. The emphysema was gradually absorbed without any special trouble. The air supposedly gained entrance to the tissues through the wound and this because there was not an absolute approximation of the different layers of the abdominal wall. [G.B.W.]

8.—A case of transverse presentation is reported by Jacob, who, after version, delivered the feet and limbs, when spasmodic contractions of the uterus prevented further progress. As circumstances made a complete bath impossible, hot, wet clothes were applied to the uterus for 1½ hours, when the tetanus disappeared and delivery was completed. The retained placenta was removed manually; vigorous massage and a drawing downward of the cervix with Muzeux forceps produced proper contractions of the relaxed uterus and checked the hemorrhage. Jacob has nowhere seen mention of the application of hot, wet cloths as a remedy for tetanus and thinks it worthy of trial. [W.K.]

9.—The joint complications in this case of **ophthalmia neonatorum** began as the eye was getting better. Both knees were affected, but the right one recovered without suppurating. The left knee, however, did suppurate and was operated on. The joint capsule was thickened and the synovial membrane velvety and thrown into folds over the joint cartilages. The joint was irrigated with lysol and normal salt solution and the patient made a good recovery, though with a slightly stiff knee. [G.B.W.]

11.—In a case of **tetanus** with an incubation period of 16 days, **antitoxic** treatment was of **no avail**. [D.R.]

Deutsche medicinische Wochenschrift.

August 16, 1900. [26. Jahrg., No. 33.]

1. A Group of Cases with Disease of the Upper-Air Passages, belonging together Clinically and Etiologically. ERNEST NEISSER and KAHNERT.
2. Symptomatology and Diagnosis of Membranous Colitis. I. BOAS.
3. A Particular Symptom-form of Carcinoma of the Stomach, together with a Discussion of Atony of the Esophagus. R. SCHÜTZ.
4. Does Alcohol Act as a Food or as a Poison? KASSOWITZ.

1.—Five cases are reported in which the following facts were observed: All had **chronic trouble with the upper air-passages** which had lasted for years, always most severe in winter and showing marked summer remissions. They all showed atrophy of the mucous membrane of the nasopharynx, the pharynx, larynx, and even of the trachea and to some extent of the nose. The follicles were swollen; there was excessive secretion of mucus, but no formation of scars or adhesions. There was therefore no evidence of rhinoscleroma and the organism of this disease was absent. The cases had the characteristics of ozena, but syphilis and bone deformities were absent and Abel's bacillus could not be found. Bacilli which had the characteristics of the diphtheria bacillus were present in each case, however; they were virulent in only 2 instances, but the blood-serum of the other 3 patients was found to contain so much antitoxin as to protect animals against large doses of diphtheria toxin. The bacilli also showed agglutination reaction with the serum of a goat infected with diphtheria. There was no formation of pseudomembrane and no clinical appearance of diphtheria, but it seemed hardly possible that the process was due to the diphtheria bacillus. Attempts to increase the immunity of the subjects by giving diphtheria toxins could be tried in but one case. The injections caused pain and local infiltration, but improvement ensued. This was just at the beginning of warm weather, however, and the improvement may have been the usual summer remission. [D.L.E.]

2.—Boas defines **membranous colitis** as a peculiar

catarrhal affection of the colon accompanied by formation of mucous casts and always associated with some actual disease. Mucous colic, on the other hand, is characterized by colicky attacks, passage of mucous casts and *absence* of local disease. The latter is much the rarer and can be diagnosed only when mucus is regularly absent from the stools in the interval and other signs of organic disease fail. An affection which he characterizes artificial membranous colitis is the passage of mucous casts in cases of ordinary colitis when local applications of astringents are made. Boas has convinced himself that the cast-formation is often due to the astringent and is not spontaneous, and he thinks that it may often be the result of simple enemata or of those containing drugs other than astringents. In discussing symptomatology he states that severe obstipation is always present. Colic may be absent in membranous colitis. Status neurosis is not an essential characteristic disease, and is found in the entire absence of cast-formation in other cases of colitis. Disturbance of nutrition is always present and is important, both as a cause and a result of the disease. In the diagnosis it is important to determine whether the disease is primary or secondary to some other bowel trouble, such as appendicitis, carcinoma, etc. If casts are known to be present the condition itself is readily recognized, but if casts are not known to have been passed, all cases of absence in intestinal disease should be subjected to high colon washings, when casts will usually appear if it be membranous colitis. It is always very important not to overlook grave organic disease; membranous colitis is often only a striking symptom of appendicitis, carcinoma, or diseases of the female internal genitalia. Mucous colic should be diagnosed only when all signs of organic disease are absent in the interval between the attacks of colic. [D.L.E.]

3.—The case was that of an old woman who had difficulty in swallowing, and severe emaciation. There was, however, no regurgitation, and an ordinary stomach-tube passed through the esophagus readily. A diagnosis of **cancer** of the pyloric portion of the **stomach** was then made, but there was no dilation of the stomach and the whole condition was somewhat uncertain. The autopsy showed a medullary carcinoma of the stomach which involved the whole organ and had transformed it into a straight tube which, owing to adhesions, had assumed a vertical position. The vertical position and motor weakness of the stomach explained the obstruction to passage of food. There was also weakness and slight dilation of the lower end of the esophagus. The absence of regurgitation and, upon sounding, of evidence of decided stagnation in the esophagus, together with severe signs of stenosis, were the striking features in this case and in one reported by Rosenheim, and such symptoms should lead to a suspicion of the condition present in the case. If a diagnosis could be made it might be possible to introduce a tube into the bowel through the pylorus and give the patient nourishment in this way. [D.L.E.]

August 23, 1900. [26. Jahrg., No. 34.]

1. Fifth Report From the Malarial Expedition. R. KOCH.
2. The Doubtful Value of Antitussin as a Remedy Against Whooping-cough. PAUL KRAUSE.
3. The Treatment of Aneurysm with Electrolysis by Means of an Inserted Wire. ALBERT BERNHEIM.
4. What Part Do the Tubes Play in the Therapeutic Application of the Röntgen-rays? STRÄTER.
5. Does Alcohol Act as a Food or a Poison? KASSOWITZ.

1.—Koch reports that in Stephansort in the spring months of this year, although the conditions of the weather were extremely favorable for the **development of malaria**, there were but rare instances of recurrence of malaria. In the month of May but 3 cases were admitted to the hospital; in the first half of June but one case; all were recurrences of quartan fever. This is an exceedingly striking reduction of cases, and he attributes it to the prophylactic use of quinin, instituted according to his suggestion with the idea of preventing recurrence of malaria, and of thus preventing the inoculation of new individuals by means of these old cases. Any general attempt to kill mosquitos he considers will prove impossible. The use of mosquito nets is only a partial aid in the prevention of the disease, and he thinks that only the prophylactic use of quinin will prove sufficient to stamp out

the disease. He intends to continue his investigations on the influence of quinin in other regions. [D.L.E.]

2.—Krause has carried out an investigation on the **value of antitussin in whooping-cough**, giving it to 15 cases and comparing the results with 3 other series of cases, each consisting of 10 children, the one series treated by bromoform, the second by quinin, and in the third no medication was used. The records of the cases during this time showed the number of the daily paroxysms, and included notes of hemorrhage from the nose, vomiting, and other symptoms. There was no evidence that antitussin had any special effect. These cases were not picked cases, hence the test seemed a fair one. Krause also states that since antitussin is a fluorin preparation it is likely to cause unpleasant collateral effects, chiefly on the mucous membranes and skin, since it is somewhat caustic in its effects. Eight of the 17 children treated with it showed obstinate ulceration of the places upon which the antitussin was locally applied. He considers that it should not be used. [D.L.E.]

3.—Bernheim says that **aneurysms** may be sometimes **cured by electrolysis** when other methods have failed. The method consists in passing a quantity of fine wire through an insulated canula into the aneurysm and connecting this wire with the anodal pole of a galvanic battery. He says that only about a dozen cases have thus far been reported which were treated in this manner, and he therefore gives the history of another case. The patient was a man of 45 who had an aneurysm projecting on the right of his sternum. At the first operation 27 meters of a fine gold wire were introduced into the aneurysm and a current of from 10 to 80 milliamperes kept up for one hour. About 2½ months later a second operation was undertaken. At this time the sac was notably shrunken and the needle had to be introduced to more than twice as far as at the first introduction in order to draw blood. A month later, a number of exploratory punctures were made and only once was the puncture followed by the flowing of blood. Electrolysis was again performed. Four months after this the patient was seen and the aneurysm seemed cured, the patient being able to return to his work as a traveling agent. [G.B.W.]

4.—Sträter calls those **tubes** whose **rays** are chiefly absorbed by the skin or muscles, "**soft**." The tubes whose rays chiefly pass through the skin and muscles he calls "**hard**." Besides considering the character of the inductor, the strength of the current, the duration of the exposure, the rapidity of the interruptions, and the distance the tube is removed from the tissue, he thinks that one should consider whether the tubes are "hard" or "soft" in choosing them for special purposes. If superficial conditions, such as skin affections, are to be treated, he thinks that soft tubes should be used; if deeper situated diseases, the harder tubes should be used. [D.L.E.]

5.—Kassowitz, after reviewing the metabolism work that has been done on the **influence of alcohol**, decides that alcohol can in no sense be considered a nutriment, apparently chiefly basing his opinion upon the belief that a poison is always a poison, and it does not make any difference whether its good effects are large or small. It is still a poison, and must always be considered a poison. [D.L.E.]

Centralblatt für Gynäkologie.

September 15, 1900. [No. 37.]

1. Remarks Upon the Tübingen Experiments in Disinfection of Hands. F. AHLFELD.
2. A Case of Colossal Fibromyoma of Fundus Uteri. A. PINNA-PINTOR.
3. Upon Contracted and Relaxed Condition of the Uterus in the First Months of Pregnancy. OSCAR BEUTTNER.

1.—Ahlfeld compares the value of 46% solution of spiritus saponis (tincture of green soap) and a 96% solution of alcohol for the **disinfection of the hands** with a preference for the latter. He thinks the former can not disinfect at all without a previous washing with hot water and soap. The addition of sapo kalinus to the alcohol has no effect worth mentioning, as he had proved by adding 5, 10, and 15% of it to the 96% alcohol. The disinfecting power was exclusively in the alcohol. [W.K.]

2.—Pinna-Pintor reports the successful **removal**, from a woman of 43, of a **fibromyoma** weighing 12 kg. and

measuring in its vertical diameter 120 cm. and 100 cm. in the transverse. The case was worthy of notice in that notwithstanding the extraordinary size of the tumor, the uterus had suffered no change in size or consistency, there had been no hemorrhage, and all the pains were caused by the pressure. The recovery was uneventful. [W.K.]

3.—Beuttner gives the history of 2 cases to confirm his theory of the alternate **relaxation and contraction of the uterus** in the first 2 or 3 months of pregnancy. He claims that after a relaxed or softened condition during the first month, in the second month there is a period when the uterus seems smaller and of firm texture, simulating a nonpregnant uterus, which subsequently again relaxes and enlarges. [W.K.]

September 22, 1900. [No. 38.]

1. Instrument for the Self-Insertion of Vaginal Tampons. O. WILLE.
2. Regarding Martin's Treatment of the Umbilical Cord. BALLIN.

1.—Wille exhibits a picture of an instrument enabling a patient herself to apply tampons when advised by the physician. It somewhat resembles a cylindric speculum and an obturator. [W.K.]

Neurologisches Centralblatt.

October 1, 1900. [19. Jahrg., No. 19.]

1. Sensory Interference. ADAMKIEWICZ.
2. The Sound-Conduction of the Cranial Bones in Diseases of the Brain and its Membranes. WANNER and GUDDEN.
3. The Clinical Position of the so-called Erythrophobia. FRIEDLANDER.

1.—Adamkiewicz insists that we should discriminate sharply between subjective and objective **disturbances of sensation**; the former are the result of some external stimulant, the latter, of the diseased condition of the brain. The objective disturbances, therefore, are due to some pathologic condition of the conducting apparatus; the subjective, to some disease of the central nervous system; and comprise practically the phenomena known by the term "paresthesia." When paresthesias exist they frequently interfere with the perception of normal objective sensation, because they are probably localized in the spinal cord and interrupt at this point the conduction of irritant stimuli. [J.S.]

2.—The method of Bezold for **testing hearing** by means of a series of tuning-forks and whistles, giving an almost continuous series of notes, when applied clinically, frequently enables a distinction to be made between organic, or purely functional conditions, such, for example, as cerebral lues, epilepsy, etc., and traumatic neurosis. The series extends from C₂ to the third C of the treble, and the number of vibrations varies from 16 to 50,000. Each ear is tested for whispering speech, for the lowest perceptible note, and for the duration of the perception by bone-conduction. Comparison is then made between air and bone-conduction, the upper perceptible note is determined, and finally an investigation is made in order to show whether by bone-conduction the sound is always heard more distinctly in one ear than the other. If the disease is in the middle ear whisper-speech is diminished, the perception for bone-conduction increased, and the sound is heard more distinctly on the tested side. If in the internal ear, the duration of the perception for bone-conduction is decreased or perhaps completely abolished, the upper note is not so distinctly heard, and there may be imperfections in the scale. In many cases of insanity that the authors examined they were able to determine a considerable reduction of bone-conduction. In a series of normal cases taken for comparison, it was found that the upper perceptible note equaled from 46,000 to 50,000; and that **air-conduction** persisted longer than **bone-conduction**; variations in duration of bone-conduction of 2 or 3 seconds, however, lay within normal limits. They give the results of the examination of 3 cases, one of cerebral hemiplegia, and 2 of chronic alcoholism; one of the latter also suffered from cerebral tumor. [J.S.]

3.—This article is devoted to the abstracts of 23 cases of **erythrophobia**, collected from the literature. It is still unfinished. [J.S.]

Practical Therapeutics.

Under the charge of

A. A. STEVENS, A.M., M.D.

Heroin as an Analgesic.—Brown and Tompkins (*Therapeutic Gazette*, August 15, 1900) report 50 cases, in which they employed heroin as an analgesic, or a hypnotic. In 34 cases, it was used for its analgesic effect, and 16 for its hypnotic effect. In all but 7 cases, sleep was induced, and pain was relieved. The action of the drug took place in 15 minutes from the time of administration in 25 cases; in 20 minutes in 18 cases; in the other 7 cases no effect was produced. The dose in 34 cases was $\frac{1}{2}$ grain of the hydrochlorate; in 16 cases $\frac{1}{4}$ grain was given. In 30 cases, the duration of the action of the drug was 4 hours, in 13 cases from 6 to 8 hours, and in 7 cases no appreciable effect was noted. Thirty-one administrations of the drug were given by hypodermic injection, the remaining 19 by the mouth. Vomiting was absent in all but 4 cases, and, as the administrations were made before the patients had fully recovered from the effects of ether, it would be difficult to say which was the cause of the vomiting. Contraction of the pupils and subsequent constipation were absent in all cases. We did not find any idiosyncrasy for the drug, such as has been reported by other observers. The authors conclude that heroin is a safe analgesic, one which can be repeated if necessary without producing habit, or doing harm in any way.

Pastils for Throat Affections.—According to *The Laryngoscope*, the following pastil, when dissolved upon the back of the tongue, 20 minutes before using the voice, is useful in clearing the voice when hoarse or husky:

R.—Benzoic acid..... $\frac{1}{2}$ grain.
Boric acid..... 1 grain.
Coca..... $1\frac{1}{2}$ grains.
Black currant paste..... q. s.

The following pastil, containing guaiac, is highly recommended in acute tonsillitis and acute pharyngitis:

R.—Resin of guaiac..... 2 grains.
Morphin bimeconate..... $\frac{1}{100}$ grains.
Tincture of aconite..... 2 minims.
Oil of cinnamon..... $\frac{1}{4}$ minim.
Powdered cinnamon..... 1 grain.
Black currant paste..... q. s.

Röntgen Rays in Painful Affections.—Stembo (*Therapie der Gegenwart*, June, 1900) reports the results of a series of experiments undertaken to determine the analgesic effect of the Röntgen rays. The rapidity of the interruptions was about 1500 a minute, the duration of the application was from 3 to 10 minutes, and the treatment was applied usually on alternate days. Relief usually follows after three applications; if no results are obtained after ten applications, the treatment should be discontinued. Only the cathodal rays are effective, and since the anodal rays exert little or no influence, the author is of the opinion that the good results cannot be attributed solely to suggestion. Twenty-eight cases are reported, including all the ordinary forms of neuralgia, and of these 21, or 75%, were promptly relieved. When the applications are to be made to the face the author directs that unaffected parts should be protected from the rays by a thin piece of tinfoil.

Dilation of the Heart.—Broadbent (*Heart Disease*, 1900), after alluding to the value of mercurial purgatives and of local or general bloodletting, writes as follows concerning the use of cardiac stimulants: "The heart being relieved of work may be urged to more vigorous contraction by digitalis, strophanthus, spartein, squills, caffein, convallaria, apocyanum, the special heart tonics, with which strychnin may usually be combined with advantage. In a case of extreme suffering, digitalis may be given with ammonia, ether and nuxvomica; in a more chronic stage, with iron, strychnin, and perhaps nitric or hydrochloric acid. Sometimes an effect can be obtained by giving citrate of caffein in a pill, at the same time with digitalis in a mixture. When singly neither seems to be efficacious. Squills, again, may be given with digitalis, as in the well-known pill with mercury, or in

some liquid combination. Next to digitalis stands strophanthus, which is a most valuable alternative when digitalis seems to produce sickness, as is sometimes the case, or when it fails to exercise a favorable influence on the heart. Sulfate of spartein I have seen to be of great service when digitalis and strophanthus appeared to have exhausted their influence. Of convallaria I have little to say. Apocyanum has in one or two cases seemed to carry off dropsy in a remarkable way, but one patient died suddenly when apparently just well."

Acute Bright's Disease.—J. Mitchell Bruce (*Treatment in Practical Medicine*, 1900) summarizes the treatment of this condition as follows: Rest in bed, in a room at not less than 60° F.; flannel garments, blankets, no sheets; careful nursing. Warm baths; never cold. If lumbar pain, free hematuria and scanty urine; a hot-water bag to loins, or dry cup. *Diet*: Milk only, or milk and water. *Medicine*: A regular morning purgative:

R.—Potassium bitartrate..... 2 drams.
Sodium tartrate..... 10 grains.
Tincture of bitter orange-peel..... 15 minims.
Sirup of orange..... 30 minims.
Distilled water to make 1 ounce.

A saline diuretic and diaphoretic mixture:

R.—Potassium acetate..... 20 grains.
Potassium bicarbonate..... 10 grains.
Solution of ammonium acetate..... 2 drams.
Tincture of lemon..... 10 minims.
Sirup..... 30 minims.
Water to make 1 ounce.

Every 6 hours.

If no complications occur, continue the general treatment and diet, but presently begin to modify them in detail. In the more severe cases: Vapor or hot-air baths. If cases do well, allow in addition to milk in different forms farinaceous foods; then, in succession, light vegetables, subacid fruits, fish, fowl or game, fat bacon—watching the urine, the pulse, and general strength. Abundance of distilled water or Vichy, or imperial drink with the solid meals.

R.—Potassium bitartrate..... 5 drams.
Sirup..... a sufficient quantity.
Boiling water..... 1 pint.

To be drunk *ad lib.* No stimulants. Very gradual cautious return to sitting up and movement. *Medicines*: A mild, unstimulating, hematuric and diuretic mixture:

R.—Iron and ammonium citrate..... 5 grains.
Potassium citrate..... 15 grains.
Fluid extract of squill..... 1 minim.
Sweet spirit of niter..... 30 minims.
Sirup of orange..... 30 minims.
Distilled water to make 1 ounce.

Three times a day after meals. A regular morning purgative.

The Treatment of Epilepsy.—Fleury (*Journal de Médecine*, May 10, 1900, and *British Medical Journal*, August 4, 1900), who has made a careful study of the treatment of epilepsy, strongly believes in the autotoxic nature of this neurosis, and therefore considers that diet forms one of the most important elements in the treatment of epilepsy, and should be combined with methods tending to free the gastrointestinal tract from toxic material. Fleury admits that some cases of epileptic seizure seem to be directly due to lesions, meningeal and otherwise, of the central nervous system, and such accordingly are very difficult to treat, but many others, and by far the greatest number, show no cerebral lesion other than possibly some inherent excitability, but in whom disorders of circulation, be they due to auto-intoxication or reflex irritation, are the cause of the seizure. These seizures may vary in very many respects, under the influence of diet, suppression of alcohol, etc. Patients so affected must have their diet carefully regulated and all the surroundings modified, and after this bromids may be administered. These latter become more efficacious when patients have been properly prepared for their exhibition. The writer points out the extreme frequency of gastrointestinal disorders (possibly dilation of the stomach), atony of the intestine, and constipation. Indicanuria is also

a frequent feature. Such patients are put on dry toast, boiled eggs with ham, light fish, such as sole, whiting, veal, chicken, beef, and mutton in small quantities for the first midday meal, and an extremely reduced quantity at night, the last meal being preferably vegetarian. Dry cakes, biscuits, one or two glasses of water, especially mineral or hot water, should constitute the only beverage, alcohol being contraindicated. Euonymin, cascara, and similar drugs should be freely administered, while copious enemata should be given daily. Should there be any extreme dilation of the stomach this organ should be washed out. Under such conditions of diet the bromids, especially the bromid of soda, will render much service. Chloral has also been found of much use. The administration of bromids should be relegated to the time of the seizures according as they are nocturnal or diurnal. In the case of daytime fits bromid should be administered before each meal. Massage, cold douching, brine baths, and mountain air are all more or less of great importance. The injection of an artificial serum, consisting of 1% of phosphate of sodium, sulfate of sodium, chlorid of sodium, and carbonic acid, is useful. Eight to 10 grams of this may be administered daily by hypodermic means. According to the writer, some weeks of such treatment should stop any tendency to epileptic seizure.

Orthoform.—Sprague (*The American Therapist*, September, 1900) mentions some conditions in which he has found orthoform useful. In carious teeth with exposed nerve-endings a piece of cotton dipped into a saturated solution of orthoform and alcohol, packed not too tightly, will stop the toothache in 3 or 4 minutes, and will hold its anesthetic effect for several days if packing is not removed. In hemorrhoids it is most valuable in 10% quantities combined with chrysarobin, belladonna, iodoform and lanolin, as an ointment for external, or cocoa butter in place of lanolin as suppositories for internal (rectal) use. In burns of the first degree, 10% orthoform with lanolin containing 5% ichthyol is the best remedy the author has ever used, and in burns of the second and third degree orthoform and boric acid, equal parts, or orthoform alone, is all that is necessary. In all minor operations under cocaine-anesthesia we always have an intense burning in the incisions for from one to four hours afterward, but by dusting orthoform into the stitches we gain complete anesthesia of the part until well. In the dermatitis of rhus poisoning the author has found a combination of orthoform, dermatol and starch highly efficacious.

Cacodylate of Iron.—Gilbert and Lereboullet (*Journal des Praticiens*, September 1, 1900) conclude that cacodylate of iron is very soluble; that it may be readily administered either hypodermically or by the mouth; that its toxicity is very slight, and that it may be employed with advantage in all cases in which it is desirable to increase not only the number of red blood-cells, but also the amount of hemoglobin. It is especially indicated in chlorosis, and in the chloroanemia of tuberculosis. The drug is not irritating to the kidney, and so it may be employed in the anemia of nephritis. In 5 cases of nephritis in which cacodylate of iron was employed, there was, in addition to the general improvement, a marked reduction in the quantity of albumin contained in the urine. The dose to be employed hypodermically is $\frac{1}{2}$ to $\frac{3}{4}$ of a grain daily, by the mouth, 1 to 2 grains or more a day.

Protargol.—Stephenson (*The Therapist*, May 15, 1900) states that he has tried protargol in several kinds of ophthalmia due to gonococci, Koch-Weeks bacilli, diplobacilli, Klebs Löffler bacilli, and in trachoma, acute and chronic. In gonococcal ophthalmia, mainly in newly-born children, he has experimented with solutions ranging in strength from 5 to 50%. The eye was kept clean by the frequent use of a weak antiseptic solution, and the exposed conjunctiva freely brushed once a day with a solution of protargol. For several months he has employed exclusively the 50% solution, twice daily in severe cases. He believes that protargol yields better results in the management of these cases than any of the other silver salts or compounds, including the nitrate. Its application is painless, and, so far as he knows, never gives rise to conjunctival eschars. It may be employed even when the cornea is ulcerated, and, indeed, the existence of such a complication furnishes an additional reason for pushing the remedy. He has not found, what some have claimed, that there is a speedy disappearance of the gonococci from the

secretions under this or any other treatment. The persistence of those organisms, practically as long as there is a trace of discharge, must be a fact familiar to all who have made bacteriologic investigations. In acute contagious ophthalmia (Koch-Weeks bacilli) protargol (20% solution) was not so efficient as a 2% solution of lunar caustic or a 10% solution of largin. In diplobacillary ophthalmia protargol in the author's hands gave no satisfactory results. In conjunctival diphtheria, protargol was used in conjunction with antitoxin with apparent success. No tangible results were obtained in chronic trachoma. In acute trachoma infinitely better results were obtained with both silver nitrate and largin. Protargol is an excellent remedy for use in catarrhal inflammations of the nasal sac—of course, after slitting up the canaliculus and probing the nasal duct.

Petrosulfol.—Ehrmann (*Wiener klinische Rundschau*, No. 18, 1900) states that petrosulfol in a sulphur compound similar to ichthyol in its physical and chemical properties. While he found the drug valuable as a local application in dry eczemas, the best results were obtained in eczemas associated with scales (eczema keratoides); excellent results were also obtained in cases of sycosis and pustular eczema. The remedy was employed in the form of an ointment, or in a paste like the following:

R.—Petrosulfol 6 parts.
Lanolin 20 parts.
Vaselin 20 parts.
Zinc oxid, starch, or talc..... 10 parts.

Occasionally it may be necessary to make the paste not quite so stiff, in such a case only half of the zinc oxid or starch may be used. In sweaty hands and feet the author found 5% solutions of petrosulfol alone, or in combination with salicylic acid very efficient. As a dusting powder in erythema the author recommends:

R.—Petrosulfol 5 parts.
Venetian talc..... 50 parts.
Starch 100 parts.

or,

R.—Petrosulfol 6 parts.
Venetian talc..... 60 parts.
Magnesium carbonate 40 parts.

The Treatment of Facial Paralysis.—Short (*Birmingham Medical Review*, April, 1900) states that a blister behind the ear often renders great service in the early stage of the affection. When blisters are inadvisable, stimulating liniments may be rubbed in over the mastoid process. As in other forms of neuritis potassium iodid (5 grains thrice daily) is usually prescribed, but the author believes that it is generally unnecessary. At the end of two weeks strychnin is given and continued until the muscular contraction is almost as good on the affected side as on the sound side, and is then stopped. Galvanism, however, is the most valuable treatment, and this should be employed early. According to the author, the third day of the paralysis is not too soon, and the weakest current that will cause contraction of the muscles should be used. Prognosis based upon the presence or absence of the reactions of degeneration is not always to be depended upon, for in one case they were well marked on the fifth day, and the patient was quite well within a month. Faradism is not absolutely necessary, and when the nerves respond less readily to it than galvanism it should be avoided. Later, however, when reaction to faradism is normal, but voluntary action of the muscles is weak, a combination of the two currents will often hasten recovery. In chronic forms, especially when little voluntary power has returned, the author recommends the use of a "face crutch." This consists of a small silver hook placed in the corner of the mouth, and attached by means of an elastic loop to the ear of the same side. Every movement of the muscles of the lips and cheeks alters the tension of the elastic pull on the hook. The pull is in direct antagonism to the action of the orbicularis, so that the work of that muscle is increased. The tension of the elastic should be such that the pull on the corner of the mouth is sufficient to widen the aperture about one-quarter of an inch. The apparatus should not be worn more than 10 minutes at first, and never for more than an hour at a time. If a feeling of cramp in the cheek develops the hook should be removed and the muscles rested. In addition to this artificial exercise of the muscles massage should be employed.

Original Articles.

THE ETIOLOGY OF YELLOW FEVER.

By EUGENE WASDIN, M.D.,

Surgeon M. H. S., Buffalo, N. Y.

SINCE the publication of the memoirs of Giuseppe Sanarelli in June, 1897, upon his studies in yellow fever, the medical profession has been intensely interested in the subject. As it is now well known, Sanarelli based his claim to the discovery of the cause of the disease upon inadequate experimental evidence, his *Bacillus icteroides* having been shown to possess only pathogenic powers when artificially inoculated into animals. However, prior to these memoirs of Sanarelli there is nothing written which throws the slightest light upon either the cause of the disease, or its natural and clinical phenomena. The report of the Commission of Medical Officers of the Marine-Hospital Service upon this subject, made in July, 1899, sustained the claim of Sanarelli, and in addition offered evidence in proof of the specificity of *Bacillus icteroides*, and an explanation of the natural and clinical phenomena of the disease. Since that report has been published there have appeared a number of contributions upon this subject in the medical, and unfortunately in the lay, press, many of which have been condemnatory of the claim of Sanarelli of having discovered the germ, and of the work of that Commission in sustaining him, and in the elucidation of the disease. Of these the one contributed by Dr. Charles Smart, U. S. A., to THE PHILADELPHIA MEDICAL JOURNAL of the 20th, and that read by Drs. Reed, Carroll, and Lazear at the recent meeting of the American Public Health Association, and published in the same journal of October 27, will alone receive attention.

In his article Dr. Smart introduces in condemnation of the claim made by us for *Bacillus icteroides*, the fact that Agramonte had isolated this bacillus from the bodies of three persons dead of some disease other than yellow fever. I will only ask attention, in reference to these cases, to an article, which utterly refutes them, by my laboratory associate, Dr. Francesco E. Menocal, U. S. M. H. S., published in *Toma 10, Entrego*, of the *Archivos de la Sociedad de Estudios Clinicos de la Habana*. Dr. Smart also introduces entire a letter written by Lutz, of San Paulo, Brazil, in which *Bacillus icteroides* is condemned because of the results obtained from the antiserum prepared from it. Lutz recognizes *Bacillus icteroides*, since he has isolated it from 50% of his cases, but denounces it because its antiserum is found to be neither antitoxic nor germicidal *in vitro*; hence he contends that it is *inert*.

Sanarelli and ourselves recognize fully these facts, but we cannot accept the contention. The same facts are recognized in regard to the famous Roux serum antipesteuse. It is *not* antitoxic, nor is it germicidal *in vitro*. Yet it is equally well known that the serum antipesteuse, when introduced into the circulation of animals, in which *Bacillus pestis* is present with impunity among the phagocytes, induces such changes in the cells of *Bacillus pestis*, that the phagocytes can now engulf them and bear them away. This force not present in the blood *before* the injection of the serum is *at once* observed *after* its use. The pest organism is not *killed* by this influence—far from it—but it is *inhibited*, and the leukocytes can then act upon it.

This fact is evident from the experience of Calmette

and Salembini, who found that in certain cases of peste, which they term "secondary infection" of the lungs, a theory which I have shown to be erroneous, the patients die in spite of the copious use of the serum antipesteuse, because its *inhibitive influence, exercised* so clearly upon *Bacillus pestis in the blood-current*, is not so powerful when brought to bear upon the concentrated *primary colony* of the germ in the *tissues of the lung*. In other words *protection after infection* does not depend upon the *immediate death* of the invading organism, but upon the exercise of the *inhibitive* power of the serum, after which the phagocytes do the rest. The deleterious influence of any organism depends upon the development of its inherent qualities by its environment. In natural immunity the quality of specificity is not developed because of the environment, nor is there necessity to speak of the combination of certain chemical agents with the toxins from these germs to account for natural immunity, which depends upon an inherent potential of the bacterial cell, and unless this is developed there can be no infection, and therefore no need for protection. After such development specific disease results, and a specific antitoxin, or a specific *antisepsin* is developed according to the type of the disease. It is this latter body, produced in the blood of the horse after inoculation with *Bacillus pestis*, which *inhibits* the germ after natural infection of man, phagocytosis accomplishing their *further destruction*. If there could be produced also an antitoxin from this bacillus the cure of practically all cases of pest would be assured. The antiserum of yellow fever possesses the same quality of power as that of pest, and we have no doubt of finally producing an antiserum of value, although this may depend upon the environment of the animals in which it is produced. The letter of Lutz is directly in favor of the claims for *Bacillus icteroides*.

As to the paper presented to the American Public Health Association by Reed and Carroll, there is not much to be said in reply. In regard to the first portion of it, treating of *Bacillus icteroides*, it is scarcely necessary to call attention to the fact that the absolute failure of these observers to isolate *Bacillus icteroides* from the living blood, employing as they confess a method of collecting it entirely different from that employed by us and by other observers, and discountenanced by many authors, simply proves the inutility of the method employed by them, and does not bear directly upon the question of the presence of *Bacillus icteroides* in the blood of yellow-fever patients. Their failure to find *Bacillus icteroides* in the autopsy cases causes the *surprise of even one of their own colleagues* and, in view of the facts established by others, must depend upon a want of proper conception of the difficulties encountered and the labor demanded in isolating this organism.

They remark in this connection that the colonies of other organisms in gelatin closely resemble those of *icteroides*, and generously comment: "We wonder whether other observers have occasionally relied upon the appearance of colonies in gelatin plates, *without further study*." (The italics are mine.) This is ingenuous, since in *our* report of our work we have explicitly stated that no organism was accepted as *Bacillus icteroides* until it had been made to fulfil every demand that could be made upon it, and that all these cultures had been preserved and presented in evidence to our Surgeon-General upon our return to the United States. It is neither scientific nor generous to endeavor to

impugn the motives or results of coworkers, however much we may differ from them in the construction to be placed upon those results. The attitude of the authors towards Sanarelli and ourselves is as unfortunate as it is well known.

Because of their failure, through the employment of strictly venous blood in sowing, to isolate *Bacillus icteroides* from those ill with yellow fever, these observers condemn ourselves with 92.8%; P. E. Archinard with 85%; Potier with 82.6%; Sanarelli with 55%; Lutz of San Paulo, Brazil, with 50%, and lastly their colleague, Agramonte, when employing the same technic, with 33.3% of isolations of *Bacillus icteroides* from those ill with yellow fever. Can any one accept their dictum under these circumstances? I think not, for their failure does not affect the question of the etiology of yellow fever.

In this connection they remark that Veasie (New Orleans) states that Potier *did not isolate* *Bacillus icteroides* from any *cases* during the fever of 1899. That is incorrect, since Veasie allows Portier to state himself as follows: "From all autopsies held of suspicious cases cultures were made and they remained free from *Bacillus icteroides* . . . In the blood of these cases *Plasmodium malariae* was found before death . . . and in the blood taken at autopsy." Reed and Carroll failed to state that Veasie's paper treated of *estivo-autumnal* fever and not of yellow fever; and to the contrary of their statement is the fact that Potier continues: "As to the cultures obtained from living blood during the prevalence of the fever in 1898 (yellow fever in New Orleans) I obtained pure cultures of *Bacillus icteroides* in 19 cases out of 23. The method I used was to puncture the lobule of the ear, after thorough cleaning of the parts, with a sterile lancet, and allow from 15 to 20 drops of blood to flow into a small tube containing sterile bouillon and plating . . . The same methods were used in 1899 (*estivoautumnal* fever) and no *Bacillus icteroides* was found."

These italics are mine, since it is necessary to clear up this matter so imperfectly remembered by Reed and Carroll, and since it shows so clearly the superiority of using capillary blood in planting over that of using .5 cc. of venous blood, as practised by these observers. Their technic is proved to have been faulty, this fault representing with us the difference between 92.8% and 0%.

As an offset to this failure they introduce some observations made at the suggestion of Dr. Carlos Finlay, of Havana, upon the influence of the mosquito (*Culex fasciatus*) in the propagation of the disease. While in Havana we were shown by Dr. Finlay, with that rare courtesy and scientific interest which characterize him, his painstaking and continuous (over several years) work in this direction; and during our conversations I assured Dr. Finlay of my deep interest in the plausible theory, so far as the carriage of the disease was concerned, since I could not deny the possibility of any acute septic organism being introduced into the blood by this artificial means and causing its specific disease; my principal reason for not accepting his theory of such *artificial inoculation* being the fact that I had never known a case of yellow fever thus contracted, although *my own severe case* was contracted a few days after I had incised my hand while making section of a yellow-fever cadaver in 1897.

Dr. Finlay's percent of cases resulting in fever after these artificial attempts at infection is only that which

would naturally be expected among a number of well-to-do persons (mostly Spanish clericals) coming to Havana during the winter months in order to escape the severity of the disease; and it is a well-known fact among the Cuban physicians that these acclimatizing (ephemeral) attacks freely occur in Havana. And it will be recalled that at that time, prior to the studies of peste at Oporto, Portugal, and our own conclusions in yellow fever, it was almost generally conceded that the peste was an artificial inoculation through the bites of certain insects, an error from which we are now fortunately freed, although the menace from the bites of these insects forcibly reminds us of the saying concerning the noisy dog. Therefore I am open to the concession that *Culex fasciatus* may be a possible (not probable) agent in the carriage of *Bacillus icteroides*, just as the fly does *Bacillus typhi abdominalis*, or the flea carries *Bacillus pestis*. Only this and nothing more.

With presumably infected mosquitos these observers inoculated 11 reagents, and two of these reacted in a given time to the supposed virus. Let us analyze these two cases in all scientific fairness. That of Dr. Carroll, one of the inoculées, was contracted within five days of a visit to one of the dirty autopsy rooms at the Military Hospital in Havana, wherein an autopsy upon a yellow-fever cadaver had been held only the preceding day; he had, besides, the habit of entering the yellow-fever wards of other hospitals for the purpose of studying the disease. Therefore this case, so fairly open to just criticism as to the possible mode of infection, should be discarded. The second case to react, that of a soldier "X. Y.," occurred in a barrack in which there has been yellow-fever during the summer, and situate only six miles from Havana. This soldier was in the laboratory in which the work was being conducted, and in which Dr. Carroll worked, on the day when Dr. Carroll, sick for three days, was compelled to seek his bed, or the 31st of August, the day on which the inoculation of the soldier took place. Since we have only the statement, dependent upon his freedom from discomfort, of this man that he had not visited Havana during the preceding days, the fact of his nonexposure in that city remains in doubt, and the case is open to question.

The case of the highly gifted and universally esteemed and regretted Lazear is even more open to criticism in this relation than the others. In other words, nothing has been proved, neither that there is *anything new* in the blood of yellow-fever patients, nor that these cases were not the result of natural infection, nor yet, and it is of some importance, that there is anything of interest in the middle intestine of these supposedly infected mosquitos. Pure speculation cannot be accepted.

Sternberg in a recent note said, "From Wasdin's point of view the question of yellow-fever etiology is settled." Nothing is more certain than that fact, and I will here repeat my reasons for occupying that position for fear that it may sound egotistic.

Laborious clinical observation carried on through many years has culminated, in the past two decades, in the formulation of a group of diseases called, by international consent, the "acute infectious diseases."

All of them have characteristics in common; primarily, they are infectious; then, they are characterized by clinical symptoms due to the influence of intoxicants, each one of them exhibiting, however, some special reaction or symptom which serves to identify the disease; that is to say, they are all specific infections;

and, finally, we now know that many of them are caused by vegetable microorganisms of low type.

Clinically these diseases resemble each other closely until the development of their specific symptoms, after which they are readily diagnosticated.

Pathologically it is known that the chief disasters arise from the influence exercised by the toxins, formed by these organisms, upon the highly organized cells of the parenchyma of the organs of the body attacked, such as the fatty degeneration of the cells of the liver, kidneys and other organs, and the necrosis found at times in the same tissues.

In some of these diseases the toxins absorbed from the primary and localized colony alone cause these changes; while in others the infecting organisms are found to have passed from the primary colony into the circulation, and thus add to the effect of the toxins absorbed from the primary colony, the type of which we have in enteric or typhoid fever.

So much for the disease. The causes of these infections are important, and in the study of them the causes and effects must be approximated, and should be in harmony.

Each one of these infecting organisms is specific, and it is only so when it has entered into contact with the living tissues, when, if the environment is propitious, this potential becomes a developed force.

Coinstantaneously there are developed two other inherent forces, or qualities in the infecting germ. These are the well-known quality of toxicity, and the equally important one of septicity, not generally recognized. Upon the development of these latter qualities the type of the attack of the disease about to be produced must depend. Those germs, intensely toxic, produce a reaction characterized by special toxic clinical and pathologic symptoms, among the latter appearing the *fatty degenerations*, and at times the necroses in the parenchyma of the organs.

Those intensely septic are characterized by more prolonged clinical symptoms, *less marked fatty changes* and *more marked necroses* in the tissues.

These terms toxicity and septicity are therefore *apposites* of each other in their relation to the bacterial cell, and are only potential until developed by the cell environment. These are the three qualities that each specific infectious organism must possess potentially, which make it pathogenic of necessity, although all pathogens are not specific, and are only potentially toxic or septic until introduced artificially into the tissues.

Since, as said above, these inherent potentials when developed must influence the types of cases produced in any of these diseases, it stands that there must be a common law which governs this production, since nothing occurs by chance in nature, and this is the law, that if the toxic potential is strongly developed there will arise the acutely toxic, siderante cases; that if it is only slightly developed such cases will be ephemeral; and if the septic potential is developed, either alone or in conjunction with the toxic, that there must arise the septic cases of these diseases. When these developments are mixed the pathologic changes are found to be combined. The general rule for these pathologic changes applies to all of these infections. There is no exception, and the reason of this probably is that the sepsis tends to a depreciation of the blood towards *anemia*, and it has been observed that anemia, or diseases tending to produce it, tends to *prevent fatty degeneration*, even in the case of phosphorus poisoning.

The three types of cases named are and have been recognized thus far only in yellow fever (Sternberg), although we may now recognize all of them in the other acute infections. It was from my observations in this disease, and from those of Calmette in pest, that I have been enabled to formulate this law, nor does it do any violence to our accumulating knowledge of these affections. It is, therefore, in the application of this law to the acute infection of yellow fever, explaining its symptomatology, and its pathology upon these firm facts, that I now contend that yellow fever can not be rudely torn from its place in the list of the acute infections, and placed, as would Reed and Carroll, in that of the accidental, artificial inoculations, which appears to be the fate of the malarial fevers at this time.

Each one of the specific infectious organisms may be able, under artificial inoculation, to produce its specific disease, as in diphtheria and pest, but that does not remove these diseases from the list of the natural infections. So with yellow fever, its accidental, artificial inoculation by the contaminated proboscis of the mosquito is only of the significance of the pest virus introduced into the blood-current by the flea or other insect.

Therefore, from these facts I must discourage the idea, which the paper of Drs. Reed and Carroll tends to encourage, that the nosology of yellow fever is to be changed, even though their very imperfect observations were more convincing, by the theory of its convection by the mosquito, and will leave the matter of isolating the *Bacillus icteroides* from the blood of those ill with this disease to their further work under improved technic, since I can not accept either of the contentions of their paper under circumstances so open to just criticism.

CARCINOMA OF THE RECTUM.

By JOHN B. DEEVER, M.D.,

of Philadelphia.

THAT important avenue, the rectum, is unfortunately one of the most common sites of malignant disease, and this is especially the case in males. As regards its etiology we know no more than we do of that of carcinoma in general. Systematic writers seem agreed that carcinoma of the rectum, like carcinoma of other portions of the gastrointestinal tract, is more likely to occur in advanced life, that is, after the fortieth year, but this is not in accordance with my experience. It seems to me that age is of relatively little importance as an etiologic factor, as I have encountered the condition as frequently in the young adult as in the aged. Heredity also is of little significance, as in no instance have I been able to elicit a history of the occurrence of carcinoma in the family connections of my patients. As regards the theories that have been propounded to explain the origin of the affection, it may be stated that none is in any way satisfactory.

An idea of the relative frequency of carcinoma of the rectum may be gleaned from the statistics recently collected by Dr. A. O. J. Kelly, and published in his article on tumors of the vermiform appendix which was read at a meeting of the Pathological Society of Philadelphia, March 8, and which appears in the second edition of my "Treatise on Appendicitis." From this communication it is learned that Maydl and

Nothnagel have collected the statistics of the Pathological Institute of the Vienna General Hospital for the 24 years from 1870 to 1893, during which time 41,838 necropsies were performed. Among these were 3,585 cases of carcinoma in general, of which 343 affected the intestinal tract, its various portions being involved as follows: Duodenum 7, jejunum 0, ileum 10, vermiform appendix 2, cecum 23, colon 99, sigmoid flexure 53, and rectum 162. To these Dr. Kelley has added the statistics of Leichtenstern, Bryant, Müller, and Ewald, from which we ascertain that of 1,391 cases of carcinoma of the intestine, the rectum was the seat of the new growth in 988 cases, the large intestine in 251, the cecum and appendix in 79, the ileum in 32, the jejunum in 17, and the duodenum in 24.

Of the malignant tumors encountered in the rectum, several varieties may be distinguished. Carcinoma is by far the more common; sarcoma, however, may occur. It is nevertheless relatively so rare that it possesses but little practical importance. It is generally of the spindle-cell variety, but may be melanotic. If the latter, there may be detected a blackish, soft, generally large tumor, surrounding the rectum and protruding from the anus. The discharge is extremely foul, and the stools are often blackish from admixture of degenerated neoplastic masses. The tumor grows rapidly and quickly infects the general system. The disease is so rare that personally I have never encountered a case.

Of the carcinomas of the rectum several varieties also may be distinguished. Broadly speaking, there are two distinct classes, the squamous epithelioma and the cylindrical epithelioma. These differ not only in situation, but also in general characteristics. The former, the squamous epithelioma, begins at the mucocutaneous juncture of the anus, as a small, hard, dry nodule. It tends progressively to increase in size, though it is generally of slow, and often of very slow growth. It gradually infiltrates the surrounding tissues, and may spread to the neighboring lymphatic glands. Ulceration, if it occurs, does not develop until late. This is the variety of carcinoma that arises at any of the mucocutaneous junctures, especially at the mouth. It is rare, however, about the anus and rectum. Under the microscope it reveals the ordinary characteristics of squamous epithelioma in general. In particular, the well-known pearly bodies are especially conspicuous, whereas in the other carcinomas of the rectum they are entirely absent.

The vast majority of carcinomas of the rectum are of the cylindrical-cell variety. It is likely that some of these carcinomas arise from the surface epithelial cells of the rectum, but most of them develop from the epithelial lining of the glands. In the atypic proliferation that characterizes the carcinoma, the origin of the new growth from these glands is usually very manifest, and it is for this reason that these tumors are most appropriately designated adenocarcinomas. For practical purposes it suffices, therefore, to regard these tumors as adenocarcinomas. Clinically several varieties may be distinguished, and histologic investigation reveals that the clinical classification is well founded. Thus of the cylindrical-cell adenocarcinoma of the rectum we may distinguish the scirrhus, the medullary or encephaloid, and the colloid varieties. Again, there is sometimes encountered a carcinoma of the rectum which does not altogether exhibit the characteristics of the scirrhus variety nor yet those of the medullary form, and which,

being as it were midway between the two, is spoken of as a simple adenocarcinoma of the rectum. This fact merely emphasizes the fact which must be evident to all who have investigated these tumors, that there is no sharp line of demarcation between the different varieties. At one time a carcinoma of the rectum may partake of the peculiarities of the scirrhus variety and at another of those of the medullary variety, though the reverse of this is not likely to be the case. Exceptionally we must admit that it may occur through the degeneration, necrosis, and ulceration of the carcinomatous mass. The larger part of the mass may be cast off and discharged with the feces, whereas the remaining connective tissue, by its cicatrization, tends to the production of the characteristics of the scirrhus variety. In other cases, in one portion of the growth, the appearances may be those of the typical scirrhus, while in another they may be those of the medullary form. In other cases the so-called colloid degeneration is more or less marked, while in a few instances this assumes the predominance. There occur, nevertheless, typical instances of scirrhus, medullary, and colloid carcinoma of the rectum.

Ordinarily adenocarcinoma of the rectum in its early stages presents itself as a more or less circumscribed, roundish or oval nodule that projects somewhat into the lumen of the bowel. At this time it may be quite smooth and movable with the mucous membrane from which it has taken its origin. Its subsequent appearance depends considerable upon its histological structure, but also upon other factors with which we are poorly acquainted. Generally it tends to more or less rapidly infiltrate the submucous tissues—the submucosa, the muscularis, and the perirectal connective tissue. It may remain somewhat circumscribed to one side of the rectum, or it may encircle the bowel and lead to considerable constriction of its lumen. It tends to ulceration, and when this occurs the examining finger encounters a mass of soft and necrotic neoplastic debris, around which there may be detected the harder and raised edges of the indurated ulcer. This induration may also be found to extend to the surrounding tissues. In the neighborhood of the large ulcer several smaller nodules or ulcers may be detected. As a consequence of ulceration and necrosis these tumors are likely to give rise to considerable hemorrhage.

Under some circumstances the malignant growth is encountered as an encapsulated lobulated mass which grows rapidly and may reach an immense size. The mass may be firm or semifluid, and vary in color from grayish-white to a reddish color, the latter the result of the admixture of more or less blood. Later the seeming capsule of the growth may burst and the contents will be extruded and present the appearance somewhat of brain-tissue. This is the variety of carcinoma of the rectum spoken of as encephaloid. The fluid expressed from the tumor colors water a milky-white, a sign which Paget considered pathognomonic of this form of carcinoma. This tumor grows with great rapidity, and is very malignant in that it gives extensive metastases to the general system and recurs soon after removal.

Somewhat more common than the encephaloid variety is the scirrhus carcinoma of the rectum. Clinically it appears to begin in the submucosa, and is usually first detected on the anterior surface of the rectum in the neighborhood of the prostate gland. It presents the characteristics of a hard, fibrous mass, which often is not discovered until it has encircled the rectum and caused considerable constriction of its lumen. It tends

to spread upward rather than downward. It invades the surrounding tissues and late in its course may ulcerate. When this occurs, it is usually difficult to distinguish it clinically from the other varieties, particularly as the latter often present analogous appearances in their later stages.

Colloid carcinoma of the rectum much resembles the encephaloid variety. It differs from it, however, in that the large semifluid mass is more jelly-like in character, glistening, translucent, and pale-yellowish in color. These tumors are not uncommon, and differ greatly in malignancy. They do not grow as rapidly as do some others and are less likely to give metastasis so soon; in consequence they frequently do not recur after removal.

As already remarked, a few of these carcinomas may develop from the surface epithelium lining the lumen of the rectum. The vast majority, however, develop from the epithelium of the glands of the organ. Even those which grow in the submucosa beneath a seeming intact mucous membrane can have no origin other than the glands of Lieberkühn. They result from an irregular proliferation of the epithelial cells of these glands, which, as a consequence of their increase in number and their general tendencies, penetrate the muscularis mucosa, and, having reached the submucosa, find a congenial soil for their unhindered growth. Depending upon the relative amounts of the connective-tissue stroma, and the nests of epithelial cells, the tumors partake of the scirrhus or medullary variety. In the former the nests of epithelial cells are small and the stroma abundant and fibrous; in the latter the nests of cells are very large and the stroma very meager. In the so-called colloid carcinoma there occurs an extensive mucoid degeneration of the epithelial cells. Clinically there is often but little difference in the various forms of rectal carcinomas and at times we are able to distinguish but the squamous and cylindrical varieties—the latter, as has already been stated elsewhere, being spoken of as adenocarcinoma. We must also bear in mind that some of the benign polyps and so-called villous tumors of the rectum are prone to malignant transformation and that a carcinoma may thus arise. The indications for treatment, however, in all cases is the same—operation.

The symptoms of carcinoma of the rectum, especially in the early stages, bear no relationship to the gravity of the affection. A patient may have advanced rectal carcinoma and suffer but little pain and some diarrhea and rectal tenesmus. However, pain is the most frequent symptom and is usually described by the patients as being extremely severe. In the latter stages it may be continuous, but subject to acute exacerbations during the movement of the bowels, as a consequence of the passage of feces over the ulcerated surface. The pain is most severe when the growth involves the internal sphincter. The pain is caused by pressure or stretching of the nerves supplying the rectum. Tenesmus is often found associated with pain and is a most distressing symptom. Diarrhea is a constant and troublesome symptom. A diarrhea which persists for any length of time, even if there are intervals of quiet, calls for a digital exploration of the rectum. Later stages present symptoms commensurate with obstruction to the passage of feces and systemic infection.

Prognosis depends upon the position and extent of the growth and the time which has elapsed from its incipency.

Ordinarily cancer of the rectum is located about 2½ to 3 inches from the anus. It may start high up or near the sigmoid junction with the rectum. There seems to be something favorable to the rapid growth of high rectal cancer, for certain it is that it is most rapidly fatal and causes early obstruction. Often a colotomy becomes necessary very early to relieve the obstruction and pain.

The characteristic "feel" and odor of cancer renders the diagnosis unmistakable. The only condition for which it can be mistaken is simple indurated ulceration causing stricture of the rectum. The odor and "feel" once recognized will never be forgotten and will make the diagnosis of cancer quite positive.

Unfortunately the disease starts so insidiously that it offers no symptoms proportionate to its severity. I would, however, suggest the advisability of rectal examination in every case of more or less continuous diarrhea, for thus we will discover early cancer and can therefore institute the only means which offer a possibility of a cure.

The treatment consists of radical measures and palliative treatment. It must be suggested that even the most radical measure possible, namely, total extirpation of the growth, is not always successful in securing a cure. However, it alone offers the best chance and is particularly efficacious when undertaken in the very early stages of the disease.

Kraske's operation as I have modified it best meets the indications. I always aim to remove the rectum wide of the disease and to do an end-to-end anastomosis. If an end-to-end anastomosis is impracticable I make an artificial anus in the left iliac region.

Operations through the rectum, such as curetments, applications of cauteries, etc., are only to be classed as palliative measures and are only applicable in the hopelessly advanced cases when extirpation is impossible.

My practice in dealing with carcinoma of the rectum is as follows: Where the growth involves the terminal part of the rectum and includes the anus, the operation of removal is made through the perineum; the mucous membrane of the bowel above being stitched to the skin margin of the circular perineal incision. Where the growth involves the lower portion of the rectum, exclusive of the anus, it is removed through a posterior median incision, taking away the coccyx with, in many cases, the last one or two segments of the sacrum. By this method (modified Kraske), as in that for the removal of a growth occupying a higher location, the diseased portion of the bowel is excised and end-to-end union of the divided bowel made. This permits of reestablishment of the function of the bowel. Where the growth occupies the upper portion of the rectum, and to some extent the terminal portion of the sigmoid, it is removed through the posterior median incision, taking away the coccyx and the lower three or four segments of the sacrum. Here, end-to-end union of the divided bowel is practised. Reference to cases I have reported in the Transactions of the Academy of Surgery, of Philadelphia, for the year 1900, will show three successful cases with complete restoration of bowel function. The section of the sacrum is made with chisel or osteotome, and the ligaments and soft tissues cut with scissors curved on the flat and made to hug the bone, thus dividing the vessels where they are smallest and readily reached. The amount of bleeding is not great, hence the shock is of minor importance. Upon one

occasion I first opened the abdominal cavity and tied the inferior mesenteric artery. This I have never repeated, as I consider it too much surgery where less suffices.

The question of shock is influenced too by the condition of the patient; if much debilitated there will be some shock. I have had to resort to intravenous saline infusion. It will be noticed that the cases of magnitude I have reported, and which include all I have done up to date, have all resulted in recovery. When the growth occupies a high location it is necessary to open the peritoneum, not only to be sure that the bowel has been divided well to the proximal side of the disease, but to give opportunity to draw down enough bowel to render suturing easy and prevent traction or tension. With the peritoneum opened, by the proper disposition of sterile gauze until the excision is accomplished, when the divided parietal peritoneum is stitched to the serous covering of upper portion of the rectum or the sigmoid, as the case may be, infection of the peritoneal cavity is avoided. I have never seen peritonitis follow this operation. After the divided parietal peritoneum is united to the peritoneal covering of the proximal bowel by a continuous Lembert suture the packing is again introduced to further prevent the possibility of peritoneal infection.

It will be noticed that I have said nothing about a preliminary colotomy, my only reason for not mentioning it being that I consider it unnecessary. The latter operation, if done at all, except in the inoperable cases, by which I mean where excision of the growth is inadvisable, I do as a sequel; that is, in the cases where the growth involves the anus and I am not able to save the sphincter muscle and where the patient is not satisfied to have an anus over which he has no control and from the situation cannot comfortably wear a mechanical appliance that will occlude the opening as can be done in the iliac colotomy anus.

The latter operation is only practised when excision of the rectum is to be done later. To divide the sigmoid flexure and close the distal end by invagination where the rectum is not to be excised is a dangerous procedure in that the discharge may collect to the proximal side of the growth to the extent of distending the cut-off segment of bowel to the degree of causing ulceration and perforative peritonitis.

In concluding my remarks upon the subject of carcinoma of the rectum, I regret that more radical surgery than that advised is not permissible; by which I mean, the removal of the lymphatic glands, of the mesosigmoid, in this wise absolutely cutting off the lymphatic circulation between the site of the disease and the general lymphatic circulation. If this was possible, the outcome of these operations would be more promising. In the absence of being able to do this, early and radical operation is all the more urgently called for.

When the growth occupies the rectum high up and I am not able to determine by examination through this avenue or the vagina, I open the abdomen in the left iliac region. If it is now determined that the growth with the rectum can be taken out through a posterior incision the sigmoid is divided transversely and removed with its mesentery as far down as the growth, when the lower opening is closed and the margins of upper opening stitched to the margins of the upper part of the incision, closing the lower part of the incision entirely.

ACUTE HEMORRHAGIC ENCEPHALITIS.¹

A Case of Multiple Terminal-Twig Hemorrhage of the Cortical System of the Right Side of the Brain, Followed by Transient Left Hemiplegia, Petit Mal, and Later Generalized Convulsions. Operation. Recovery.

By CHARLES DEWEY CENTER, M.D.,
of Quincy, Ill.

On February 14, 1899, I was called to the plant of the Quincy Valve Works to see a foreman, W—A—, German, aged 36 years. I found him sitting up, supported by a workman. He showed some tendency to cyanosis. Was breathing, not stertorously, but with some effort. The pupils were contracted, and the temperature subnormal. The pulse was full, irregular, and about 90. His left hand was numb, with diminished muscular force. The left leg was about equally disabled. He had great difficulty in speaking.

The immediate history of the case, elicited from fellow workmen, was that he fell unconscious and in a fit while working. From his family, and from him later, the following remote history was obtained: For two weeks previous to this attack he had been suffering from what they considered grip, and, although he had not quit work, his discomfort, especially the pain in his head, had been so great that he had been unable to sleep for the two nights preceding the present attack. This pain was on the right side of the head, and, in his words, was a feeling of too great pressure. Its seat he designated as behind and above the right eye, extending back over a region equivalent to the upper and anterior parts of the rolandic area. He denied absolutely any possibility of syphilis, but confessed to using considerable alcohol. He is about 6 feet tall, of full habit, and weighs between 200 and 220 pounds.

On February 13, after a sleepless night, he went to work and found the water pipes frozen. While thawing them out he was compelled, as he worked, to lie in water and ice upon one side. He became very cold, wet, and tired while doing this. That night again he could not sleep, because of pain in head, back, and legs, and went to work the next morning intending to consult a doctor during the day. At 10 A.M., as before stated, he fell unconscious.

After being taken home, the day passed uneventfully, and a few hours in bed with head high and hot bottles at the feet, so restored him that he wanted to get up. The hemiplegia was diminishing, and he spoke with greater distinctness. He was not allowed to leave the bed. Toward evening he began to have periodic attacks of twitching of the muscles at the left angle of the mouth. Immediately preceding these attacks there was a premonitory feeling of numbness of the thumb and forefinger of the left hand. He did not, during the spasms, lose consciousness, and several times was able to count through one, but very indistinctly, as the tongue partook in the spasm, being partially protruded and pushed to the right. As the spasm grew in intensity he would invariably, unless restrained, raise his left hand, gaze steadily and with an extremely sorrowful expression at it, and hold it up until the spasm passed. He could not tell why he did this, nor remember doing it. These spasms lasted about two minutes. During the muscular twitchings his face reddened, the vessels of the conjunctiva and sclerotics became engorged, and the lips a little cyanotic. The pupils would not respond to light, but sometimes he would wink at the approach of a flame to his eyes. He felt no pain other than the headache.

The night of the 14th he slept fairly well, having but 6 or 7 of the facial spasms. He had been placed on full doses of bromid, together with the acetate and citrate of potassium, and broken doses of calomel, as he was constipated and was passing but little urine, and that heavily loaded with albumin.

During the 15th the only change was in the number of spasms and the lengthened duration of each. One or two of them involved both sides of the face. A copious evacuation of the bowels had been secured, and he was excreting a greater amount of urine still containing albumin.

On the forenoon of the 16th, Dr. Christie, Sr., saw the case

¹ Read before the Illinois State Medical Society at Springfield, Ill., May 15, 1900.

with me, and in the afternoon of the same day, Dr. Johnson also saw him. The first part of the day he was apparently better. Neither of the consultants was fortunate enough to see one of the facial spasms.

Two hours after Dr. Johnson and I saw him he began to grow worse. The spasms became general, tonic and clonic convulsions involving the entire body. Large doses of bromid and morphin failed to control them in any degree. In the 6 hours, from 3 to 9 P.M., he had between 30 and 40 convulsions, those occurring between 8 and 9 o'clock being so profound that at the climax of each, the attendants holding him in bed, thought the patient had died. There was opisthotonos, profound protrusion of eyeballs, tetany, recession of lips, face first congested, then cyanotic, then livid to an extreme degree. The pulse became very rapid and weak. The temperature was 99° and a fraction. Dr. Christie, Jr., now saw the case with me, and hoping it would afford relief, we determined to do craniotomy. Our diagnosis at this time was intracranial pressure, and we did not specify the cause.

The patient was placed on the kitchen table and the head prepared. I may say in passing, that the only scars upon the head were two linear ones, one above and behind the left ear, the result of a cutting affray some 10 years before.

No anesthetic was used, as the patient had been in a state of coma, between convulsions, for two or more hours. The opening was a curved incision of the soft parts over the middle and upper area of the right Rolandic tract. A chisel was used for the bone work. The dura was very tense and bulging, with turgid bloodvessels. On incising it, considerable bloody serum escaped. The pia was so tense and protruding that, by the uncertain light of a hand lamp, it was first thought to be a cyst-wall. Considerable blood, serum, together with small particles of gray matter, ran out when this was opened. The cortex was disintegrated so much that on touching it lightly with a gauze sponge, small pieces would adhere to the mesh. So far as exploration could be made, there was an appearance of multiple minute hemorrhages. The brain was aspirated in 3 different directions with negative results. The patient had 5 severe convulsions while on the table, a period of a little less than an hour.

It was decided futile to do more, so the wound was closed with absorbable sutures in the dura, and silkwormgut in the skin, and dressed with a good-sized gauze drain at each angle of the wound, one of them entering the dura. No effort was made to close the opening in the bone. The patient was placed in bed about 11 P.M., condition very bad, pulse 160 and very irregular. Prognosis the worst. Strychnin and atropin were given hypodermically.

There was no change until about 2 A.M., save that the convulsions grew more feeble, and came at longer intervals, which, considering his condition, I ascribed to approaching dissolution. At 2 o'clock the pulse had receded to 140 and was more regular. At 3 he was beginning to show signs of consciousness, with no convulsion since 1.30, pulse still improving. At 4 the patient was able to swallow a little brandy and water, and at 5 he began to speak. From this time he made an almost uneventful recovery. For about 30 hours after the operation the escape of serum was very copious, so great that not only the dressings but his pillows were kept saturated. Then the discharge stopped, and shortly after he began to complain of the pain in his head again, and later began to have slight spasms of the left facial muscles. I then dressed the wound, some 40 hours after operation. There was no serum escaping through the drains, but the skin over the opening was bulging. On pulling out the gauze that entered the dura a stream of clear serum shot up, like the spurting of a severed artery, to a height of probably 8 inches. An amount estimated at 3 ounces escaped. As some head-pain remained an hour after dressing I put 2 leeches on the postauricular space of the right side. Hereafter the wound was dressed daily, serum escaping for 8 or 9 dressings, when there being no more, the wound was allowed to close. Had it become necessary, aspiration could readily have been done through the soft parts. Six weeks from the time of operation he returned to his work, suffering no inconvenience. His employer tells me, however, that his perceptive faculties seem dulled, that he is indecisive, and slower of speech and motion than formerly.

The chief point of interest in this case is, perhaps, the difficulty thrown in the way of making a positive diagnosis. The majority of symptoms pointed to one or more of four diseases: Epilepsy, cerebral hemorrhage, cerebral thrombosis, and uremia—in other words eclampsia. There also presented for consideration the more unusual troubles, idiopathic nonsuppurative encephalitis and cerebral edema. Meningeal inflammation was not considered as a cause. Simple epilepsy was discarded because as time went by it became more and more evident that there was something more than functional trouble within the cranium. Traumatic epilepsy, in its restricted sense, could be eliminated since there was neither near nor remote trauma. Epilepsy from syphilitic neoplasm could not be considered if the word of the patient was good. On the other hand, there was a possibility of epilepsy from excessive mental or physical irritation. There was what might be considered a motor aura in the left hand, and the convulsions were epileptiform at least. Per contra there was a history of cerebral irritation of two weeks' duration, 11 days before this period of excessive physical and nervous exhaustion, and 14 days before any manifestation of *petit mal* or *grand mal*. There was an initial shock and a resulting hemiplegic condition. It was also evident that this intracranial irritation was rapidly growing more intense. These facts in their entirety, moved us to exclude epilepsy, per se, as a cause for the found condition.

The question of uremia with eclamptic convulsions then rose for consideration. Here was a case where the amount of urine had failed rapidly, and where upon examination it was found heavily loaded with albumin. The head-pain would not be out of place in an absence of kidney function, but there were no uremic vision symptoms. There was no vomiting. Instead of somnolence there was insomnia. The patient was a large, full blooded man, but his pulse was not unusually full or bounding. There was no uremic odor, nor urea crystals on the skin. Also, when kidney function and bowel action had been reestablished, after an apparent improvement of some 12 hours, the convulsions grew in frequency and intensity.

Uppermost, I believe, in the minds of the four members of the profession who saw this patient, was the belief in some form of cerebral hemorrhage. That it was slight, or at least insufficient to produce much pressure, was plain since there was no persistent paralysis. There was, first, the subjective evidence of intracranial irritation; then the objective evidence of monospasm, changing later to generalized convulsions; there was the shock, hemiplegia, and the patient's history.

Because of the train of convulsive symptoms it was believed that the lesion, or lesions, were near the cortex. It was not easy to reconcile the spasms of the left side of the face with a lesion of the right side of the brain, but some of the spasms were bilateral.

It may be impossible to prove to the minds of all that this was primarily a case of hemorrhage rather than embolism or thrombosis. I know of nothing more efficient for this purpose than the admirable table of differential probabilities, compiled by Church, of Chicago, and published in his work on Nervous Diseases and in the Year Book for 1899. Not all of these probabilities can be reconciled in this case, but enough of them can to make a somewhat unusual case reasonably clear. Thrombosis, according to him, is usual in young adults and in old age. Hemorrhage before 3, and between 40

and 60. This man was 36, but in habit, adipose development, and appearance is 40, or more. Church gives as the usual antecedents of thrombosis endarteritis, atheroma, endocarditis, cachexia, and embolism, none of which, we have reason to believe, were manifest here.

For exciting conditions of hemorrhage he gives high arterial tension, excitement, effort or shock, the reverse for thrombosis. In onset conditions this case is not so typical. Here was a prodromal period, not usual in hemorrhage, expected in thrombosis. The initial coma was of brief duration. The face was congested, the breathing heavy, and the pulse was full, though neither slow nor rapid. The motor loss was hemiplegic, and was greatest immediately after the initial shock. So, with the exception of the prodromata, these onset conditions coincide fairly well with those given by Church for hemorrhage.

Coming to his classification of symptoms for course, there was the expected rapid improvement in motion, the foot gaining faster than the hand. Anesthesia, however, was never marked, and periodical paresthesia persisted in part of the left hand, an anomalous condition. This patient never had true aphasia, but rather, tongue-sluggishness. Again, where this case was atypical was in the postplegic convulsions, they being classified as common with thrombosis, uncommon with hemorrhage.

I believe some of these anomalies may be accounted for by reason of the lesions being in, or near, the cortex. I have not been able to find much in current literature of value for comparison with this case. Bouffleur reports a case found unconscious on the street. As there was a scalp-mark of contusion, its origin and time of receiving unknown, it was thought he might have sustained a fracture, there being no other discoverable reason for his coma. At the operation no fracture was found, but there were present numerous punctate hemorrhages of the brain-substance. He classifies this as a brain-contusion.

The law laid down by Courtney is of interest since the operation in my case revealed cerebral edema. He says: "Cerebral edema is primarily the inevitable sequence in time, of that complex of pathologic symptoms which we designate contusion."

In the same connection, and bringing up a phase of the case hitherto dwelt upon. Traube says: "An acute edema of the brain produces uremic symptoms." The question then arises, Is it possible for this complex of pathologic conditions designated as contusion to come into being without violence exerted on the outside of the skull. I believe it is, that when a given arterial pressure acting under abnormal conditions, upon possibly an abnormal wall, of a given artery, is able to rupture that artery and cause a punctate hemorrhage, it is to be expected that this same arterial pressure will, under the same abnormal conditions, rupture adjacent walls of arteries of like abnormality and caliber, and cause multiple punctate hemorrhages. The rupture of a minute terminal twig is not like the rupture of one of the arteries outside of the cortical supply, for here the extravasation is so minute that arterial tension is practically unchanged, and, furthermore, these terminal twigs have no anastomotic branches. Whether or not, the curable encephalitis of Strümpell, called by some other writers cerebritis, a disease which produces a condition of the brain not unlike traumatic contusion, was present here during the two weeks of intense cephalalgia we cannot say.

In his work on nervous diseases Church says: "Except in traumatic cases, hemorrhage into the substance of the brain is a secondary or terminal effect of degenerative or inflammatory disease of the cerebral blood-vessels, almost invariably of the arteries." From his standpoint there existed in this case an inflammation prior to the rupture of bloodvessels, a condition designated by him as acute hemorrhagic encephalitis. He further says: "Anatomically the disease is marked by multiple, nonsuppurative, inflammatory foci, showing congestion and either punctate or massive hemorrhages, leukocytal infiltration, and localized destruction of brain-tissue." Still quoting, "most of these cases follow influenza."

We now have the tangle of symptoms made at least partly clear. First, the punctate hemorrhages revealed by operation, a brain trauma equivalent and analogous to brain contusion. Brain contusion producing brain edema (Courtney), the edema likewise demonstrated by operation. Acute brain edema producing uremic symptoms (Traube), one of the stumbling-blocks before the operation.

IDIOPATHIC PHLEGMONOUS GASTRITIS.*

By FRANCIS P. KINNICUTT, M.D.,

of New York.

Professor of Clinical Medicine, College Physicians and Surgeons, Medical Department, Columbia University, New York.

PHLEGMONOUS, or suppurative, gastritis is so rare a disease; and the number of cases,—including both the circumscribed and the diffuse forms,—reported in the literature of the subject is so small, that the presentation of a specimen with the clinical history of the case may be of interest to the members of the Association.

The earliest description of the disease would seem to be in a communication by Veranadeus,¹ in 1620. In the latter half of the seventeenth century and in the beginning of the eighteenth, there are published observations by Borel,² 1656; Sand,³ 1701; Vorwaltner,⁴ and Bonet.⁵ All of these observations describe the circumscribed form alone. Andral,⁶ 1839, and Cruveilhier⁷ appear first to have observed the diffuse form of purulent infiltration of the gastric walls. In their case only a fortunate accident led to incisions into the stomach-walls, which revealed a diffuse submucous suppurative inflammation. Since 1860 papers both on the circumscribed and diffuse forms have been published by Raynaud,⁸ Auvray,⁹ Leube,¹⁰ Hun,¹¹ Glax,¹² Lowenstein,¹³ Oser,¹⁴ Reinking,¹⁵ Kelynack,¹⁶ among others, and, finally, a very admirable monograph by Leith,¹⁷ of Edinburgh, in 1896. Leith¹⁷ has been able to collect only 51 positive cases of the diffuse form in the entire literature of the subject, and the total number of cases both of the diffuse and the circumscribed forms is given as 85. For a very interesting discussion of the entire subject especially, I would refer to Leith's¹⁷ monograph.

The specimen which I present is an exquisite example of the primary diffuse form of the disease. A single other instance of a similar form came under my observation many years ago in the wards of Bellevue Hospital, in which the true lesion was only demonstrated at autopsy.

CLINICAL HISTORY.—M. L., male, aged 41, plumber. Admitted to the Presbyterian Hospital, April 10, 1900. Service

* Read before the Association of American Physicians, Washington, May 1900.

of Dr. Kinnicutt. Family history unimportant. *Previous History*: There is no history of syphilis. An alcoholic habit has existed for many years. The patient states that he has never suffered from gastric disturbances, except at times of excessive drinking, and has enjoyed excellent health. *Present Illness*:—Five days before admission to the hospital, after drinking to excess and after a hearty meal, he suddenly began to vomit. The vomited matter consisted at first of the food in the stomach, and later of a brownish fluid. Vomiting occurred frequently during the four subsequent days, irrespective of the ingestion of food, which was only fluid in character. There was never any blood in the vomited matter. There was moderate diarrhea for the first three days, and then no further movement of the bowels previous to admission. Blood was not present in the stools. With the onset of the vomiting he suffered from pain located in the epigastrium and in the lower abdomen. The pain was acute and more or less constant for the first three days. For the two days previous to admission, he was comparatively free from suffering. With the occurrence of the first symptoms of his illness, there was a feeling of chilliness, but no distinct chill.

Examination on Admission.—The patient is a large muscular man, well nourished, and not anemic in appearance. The tongue is very dry and moderately coated. The respirations are shallow, 48 to the minute. The pulse is 108, full, and a little tense. Temperature (rectal) 101°. The patient is very restless, anxious, and obviously very ill. Heart: The apex is in the fifth space in the mid-clavicular line. The left limit of cardiac dulness in the fifth space corresponds with the apex impulse. No murmurs are appreciable. Lungs: Negative, beyond slight dulness at both bases and moderate subcrepitation over these areas. Liver: Percusses from the sixth rib to the costal arch in the mid-clavicular line; edge not palpable. Spleen: Area of dulness not increased, edge not palpable. Abdomen: Is moderately distended with considerable rigidity of the abdominal walls, most marked in the upper half. There is moderate sensitiveness on deep palpation and slight on gentle palpation, and this sign is not obtained uniformly over the abdomen, but at several points, being most marked over the epigastrium and right hypochondrium. It has been noted that the liver-dulness is not obliterated, but fully reaches the costal arch in the mid-clavicular line. Over the liver-region, just above the costal arch, and also over the left hypochondrium in the anterior axillary line, scanty crepitation is heard, and is believed to indicate an involvement of the peritoneum. Signs of free fluid in the peritoneal cavity are not obtained. Abdominal respiratory movement is present, but diminished. The urine is free from albumin and sugar; specific gravity, 1.025. It contains a few hyalin and granular casts.

Lavage was immediately given and a yellowish-brown fluid, without odor, considerably larger in amount than that introduced, was returned by siphonage. A general peritonitis was believed to exist; the causative lesion was judged to be either an acute pancreatitis or a perforating ulcer of the duodenum.

On consultation with my colleague, Dr. McBurney, an exploratory laparotomy in the pyloric region was decided upon. The patient's condition, however, so rapidly became worse, the heart very suddenly failing, that surgical interference was not deemed advisable. Death occurred 16 hours after admission. Large quantities of a yellowish-brown fluid were repeatedly vomited during this period. The patient suffered little pain, and there were no further symptoms other than those of collapse.

AUTOPSY.—*Anatomical Diagnosis*: Diffuse Suppurative Gastritis; General Peritonitis.—Frame, large; adipose, considerable; muscle, fairly developed. Heart: weight 12½ ounces. Pericardium normal; valves, normal; muscle, normal. Lungs: moderately congested at bases; a few old adhesions of pleurae. Liver: weight, 73½ ounces. Firm in consistence, surface deeply congested in places, for the most part pale. On section, pale, otherwise normal in appearance. A few old adhesions present and some recent fibrin. Gallbladder: filled with pale brown, very viscid bile. Spleen: weight, 5½ ounces; surface smooth; consistence soft. On section,

coarsely mottled, pale and dark red. Pancreas: normal in appearance and on section. Adrenals: normal in appearance and on section. Kidneys: left, weight 6½ ounces; capsule adherent, surface smooth. On section, normal in appearance. The right kidney is similar in weight and appearance to the left. Ureters, bladder, prostate, and seminal vesicles, normal. Abdomen: the peritoneal cavity contains a moderate quantity of turbid fluid. There is a small amount of fibrinous exudate adhering to the surface of the peritoneum at various points. The omentum is adherent to the mesentery by firm, slender bands, across which hang some loops of small intestine. Stomach: normal in size. Its walls are greatly thickened, extraordinarily so in the pyloric region. On section, the thickening is seen to be due to a purulent infiltration of the submucosa. At the pylorus and to a point 3 inches from it, the thickness of the submucosa throughout the circumference of the walls is fully an inch. Elsewhere its thickness is a little less, and is very uniform. The process is sharply limited at the pyloric ring. Not so at the cardiac orifice, where it extends upward to a point about 2 inches from the orifice. The infiltration is of a yellowish white color, and is firm and solid; only a little watery fluid exudes on firm pressure. It separates the mucous from the muscular coat with great distinctness, both of these coats standing out prominently on either side of it. The surface of the mucosa is uneven and, in places, greatly congested, especially near the cardiac end. The muscular coat is slightly swollen. On the posterior wall of the stomach, near the lesser curvature and 3 inches from the pylorus, there is a linear cicatrix, 1½ inches in length. At the lower end of the cicatrix, there is a small area, necrotic in appearance.

MICROSCOPIC REPORT FROM THE PATHOLOGICAL LABORATORY OF THE HOSPITAL, BY DR. BERKELEY.

Minute Anatomy of the Stomach-wall.—Tissue hardened in formalin and alcohol, mounted in celloidin, stained with the usual reagents.

The *Serous* and *Subserous Layers* show irregular thickening and infiltration with round cells. The endothelial covering is in most places entirely lost.

Muscular Coat.—The fibers of the muscular layer are swollen and much distorted. The connective framework is everywhere crowded with leukocytes. These leukocytes are of unusual size, are mainly mononuclear, and the nuclei are as a rule round, more rarely crescentic or irregular. There are a few apparently polynuclear forms. Some of these have penetrated even between the individual muscular strands.

Submucosa.—This layer is enormously thickened, measuring in certain places three-fourths of an inch even in the hardened section. It has evidently been the main seat of the bacterial infection. Its fibers are widely separated by quantities of fibrin, leukocytes, lymphocytes, and complete strata of bacteria (see below). The violence of the inflammation has caused extensive areas of partial or complete necrosis; in these only the faintest outlines of cells and fibrils are distinguishable. The lymphatics are here and there gorged with microbes. Between the submucosa and the mucosa proper the necrotic spaces are less numerous, but vast numbers of lymphocytes (many more than those normally present) are found. The *muscularis mucosae* is generally in place, and unexpectedly enough seems to have participated in the pathologic process less than any other layer of the entire stomach.

Mucosa.—This is preserved in a few places. Here the peptic glands are in various states of inflammation and degeneration. The nuclei of the glandular cells stain everywhere ill or not at all. The protoplasm is markedly granular. In other portions the mucosa is eroded, or necrotic, or quite absent. Sections made through the necrotic part of the old cicatrix referred to in the description of the macroscopic appearances (by Dr. Kinnicutt) show that at one point the infiltrated submucosa is completely exposed by a deep erosion in the inflamed and necrotic mucosa. Whether or not this was the point of original pyogenic infection does not, of course, admit of demonstration; such a hypothesis, however, seems reasonable.

In respect of the anatomic extent of the inflammation, it is rather strange that while the phlegmonous

swelling is perfectly and clearly delimited on the left by the pyloric valve of the stomach, the lower (cardiac) end of the *gullet* has not escaped; the latter shows for some distance upwards practically the same changes found in the stomach-wall, viz., swelling, softening, intense cellular infiltration, and a countless number of microorganisms. Through the stomach itself the infiltration is universal, and the degree of swelling is high everywhere.

The bacteriologic examination shows the practically universal presence of a streptococcus. It is most abundant in the connective tissue of the submucosa and muscularis. Some of the individual chains are quite long, being made up of eight and ten members. Most are shorter. Contrary to the classic descriptions, few or no cocci are to be found inside the leukocytes. The *strata* mentioned above are made up almost entirely of these chain cocci. The lymphatics contain not so many cocci as bacilli. The latter are long, with deeply stained ends (spores?). They are possibly of *postmortem* origin, inasmuch as they are abundant in the superficial vessels. No cultures were made from the stomach, but films made from the exudate on the cut surface show that the streptococcus is the prevailing pathogenic organism.

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ANEURYSM OF SPERMATIC ARTERY SIMULATING OBLIQUE INGUINAL HERNIA.

By S. W. MILLER, M.D.,

of Lancaster, Pa.

Medical Superintendent Lancaster County Hospital.

THE following record of a case is reported mainly on account of its closely simulating a hernia, and also on account of the large size of an aneurysm of so small an artery, and the subsequent gangrene which occurred.

The blood-supply of the testicle and its excretory duct, which is derived from the spermatic and vas deferens arteries, both of which accompany the spermatic cord, was occluded by the aneurysm in the one, and the pressure at the internal ring on the artery to the vas, by the aneurysm. The blood-supply to the scrotum is derived from the superficial and deep external pudic, the superficial perineal, and the cremasteric arteries. Owing to the weakened physical condition of the patient and the pronounced disturbance of the circulation and the underlying gangrenous testicle, these arteries were unable to provide the necessary nutrition, and the scrotum, as well, took part in the gangrenous process. A report of the case follows:

P. S., aged 62; of German nativity, laborer, was admitted to the hospital April 4, suffering with mitral regurgitation and cardiac asthma, with marked edema of the lower ex-

trémities and all the associated symptoms of failure of compensation. Examination of the urine showed no albumin nor sugar present. Tincture of digitalis in 15-drop doses every 4 hours was prescribed. On the evening of the 5th, the day after admission, the nurse accidentally noticed a swollen and dusky red scrotum on the right side. I learned that the patient had not complained of any pain whatever in this region. Upon examination I found a sausage like tumor extending along the length of Poupert's ligament and down into the scrotum, which was swollen to the size of an orange. The skin and underlying tissues were of a dark bluish color, and there was some tenderness about the internal abdominal ring. The gross appearance was that of a strangulated inguinal hernia. There had been no vomiting, but a number of small stools accompanied with much tenesmus. The patient had been wearing a truss for a right inguinal hernia for some months.

Operation was advised, and early in the morning of the 6th, before operating, I again examined him, and found that the scrotum was already black and gangrenous. He had grown much weaker, the tongue was brown and dry, some delirium had been present, and the pulse was frequent, lacking in force and volume, and a condition of sapremia existed. The temperature had been slightly subnormal.

I cut down over the cord, and removed the scrotum and testicle, which were both gangrenous, and followed up the cord to the internal ring, where it was amputated, the whole length of it being necrosed. There was no intestine nor omentum in the canal. After packing with iodoform gauze the incision was partially closed with silkwormgut.

The operation was of no benefit, however, and the patient died late the same day.

At the autopsy there was found a tumor about the size of a goose egg, of a purplish color, of the consistence of gelatin, situated behind the peritoneum. The surrounding peritoneum was red and injected. This tumor, which proved on close inspection to be an aneurysm of the spermatic artery, was presenting at the internal abdominal ring, around which there were some few adhesions. Upon section, a large current-jelly clot was found filling up the whole of the aneurysm.

NOTE ON SPECIMEN SHOWING A SMALL SACCULAR ANEURYSM ON AN ACCESSORY BRANCH OF THE RIGHT RENAL ARTERY.

By MAUDE E. ABBOTT, B.A., M.D.

Assistant Curator Pathological Museum, McGill University, Montreal, Canada.

A SPECIMEN of renal aneurysm in the Pathological Museum, McGill University, presents another example of this rare condition, attention to which has recently been drawn by Professor Keen in the *PHILADELPHIA MEDICAL JOURNAL* for May 5, 1900. As seen in the photograph, the aneurysm is situated on an accessory branch of the right renal artery, just beyond its origin. It presents a small excrescence, the size of a marrowfat pea, on the posterior surface of the vessel. The sac wall is smooth externally. On section it cuts toughly and is seen to be thin above, but thickened at its proximal end by the deposit of fibrin which gives it a laminated appearance. At this point also there is beginning fatty degeneration of the wall. The sac contents consist of a single firm blood-clot, forming a rounded mass which lies free in the cavity, almost filling it. The clot is homogeneous in structure, not laminated. The renal artery as also the abdominal aorta show beginning atheromatous degeneration. The kidney is large, weighing 175 grams and microscopically shows a chronic interstitial nephritis. So small an aneurysm naturally gave rise to no symptoms during life, so that only a few points will be of interest in connection with the history of the case:

The patient was admitted to the Royal Victoria Hospital June 27, 1898, in the service of Dr. James Stewart,

whom we have to thank for permission to make the following notes from the clinical report: She was a multipara, aged 56, giving a history of moderate alcoholism, but no history of inherited disease. Two years ago she fell heavily, injuring her back, and has never felt well since; 18 months ago she had an attack of subacute rheumatism. Six months ago she sustained another heavy fall. On entrance to hospital she complained of weakness, shortness of breath, swelling of the legs and abdomen, loss of flesh, and sleeplessness. These symptoms set in about a year ago but have increased greatly during the past two months. The urine was dark-colored, acid, specific gravity 1.020, containing bile and a small amount of albumin. Casts were not certainly made out.

The postmortem was performed by Professor Adami, who preserved the specimen for the museum. The following notes are abstracted from the report made at the autopsy:

There was general anasarca of the body, ascites, right hydrothorax, edema of the lungs, early cirrhosis of the liver, and advanced chronic interstitial nephritis. The heart showed slight fibrosis of the mitral valve. There was beginning atheroma, slight in the aorta, more marked in the medium and smaller-sized arteries, the branches of the renal arteries being distinctly calcareous. The spleen showed one small and one large white infarct. Both kidneys were hog-backed in type. There was extensive scarring of the left kidney and at its lower apex a small well-defined white infarct. The right kidney showed four cicatrices and microscopically advanced chronic interstitial nephritis with marked periglomerulitis and atrophy of the tubules. In the medulla were hemorrhagic areas.



With regard to the etiology of renal aneurysm, in the 13 cases collected by Professor Keen in his article, to which reference has been made above, there was a history of trauma in 6 cases; of nephritis in 2; of calcareous degeneration of the arteries in 2, and of chronic endarteritis in 1. In 4 cases, including the one operated on by Professor Keen, no assignable cause was made out.

In our case it is interesting to note that not only was there a chronic nephritis present, and some atheroma of the vessels, but there was also a history of trauma two years previous to death—"A heavy fall in which the patient injured her back." Any or all of these three conditions may have been in operation causing the aneurysm.

VENOUS THROMBOSIS IN HEART-DISEASE.¹

By WILLIAM W. FORD, M.D.,
of Montreal, Can.,

Fellow in Pathology, McGill University, Montreal.

(From the Pathological Laboratory of the Royal Victoria Hospital).

WELCH, in his recent paper on venous thrombosis in heart-disease, read before the Association of American Physicians in Washington, has called attention to this complication in cardiac disorders. In his paper he has given abstracts of all of the cases which he could find recorded in the literature. He states, moreover, that he considers the thrombus to be microbic in origin, and has referred briefly to a number of cultures which have been taken from thrombi in the pathological laboratory of the Johns Hopkins Hospital.

The following case, which occurred in the wards of the Royal Victoria Hospital, represents this condition, but unfortunately no cultures were taken from the thrombus at autopsy:

D. Bonnar, aged 56, blacksmith, was admitted to the hospital December 18, 1899, and died February 18, 1900, under the charge of Prof. Stewart. The patient gave a history of acute rheumatism when a young man, involving ankles and wrists and knees, and 12 years ago an attack of pleurisy with lumbago and phlebitis. For the past two months has had increasing dyspnea, anorexia and edema of the legs, attacks similar to which he has had since onset of his first trouble.

On admission the patient was in labored respiration, quite cyanotic pulse irregular in volume and rhythm; heart-dulness increased with definite signs of mitral insufficiency; numerous moist rales throughout chest. Five days after admission a hard, tender mass about the size of a half-dollar was felt about the saphenous opening on the right side of the right thigh, and extending from this point round to the inner side of the thigh was felt a small tense vessel. There was, as well, a tender point felt in the popliteal space along its inner side to about the middle of the calf, where there was decided tenderness and pain on pressure.

The symptoms of cardiac insufficiency increased, the pulse became very weak and irregular; patient suffered from great dyspnea and was at times delirious. On January 10, 34 ounces of clear, straw-colored fluid were removed from the right pleural cavity. The cardiac dulness, however, continued to enlarge, the heart showed signs of muscular breakdown; there was marked edema of the legs and blood-stained expectoration.

At autopsy, performed by Dr. Adami, there was 1,600 cc. blood-stained fluid in the right pleural cavity, general anasarca and edema of the extremities. The heart was found to be very much enlarged, pericardial cavity contained 100 cc. of clear, straw-colored fluid. The mitral valve was contracted, its edges markedly thickened without calcification of mitral ring. The mitral orifice showed a slit-like opening about 2.5 cm. in diameter. The left ventricle was greatly enlarged. In the lungs on the right side the lower middle lobes were converted into an enormous infarct, the right pulmonary artery being blocked by an embolus, which with the succeeding thrombus entirely shut off the circulation from this part of the lung. Abdomen and abdominal organs normal. The right common iliac vein showed an old organized thrombus throughout its whole extent, surrounded by numerous bands of adhesions the lower end of the vein gradually tapering down until it became a small, thin strand of fibrous tissue. At the junction of the femoral and the internal saphenous veins the vessel was completely blocked and showed a very recent thrombus filling in that portion of the lumen not already occupied by the old organized mass. At the saphenous opening the saphenous vein showed a sudden fusiform enlargement, the external diameter at this point being 15 mm. About this thickening there was considerable fibrinous periphlebitis, the main veins and branches were completely obliterated by thrombi, firm, and apparently of some standing, but still red in color. The internal femoral cutaneous veins as well were completely thrombosed, rigid and firm, standing out like hard cords.

¹ Read before the Montreal Medico-Chirurgical Society, May 25, 1900.

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Secrecy and local patriotism, when it concerns infectious disease, may prove to be a great source of danger to the country. It is this fact that gives those who believe in the national control of quarantine their strongest argument. We wish distinctly to avoid arousing local feeling, but the duty of arousing the alertness and protecting the interests of the entire country is more incumbent upon us. It would be easy to give examples of the evil in the past, and even in the present, if any good service could thereby be rendered the entire community. We know today, for example, that yellow fever exists within the bounds of perhaps more than one of the United States, disguised under other names. We have such sympathy with the inhabitants that we can realize the tragedy that would befall them should this fact become known. Whenever the deceit is not coupled with the most stringent local measures to stamp out the disease, the evil at once and most decidedly becomes of national significance. But we hate the secrecy and the deception, and we believe that in the long run it is as bad policy as it is bad morals.

The medical inspection of schools is a measure concerning whose utility there can be no two opinions. Of its eminent success the results of its operation in the city of Chicago, as made public by the Health Commissioner, Dr. Reynolds, afford demonstrative evidence. Of 75,000 children examined in the course of eight school months, 4,539 were temporarily excluded from school on account of contagious disease. As a result, the mortality from scarlet fever and diphtheria has been reduced almost one-half. Authoritative information is wanting as to the results obtained in the city of Philadelphia from similar examination of school-children, but there can be no doubt that a marked lessening in the prevalence of the contagious diseases has been thereby effected, and that many lives have been saved in consequence. While the plea was at first made that the undertaking was in the nature of an experiment, and that it would not be wise at the time to apply for an appropriation for the services of the examining physicians, the hope was held out that if the plan proved practicable and useful, at least nominal remuneration would be provided for those who had most contributed to the success of the movement. It now appears that there is some unwillingness to appropriate

the necessary money for the purpose. This should not be, but reasonable compensation should be given for work requiring special skill and acumen, and having direct material value. We pay men for securing public safety, for the extinguishment of fires, and for multifarious other purposes, and we should not attempt evasion of payment for the prevention of disease and death.

Cataract "Absorbers."—Many years ago there was a good deal of newspaper gossip of the pseudo-scientific sort as to the absorption of cataract by drugs used internally or applied locally. The ophthalmologists soon silenced the nonsense until of late, when it seems to have been galvanized into life by much the same class of people who were interested in it formerly. We have heard something of institutions exploiting such remedies and making extravagant claims as to their powers. When newspapers publish the reports of cures of cataract or advertisements claiming to cure, they perhaps have no conception of the suffering and waste of money they cause. There is, indeed, a class of so-called physicians who either through deplorable ignorance or more deplorable shamelessness delude patients with the silly hope that drugs and applications can "dissolve" or "absorb" cataract. We believe that cataract may be prevented and its progress sometimes retarded, or even brought to a standstill, by the relief of eyestrain. But to humbug patients with the false belief that an existing cataractous lens can again be made transparent by drugs is wanton cruelty and downright quackery.

Suicide in the Army.—Surgeon-General Sternberg has recently been investigating the subject of suicide in the U. S. Army. He has selected the years 1898 and 1899 for comparison with the ten years between 1888 and 1897. The first mentioned two years, it will be observed, constituted a period of greatly increased activity in the army owing to the war in Cuba and the Philippine Islands. During this period also the size of the army was greatly augmented. In view of these facts it is noteworthy that there were relatively fewer suicides in the army during these two years than during the preceding decade. The average number of suicides per year in an army of 27,116 men for the ten years was 17. This was a ratio of .063%. The strength of the army in

1898 was 147,795, and the number of suicides was 38, or .026%. In 1899 the strength of the army was 105,546 and the number of suicides was 30, or .028%. If any deduction is warrantable from these figures it would seem to be that actual warfare, and even mere increased activity in the field, tend to diminish the number of suicides in an army. This would probably be accounted for by the improved mental hygiene that comes with an active life, change of scene, keen interest, and the intense emotional excitement incidental to actual war. The statistics do not appear to prove that military service in the Philippines has been the cause of increased mental disease.

Suicide among soldiers has been a subject of special interest for many years in European countries, and special treatises have been written on it, notably the theses of Cristan in 1874, and of Mesnier in 1881. Wallmann, in 1858, furnished some figures derived from the Austrian Army. He found that about 66% of these suicides shot themselves, but these figures probably do not hold everywhere. The next commonest method was hanging. The men were comparatively young. The causes, as observed by Wallmann, were fear of punishment, dislike for a military life, homesickness and melancholia, dissipation of various kinds, debts, wounded honor, and bodily suffering. In the Prussian Army in recent years, suicide is said to have been on the increase, and some persons have attributed this increase to the rigor of the service and the severity of the discipline.

Plague in San Francisco.—The exact truth should be known about the prevalence and prospects of plague at any place in this country, and therefore we welcome an official statement made by Dr. J. J. Kinyoun, of the U. S. Marine-Hospital Service, respecting the state of plague in San Francisco during the month of October. Three cases of the disease, all fatal, occurred among the Chinese in that city. The first case was in a cigar-maker who had been plying his trade up to the very moment when he was taken ill. No clinical history could be obtained, and the real nature of the disease was only discovered at the autopsy. The plague-bacillus was found in the enlarged femoral glands. The second case occurred in a house already infected by a fatal case in July. The death-certificate gave "typhoid pneumonia" as the cause of death. A mass of enlarged femoral glands were discovered, and the plague-bacillus was demonstrated. The third case was quite a typical one, and the diagnosis was made before death. The enlarged spleen and enlarged femoral glands were thoroughly infected with the bacillus. The coverslips made from the fluid removed from these glands contained countless bacilli; in fact, the preparation looked more like a pure culture than a pathologic specimen. Animal inoculations were in every way confirmatory.

Dr. Kinyoun states his belief that the area of infec-

tion in San Francisco is gradually growing wider, so that now there are only 3 blocks of the Chinese quarter proper in which plague has not occurred since last March. The conditions which will obtain in the next six months will, in his opinion, be conducive of a further outbreak. The Chinese population in San Francisco is largely augmented in the winter months. From the salmon fisheries of Alaska alone about 3,000 Chinese return every fall. Then at the end of the fruit-picking season many more of these people flock to San Francisco and make it their home during the winter months. They are of the lowest coolie class, and live amidst the worst possible hygienic conditions. Dr. Kinyoun fears, very naturally, that this population will supply the soil for plague, and we argue with him to the extent, at least, of thinking that the situation has its grave risks. Under date of November 6, Dr. Kinyoun reports still another case of plague, this time most unfortunately in the person of a trained nurse. This nurse had been in attendance on a case of supposed diphtheria, but the bacteriologic examination left no doubt of the nurse's own case at least being plague. This case did not occur in Chinatown. Dr. Kinyoun believes that other cases of true plague occurring in San Francisco are being reported under other names. The situation thus depicted is not to be winked at or covered up. The whole country is interested in San Francisco's health just now, and will insist that it be carefully looked after.

The Census.—The Twelfth Decennial Census of the United States will doubtless contain many interesting statistics for the medical observer, but it is too early yet to obtain them. The preliminary statement, recently given out, places the whole population of the country, including Hawaii, at 76,295,222. Only three countries, China, Russia, and the British Empire, surpass this republic in number of inhabitants. Regarding this country simply as a field for medical research these numbers are indeed stupendous. They mean that, with our energetic and advancing population, we have in the United States a territory of unrivalled opportunity and productiveness for the cultivation of the medical, hygienic, and sociological sciences. Some of the figures are significant. The rate of increase has been about 21%, which means that 13,225,464 have been added to our population since 1890. This rate, however, is lower than that of any decade since the first census of 1790, and this fact seems to indicate that natural causes are operating, according to the laws of population, to curtail in a measure the former phenomenal growth of the country. We may, therefore, reflect that the time has come when the problem is no longer one of mere growth, but of assimilation and cultivation. We may no longer expect excessive growth, but we must be prepared to elaborate what we already have. From a medical standpoint this thought furnishes

much food for reflection. The lusty infant has become a grown man; he must now put forth his strength, and learn to know himself and to meet his destiny.

New York State still leads with 7,268,000 people. Pennsylvania comes next with 6,301,365. But local pride may take a modicum of satisfaction in the fact that if the population of the two cities, New York and Philadelphia, be subtracted, the State of Pennsylvania has the larger population, and is truly the Empire State. Illinois, with 4,821,550 inhabitants, is third, and Ohio, with 4,157,545, is fourth. These four States combined would constitute a respectable "empire," and exceed the combined population of the United Kingdom and the United States 100 years ago.

From the medical standpoint a fact of great interest and importance is the growth of urban population. The increase in cities of 25,000, or more, has been more rapid than during the preceding decade; in other words, there is no reaction from the tendency of the American people to live in towns. We are becoming more and more a nation of town-dwellers. This fact shows at once how important among us have become the problems of civic righteousness. These problems, indeed, have become foremost in our social life, and not least among them are the problems of medical and hygienic science. Whether this tendency is for good or for evil may be a debatable question, but the fact is before us and we must meet the obligations which it imposes.

The Present Status of Litholapaxy.—An examination of the literature leads one to the conclusion that litholapaxy has not received, in this country, the recognition to which it is entitled, except by a few surgeons. It is an especial pleasure, therefore, to observe the high estimate placed upon this operation by the surgeons of India, whose enormous experience entitles their views to the most respectful consideration. A most impressive exposition of this subject appears in the "Special Stone Number" of the *Indian Medical Gazette* (August, 1900), from which the following quotations and statistics are taken:

It may be said without fear of successful contradiction that the operation of litholapaxy, in its conception and final execution, will ever stand as one of the most brilliant achievements in the entire field of surgery. It was introduced by Professor Bigelow, of Boston, in 1878, and was immediately taken up by the more progressive surgeons of this country and Europe. Previous to this time stone in the urinary bladder was dealt with either by lithotomy or lithotrity. The latter had already become with some surgeons the operation of choice in selected cases, but it was attended with such serious inconveniences that many hesitated to adopt it. The instruments employed for crushing the calculi were inefficient and unsuited for their work, and the irritation caused by the fragments passing with the urine

was considerable. Besides, recurrence was common on account of the fact that some of the fragments remained in the bladder and became the nuclei of new concretions. That these inconveniences, not to say dangers, impressed those of the largest experience with vesical calculi is shown in a volume on lithotomy, based on 864 operations, published in 1876, by Surgeon-Major Harris, of the Bengal Medical Service. In the preface the author says: "No reference has been made to lithotrity, as I, following the general custom of surgeons in India, have never practised it." As already stated, litholapaxy was brought out in 1878. That the operators of India were impressed with the merits of this method of dealing with stone is evidenced by the fact that it was performed by Surgeon-Major Beaumont, in 1880.

In the *Indian Medical Gazette* for 1882-3, Surgeon P. J. Freyer records his first 20 cases. In the same journal for March, 1884, he says: "I cannot speak in terms of too high praise of Bigelow's operation. By its introduction the operative surgery of stone has truly been revolutionized." In 1892, Dr. Keegan writes: "I have no hesitation in stating that it is far and away the best operation for the vast majority of the calculi the surgeon meets with in boys, provided he has a large assortment of trustworthy instruments to hand and that he knows how to use them with dexterity and judgment." The weight of the testimony of almost all of the Indian surgeons today is even more strongly in favor of this procedure. To quote the opinions of the various operators would require far more space than could be devoted to this subject, and, moreover, would be but a profitless repetition. The consensus of opinion appears to have been expressed by Freyer in the *British Medical Journal* for November 7, 1896. He says: "With results such as these before me, I have no hesitation in pronouncing Bigelow's method the safest and best for calculi of all sizes, in patients of all kinds and conditions, provided only that this operation is feasible. . . . So fully convinced am I of the vast superiority of Bigelow's operation over all others in saving human life and suffering, that I would lay it down as an absolute rule, that in no case, whether in the male or in the female, the adult or the child, should a stone, whether small or large, be subjected to a cutting operation till after trial litholapaxy is found to be not feasible."

Let us consider for a moment the experience upon which these opinions are based. Keegan reports 500 litholapaxies performed on boys at the Indore Charitable Hospital. The average of these patients was 6 years; average weight of stone, 95 grains; average stay in the hospital, 4 days; mortality, 2.2%. Henderson has performed 1,200 litholapaxies, but does not speak of his results, as the paper deals only with "perineal" litholapaxy. At the Mayo Hospital, Jaipur, 175 litholapaxies have been performed during the past 5½ years with a mortality of 1.7%. The ages of these patients ranged from 7 months to 80 years. The average stay

of the patient in the hospital was 6 days. Baker refers to 404 cases published in the *London Lancet*, in 1896 and 1897. The mortality in these cases was 0.742%. The extremes of ages were 8 months and 78 years. Many other similar experiences might be quoted. At least three medical officers in India have reported series of over 100 consecutive litholapaxies without a death. For the 5 years, preceding March 31, 1895, the record of all Indian litholapaxies was 10,073 operations, with a mortality of 3.96%. The mortality in 7,201 cases of lateral lithotomy by the same operators, was 11.02%, while 147 cases of suprapubic lithotomy was followed by a mortality of 42.17%. It should be said of the suprapubic cases that they represented the most unfavorable examples met with, hence the high death-rate.

The majority of surgeons of this country have accorded litholapaxy a restricted place in dealing with stone. In most textbooks a number of contraindications to the operation are mentioned. Chief of these are: Persons below the age of puberty, very hard stones, very large concretions, stricture of the urethra, enlarged prostate, stone of the bladder, encysted stones, a sacculated condition of the bladder, cystitis, etc. A few operators have reduced this list by half or more in their practice. That this number should be still further curtailed is shown by the work of the Indian surgeons. To meet the cases of "hard" and "large" stones, and stricture of the urethra, "perineal" litholapaxy was introduced by Brigade-Surgeon Forbes Keith, at the time Civil Surgeon of Hyderabad, Sindh. This consisted in the addition of Bigelow's operation to the method of Dolbeau and of Harrison, the difference being that Keith opened the membranous urethra and passed the lithotrite and evacuators into the bladder by this route. By this means larger and much stronger instruments may be employed without injury than could possibly be manipulated through the urethra. The prostate and vesical neck not being incised, perfect control of the sphincter remains, and the small wound heals in a very much shorter time than the usual lithotomy wound. The statistics of this operation are few, as but a very limited number of the hospitals possess the necessary instruments. Henderson reports 110 cases; of these 13 were in adults; all recovered, and 97 were in children. Three were fatal giving a mortality of 3.09%, or for the whole, 110, 2.73%. It must be remembered that these were unsuitable for urethral litholapaxy, and yet the showing is nearly as good as that obtained in uncomplicated cases. This was the first improvement in Bigelow's operation, or, to be more correct, extension of the method. The next, and only other addition to this work as Bigelow left it was by Forbes (*Medical News*, June 23, 1894), who demonstrated with mathematical precision the resistance of vesical calculi to crushing force, and the strength of the lithotrite. From these factors and a careful considera-

tion of the lithotrite from a mechanical standpoint, he devised a new instrument which is stronger and more efficient than those hitherto employed. Each lithotrite is tested before being sent out, and the pressure it has withstood is plainly stamped upon it. A mechanism in the handle indicates to the operator the power he is exerting between the jaws of the instrument so that he may be certain of the amount of force he may safely apply. By this means, broken and bent lithotrites which have constituted rare, but serious complications of litholapaxy, will be unknown. The Forbes instrument being more powerful than the other types in use of equal size, resort to the perineal route will be less frequently necessary.

How well Bigelow accomplished his purpose is shown by the fact that today, save the single improvement of Forbes, his instruments and his methods have not been advanced in a single particular. It is most exceptional that the first effort approaches so nearly perfection.

The operation of litholapaxy may be considered ideal. The work of Bigelow has added a luster to American surgery that will endure as long as the healing art is practised. To American ingenuity also belongs the credit of bringing the lithotrite to a higher degree of efficiency.

Plague.—The last of the plague patients has been discharged from the Plague Hospital, at Glasgow, and the port has been declared free of the disease, and clean bills of health have been allowed to vessels leaving the harbor. The outbreak has extended over a period of nearly 3 months, and 28 cases have been dealt with, 8 of which terminated fatally. Fully 170 "contacts" have passed through the reception houses, over 120 being under observation there at one time. At a recent meeting held in National Hall, Glasgow, Dr. Thomas Colvin advocated the appointment of a port medical officer. The Tynemouth Hospital and the Tyne Floating Hospital, specially set apart for plague patients, have each a case of suspected plague. Up to the present, however, the diagnosis of plague has not been confirmed. The mortality from plague for all India increased from 2,123 during the week ended October 7, to 2,322 during the week ended October 14. In the Bombay Presidency the deaths from plague during the same periods rose from 1,142 to 1,415. In Calcutta the number of cases of plague has fallen most satisfactorily.

Important modifications in the existing plague regulations have been made by the Government of Bengal. The rules issued in 1898 have been cancelled, their place being taken by regulations of a simpler nature. Isolation, segregation, and inoculation are to largely give place to sanitary and disinfecting precautions, so as to avoid every chance of friction with the natives, and of fighting against their superstitions and prejudices. In Bangalore, plague has increased rapidly, plague corpses being found cast away in the municipal drains, etc. In Mysore, there has been a slight decline in the plague mortality. In the Kolar gold fields the fresh outbreak of plague has caused considerable alarm. For the present it is confined to the Coromandel gold mine and to a village adjoining the mine. The infection is supposed to have been conveyed through a supply of flour imported from Bombay. The plague in Poona City shows no signs of abatement. The exodus from the city continues, and Poona seems to be once more in the throes of a severe epidemic. From the Island of Mauritius, 50 fresh cases of plague were reported for the week ended November 12, with 34 deaths. United States Vice Consul General Knight, at Capetown, South Africa, has informed the State Department that plague is declared officially to exist in the interior of the colony. The information was communicated at once to the Marine-Hospital Service.

Reviews.

The Care of the Child in Health. By NATHAN OPPENHEIM, A.B., M.D. New York: The Macmillan Company, 1900.

There need be no hesitancy on the part of physicians to recommend this book to parents, for it does not go beyond its title more than to be a guide as to when medical attention is necessary. No parent, and we might say no adult, can fail to be benefited by reading the chapter on the "Relation of Parents to Children." The advice throughout the book is uniformly sound with the exception of a few slips of minor importance. To the medical mind the author's style is exceptionally clear and even attractive, but in a few places it seems as though the laity might miss a good deal of the meaning. On the whole, the book will be of service and, at times, of great comfort to anxious young mothers.

Ulceration of the Bladder, Simple, Tuberculous, and Malignant. By E. HURRY FENWICK, F.R.S., Surgeon to the London Hospital, Surgeon and Pathologist to St. Peter's Hospital for Urinary Diseases, Consulting Surgeon to the West Herts Infirmary. Pp. 85. Philadelphia: P. Blakiston's Son & Co., 1900. Price, \$1.75.

The book is divided into three chapters; the first devoted to simple ulceration of the bladder, 31 pages; the second chapter to tuberculous ulceration of the bladder, 46 pages; and the remainder is taken up with malignant ulceration of the bladder. The subject under discussion is an obscure and difficult one and the facts recorded are the result of an extensive and clinical experience, some of the patients having remained under observation for many years. The discussion of the pathology of the conditions under consideration is not as thorough in all cases as seems desirable and perhaps some surgeons will question the advisability of certain suggestions as to treatment. For example, we notice frequent reference to the use of Koch's tuberculin; also the production of paraplegia by inserting a tenatome between the laminae of the vertebrae low down and cutting across the cord to isolate the nerve-supply is suggested. However, the book contains much that is interesting and valuable for those engaged in genitourinary practice.

Rhinology, Laryngology, and Otology, and their Significance in General Medicine. By E. P. FRIEDRICH, M.D., Privat-docent at the University of Leipzig. Authorized translation from the German. Edited by H. Holbrook Curtis, M.D., Consulting Surgeon to the New York Nose and Throat Hospital. Philadelphia and London: W. B. Saunders & Company. 1900.

In the words of the preface, this book "does not pretend to be a special textbook in the ordinary sense, being intended to awaken the interest of both the general practitioner and the specialist in certain matters which appear to me to demand special attention and further elaboration." . . . The bibliographic notes "do not pretend to anything like completeness," yet the author "hopes" he has "cited the most important works, a reference to which will enable the reader to elucidate any doubtful questions that may present themselves." So that at the outset we are informed that only a syllabus of a proper course of research and study in these three great special branches of medicine, is placed in our hands, and after a careful examination of the book we discover that such is really the case. We find no anatomy, physiology nor illustrations of any kind in the entire work of 335 large octavo pages. We have before us practically nothing but a list of symptoms in the nose, throat and ear, which may be observed by the general practitioner in his care of general diseases, but there is no attempt made to mark out a course of treatment for such symptoms and diseases. This work cannot be of use to the medical student. The general practitioner may be interested in it if he has time to follow the line of study suggested by its pages, but it seems to us that the specialist in diseases of the nose, throat and ear is the only one appealed to by the mass of special literature laid before him in this work.

Transactions of the American Surgical Association, Vol. 18. Edited by DE FOREST WILLARD, M.D., Ph.D., Recorder of the Association. Illustrated, pp. 468. Printed for the Association and for sale by Wm. J. Dornan, Philadelphia, 1900.

In a report of the Surgical Association contained in our special number of May 3, will be found quite complete abstracts of the papers presented which are contained in full in this volume. As is usual, the papers presented were of a high scientific value. The symposium on stomach surgery contains a great deal that is of value with regard to this subject and which cannot be found elsewhere. Many of the cases reported were also of special interest, notably those of Elliott and Richardson on removal of tuberculous mesenteric glands and Keen's report on nephrectomy for a large aneurysm of the right renal artery. The special interest which has been taken in celiotomy for peritoneal infection in typhoid fever makes the paper by Warren, reporting 24 cases of this kind, also of particular interest. The volume is well printed, bound and indexed and contains a number of good illustrations.

Ringworm in the Light of Recent Research. Pathology, Treatment, Prophylaxis. By MALCOLM MORRIS, Surgeon to the Skin Department, St. Mary's Hospital. With 22 photomicrographs and 1 colored plate. 8vo, pp. viii, 142. London, Paris, and Melbourne: Cassell & Company, Limited, 1898.

Ringworm is such a common affection that the practitioner needs to be informed concerning its every aspect in order that he may the more successfully cope with it. In the volume before us the question of etiology is carefully gone into and the opinion is expressed that ringworm is of multiple etiology. In the treatment are considered not alone those measures that have proved useful in the author's personal experience, but also those that are recommended by others. The illustrations are excellent and helpful. Four chapters are devoted to the question of etiology, one to that of pathology, two to clinical varieties of the disease, one to ringworm of the beard, one to diagnosis and prognosis, one to treatment, and one to prophylaxis.

L'Année Chirurgicale. Revue Encyclopédique de Chirurgie General et Special. Published under the direction of DR. A. DEPAGE, of the University of Brussels, surgeon to the Brussels Hospital; with the collaboration of many well-known surgeons. Second year, 1899, second fasciculus, 1900, pp. 792. Brussels: Henri Lamertin; Rue du Marché au Bois 20.

In a review of the first fasciculus of this excellent work we have given its general plan. The editors undertake to notice every article which has appeared on surgery during the past year and classify these articles under various headings. First is given a bibliography of the subject under consideration with reference to the place where the article appeared. Then follow brief abstracts of the articles signed by the abstractor. In this volume are taken up the special surgery of the nose, ear and throat, the face, lips and jaw and the thoracic and abdominal organs, including the entire digestive tract. We have formerly expressed our high opinion of the value of this work. It not only enables the surgeon who desires to look up the literature of any subject to find a carefully prepared bibliography, but it gives him a brief abstract of the articles which have appeared. While these abstracts may not perhaps always of themselves be sufficient for those interested in any special subject, they indicate sufficiently the character and value of the articles and in this way may save unnecessary trouble in obtaining some article which is of comparatively little value. We trust that the work will become sufficiently well known and will be enough supported so that the editors and publishers will find it worth their while to continue it in coming years. Such a volume is of particular value now that the *Index Medicus* has been discontinued, which formerly was so useful for those engaged in literary work.

Bacteriology and Surgical Technic for Nurses.

By EMILY M. A. STONEY, Superintendent of the Training School for Nurses, St. Anthony's Hospital, Rock Island, Illinois. Author of "Practical Points in Nursing," etc. Illustrated, pp. 190. Philadelphia: W. B. Saunders & Co., 1900. Price, \$1.25.

This little book contains a brief discussion of bacteriology and the theory of antitoxins. The details of surgical technic and the use of various disinfectants are carefully given; also receipts for the preparation of surgical dressings, lists of instruments for operations, the method of administering anesthesia, preparation of operating rooms, etc. Although the descriptions are briefly given, they seem to be sufficiently complete for the use for which the book is intended, and it will no doubt prove a useful guide for nurses. It may also be of value to surgeons who supervise the preparation of their own dressings and materials for operation.

Tropical Diseases. A Manual of the Diseases of Warm Climates. By PATRICK MANSON, C.M.G., M.D., S.I.D. (Aberd.). With 114 illustrations and 2 colored plates. Revised and enlarged edition. 8vo, pp. xx, 684. London, Paris, New York, and Melbourne: Cassell & Company, Limited, 1900.

Occasionally one is moved to lament the almost unlimited multiplication of books and to wonder at the destiny of a large number of them. No such emotion, however, arises in connection with the work before us, written, as it is, by a master hand and issued at a time when the entire world is interested, if not involved, in tropical affairs. The disorders considered are neither solely those peculiar to and confined to the tropics nor yet all of those occurring in the tropics, but those occurring only or specially prevalent in warm climates. These differ from those of temperate climates principally in their specific causes, which find under the respective circumstances conditions the more favorable for their existence and conveyance. The text is divided into six sections, namely: Fevers, General Diseases of Undetermined Origin, Abdominal Diseases, Infective Granulations Diseases, Animal Parasites and Associated Diseases, Skin Diseases, and Local Diseases of Uncertain Nature. The article on Malaria is a most comprehensive one, having the first 148 pages devoted to it, and including the most recent knowledge relating to this subject. A similar commendatory statement is equally applicable to the remaining articles. The volume is wholly deserving of praise and will repay careful perusal.

The Operative Surgery of Malignant Disease. By HENRY T. BUTLIN, F.R.C.S., DC.L., Surgeon to St. Bartholomew's Hospital; Late Erasmus Wilson Professor of Pathology, and Hunterian Professor of Surgery and Pathology to the Royal College of Surgeons, with the cooperation of several well-known medical men. Second edition, pp. 462. Philadelphia: P. Blakiston's Son & Co., 1900. Price, \$4.50.

Butlin gives as his objects in writing this book the indication of the difficulties of cases, the parts of the body which may be treated by operative means with the best prospects of success and encouragement of the performance of operations in suitable cases at the earliest possible period; the discouragement of the repetition of useless and dangerous operations, and to raise the question of the propriety of the removal of entire organs for the cure of carcinoma of limited extent. The appearance of a second edition of this well-known book and frequent references which we see to it lead us to believe that the author has been successful in his efforts. All parts of the body in which operations for carcinoma are possible come under discussion. The choice of cases, the preparation for operation, the various methods of operating and the probable immediate and permanent results are carefully discussed, and the conclusions seem to us judiciously drawn. The book shows evidence of a most thorough and careful study of the literature of the subject, and of much practical experience. Full and careful references are given to all important papers which have appeared, and the book seems thoroughly up to the times in every particular. In most cases Butlin takes a hopeful view as regards

the results of operations for carcinoma. He believes that about a dozen cases of undoubted gastric carcinoma have been cured by pylorotomy, and that patients who are not cured, are relieved by the operation. In operating on the digestive tract he prefers anastomosis by suture. The results of operation for carcinoma of the rectum are not as good as those for some other parts of the body, but they are not bad; although the first operation is not always successful, several cures have been effected by a second operation. He believes that in spite of the disagreeable sequels which sometimes follow, it may be fairly said that the patient's comfort is increased and his life prolonged by operation. In operation for removal of carcinoma of the breast, Halsted's method is preferred. Butlin states that he has used this as his routine method of operation since 1895. The percentage of cases in which the patient has remained free of disease for 3 years or over during the 5 years in which he has used this method is nearly 70%. But Butlin has no hope that we shall for the present permanently succeed in attaining such excellent results, as there is no doubt that this series was a very fortunate one, and he believes that his next series of cases will not yield equally good results. In all operations for malignant disease great stress is laid upon the importance of early operation. The book is worth careful reading, and every surgeon will certainly want to own a copy.

A Practical Treatise on Fractures and Dislocations. By LEWIS A. STIMSON, B.A., M.D., Professor of Surgery in Cornell University Medical College, New York City; Surgeon to the New York and Hudson Street Hospitals; Corresponding Member of the Société de Chirurgie of Paris. Third edition, revised and enlarged. In one handsome octavo volume of 842 pages, with 336 engravings and 32 full-page plates. New York and Philadelphia: Lea Bros. & Co., 1900. Cloth, \$5.00, net; leather, \$6.00, net; half morocco, \$6.50, net.

Stimson's book on fractures and dislocations has long been regarded as the standard text on this subject in the English language. The book is too well known to need any extended description of its general plan and its teachings are too sound to permit very much criticism. This third edition has been thoroughly revised and seems to be quite abreast of the times. The section on fractures of the spine, including a discussion of hematomyelia, the reference to the operative treatment of dislocations, and the teachings with regard to many other subjects give evidence of this. The tone of the book is conservative and safe. For example, we find the following with regard to the treatment of fractures of the patella: "I believe certain methods, when surrounded by every precaution, may be employed with the assurance of success that justifies resort to them, and while I habitually use them yet I have never taught them as routine practice. But, on the contrary, I strongly advise against their use except by those who can bring to them not merely experience in operating, but also the habit of taking surgical precautions and the aid of trained assistants who have the same habits, who are practising those precautions daily; in short, the personnel of an active surgical hospital service. The general practitioner, even the occasional surgeon, is not only fully justified in using nonoperative methods (in treating fractures of the patella), but ought to do so, and he can feel assured that the method at his command justify the expectation of a satisfactory, even if not perfect, result." The method of reducing dislocations by continuous traction of a weight seems simple, safe, and deserving of general adoption. This original method has been published by Stimson during the past year. This edition of the book contains many new and valuable cuts and particularly some very good x-ray cuts illustrating the conditions found in various fractures and dislocations. There are still some rather old and complicated methods illustrated and described which we think might with advantage have been omitted; for example, Middeldorpf's triangle for fracture of the humerus and the old-fashioned side traction splint. The usefulness of massage in the treatment of fractures and dislocations is perhaps not sufficiently emphasized, and the author seems to be somewhat more conservative than most modern surgeons in the operative treatment of fractures. However, on the whole, the book is very complete, its teachings thoroughly modern, and it will no doubt continue to be the standard book of reference on this subject for some time to come.

Correspondence.

ETIOLOGY OF YELLOW FEVER.

By WALTER REED, M.D.,

of Columbia Barracks, Quemados, Cuba.

Surgeon U. S. Army.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

REFERRING to our paper on "The Etiology of Yellow Fever—a Preliminary Note"—which was published in the issue of your journal for October 27, 1900, we regret very much that, in quoting from memory, we have unintentionally misconstrued Veazie's results in the epidemic which prevailed in New Orleans during the summer and fall of 1899. We said, if we remember correctly, Veazie, of New Orleans, has recently reported that during the epidemic of 1899 in New Orleans, a pure culture of *B. icteroides* was not isolated in any case of yellow fever.

Since the appearance of our Preliminary note, we have, through the courtesy of Dr. Veazie, received a reprint of his paper (*Estivoautumnal Fever in New Orleans, Summer and Autumn, 1899, N. Y. Med. Journal*, May 19 and June 2 and 9, 1900), from which we quote: "I know of no instance as yet when *Bacillus icteroides* has been found in the bodies, dead or alive, of those afflicted with the prevailing fever this year (1899); that is, no true cultures have been developed, although repeated trials were made by different bacteriologists."

Dr. Veazie then proceeds to show, both by blood-examinations and by postmortem appearances, that the prevailing disease was malaria and not yellow fever. In this connection it is but fair to state that Dr. Veazie, taking cultures from the ear-lobe on the third day of the disease, during the prevalence of the epidemic of yellow fever in New Orleans in 1898, claims to have obtained *B. icteroides* in 19 cases out of 23. His failure to obtain this bacillus in 1899 was, therefore, one of the reasons which led him to conclude that the much disputed epidemic of that year was malarial in character.

POTASSIUM IODID IN SATURATED SOLUTION. A STUDY OF THE DROP.

By J. HENRY SCHROEDER,

United States Chemist,

of Cincinnati, O.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

UPON superficial consideration of this subject it would not appear that it embodied much food for thought. The drop has, of necessity, remained as one of the popular means of measuring medicine, and, erroneously, a drop is usually considered to be equal to a minim, at least for all practical purposes. It has long ago been demonstrated, however, that this may be the case with distilled water under certain conditions, but does not hold good for the majority of liquids.¹ The size of a drop depends upon the orifice from which the liquid in question may be dropped, from the surface over which the drop must flow before it drops, and also upon the consistency and character of the liquid. This will be clearly

demonstrated in a later part of this paper. I believe that potassium iodid is practically the only salt which is prescribed and dispensed in saturated solution. This is because of its extreme solubility, one part being completely soluble in 0.75 parts of water and 15° C. It is my experience, and special inquiry has developed the fact, that in most cases the physician who thus administers potassium iodid expects that the patient shall receive one grain of the salt with each drop of the solution, or practically that amount. The basis for this accepted theory may, perhaps, be found in the belief that one fluid ounce of a saturated solution of potassium iodid contains 480 grains of the salt, and that the 480 minims of the fluid ounce are equal to 480 "drops." Any variance in the quantity of the salt contained in one "drop" of the solution must necessarily bring about a variance in the result of the treatment, whether the doses administered be small or large. Only recently an instance has come to my notice, where a physician administered 300 drops of the saturated solution per day, with the expectation that the patient received a total of 300 grains of potassium iodid during that period. The result of the treatment was not at all in accordance with this dose supposedly administered.

This method of administering potassium iodid is probably not of recent origin, yet the theory that each "drop" of its saturated solution contains *practically* one grain of the salt, seems not to have ever been doubted or investigated; at least, records of such a study are not among the treasures of pharmaceutical and medical literature that I have at my disposal. Perhaps the subject seems insignificant at first, but the results of my investigation may have justified the study.

The Saturated Solution.—24.1835 grams (372.4 grains) of potassium iodid was dissolved in the smallest possible quantity of distilled water, at ordinary temperature, and this finished, saturated solution measured 26 cc. (or 7.033 fluid drams = 421 minims) or, in order to contrast more prominently, 422 minims contained 372.4 grains KI. This proves that one *minim* of the solution does *not* contain one grain of the salt, but less. The following experiments prove that:

1. One "drop" is not equal to one minim of the solution.
2. The variance of the size of a drop of solution, according to whether the solution is dropped from a pipet (ordinary medicine dropper), from a glass tube, or from the lip of a prescription bottle. (It will be noticed that only such dropping mediums were selected as are used by patients.)
3. The exact quantity of potassium iodid contained in the respective "drop."

The figures may be better contrasted when arranged in tabular form:

3.7 CC. (OR 1 FLUID DRAM) OF POTASSIUM IODID SATURATED SOLUTION.

DROPPED FROM.	NUMBER OF DROPS.	GRAINS KI. IN EACH DROP.
Pipet, orifice 2 mm., walls thin, held <i>vertically</i> .	113	0.46
The same, <i>inclined</i>	78	0.68
Glass tube, orifice 6 mm.	58	0.91
Lip of prescription-bottle (6 mm.)	124	0.43

3.7 cc. (1 fluid dram) = 60 minims. Each minim contains 0.88 grains.

From the above figures it will be seen that it is entirely impossible to administer potassium iodid with any exactness of dosage when dispensed in the form of a saturated solution.

¹ Remington: Practice of Pharmacy, Third edition, p. 73.

LIGAMENTOPAXIS.

By CARL BECK, M.D.,

of New York City.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

FULLY appreciating the fact that the *Centralblatt für Chirurgie* (August 21, 1897), in which I first published my method of suspending the uterus on the round ligaments, may have been inaccessible to Dr. D. Tod Gilliam, I must differ from the position which Dr. Gilliam takes in your issue of November 3, where he writes: "The only thing in common is the inclusion of the round ligament in the abdominal wall. If Dr. Beck can establish priority for this very important feature of the operation, he is entitled to credit for it." The interrogative "if" seems, to say the least, odd, in view of the more than ample proofs of my priority, as shown in this journal. Dr. Gilliam has apparently not looked up the dates thoroughly, and has only read the article which described the latest modification of my original operation (*American Journal of Obstetrics*, Vol. xlii, No. 3, 1900). Therefore, if he intends to convey that this last modification of mine differs from the one which he describes as his own, he is perfectly right, because what he published was not my modification, but my *original operation* (published more than three years ago). I certainly am grateful to Dr. Gilliam for further modifying my method of ligamentopaxis, which does not, however, exclude my claims for my original work.

CALENTURA OR FEVER?

By EUGENE STADELMAN, M.D.,

of Descubridora, Dgo., Mex.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

I HAVE read with great interest the article "Concerning Calentura" that appeared in the issue of October 13. I fail to understand why Dr. Foxworthy limits the term "Calentura" to a particular form of fever that occurs at a particular time of the year. In Mexico the name is applied to any form of fever, not as a name for the disease, but to designate the presence of fever. Among the better classes, the more expressive word "fiebre" is used in the same sense. Calentura literally means a "heating up," and when used in the plural, "Las Calenturas," it signifies some form of malaria accompanied by chills.

ANALGESIA IN OBSTETRICS PRODUCED BY MEANS
OF CARBONIC-ACID GAS DOUCHE.

By A. ROSE, M.D.,

of New York.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

TO YOUR editorial "Patriotism and the Zeitgeist in Medicine" I wish to offer an illustration how an American discovery is neglected.

In the *Medical and Surgical Reporter*, Philadelphia, February 18, 1871, appeared an article "On the induction of local anesthesia in labor by the use of carbonic-acid gas," by Theodore A. Demmé, M.D., of Philadelphia. In this paper the author reports the following three cases:

CASE 1.—In December of last year, I received an urgent call to wait upon a lady who, it was stated, was in labor, and had been in convulsions for several hours. Upon arriving at the house I was informed by the midwife having the patient in charge that she had been in labor over 20 hours; the

bag of waters had ruptured almost at the commencement of labor and, although the pains were frequent and excessively severe, the mouth of the womb had scarcely dilated any during the last 10 hours, and that she was about to request the attendance of a physician when convulsions came on. I recognized at a glance that I had before me a terrible case of eclampsia or puerperal convulsions. The patient was lying in a totally unconscious condition, and at short intervals would be seized by a spasm, convulsing every muscle of the body, jerking violently the head to one side, and at the same time bending the body backward as if the head and heels were to approach one another; the features were distorted; the throat and face tumid and purple, and the eyes rolled up in the orbits—it seemed as if they would start from their sockets. Upon examination I found the os uteri dilated to about the size of a half-dollar piece, and extremely hard and rigid. This rigidity continued not only during the pain, but in the intervals; there was, in fact, a constant spasmodic rigidity. The commencement of a pain and the onset of a convulsion were almost simultaneous, it appearing as if the pressure of the child's head upon the irritable and sensitive os was the direct cause of the eclampsia.

The indication was undoubtedly to dilate the os and deliver, but every attempt at forcible dilation aggravated the symptoms, and I therefore bled the patient freely from the arm, in the hope of promoting the relaxation of the spasmodically contracted muscles; but although I controlled the arterial circulation and reduced the volume and frequency of the pulse, I found that even excessive bloodletting had no effect upon the rigid os. The idea then flashed upon my mind of using the carbonic-acid gas. After a delay of 15 minutes consumed in procuring the apparatus, I applied the gas to the uterus. When the douche had been continued for about 5 minutes, it was evident that some change had been produced, for the patient remained quiet, and no convulsive movement took place. A few minutes more, and the anxious family, startled by the great change that had occurred in the behavior of the patient, imagined that she was dying, and only the regular beating of the pulse assured me that such was not the case. Fifteen minutes after the application of the gas there was a slight tremor of the body, when I again carried the gas-tube into the vagina, and in so doing examined the womb, and to my astonishment and great satisfaction found the os not only no longer rigid, but fully dilated, and the head about passing the superior strait. I immediately applied the forceps and delivered. The patient, after remaining unconscious for several hours, suddenly awoke as if from a sleep, and asked for a glass of water. Convalescence proceeded favorably.

In this case we had a revelation of the power of carbonic-acid gas as an anesthetic agent over an extremely sensitive and irritable os uteri, controlling rigidity without any apparent interference with the contractile or expulsive efforts of the uterus.

CASE 2.—January 3, 1871, Mrs. D., primipara. When called to the patient, labor had been in progress about two hours. The pains were excessively severe and frequent. The patient was nervous and extremely irritable, allowing neither herself nor those surrounding her any rest. Per vaginam examination gave little hope of speedy termination. The os uteri was dilated about one-half, the edges dry, hot-and-cold-like. After waiting 30 minutes and perceiving little or no progress, I determined to use the carbonic-acid douche. The patient having been assured that she would receive relief, offered no opposition to the application. After the gas had been allowed to act upon the mucous membranes for 5 minutes the entire demeanor of the patient was changed. The demonstrations of suffering, impatience and irritability were succeeded by a calm so complete that it seemed as if the labor had been suddenly arrested. The douche was repeated in 10 minutes, and the observation made that whilst the patient asserted that she felt no pain, the bag of waters was pressing firmly upon the now rapidly yielding os. In exactly 15 minutes from the termination of the first douche, the dilation being almost complete, I ruptured the bag of waters and almost immediately perceived the head entering the pelvis. Five minutes after the escape of the waters the third application of the gas was made. The head had now entered the pelvic cavity and was pressing upon the perineum.

The patient at this time, in answer to the questions, stated "that she felt no pain," "did not feel the head at all." In fact, did not believe she was to have a child. Very shortly after, however, the relief from suffering ceased, and the passage of the inferior strait was accomplished with all the usual symptoms of pain. The further progress of the case presented no particular features.

CASE 3.—January 4, 1871, Mrs. D., aged 37; second confinement; 13 years elapsing since the birth of the first child. When engaged to attend this lady I anticipated a difficult labor, in consequence of the great length of time that had passed since the birth of the first child. Such was, however, not the case. Being called to the patient at 9 A.M., I was enabled to leave the house at 11.15 A.M., the mother lying comfortably in bed and the nurse dressing the newborn babe.

In this case I made four applications of the gas, at ten minute intervals, during the first (or dilating) stage of the labor, with the effect of greatly ameliorating, but not entirely relieving the sufferings, the patient complaining from the very commencement of labor of pain in the back and of cramps in the limbs.

CASE 4.—January 21, 1871; Mrs. E., primipara. The gas douche applied every ten minutes, with the effect of relieving the pain in so marked a manner that it was with difficulty that I could convince the mother and nurse that I had not stopped the labor. Indeed, it was only when the sufferings became intensified, as the head pressed on the perineum, that they again had faith. In this case the gas injection was applied four times, at intervals of ten minutes.

Dr. Demmé in conclusion says: "I would urge upon my medical brethren to give this agent a fair trial, and to report their experience. The number of cases in which I have used the gas is too limited to form a proper estimate of its value. Nevertheless, in cases of rigid, unyielding, irritable os uteri, I regard it as a boon, relieving the suffering and expediting the labor."

The paper of Demmé in which these cases are given was referred to in several of my publications on carbonic-acid treatment. I mentioned Demmé's discovery before the Obstetrical Section of the New York Academy of Medicine, at the occasion when I reported a case of my own in which I had succeeded to produce anesthesia during labor by means of the carbonic-acid gas douche; but it seems indeed, a method discovered by an American physician has to be discovered or at least ascribed to some European physician before the profession here will take the pains to notice it or give it a trial.

As far as my knowledge goes—and I have read every book and paper on carbonic-acid treatment which I could find in the library of the New York Academy of Medicine and the Surgeon-General's library in Washington—Demmé was the first who wrote on this method of anesthesia in labor, and I have not seen a single notice in any journal about his paper; certain it is that it is not mentioned in any of the textbooks on obstetrics that I have examined.

Fulminating Appendicitis.—C. A. Wheaton (*St. Paul Medical Journal*, November, 1900) says that he has noticed in nearly all of his cases the occurrence of vasomotor paralysis which brings about a cyanosis of the trunk, particularly of the abdominal region. He regards this as a symptom of general abdominal suppuration. He has not seen the sign mentioned in any textbook. Every case of appendicitis should be considered surgical, because the surgeon's training specially qualifies him to best interpret the meaning of the symptoms encountered. Every case of so-called "fulminating appendicitis" should be operated upon as soon as its distinctive characteristics are known. High temperature and high pulse associated with local pain and rigidity are strong presumptive evidences of malignancy in the attack, and if associated with the vasomotor disturbances before referred to, are practically proof of perforation. [G.C.C.H.]

Society Report.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Thirteenth Annual Meeting, Held in Atlanta, Georgia
November 13, 14, and 15, 1900.

THE Association met in the ballroom of the Kimball Hotel, under the presidency of Dr. A. M. Cartledge, of Louisville, Kentucky. Governor Candler, of Georgia, delivered the address of welcome, which was responded to by President Cartledge.

Medullary Narcosis.—DR. W. L. RODMAN, of Philadelphia, read a paper in which he discussed the points of most practical value in connection with this method of anesthesia. Will it displace ether and chloroform in operations below the diaphragm? No one, however optimistic he may be concerning this new method of producing analgesia, will think of abandoning ether and chloroform. These trusted agents will continue to enjoy the confidence of the profession, and the Corning-Bier method will be held in reserve for certain cases where there is seemingly a clear contraindication to chloroform or ether. Medullary narcosis should be given subjects suffering from bronchial, pulmonary, and renal diseases; to patients affected with fatty or dilated heart, and cardiac diseases in general. It may also be given to old people in whom the shock of general anesthesia is oftentimes great, and from its action in one case the author believes it to be safer than chloroform or ether in drunkards. The place where the spinal canal is entered is of some importance. Tuffier, Murphy, Matas, and others, who have had the largest experience with the method, prefer the fourth lumbar space. In the opinion of the author any of the lumbar spaces can be punctured with safety. The fifth interspace between the last lumbar and the first sacral vertebrae is in some respects the easiest route. The author considered the primary dangers of simple puncture without injection. It has not been shown that secondary changes, either inflammatory or degenerative, have taken place in either membranes or cord leading to chronic disease. Theoretically, one might fear some form of sclerosis. Simple puncture of the spinal cord, if aseptically done, is unlikely to be followed by serious changes in the cord or its membranes. If to simple puncture is added the injection of some chemical substance by which anesthesia is produced, a new element of danger is undoubtedly incurred. Therefore, the choice of a local anesthetic becomes of paramount importance. Cocain is difficult to sterilize, as it cannot be boiled without impairing its anesthetic properties. Raised to a temperature above 180° F., it is decomposed into ecgonin, and becomes comparatively inert. Some have found it practical to boil cocain, and then introduce it into the spinal canal without impairing its anesthetic properties. By raising it to a temperature of 180° F., and repeating this twice, thrice, even six times, as recommended by Tuffier, it should be sterile, and therefore safe, and yet a dose of 30 minims of a 2% solution of cocain is too large in the judgment of the essayist. He recommended half of this amount. A small dose of a 2% solution is better than a larger one in greater dilution. He has reduced the number of minims of a 2% solution each time he has practised the method, and thus far he has not failed to obtain complete analgesia. In his first case he injected 18 minims; in the second, 15 minims, and in a third, 13 minims, and hopes still further to reduce the amount to 10 minims. We should aim to get complete anesthesia with the smallest amount of the drug. The primary and secondary effects of the injection of cocain into the spinal canal are those of simple puncture exaggerated. Shock is increased, headache, restlessness, delirium, and other symptoms are necessarily more pronounced. The speaker referred to the method of injection, the length, size, shape, and composition of the needle. He recommended an irido-platinum needle. He described the technic of the method, which was similar in many respects to that outlined by Tuffier and others. He blindfolds the patient and fills the ears with cotton to avoid psychic pain.

DR. LEWIS S. McMURTRY, of Louisville, predicted that medullary narcosis would not take the place of the estab-

lished methods of anesthesia, and said that its field of usefulness would be restricted to the class of cases outlined by the essayist.

DR. WILLIS G. MACDONALD, of Albany, mentioned the case of a man of 42, who had suffered from **hemorrhoids and fissure of the rectum**. The patient had always been a hard drinker. Granular and hyalin casts were found in the urine, also a small amount of albumin. Patient likewise had a fatty, dilated heart. He injected 18 minims of a 2% solution of cocain in the subdural space, and when he was about to begin the operation the patient became cyanotic; a profuse, cold perspiration began, so that it became necessary to give the patient $\frac{1}{20}$ grain of strychnia, $\frac{1}{25}$ grain of nitroglycerin, when the respirations ran up to 60 or 80. No pulse was discernible at the wrist. The pupils were dilated; patient became unconscious. More than 2 hours elapsed before the speaker felt safe as to the condition of his patient. The man suffered severely from headache and projectile vomiting during the entire afternoon, and had two or three involuntary bowel movements. Two days later Dr. MacDonald administered nitrous oxid and ether and operated on the hemorrhoids. Patient recovered. During the summer, while on a visit to Europe, he saw a similar experience in the practice of Professor Kocher.

DR. A. M. CARTLEDGE, of Louisville, said his experience was limited to 8 cases in which he had used this method of anesthesia, the results being satisfactory. In two patients severe headache followed its use, which soon disappeared. Analgesia was complete in all cases. In one case he operated for the removal of pus tubes; in a second he removed an enormous fibroid tumor of the uterus; and in a third a large intraligamentous cyst. Some of the patients came off the table in much better condition than if chloroform or ether had been employed.

DR. E. P. MALLETT, of New York City, detailed a case of retroverted adherent uterus in the practice of Dr. Grandin, for which an abdominal section was made. At first, much difficulty was experienced in finding the subdural space or medullary canal, so that the patient complained of intense pain. It was finally found, cerebrospinal fluid escaped, and cocain was injected, the analgesia being apparently complete in 18 minutes. So much pain was experienced while the operator was making the incision that it became necessary to administer a few whiffs of chloroform to complete the operation. He also detailed another case of posterior vaginal section for pelvic abscess. In this case the needle was introduced more quickly and with better success; but slight vomiting as well as other symptoms occurred. The subsequent course of both patients was uneventful.

DR. BEVERLY MACMONIGLE, of San Francisco, spoke of 2 cases which he saw in the practice of Dr. Barbat, of San Francisco, in which medullary narcosis was used successfully. However, he was told by both patients afterwards, and by Dr. Barbat, that they suffered a good deal from vomiting after they had been taken to their rooms, but subsequently recovered without any marked incidents.

DR. SENECA D. POWELL, of New York City, did not think the time is ripe for this method to be presented to the profession at large. The result should be worked out by experienced hands. He pointed out the dangers of cocain, referred to the susceptibility of some patients to the drug, and cited 2 cases that had occurred in his own practice in which he had used cocain, saying that both patients came very near dying from its effects.

DR. RODMAN said he had used medullary narcosis on a man 45 years of age, who had a bursa in the popliteal space, with marked kidney trouble. The result was satisfactory in every respect. The next case was one of advanced kidney trouble in which he did a suprapubic cystotomy. Result, satisfactory. He would use medullary narcosis in those cases in which there are positive contraindications to ether or chloroform. The surgeon should always obtain the consent of the patient before using the method on account of any medicolegal complications that might subsequently arise.

The Removal of Pelvic Inflammatory Masses by the Abdomen After Bisection of the Uterus.—DR. HOWARD A. KELLY, of Baltimore, has recently pointed out the great advantages which accrue from bisection of the myomatous uterus in an abdominal enucleation in certain complicated cases. In previous contributions he had described his method of enucleation by a continuous transverse

incision from left to right, or from right to left. He now called attention to the great value of a somewhat similar procedure in certain cases of pelvic inflammatory diseases. The steps of the operation are these: If the uterus is buried out of view, the bladder is first separated from the rectum and the fundus found. Then, if there are any large abscesses, adherent cysts, or hematomata, they are evacuated by aspiration, or by puncture. The rest of the abdominal cavity is then well packed off from the pelvis. The right and left cornua uteri are each seized by a pair of stout museau forceps and lifted up, the uterus is now incised in the median line in an anteroposterior direction, and as the uterus is bisected, its cornua are pulled up and drawn apart. With a third pair of forceps the uterus is grasped on one side of its cut surface, as far down in the angle as possible, including both anterior and posterior walls. The museau forceps of the same size is then released and used for grasping the corresponding point on the opposite cut surface, when the remaining museau forceps is removed. In this way two forceps are in constant use at the lowest point. He commonly applies them three or four times in all. As the uterus is pulled up and the halves become everted, it is bisected further down into the cervix. If the operator prefers to do a panhysterectomy, the bisection is carried all the way down into the vagina. The uterine canal must be followed in the bisection, if necessary, using a grooved director to keep it in view. The museau forceps are now made to grasp the uterus well down in the cervical portion, if it is to be a supravaginal amputation, and the cervix is bisected on one side. As soon as it is divided and the uterine and vaginal ends begin to pull apart, the under surface of the uterine end is caught with a pair of forceps and pulled up, and the uterine vessels which can now be plainly seen are clamped or tied. As the uterus is pulled still further up, the round ligament is exposed and clamped; then, finally, a clamp is applied between the cornu of the bisected uterus and the tuboovarian mass, and one-half of the uterus is removed. The opposite half of the uterus is also taken away in the same manner. The pelvis now contains nothing but rectum and bladder, with right and left tuboovarian masses plastered to the sides of the pelvis and the broad ligaments, affording abundant room for investigation of their attachments, as well as for deliberate and skilful dissection. The wide exposure of the cellular area over the inferior median and anterior surfaces of the masses offers the best possible avenue for beginning their detachment and enucleation. The operator will sometimes find on completing the bisection of the uterus that he can just as well take out each tube and ovary together with its corresponding half of the uterus, reserving for the still more difficult cases, or for a most difficult side, the separate enucleation of the tube and ovary after removal of the uterus. The operation just described is not recommended to a beginner in surgery. The surgeon who undertakes it must be calm, deliberate, and must bear in mind at each step the anatomic relations of the structures. He has had abundant opportunity to demonstrate the practical value of this method of treatment in his clinic this year. The advantages of a bisection and enucleation of the uterus as a preliminary to a complete enucleation of uterine tubes and ovaries for pelvic inflammatory and other diseases by the abdominal route were briefly recapitulated: 1. Additional space for handling adherent adnexae, afforded by the removal of the uterus. 2. Great increase in facility for dealing with intestinal complications. 3. Better access by new avenues from below and in front to adherent lateral structures. 4. Elevation of structures to or above pelvic brim, or even out into the abdomen, bringing them within easy reach of manipulation and dissection. 5. Some advantage in approaching both uterine vessels by cutting from cervix out towards the broad ligament, as is secured in approaching one of them in the continuous transverse incision. In general, the time of the operation is shortened; its steps are conducted with greater precision; surrounding structures are far less liable to be injured. In this way, there are fewer troubles and sequelae, and the mortality is lessened.

Vesicovaginal Fistula.—DR. M. C. MCGANNON, of Nashville, Tenn., has applied the principle of Mackenrodt in 6 cases, during the last two years, with primary union and complete closure of the fistula in every case. The technic in each case was the same, and this the author outlined at considerable length.

Report of a Case of Osteofibroma of the Uterus.

—DR. GEORGE BEN JOHNSTON, of Richmond, Va., narrated this case. He operated upon the patient April 10, 1900. Bimanual examination, made before the operation, revealed two tumors, one a large fibromyoma, situated posteriorly and to the right of the uterus; the other a small tumor, anterior and to the left. Complete hysterectomy was performed. The smaller tumor was found to be intramural and situated at the junction of the body and the neck. On liberation the microscopic examination showed a tumor about the size of a small orange, and of firm consistence. Held between the thumb and fingers, it gave the sensation that is produced by pressing a hard-boiled egg, the shell of which has been broken. Plates, apparently of bone, surrounded the surface, and on opening it a substance resembling medullary tissue was found. This was unfortunately lost, so that no subsequent histologic study of it could be made. Attached to the lower part of the osseous tumor was a small fleshy mass, which contained a body about an inch in length resembling a heart in shape. On opening the uterus a recent placental site was found near the uterine opening of the right fallopian tube.

Appendicitis in the Female.—DR. F. W. McRAE, of Atlanta, Georgia, quoted eminent authorities to show the divergence of opinion as to the relative frequency of the disease in the male and in the female. In practically all of the cases that had come under his observation in females, mistakes in diagnosis had been made either by himself or by the attending physician. Almost all of the attacks had occurred at or about the menstrual term, and most of them had been diagnosticated "inflammation of the tube or ovary." In two cases of his own series the appendix and the right tube and ovary were involved; in two others the appendicular trouble was complicated with diseased kidneys. Two patients suffered with recurrent appendicitis, and attacks of renal colic before or after operation for the removal of their appendices. He had records of 49 cases of appendicitis seen within the last 16 months, 29 of them being males, and 20 females. During this period he had operated on 17 males, and 14 females.

DR. GEORGE BEN JOHNSTON expressed the conviction that chronic appendicitis is quite as frequent in the female as in the male. He believes, however, we see fewer cases of the fulminating form of the disease in the female than in the male. He has observed numerous cases of chronic appendicitis associated with movable kidney in females, and it is sometimes difficult to determine which is the cause of distress for which the patient consults a surgeon, the diseased appendix or movable kidney, or both. The coexistence of the two conditions is so frequent in his practice that oftentimes he keeps patients under observation for days, perhaps weeks, to determine which is the more distressing condition.

Drainage in Abdominal Surgery.—DR. J. W. LONG, of Salisbury, North Carolina, said that the chief purposes for which drainage is employed are to drain away existing septic material; to afford an exit for the sepsis when the operator fears he has possibly infected his patient; to provoke adhesions and thereby wall off weak spots from the remainder of the abdominal contents; to keep the peritoneal cavity free of blood and other fluids; to allow of a more certain knowledge of the conditions present in the abdomen. Gauze drains are sometimes employed as tampons to control hemorrhage. These features of drainage were discussed in the order given. After referring to the work of Wegner, in 1877, and that of Muscatello, in 1895, and others, regarding the histology and physiology of the peritoneum, the author passed on to the consideration of objections to drainage, and these were enumerated as follows: 1. Drainage is deceptive. 2. Cases not drained do better. 3. Drainage is neither scientific nor workmanlike. The last statement was made with an apology and due deference to those distinguished gentlemen who drain most of their cases.

Atresia of the Vagina.—DR. GEORGE H. NOBLE, of Atlanta, described a flap operation for the relief of this condition, saying that he had operated successfully in several cases by the plan he had outlined.

Recent Technical Improvements in the Surgery of the Stomach for Carcinoma.—DR. WILLIS G. MACDONALD, of Albany, N. Y., said that any one, or a combination of symptoms, is a sufficient indication for operation: 1. A chronic gastritis which is progressive in character under

proper dietetic, medicinal, and physical treatment. 2. A loss of gastric motility. 3. Progressive diminution of gastric peristalsis. 4. A diminution of free hydrochloric acid, progressive in character. 5. Emaciation of the patient under forced diet. 6. Reduction of the hemoglobin in the blood, progressive to 65%, or under, and a moderate leukocytosis. The widest extirpation is demanded in carcinoma of the stomach. All surgery for carcinoma involves the removal, as far as is compatible with adjacent anatomical structures, of lymph nodes. In a complete pylorotomy, it is desirable to remove the lymphatics along both curvatures of the stomach as well as those lying behind the pylorus. As a rule, the duodenum is not extensively involved in pyloric carcinoma, although a few observers have found infiltration of Brunner's glands in the upper portion of the duodenum. There is little justification for the total extirpation of the stomach in the majority of cases, and the probability of cure will not be greater than surgical resection. The old rule on cutting 1 cm. beyond all evidences of carcinomatous infiltration is not wide enough. Personally, the author feels that the line of excision in the stomach should be at least 3 cm. from the border of the last palpable infiltration, and in the duodenum at least 2 cm. from the most dependent portion of the growth. The speaker's earlier gastroenterostomies were done by the Wolfier method of attaching the jejunum and the anterior wall of the stomach. It appears to him that the two fatal cases in which he applied that method were due to regurgitation of bile into the stomach and persistent vomiting following operation. Some two years ago he began employing von Hacker's method of attaching the jejunum to the posterior gastric wall with a reanastomosis between the duodenum and the jejunum. The results of this method of operation have been most satisfactory. During the past year he has employed it 8 times, with 7 recoveries. For the most part, the anastomosis between the jejunum and stomach has been made by the suture method, although a number of surgeons have been quite as successful in the employment of the Murphy button. For the secondary anastomosis the author has uniformly used a Murphy button of moderate size. The anastomosis by this method requires very little time for its performance and can be readily completed in five minutes. When an operation has been carried out by this method to its completion, the following advantages were claimed for it: 1. Freedom from contamination of the wound by stomach contents. 2. Accessibility of the neighboring lymphatic nodes for extirpation. 3. No subsequent danger from suture perforation. 4. Freedom from loss of blood. 5. The great saving of time required for the operation.

Menstrual Condition of the Average Girl in Average Health.—DR. GEORGE J. ENGELMANN, of Boston, presented an interesting statistical paper on this subject, and the facts presented by him were culled from the records of 4,873 cases from high and normal schools, colleges, and department stores, girls between 15 and 26, the majority between 18 and 22, in somewhat better than average health, in good health, and in numbers sufficient to admit of positive deductions as to what may be termed normal or average menstruation. In brief, the menstrual period proper is intensified by the increase of all vital energies, followed by a depression which appears with the coming of the flow. Under ideal conditions, and in perfect health, the physiologic status is such that this epoch, preceded by a day or two of heightened activity, is marked by a moderate lassitude, mental and physical, the flow persisting for from 4 to 5 days, and recurring at regular intervals of about 28 days. It is a period of heightened susceptibility that quickly records any variation from the normal; excitement or exertion, or fatigue, mental or physical, are promptly reflected by variation in the function, and in our everyday life such disturbing elements constantly occur, so that conditions actually existing vary greatly from this ideal. The average period of the average girl in average health presents very different features: Regularity in 50% of the cases only; recurrence every 28 days in 30%; varying most frequently from 26 to 42 days, 45%, being over 28. The duration varies from 2 to 7 days, average 4.6; from 66% to 70% suffer more or less, the number of sufferers varying according to age and nature of occupation, between 30% and 90%. Lessened ability for exertion, mental or physical, is admitted by 60%. Some few are habitually incapacitated from work, and 30% occasionally. The function of the condition of the girl in good health, under mod-

ern conditions of life, is by no means an ideal one in the judgment of the essayist, and in fact the functional health of the American girl, the coming mother of American men, is far from what it should be by right of inheritance and surroundings. This fact physicians must recognize, and upon them and educators devolves the duty of study and correction of the evil.

Operation for the Treatment of Marked Prolapse of the Rectum in Women.—DR. J. WESLEY BOVEE, of Washington, D. C., described an operation for the relief of this condition by fixing the uterus to the abdominal wall, then drawing up the rectum and fixing it to the posterior wall of the uterus.

Carbolic Acid in Surgery.—DR. SENECA D. POWELL, of New York City, read this paper. In 1894 he first became convinced that he could control the action of carbolic acid under all circumstances. At that time he used it in its full strength of 95% in an abscess-cavity upon a patient suffering from suppurative appendicitis. Since then he has extended its use to all cases where he has had to fight disease due to microbic infection, and he is now prepared to assert its safety and reliability, when properly brought in contact with an infected surface. He bases his statements on the results of treatment of hundreds of cases which have come to his clinic at the Post-Graduate Hospital, New York. The essayist quoted Phelps, of New York, as saying that to him (Dr. Powell) the profession is indebted for one of the most useful discoveries ever made in surgery, namely, the antidotal effect of alcohol in carbolic acid. The speaker has used carbolic acid for years in the treatment of infections and bone diseases in various parts of the body. He recommends its use likewise for erysipelas and abscesses. During the past six years he has treated every phase of microbic disease with this agent, and as early as 1894 hip-joint cases were treated by him with pure carbolic acid and with a large glass drainage-tube. Abscesses, wherever located, can be speedily treated by the injection of, or swabbing with, pure carbolic acid. The size of the abscess, or the amount of surface covered, is not a factor. Only thorough drainage and complete removal of the pyogenic membrane need be considered.

Early Excision for Dislocations Not Reducible by Manipulation.—DR. WILLIS F. WESTMORELAND, of Atlanta, reported two cases; the first was an arthrotomy, with excision of the head of the humerus, for old dislocation of the shoulder-joint, the second a shoulder dislocation received while boxing.

A Plea for the Better Appreciation of the Limitations of Operative Work.—This was the title of the president's address, delivered by DR. A. M. CARTLEDGE, of Louisville. Every surgeon must be his own arbiter in deciding questions, and the judgment he displays will depend upon his professional learning and wisdom. Methods of surgical diagnosis have undergone striking modifications within the past decade and have influenced operative work. The older surgeon made his diagnosis of abdominal and pelvic lesions slowly; his skill at that time consisting largely of a delicate sense of touch, trained eye to detect asymmetry, keen ears to differentiate sounds elicited by percussion, and methodical investigation of all symptoms both subjective and objective. The result was his diagnosis having been made, he next carefully, and with abundant time before him, considered the advisability of operative intervention. It is as much a part of the knowledge of surgery to know its limitations, or what it cannot do, as to be justly proud and ready to perform that which it has very good reasons to believe will be productive of relief, and cure to the thousands of unfortunates who seek its aid. From every standpoint there is much to be gained by a better appreciation of operative limitations. A plea was entered for more careful diagnoses with an especial view to the detection of attending visceral disease; in short, to try and become more expert prognosticians. There are two phases of surgical practice alone, the careful observance of which would reduce the mortality of surgical operations so low as to cause us to believe that exactness had been reached. He referred to greater care in the detection of kidney lesions, and instituting measures to correct this frequent cause of unfortunate operative terminations, and the still prevalent practice of operating upon hopeless cases of cancer. It would seem that surgical limitation is most often exceeded and mortality unnecessarily increased in operations for the following diseases: General septic peri-

tonitis, extensive carcinoma of the ovaries, uterus and intestine, and operations upon the gall-passages in long-continued and profound cholemic patients without adequate preparation. He protested against the too frequent practice of operating in these affections. As to laparotomy in cases of general diffuse septic peritonitis, with irrigation and drainage, reports of such cases have appeared in literature from time to time, but the mortality up to the present time of such operations in exaggerated types of the disease is so great, in his opinion, as to make it an unwarranted procedure. He is strongly impressed with the belief that the successful cases reported have been cases of beginning general peritonitis, or of wide-extending, yet circumscribed peritonitis.

Excision of the External Carotid Artery in Cases of Inoperable Malignant Diseases of the Face.—DR. WILLIAM P. NICOLSON, of Atlanta, Georgia, reported 2 cases upon which this operation had been recently done. The first case was a sarcoma of the nose which began apparently as a polypus about 8 months before. The second case was one of inoperable sarcoma of the upper jaw of 3 months' duration, and of very rapid growth. It was claimed that in these cases the patient was simply doomed if nothing could be done, and this appeared to be the only recourse that offered any hope of benefit. He had performed various operations upon the external carotid artery in cases of malignant diseases, having tied the vessel 26 times, 4 of these being cases of double ligation. The operation has not been accompanied by any mortality. Little could be accomplished by simply ligating even both carotids, because the circulation was reestablished so rapidly that the nutrition could not be cut off with any degree of permanence. The operation of excision, as recommended by Dawbarn, seemed to be the only procedure that offered any hope; and while this would not perhaps produce much permanent effect, yet it seemed undoubtedly true that the lives of patients could be much prolonged, and their sufferings greatly lessened. The operation was one of considerable magnitude, and dealt with structures of great importance anatomically, yet the results demonstrated that there was comparatively little danger in the performance of it.

Autointoxication from Renal Insufficiency With or Without Disease of the Kidneys.—DR. JAMES T. JELKS, of Hot Springs, Arkansas, for years has made it a point to examine the urinary output for 24 hours of every patient who consults him. This has been a revelation to him, and therapeutics based thereon has enabled him to accomplish what he described as marvelous results. Abundant evidence was adduced to show that as the result of faulty elimination by the kidneys, without the presence of disease in these organs, patients may have vertigo, contracted capillaries, cold skin, especially of the extremities, so-called sick-headache, which is now recognized as uric-acid headache, melancholia, palpitation of the heart, interrupted heart-beat, various forms of skin diseases, rheumatism, gout, hysteria, epilepsy, and even genuine insanity. Among the remedies used to correct this faulty elimination are squills, milk, rectal or hypodermic injections of normal saline solution, digitalis or its derivatives, sodium phosphates, sodium salicylate, Vichy water, etc. All of these were used in connection with baths, where it was possible to give them, and the patients were ordered to drink from one-half to one gallon of hot water daily.

DR. GEORGE S. BROWN, of Birmingham, made (a) a supplementary report regarding a case of litholapaxy previously presented to the Association, and (b) a supplementary report with reference to a case of vesicorectal fistula.

DR. JAMES A. GOGGANS, of Alexander City, Alabama, reported one case of **strangulated femoral hernia** in a woman, 40 years of age; three cases of extrauterine pregnancy; one case of thoracotomy for empyema, and one case of ovarian cyst.

Some Life-Saving Measures in Obstetric Work.—By R. R. KIME, of Atlanta. The author considered as the most important life-saving measures saline infusions, medicinal remedies, serumtherapy, hydrotherapy, and drainage. In cases of placenta prævia and postpartum hemorrhage saline infusions or intravenous injections are of prime importance, not only to save life, but to lessen susceptibility of infection and hasten recovery.

Pseudomembranous Enteritis and Its Relation

to Abdominal Surgery.—DR. FRANK A. GLASGOW, of St. Louis, Missouri, called attention to this very common disease, and urged physicians to study the relations of it to appendicitis.

Solid Ovarian Tumor.—DR. JOHN G. EARNEST, of Atlanta, Georgia, reported a case of solid tumor of the ovary. The tumor showed the pearly luster of an ovarian tumor. It had so grown that it seemed to be caught under the promontory of the sacrum, and was adherent to the pelvic wall. It was enucleated with some difficulty. The pedicle was from the right side and comparatively small. The tumor, when removed, was found to be ovoid in its general outline, with an indenture corresponding to the promontory of the sacrum. It measured 20 cm. in length, and about 14 in breadth at the widest point. When cut open, its appearance was very much that of an ordinary uterine fibroid, and the tissue was quite dense. The cortex was united to the tumor by a thin layer of cellular tissue, infiltrated with serum. No microscopic examination was made. At first it was supposed to be a sarcoma, but careful examination showed the fibers to be distinct and arranged in irregular whorls, as in uterine fibroids, and the tissues quite as hard as any fibroid, and absolutely solid, without a break.

Histogenesis of Ovarian Dermoids.—DR. W. D. HAGGARD, JR., of Nashville, Tenn., stated that dermoid cystomas of the ovary differ essentially from dermoids in the orbit, pharynx, mediastinum, scrotum, coccyx, and elsewhere. The latter are unquestionably from inclusions or nipping off of the ectoderm in the development of the embryo, which is similar to the "healing in" of skin in wounds and the subsequent development of a dermoid growth. These structures all contain sebaceous material, hair, plates of bone, teeth, etc., and purely dermal derivatives. Ovarian dermoids contain derivatives of all the mesoderm and enteroderm as well, and hence some adequate explanation other than the inclusion of the skin-forming layer must be forthcoming. All sorts of curious theories have been successively advanced. The virginal pregnancy idea was succeeded by one which ascribed the origin of these growths to prolonged ungratified sexual desire on the part of the woman. A man who jested at his wife during travail was afflicted with a pregnancy (dermoid) of the thigh. In evidence an attempt at formation of nearly all the organs of the body has been found in the lawless development of these benign growths. Retinal pigment, more or less complete, optical vesicles, a rudimentary pharynx, with an attempt at the formation of an esophageal tube; the sympathetic nerves in the alimentary canal, and curiously enough a rudimentary uterus, with branching cells of the cervix and the glands of the fundus; mammae (one case of which underwent carcinomatous development). An easily recognized heart provided with valves was found by Johnston; and many other more or less perfectly formed organs and tissues other than dermal have been reported by investigators too numerous to individualize. These data have, as remarked by Clark, dealt a telling, if not fatal, blow to the inclusion theory of ovarian dermoid evolution. The researches of Kraemer and others seem to establish convincingly the ovulogenous theory of their development.

The following papers were likewise read and discussed: "Removal of Cystic Gallstone," by DR. HOWARD A. KELLY, of Baltimore; "Osteoarthritis of the Spine," by DR. MICHAEL HOKE, of Atlanta; "Epi- and Hypospadias, with Special Reference to the Operative Treatment," by DR. W. F. PARHAM, of New Orleans.

Much to the regret of the members, DR. W. E. B. DAVIS resigned the secretaryship, owing to the pressure of other duties, after having served the Association ably and efficiently from its organization to the present time. A resolution was offered and unanimously adopted, thanking Dr. Davis for his efficient services, tireless efforts, and faithful devotion to the interests of the Association during a period of 13 consecutive years.

Officers Elected for 1901: President, Dr. Manning Simons, of Charleston, S. C.; vice-presidents, Drs. George H. Noble, of Atlanta, Georgia, and L. C. Bosher, of Richmond, Virginia; Secretary, Dr. W. D. Haggard, Jr., of Nashville, Tennessee; Treasurer, Dr. F. W. McRae, of Atlanta, Georgia. Richmond, Virginia, was selected as the place for holding the next annual meeting; time, third Tuesday in November, 1901. At this meeting 29 new members were elected.

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Calendar of Meetings of Philadelphia Medical Societies for the week ended December 1, 1900:

Monday, November 26—Neurological Society.

Wednesday, November 28—County Medical Society.

Thursday, November 29—Pathological Society.

The Faculty Club of the University of Pennsylvania gave a dinner in honor of Dr. William Osler, November 15. The dinner was followed by a reception at the club house.

Dairy Inspection.—Drs. Abbott and Stewart, bacteriologists, and Col. J. Lewis Good, Chief of the Bureau of Health, are engaged in inspecting the various dairies which furnish milk to Philadelphia.

For Purer Water.—A filtered water reservoir and 5 filter beds will be located at Roxborough, Pa. Each bed will have a capacity of 15,000,000 gallons every 24 hours. The cost of this operation will be nearly \$250,000.

Diphtheria still prevails in the Thirty-fourth Ward of Philadelphia. The filthy condition of the streets is blamed for the trouble. The Bureau of Health has been notified of the condition, but has failed to remedy matters.

Hypnotism.—The people of Chestnut Hill, Pa., are highly indignant over an effort made by a newspaper reporter to obtain by hypnotic means, from a 12-year-old boy, a confession relative to the fire that has lately damaged that suburb.

Bogus Butter Indictments.—True bills were returned by the Philadelphia county grand jury recently against 16 offenders charged with selling oleomargarine. Many of the defendants are those rounded up by Dairy and Food Commissioner Cope in his raid about 2 months ago.

Diphtheria.—Because of the prevalence of diphtheria at Woodbury, N. J., the public schools have been closed until a thorough disinfection shall have been completed. For the month ended November 15, 138 cases of contagious diseases have been reported in Camden, of which 116 were diphtheria.

Michael Kepler, of Renovo, Pa., has been taken to the Kane Summit Hospital to undergo his fourteenth surgical operation within 3 years. Kepler fell and fractured several of his vertebrae 5 years ago. Since then he has been operated on at the Blossburg, University of Pennsylvania, Williamsport, and Kane Summit Hospitals.

Repeated Dislocations.—A young man applied to one of the Philadelphia hospitals for treatment for luxation of the shoulder-joint. He volunteered the information that this was the thirty-eighth time this shoulder had been dislocated. Luxation was easy, but the reduction was so difficult that an anesthetic had been given 28 times. The patient refused surgical correction.

Summer Cars in Trenton.—The Health Inspector of Trenton recently requested the local trolley company to discontinue the use of its summer cars. The city has no legal right to stop the use of these cars, but the Board of Health is of the opinion that open cars at this season of the year are a menace to the health of the community. The company promised to comply with the request.

University of Pennsylvania Medical Society.—At a meeting held November 16, DR. DAVID L. EDSALL presented a patient with **pulmonary tuberculosis, dextrocardia, and carcinoma of the stomach.** He had been operated upon for the carcinoma, a gastroenterostomy being performed by Dr. Charles H. Frazier, with marked relief of his symptoms and a subsequent gain of 25 pounds in weight. DR. CHARLES H. FRAZIER presented a patient with **cirrhosis of the liver** who had been operated upon with complete relief of his ascites and other symptoms. DR. A. O. J. KELLY presented 3 patients with **aortic valve disease**.

and spoke of the diagnosis of the condition. DR. JOSEPH SAILER exhibited **Bowles' 6 barrel stethoscope** and spoke of its advantages in ward class work. Dr. Sailer also demonstrated a method of **recording footprints**. The following officers were elected for the ensuing year: President, Dr. John H. Musser; vice-presidents, Dr. William G. Spiller and Dr. Alfred Stengel; secretary, Dr. A. O. J. Kelly.

Typhoid fever has become epidemic in Cementon, Pa. Out of 200 families composing the population, typhoid exists in 118, and in 22 families every member is prostrated by the disease. Lack of medical attendance is reported, the 2 physicians of the town being unable to attend all. The water-supply taken from the Lehigh river is thought to be the cause. If this is true many towns below Cementon may suffer from the disease.

Episcopal Hospital.—An appeal has been made for funds to pay the current expenses of this hospital, which were last year \$30,000 more than its receipts. Although it has received many gifts and legacies in trust, only the income can be used. The increase in practice and the extension of its area have added largely to the cost of maintenance. No patients have ever been excluded for want of funds during the 48 years of its existence.

Water Company in Court.—The New Chester Water Company is defendant in a suit in equity, the object of which is to compel the company to supply the city with water of a better quality than that which residents are compelled to use. The water is taken from the Delaware river, and the allegation is made by the complainants that it is unwholesome. The impurities are alleged to be partly responsible for the increase of typhoid fever during the year. The company contends that at the present rate of water rents it cannot afford a new filtering plant.

Vital statistics of Philadelphia for the week ended November 17, 1900:

Total mortality	CASES.	DEATHS.
Inflammation of appendix 1, bladder 1, brain 10, bronchi 6, kidneys 14, heart 1, liver 2, lungs 45, pericardium 1, peritoneum 6, pleura 1, stomach and bowels 13		101
Lungs—tuberculosis of 51, edema of 1		52
Marasmus 20, inanition 18, anemia 1, debility 7		46
Heart—diseases of 33, fatty degeneration of 3, neuralgia of 4		33
Brain—diseases of 21, dropsy of 2, hemorrhage of 1, congestion of 4, softening of 1		29
Carcinoma of breast 1, bowels 1, face 1, hand 1, esophagus 1, mouth 1, neck 1, stomach 15, uterus 3, sarcoma of liver 1, tumor of brain 1, stomach 1, lymphadenoma 1		29
Apoplexy 18, paralysis 6		24
Uremia 12, Bright's disease 4, diabetes 2		18
Old age		15
Casualties		12
Convulsions		8
Bowels—tuberculosis of 1, obstruction of 5		6
Cyanosis		6
Cirrhosis of liver		6
Burns and scalds		6
Typhoid fever	29	6
Croup 2, membranous 3		5
Hernia		4
Scarlet fever	33	2
Diphtheria	160	1
Abscess of thigh 1, alcoholism 2, asthma 2, jaundice 1, locomotor ataxia 1, rheumatism 2, arterial sclerosis 1, surgical shock 2, septicemia 1, sore mouth 1, suffocation 2, suicide—shooting 1, teething 1, ulceration of stomach 1, erysipelas 2, dropsy 1, unknown coroner's case 1, whooping-cough 1, gunshot wound 1		

School Physicians Resolve to Organize.—Partial reports of the work of the school visiting physicians of Philadelphia, presented at their recent meeting, were said to show that the voluntary service has been so efficient that it furnishes the best of arguments in favor of a paid service, as in other cities. Complete returns, beginning with the establishment of the service in January last, are being prepared, which will still further demonstrate the preventive measures taken in scores of cases by which the community has been benefited. It was determined to form a permanent organization,

and a resolution was adopted requesting the Board of Education to grant the association the privilege of holding its meetings in a centrally located school building. Meanwhile a constitution is being framed by a committee. Communications were read from school medical inspectors in other cities relative to the work in such cities. In Chicago, it was stated, there are 50 inspectors, who are paid \$50 a month, and who daily visit the schools assigned them. It was claimed that fully 60% of the decrease of contagious diseases among school children since the establishment of the system in that city is due to the work of the medical inspectors. In New York, it was stated, there are 207 medical inspectors, who are each paid \$30 a month. Each inspector has 2 schools, and the work has been found of the greatest benefit to the community. The system of medical inspection of school children in Boston was said to have been begun in 1894. The city is divided into 50 districts, and one physician to each is appointed by the Board of Health. The visiting physicians are not permitted to prescribe, excepting for poor families unable to pay for medical service. In the cases of contagious diseases the inspectors are required to visit the residence of patients, see if they are properly isolated, and report thereon to the Board of Health. In no case, however, must there be any interference with the attending family physician. The physicians are each paid \$200 a year for their services. Like systems are about to be established in Washington and St. Louis. Philadelphia, it is said, is the only city having a voluntary corps of medical inspectors.

Philadelphia Pediatric Society.—November 13, 1900.

DR. DAVID RIESMAN presented a case of **complete motor aphasia** in a child of 11 years, the result of infantile cerebral palsy; the child had had grip and pertussis in the first year of life, followed by convulsions in the second; she did not walk until 5 years old, and began to feed herself first at 7; at 9 years, epileptiform attacks began and have continued ever since, some being grand and some petit mal; there are traces remaining of a left-sided hemiplegia; the child has an intelligent face and understands everything that is said to her, but she has never spoken. Some authors object to "aphasia" being used to describe such cases in which speech has never existed, preferring the term "mutism"; the lesion affecting speech in children may be either right or left-sided; in this case the lesion is not clear, but was probably a bilateral meningeal hemorrhage. DR. ALFRED STENGEL exhibited: 1. A girl of 6 years, convalescent from **meningitis**; the attack came on suddenly with vomiting, headache, stupor, convulsions, mainly right sided, and fever; on the fourth day the stupor and convulsions having continued, lumbar puncture, which withdrew 1 ounce of perfectly clear fluid, which was followed immediately by improvement, which has progressed; sight is still defective as the child runs into objects. 2. A girl of 12 years old with **osteoarthritis** affecting the small joints of the hand and feet; the hands are in the typical position of rheumatoid arthritis described by Charcot; the skiagraphs exhibited do not show marked changes in the joints; the previous history cannot be obtained satisfactorily. 3. A colored boy, 7 years old, with an **esophageal stricture** following the drinking of lye; a skiagraph, taken after the boy had been given several ounces of sirupy liquid in which half an ounce of bismuth was suspended, showed the diverticulum very well, the stricture being located 9 inches from the teeth. DR. J. P. CROZER GRIFFITH exhibited a girl 6 years old with symptoms pointing to cerebellar tumor; for 11 months there have been frequent headaches, spells of vomiting, staggering gait and some loss of weight, but the eyegrounds show no changes, nystagmus is absent and sensation and reflexes unimpaired. DR. S. M. HAMILL exhibited a **cretin** 6 months old, an Italian infant, under treatment for 1 month, with $\frac{1}{2}$ grain of thyroid extract 3 times daily; improvement has been marked, the tongue having receded and the collar of fat having nearly disappeared. DR. A. VAN HARLINGEN reported a case of **pemphigus** in a boy, the treatment, in addition to strychnin and whisky internally, consisted in opening the blebs and applying to them a lotion of mercuric chlorid 1:2000, one portion of the body at a time being so treated, the rest of the body being covered with an ointment of ichthyol or zinc; recovery ensued, and a subsequent relapse in which the above treatment was instituted at the start was mild.

Pittsburg Academy of Medicine.—At a regular meeting, held November 5, DR. P. J. EATON reported a case of **melena** fatal 2 days after birth. DR. E. H. SMALL referred to a similar case reported by him to the American Medical Association 1 year ago which recovered. Consensus of opinion is that it is due to infection as evidenced by statistics from large maternities. The mortality is about 80%. DR. SMALL then read a communication from DR. ROSENBERRY, of Arbor Vitae, Wis., who stated that he had 4 fatal cases of melena in 3½ years. DR. I. J. ELTERICH spoke of Winckle's and Buhl's diseases as closely related to melena, but there is no jaundice in the latter. DR. J. C. THOMPSON related a case in which the urine was tinged with blood and meconium was mixed with blood-clots.

A symposium on **normal labor** was opened by DR. P. J. EATON, who spoke of the preparation of the patient and the management of normal labor. In R. O. P. positions with extended head it is sometimes possible to get flexion by using knee-chest position. The tendency is to make more vaginal examinations than necessary, but in a certain class of cases internal manipulations are of value. Forceps in posterior positions usually slip; may be put on reversed. The most important point in connection with forceps is that the pressure and traction be intermittent. DR. I. J. ELTERICH spoke on the care of the newly-born infant, and emphasized the importance of prophylaxis and the gain to the child if the cord is not tied before pulsation in it ceases. DR. E. B. HECKEL spoke on ophthalmia neonatorum. Statistics are unreliable both as to its frequency and as a cause of blindness. Actual infection of the eyes takes place after the passage of the head. Every case is not due to gonococcus alone. Credé method (10 grains to 1 ounce) is efficient in the way of prophylaxis. As to treatment, flush out every 30 minutes with normal salt-solution or potassium permanganate, 1 to 1000, and use ice-compresses. Apply silver nitrate, 10 grains to 1 ounce, once daily, and later decrease to 5 grains to 1 ounce.

In discussion DR. T. G. SIMONTON referred to medullary anesthesia in labor. DR. J. I. JOHNSTON said he was in the habit of having the prospective mother practise micturition before labor while lying on her back with a view of dispensing with the use of the catheter after labor. DR. J. D. SINGLEY said that the vigorous use of antiseptic solutions as HgCl₂ 1:5000 in gonorrheal conjunctivitis was certainly injurious. Mechanical cleaning with normal salt-solution is preferable. It will wash out gonococci and it will not set up a chemical conjunctivitis upon which the bacteria may thrive. DR. WILLETTTS said the indiscriminate use of Credé's method had probably done much harm. Gonococci can be washed out with sterile water as demonstrated by Knapp of New York. He relies on protargol 10 grains to 1 ounce and cold compresses. DR. J. C. DUNN said that many women practise massage of the abdomen with some emollient, claiming it makes them more comfortable. A proper amount of exercise is essential to a pregnant woman. DR. BURLEIGH related a fatal case of hemorrhage from ligated cord. DR. HUGGINS referred to a case of ophthalmia neonatorum in which solution of silver nitrate from 10 to 40 grains to the ounce had been used with recovery. DR. J. J. SIMPSON spoke of the case of a woman curetted for supposed malignant disease of the uterus, by her physician. Later the condition was found to be due to pregnancy and she was delivered of a child at term in spite of the previous cureting. DR. CAMERON said he did not consider it necessary to examine urine of pregnant women so frequently, provided nothing had been found at first examination, and patient had no symptoms of kidney involvement. His patients would not submit to a personal examination prior to labor. It is unwise to attempt to dilate cervix with fingers, membranes and head do it better. The fewer vaginal examinations made the better. A douche prior to labor, if conditions are normal, is harmful, and the same may be said of it after labor. DR. C. O. GOULDING stated that we are frequently in too much of a hurry to deliver the placenta. Wait until it is completely detached by the normal uterine contractions. Forceps are applied too often and too early. A case of mammary abscess was reported due to mother's habit of applying saliva to nipples. DR. I. J. MOYER inquired as to the various causes of ophthalmia neonatorum in addition to gonococci. DR. E. H. SMALL said he had seen it suggested that in case the mother has gonorrhea it is well to leave membranes intact. He uses a plain douche of hot water several days after labor.

Closing, DR. HECKEL said the condition of the conjunctiva is the index to the strength of the solution of silver nitrate, but he never uses one stronger than 22 grains to the ounce. It is never justifiable to use the solid stick. He did not believe in using any irritating solution to flush out an eye—use sterile water or warm salt-solution. DR. EATON insisted that the examination of the patient prior to labor is important. He could not see that a preparatory douche could do any harm. He also related the case of a patient curetted while pregnant by a prominent gynecologist and who was delivered at term.

NEW YORK.

"Through the First Antarctic Night" is the title of a volume recording the experiences of Dr. Frederick A. Cook, of Brooklyn, who accompanied the Belgian Antarctic Expedition in 1897 as surgeon.

A New Hospital.—The sisters of the Holy Family of Nazareth, of Chicago, will erect a hospital which will cost \$250,000. It will be equipped throughout according to modern ideas, and will occupy an entire block.

Dr. Emmet.—Dr. Thomas Addis Emmet is reported to have resigned from the staff of the Woman's Hospital of New York. Dr. J. D. Emmet, his son, is acting temporarily in his stead, though no successor has as yet been appointed.

A Post-office Physician.—Minneapolis enjoys the distinction of having a post-office physician. His duties consist in giving free medical aid to all civil service employes, inspecting the various branch offices as to their sanitary condition, etc. It is a civil service appointment.

Garbage Removal Contract.—During the absence of the Democratic Mayor of Utica, N. Y., the Republican council compelled the Board of Health to resign, and appointed a new one in its stead. The object was to secure the execution of a garbage removal contract before the present councilmen go out of office.

Buffalo Academy of Medicine.—The section of ophthalmology, otology and laryngology met November 19. The program was as follows: Exhibition of a Case of Total Removal of Thyroid Gland by Dr. Cott. Discussion: The Relation of Tuberculosis of the Larynx to Pulmonary Tuberculosis. The discussion was opened by Dr. De Lancey Rochester, followed by Dr. E. L. Shurley, of Detroit, Mich., and Dr. John H. Pryor.

The new State Asylum for Insane Criminals at Dannemora, N. Y., was opened November 15. Dr. R. B. Lamb, for 4 years assistant superintendent at Matteawan, has been appointed superintendent with Drs. M. L. Bird and A. T. Baker as assistants. A transfer of 58 convicts has been made from Matteawan and in the future all of the insane male convicts convicted of felony will be sent there from the State prisons, penitentiaries, and reformatories instead of to Matteawan.

Resident Physicians Wanted at Craig Colony.—Two recent graduates in medicine are wanted to serve six months or a year at the Craig Colony for Epileptics, at Sonyea, Livingston County, N. Y. The position affords a rare opportunity for studying epilepsy, as well as a good general experience in medicine and surgery. Board, washing, and lodging are furnished, but no pay. Address Dr. Wm. P. Spratling, Medical Superintendent, Sonyea, Livingston County, N. Y.

Dangers of Rabies.—It is reported that a commissioner on the Board of Health for Greater New York has given out the following: "The Department of Health desires to call the attention of physicians and others to the occurrence of the number of cases of rabies among dogs throughout the city, and would request that wherever persons are bitten by strange dogs or stray dogs they immediately consult a physician and have their wounds cauterized, and then if there is any question as to the existence of rabies in the animal communicate at once with the Department of Health."

The New York State Veterinary College on the Cornell campus was partially destroyed by fire, November 13. The entire loss will probably amount to \$50,000. The department of histology lost specimens and apparatus worth not less than \$10,000, while the loss of the department of bacteriology cannot be covered by \$15,000. The greatest loss sustained is that of the specimens of these 2 departments. The laboratory of Professor Gage, the head of the department of histology, contained all his specimens, the work of more than 20 years. A temporary roof has already been put on the building, the museum will be used as a laboratory and the work will proceed.

Dr. Lewis Albert Sayre.—The New York Pathological Society loses the last of the members who brought it into existence, by the death of Dr. Sayre. The first meeting of the society was held in his office June 14, 1844, Drs. George A. Peters and Middleton Goldsmith participating in the formation of the new society. Dr. Sayre kept his interest in the society alive, occasionally attending its meetings, until the end of his professional activity. It is with a special sense of loss that the society sees fade from its list of active members this illustrious name, enrolled at its first meeting when "the oldest pathological society in the world," as he was fond of saying, was created. The Society now records upon its minutes the death of DR. LEWIS ALBERT SAYRE, and adopts the following resolution:

Resolved, That the sympathy of the New York Pathological Society be extended to the family of Dr. Sayre in their bereavement, and that the above testimonial be published in the current medical periodicals.

Decennial Anniversary.—The Class of 1900, Physicians and Surgeons, Medical Department, Columbia University, celebrated its decennial anniversary by a dinner, at the New York Athletic Club, November 15. This is believed to be the first class celebration in the history of the Physicians and Surgeons. Dr. H. B. Brown, toastmaster, called upon Dr. James Pederson to respond to the Class; Dr. C. W. Townsend, the College; Dr. A. E. Gallant, a Retrospect and Historic Report of the Class; Dr. Wm. Gilfillan, the Decennial Dinner; Dr. A. W. Hollis, Clinical Medicine; Dr. P. R. Bolton, Modern Surgery; Dr. C. I. Proben, Medical Testimony; Dr. H. P. de Forest, Commercialism in Medicine; Dr. H. L. Palmer, What Measure of Success Should a Physician Achieve in Ten Years' Practice?; Dr. C. F. Chapman, the Physician in the Country; Dr. S. A. Twitch, Town vs. Country Practice; Dr. E. W. Peet, Philanthropic Work of the Physician; Dr. H. H. Forbes, Requirements Necessary for Success in Our Profession. Arrangements will be made for a reunion in 1905.

Physicians Discuss Milk.—In response to a call of a committee of the Medical Society of the County of New York, a meeting was held recently at the Academy of Medicine to discuss the best method of improving the milk-supply of New York. The meeting was attended by nearly all the prominent dairymen of the city. The plan outlined is to have a competent bacteriologist examine the milk-supply of any dealer who wishes such examination, and if it comes up to the standard set, to issue to such dealer a certificate which will recommend his milk to the public. Dr. Chapin read the set of rules proposed by the Medical Society for reforming the dairy farms. The rules not only provided for cleanliness in stabling and in storage, but insisted upon every cow being thoroughly cleansed each day, on the milker washing his hands and cleaning his nails before milking, and upon precautions being taken against subjecting the cow to any excitement. The society will endeavor to aid the Board of Health in having dealers in milk preservatives arraigned in court. The general sentiment of the dairymen present seemed to favor the plans of the physicians.

The New York State Tenement House Commission.—This commission was created by the Legislature for the purpose of investigating the tenement house problem, and has the power to summon before it witnesses who may be in a position to give information as to existing conditions and offering suggestions as to remedies. "The Relation of Tuberculosis to the Tenement House Problem," was discussed at a recent meeting in New York City, and physicians working among the poor in the tenement districts were heard.

Dr. John H. Pryor, of Buffalo, said that conditions in the tenements in Buffalo at present were much superior to the conditions in New York City, because in Buffalo there were some light and fresh air in the tenements, while in New York there was practically neither. He said the majority of the persons living in tenements had tuberculosis in some form and that there were probably 20,000 tuberculous individuals in New York City alone. He said that in every tenement there should be at least 600 cubic feet of air for each inmate, and that some tenements were so infected that they ought to be demolished. Dr. Herman M. Biggs said there were 9 000 deaths from tuberculosis in New York City annually. He said the causes of tuberculosis were the unsanitary conditions in the tenements, the overcrowding, the poverty of the inhabitants, and the infection of the houses themselves. He recommended a change in the construction of tenement houses. More fresh air and more light were required.

NEW ENGLAND.

The Boston Health Report for the week ending November 14 shows 148 cases of diphtheria, scarlatina 33, measles 18, and 19 of typhoid fever.

The Veterinary School and Hospital of Harvard University will be permanently closed June 1, 1901, in accordance with a vote of the corporation.

Free Vaccination.—The board of health has passed a vote for the free vaccination of public school children in Indian Orchard, Mass. This action was taken under a law passed in 1894 giving local boards of health authority to order free vaccination when they deemed it expedient.

Massachusetts Pure Food Law.—According to the annual food and drug inspection report of the Massachusetts Board of Health, the law of that State forbidding adulteration has brought about a marked improvement. This is especially true of butter, condensed milk, species of condiments, coffee, molasses, maple syrups, and maple sugar, honey, confectionery, and canned goods. The percentage of adulteration in these articles is much lower than a few years ago; but in wheat flour, spirits, wine, beer, and cider, drugs, jellies, and jams, a good deal of adulteration is found. Within the past few years, adulteration has found in jellies and jams a fruitful field of operation. The tendency to cheapen the product has led to the introduction of glucose instead of cane sugar, of cheaper instead of more expensive fruits, and of anilin dyes to imitate the color of genuine fruits.

CHICAGO AND WESTERN STATES.

The Cleveland College of Physicians and Surgeons has received a gift of \$10,000 from John D. Rockefeller, to be added to the building fund.

Smallpox on Alaska Steamer.—The steamship *Topoka*, recently from Alaska, has been detained in quarantine at Port Townsend, Wash., because of smallpox on board.

Oshkosh Schools Closed.—The prevalence of diphtheria and typhoid fever in Oshkosh, Wisconsin, is so great that the authorities have determined to close the schools, both public and parochial.

The Oklahoma Medical Association held its annual session in Oklahoma City, November 15. About 100 leading physicians of the territory were present, and the meeting was the most successful one in the history of the association.

Fraudulent Medical Certificates.—The United States Court at Leavenworth has found guilty one Dr. H. Wilson, of Randolph, Kan., for advertising blank medical certificates for sale to any who would buy. The charge was for a fraudulent use of the mail.

Family Poisoned.—Either pickles or meat eaten by the family of Mr. Tilly, of Lake Bluff, Illinois, caused severe symptoms of poisoning. After the meal they became violently ill, the father and mother delirious. At present they are said to be out of danger.

Indianapolis City Hospital.—Dr. C. H. Poucher, who has been superintendent of this hospital for the past 3 years, has resigned on account of ill health. The vacancy has been filled by the appointment of Dr. M. J. Spencer, formerly superintendent of the City Dispensary.

The Medical Society of City Hospital Alumni, of St. Louis, Mo., met November 15. A paper was read by Dr. Ludwig Bremer, entitled "The Treatment of Chronic Nephritis," and one by Dr. Charles Orr, entitled "The Removal of Tonsils, with Special Reference to the Use of the Farlow Punch."

Christian Science Victim.—Mrs. A. D. McNeil, of Cheyenne, Wyoming, is reported another victim of christian science. She had been ill for some time, grew gradually worse, and died under the ministrations of a devotee of christian science who locked the door against the physician who had been in attendance.

St. Louis Academy of Medical and Surgical Science.—At a recent meeting the following officers were elected for 1901: President, Dr. Emory Lanphear; senior vice-president, Dr. Carl Perold; junior vice-president, Dr. H. S. P. Lare; secretary, Dr. O. L. Suggett; treasurer, Dr. G. M. Phillips; orator, Dr. Wm. Porter; librarian, Dr. H. G. Nicks.

Quarantines Against the Chinese.—Chinese emigrants coming through California still have the bubonic plague quarantine act of Colorado enforced against them. Unless the emigrant has a certificate showing that he has not been exposed to plague during the 6 weeks immediately preceding, the railroad officials are not allowed to land him in Colorado.

Ambulance Corps Returns.—The members of the Chicago Irish Ambulance Corp sent out to aid the Boers in South Africa arrived in New York, November 15, on the steamer *Trave* from Bremen. They arrived in South Africa about April 30 last, and left the Boer army in the vicinity of Lorenzo Marquez, from whence they sailed for Trieste and thence to Bremen.

The Southern Illinois Medical Association held its first session at Murphysboro, Ill., November 15, Dr. W. F. Grinstead in the chair. Prof. G. H. French, of the Southern Illinois Normal University, discussed "Epilepsy and Some Other Intestinal Parasites." A paper was read by Dr. J. S. Wiggins, of East St. Louis, entitled "Is the Diagnosis of Appendicitis Free from Error?"

Company Sued for Damages.—Edward J. Hempker, a moulder, sued the Dayton Malleable Iron Company for \$25,000 damages for the loss of both eyes. A peculiarity of the suit is that it is based on the employment of Hungarians by the company. Plaintiff alleges that the Hungarians did not understand the English language, and that they did not obey orders given them on that account.

Vaccination Contest in Duluth.—The District Court has granted a writ of mandamus requiring the superintendent of schools to show cause why children who have not been vaccinated should not be admitted to the public schools. At the instance of the local health commissioners the superintendent recently issued instructions that unvaccinated children should not be allowed to attend school.

New Use of Telephone.—Indianapolis telephone subscribers are said to have made arrangements with the central office to have their telephone bell act as an alarm clock, to enable them to catch early trains. Subscribers have left word to be called at one-hour or two-hour intervals during the night when they have to take medicine, and much inconvenience and worry has been saved thereby.

Diphtheria from Rabbits.—An epidemic of this disease prevails in Grafton, Ill. Churches, schools and courts have temporarily suspended action and a quarantine has been established. Over 100 cases and 20 deaths are reported. Many rabbits infest the surrounding country and they have been largely used as food by the people of the town. Recently hundreds of dead rabbits have been found in the country and a microscopic examination revealed the fact that they died from diphtheria. Physicians believe that these animals are the cause of the epidemic.

Poison in Foods.—Dr. E. E. Hunter, assistant physician and chemist to the Board of Health of St. Joseph, Mo., has by chemic examination found dangerous adulterants in certain foodstuffs sold by local grocers. He is now making strenuous efforts to secure the passage of an ordinance empowering him to inspect such foods and to prohibit their sale in the city. Jellies, fruit, jams, etc., were found to be colored by anilin. Evaporated fruit was found to contain zinc oxid in such quantities as to make it dangerous, and the French canned peas on the market are said to contain copper.

An Employment Bureau for the Blind, said to be the first of its kind, is to be established in Grand Rapids, Michigan, and to be maintained partly at State expense. It will be more than an employment bureau, in the ordinary meaning of that term, as its officers will visit the blind of the State outside of institutions, learn their conditions, what they can do, what ability they have for learning and their willingness to aid in supporting themselves. Miss Roberta Griffith, who will have charge of the work, is herself blind. It is also the idea of the promoters to place more children in the State School for the Blind.

Pure Water in Chicago.—This city rejoices in its added chances of longevity following the completion of the drainage canal. All the sewage of the city has not yet been diverted from the lake, out of which the supply of water for domestic purposes is taken, but already there is a very comforting diminution in the death-rate, particularly marked in the statistics as to typhoid fever. In 9 months after 2 of the main sewers were caused to empty into the river, instead of the lake, there was an improvement of 50% in the sanitary quality of the water as compared with the same period the year before. The improvement, as shown by chemical analyses, has extended to all the cribs. The number of deaths amounted to 44% in 1900 from 1899, and 51.4% in 1900 from 1898. The total number of deaths for last October was 1,802, which is a monthly death-rate of 1.06%, the lowest October death-rate in 10 years.

Hospitals Seek Aid.—The secretary of the Hospital Saturday and Sunday Association recently reported that 12 hospitals had filed sworn statements of the charity work done by them for the year ended September 30. It is said the statements were filed with a view to participating in the distribution of the sums contributed December 1-2. The institutions are St. Luke's, Protestant, St. Mary's Infirmary, St. Louis Baptist, Mullanphy Hospital, Missouri Baptist Sanitarium, Evangelical Deaconess, Bethesda Incurable, St. Louis Children's, Martha Parsons, Good Samaritan, and St. John's Infirmary. Of these hospitals 8 have filed with the secretary resolutions adopted by their boards of management, agreeing to comply with the constitution and by-laws of the association. To the remaining 4 a notice has been sent instructing them to do likewise before December 1. Of the hospitals mentioned 10 participated in last year's distribution. The Hospital Association is strictly nonsectarian and almost every religious denomination is represented in its membership.

Emergency Rations Test.—Capt. Fred W. Foster and 25 troopers of the Eighth United States Cavalry have left Fort Reno, O. T., for a 10 days' march through the Caddo Indian country, to make a second test of the emergency rations. The test will be a novel one, as the 3 cakes of sweet chocolate, which constituted a part of the rations tested on the march to Fort Sill, will be omitted, and a preparation composed of condensed milk will be substituted. They will also make a more severe test of a meat compound, a food preparation prepared under the direction and supervision of the War Department. Capt. Foster is of the opinion that the condensed-milk food will prove to be a great success, and give better satisfaction than the chocolate, which was of little service during the test just completed. The milk food is made up in the form of wafers, and, when dissolved with water, forms a kind of soup. Soldiers who have tried the preparation say it is palatable and affords considerable nourishment. A detailed report of both tests will be sent to the War Department soon by Capt. Foster.

SOUTHERN STATES.

St. Mary's Seminary, at St. Mary's City, Md., has been quarantined because of scarlet fever.

The Washington Ophthalmological and Otological Society held its thirty-fourth session at the office of its president, Dr. S. O. Richey, November 13. The meeting was one of two business meetings of the year.

The New Municipal Hospital.—About 31.7 acres of land opposite Petworth subdivision has been purchased by the Commissioners of the District of Columbia as a site for the new municipal hospital. The total cost is \$63,400. The Commissioners were allowed \$100,000 for this purpose by the current District Appropriation Act.

The Smoke Nuisance.—It is reported that the District Commissioners of Washington City will take legal steps to enforce the smoke law passed by Congress, which prohibits the emission from the chimney or smokestack of any stationary engine, steam boiler or furnace, of dense black or gray smoke or cinders. A reasonable time was given the proprietors to properly equip the plants, but they have failed to do so.

Removal of Dead Animals.—An ordinance has been introduced in New Orleans making it the duty of the owner of any bovine or equine animal, within 3 hours after the death of such animal, to cause the body to be removed to some licensed place of rendering. The body must be conveyed in a vehicle suitable for the purpose and so constructed as to hide the body from public view. The vehicle and body must be deodorized before removal, and the body must not be carried along Canal street. The usual penalties are attached to the ordinance.

Experiments with Bacillus Typhosus.—Professor William Royal Stokes, city bacteriologist and professor of pathology of the University of Maryland, has just completed a long series of experiments with typhoid bacillus, which were fed by him in large quantities and continuously to dogs, cats, pigs, calves, white rats, guineapigs and rabbits. They remained perfectly healthy. Cultures were also taken from the animals every day, but no colonies of typhoid bacilli were ever obtained from them. The conclusion reached by Dr. Stokes is that the typhoid bacillus cannot maintain its struggle for existence in the intestines of any of the animals experimented upon.

Yellow Fever Serum.—Dr. Angel Bellinzaghi, the young Italian specialist who has had such remarkable success with his yellow-fever serum, has been in San Antonio, Tex., recently, arranging for a stock farm for the production of the serum. Dr. Bellinzaghi said: "I would establish here a vaccine and serum farm because of the climate, which should be well adapted to the production of the serum I want, and because of its nearness to Mexico, my field of work next year. My idea is to operate the farm upon a scientific basis from a medical standpoint and by a company capitalized with a half million dollars, which I am confident can be done. When I have looked over the ground more carefully I can unfold my plan in greater detail."

CANADA.

The Fox Bay settlers who removed to Garland, Manitoba, after their eviction by M. Menier, are reported to be in a deplorable condition. Moving as they did in the hottest month of the year the change of climate affected them severely, and an epidemic of typhoid swept away 8 of their number. They arrived too late to do any farming, and have practically no provisions for the winter nor proper houses in which to live.

MISCELLANY.

Smallpox Aboard Steamer.—The Royal Mail steamer *Don*, from Southampton, October 31, arrived at Kingston, Jamaica, November 16, and was placed in quarantine because of smallpox on board.

Medical Department of the Army.—Majors Valery Harvard, William C. Gorgas, and J. R. Kean, surgeons, have been detailed to represent the medical department of the army at the Pan-American Medical Congress to meet in Havana, Cuba, December 26-29, 1900.

Insane Soldiers From the Philippines.—The Government Asylum at Washington, D. C., recently received 13 insane soldiers from the Presidio Hospital at San Francisco, Cal., where they have been detained since their arrival from the Philippines.

X-Ray Not Evidence.—It has been decided that hereafter the x-ray will not be sanctioned by the American Medical Association as a part of expert evidence, and whether or not a limb has been properly set will be determined by the ability of the patient to use the member.

Membership in the International Sociological Institute of Paris.—Dr. Edward A. Ross, chief of the Department of Economics and Sociology at Leland Stanford University, has been elected an associate member of the International Sociological Institute of Paris. Dr. Ross is now one of 6 such members in the United States.

Captain Meyers.—A report has been received by Admiral Van Reyden, surgeon-general of the navy, concerning the wounding of Capt. Meyers, the ranking marine officer at Pekin. The wound proves to have been made by a Chinese spear and is one of few wounds from such a weapon that American surgeons have been called upon to treat. Capt. Meyers is recovering.

Quarantining at Havana.—The Havana papers are now generally commenting upon the action of the Government in the matter of quarantining immigrants and a movement is on foot among the Spaniards to form an association to work in conjunction with the Government in encouraging immigration from Spain and the Canaries, and to provide for immigrants on their arrival.

The new Minister from Argentina to the United States. Dr. Eduardo Wildo, held the post of President of the Argentine National Department of Hygiene. He planned most of the medical colleges and hospitals throughout Argentina and has won distinction as a medical writer. His first diplomatic work was the negotiation of the Sanitary Convention between Argentina and Uruguay in 1872.

Obituary.—LLOYD DORSEY, of Washington, D. C., November 13, aged 74.—GEORGE K. CROSTHWAITE, of Hamilton, Ont., November 15.—CHRISTOPHER T. AHLSTROM, of New York, November 14.—SALOME MERRETT, of Somerville, Mass., November 7, aged 57.—NATHANIEL P. RICE, of New York, November 10, aged 72.—THOMAS A. QUAYLE, of New Orleans, November 16, aged 31.—HORACE TRACY HANKS, of New York, November 18, aged 64.

Disease Among Alaskan Indians.—The United States Commissioner at Nome, Alaska, says that unless the Government extends aid to the Alaskan Indians this winter the death-rate must be exceedingly large. He says hundreds of natives in the Yukon Valley are dying of tuberculosis. During the summer the Indians were unable to dry fish, which is their chief and almost only staple. The matter will soon be brought before the Department of the Interior.

"Christian Science" Defined.—There were some compensations for the huge advertisement which the Episcopal church congress in Providence this week gave to "christian science" by devoting an evening to a discussion of its pretensions and claims. One of them was the neat definition of eddyism by a speaker named Rogers. "It is something," said he, "of which the part that is true is not new, and the part that is new is not true."—[*Springfield Republican*.]

Disinfection of Lepers' Mail.—Dr. Carmichael, of the Marine-Hospital Service at Honolulu, has instituted the following plan for disinfecting the mails from the leper settlement at Molokai. All mail from this settlement will be disinfected with sulfur dioxide at the settlement, and then transferred directly to the steamship and received aboard in clean and disinfected sacks furnished by the post-office authorities. These sacks will be disinfected with formaldehyde at Honolulu before the mail has been removed. All letters are perforated or the corners clipped at the settlement before disinfection. No case of leprosy, the surgeon reports, has yet been discovered among the post-office employes, although non-disinfected mail from the leper settlement has been handled by them for many years.

Women Dipsomaniacs.—The Supreme Court has heard a test case concerning the commitment of women dipsomaniacs to insane hospitals, a complaint having been entered that such commitments under the present statute are not in accordance with the Constitution of the United States. The council for the complainant maintained that while men have a hearing before commitment, that privilege is not extended to women. After hearing expert witnesses the Court committed the complainant on an allegation that she was an habitual drunkard.

Pure Food Legislation.—At a meeting of the National Grange, Patrons of Husbandry, at Washington, D. C., November 16, George L. Flanders, Assistant Commissioner of Agriculture of New York State, endorsed the Grout Oleomargarine Bill now pending before Congress, and advocated proposed legislation protecting State trade-marks for cheese, and legislation to prevent frauds in the manufacture and sale of all dairy products. Aaron Jones, of Indiana, pointed out what the organization was doing to promote various legislative matters. About 60 agricultural chemists attended the meeting as a body. Mr. Wiley, of the Agricultural Department, complimented the Grange on its influence in the interest of pure food legislation, and detailed the Department's work in meat investigations for the protection of the American market, and our commercial reputation abroad.

Smallpox.—About 30 cases of this disease have been reported at Washburn, Wisconsin, and 5 cases are at present in the pest house. One whole family living near Washburn are down with the disease. The house is well quarantined. One case is reported at La Crosse. The pest house there had not been used for so many years that it took some time to prepare it for the patient. No new cases are reported from Prince George's County, Md., and the present victims to the disease are doing well. Dr. L. A. Griffiths says that every case of smallpox that has been in the county for the past 5 years, including the first case of the present outbreak, has been traced to the District of Columbia. The disease is reported to prevail in a mild form in Sprague, Washington. Several families are quarantined. From Thornton, Washington, 12 cases are reported. The authorities have employed trained nurses to take charge of the patients.

Government Hospital for the Insane.—In the report of the Board of Visitors, recently submitted to the Secretary of the Interior, attention is called to the overcrowded condition of this institution at Washington, D. C. At the latest session of Congress authority was given for the extension of the hospital for the accommodation of 1,000 additional patients, and plans for the new building are already under way. The report states that the building will at present accommodate conveniently about 1,600 patients, with the necessary employes. The number on June 30 of this year was 2,076. The inconvenience and actual menace to safety resulting from this condition, declare the Visitors, can scarcely be realized by those who have not felt the responsibility for these helpless patients. In some of the wards for males, which are intended for 18 patients each, 41 patients are now confined. In other wards for males, from 16 to 18 beds are made on the floor each night along the corridors. In the wards for the most disturbed class of female lunatics, with a normal capacity of 36 each, there are now 48 to 60 patients. During the year covered by the report many improvements were made at the institution, but much yet remains to be done. A new laundry has been installed, and a complete sewer system from all parts of the institution to the river has been built. One of the great needs of the hospital is better protection from fire; for this an appropriation of \$37,000 has been made by Congress. The Visitors object to the site chosen for the new buildings and recommend that the ground known as Wilson Park be chosen.

Suicide and Homicide in the Army.—The tabulations of the cases of suicide and homicide which occurred in the army during the years 1898 and 1899 are compared in the annual report of Surgeon-General Sternberg with the cases which occurred during the 10 years, 1888-97. Contrary to the general anticipation, it is found that there were among the troops during the past 2 years relatively fewer homicides than during the years of the previous decade, and that the

mean annual ratio of suicides per thousand men was about 2½ times greater during the decade of peaceful garrison life than during the recent period of active military service. The following figures show the rates for these years:

Year.	Mean Strength.	SUICIDES		HOMICIDES.	
		Number.	Ratio per Thousand.	Number.	Ratio per Thousand.
1888	26,739	8	.30	5	.19
1889	27,206	21	.77	5	.18
1890	26,684	16	.60	7	.26
1891	26,460	22	.83	8	.30
1892	26,861	22	.82	5	.19
1893	27,659	22	.80	5	.18
1894	27,674	18	.65	10	.36
1895	27,326	19	.70	1	.04
1896	27,183	12	.44	4	.15
1897	27,374	10	.37	5	.18
Mean of Decade .	27,116	17.0	.63	5.5	.20
1898	147,795	38	.26	19	.13
1899	105,546	30	.28	23	.22

Health-Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, for the week ended November 17, 1900.

SMALLPOX—UNITED STATES.				CASES.	DEATHS.
COLORADO:	Total for State .	Oct. 1-31		75	
DIST. COLUMBIA:	Washington . .	Oct. 28-Nov. 3 . .		1	
IOWA:	Des Moines . .	Oct. 1-31		1	
KANSAS:	Wichita	Nov. 3-10		11	
"	Total for State .	Oct. 1-31		27	
KENTUCKY:	Lexington . . .	Oct. 28-Nov. 10 . .		4	
LOUISIANA:	New Orleans . .	Oct. 28-Nov. 3 . .		2	
MASSACHUSETTS:	Taunton	Oct. 28-Nov. 3 . .		1	
MICHIGAN:	Detroit	Nov. 3-10		1	
MINNESOTA:	Minneapolis . .	Oct. 28-Nov. 10 . .		6	
NEW YORK:	New York	Nov. 3-10		1	
OHIO:	Cincinnati . . .	Nov. 3-10		14	
UTAH:	Salt Lake City .	Oct. 1-31		27	
"	"	Oct. 28-Nov. 10 . .		20	
WASHINGTON:	Seattle	Oct. 1-31		9	
W. VIRGINIA:	Wheeling	Nov. 3-10		1	

SMALLPOX—FOREIGN.				CASES.	DEATHS.
BRAZIL:	Rio de Janeiro .	Sept. 8-16		33	
EGYPT:	Cairo	Oct. 7-14		1	
ENGLAND:	London	Oct. 20-27	1		
INDIA:	Calcutta	Sept. 22-Oct. 13 . .		24	
"	Madras	Oct. 6-12		1	
RUSSIA:	Moscow	Oct. 13-20	3		
"	Odessa	Oct. 22-27	1	2	
SCOTLAND:	Edinburgh	Oct. 20-27	1		
"	Glasgow	Oct. 26-Nov. 2 . .	26	2	

YELLOW FEVER.—UNITED STATES.				CASES.	DEATHS.
MISSISSIPPI:	Natchez	About Oct. 15 . . .		12	7

YELLOW FEVER.—FOREIGN.				CASES.	DEATHS.
BRAZIL:	Rio de Janeiro .	Sept. 8-16		2	
CUBA:	Havana	Oct. 26-Nov. 3 . .		13	
DOMINICAN REPUBLIC:	Puerto Plata . .	Oct. 6-Nov. 3 . . .	5		
MEXICO:	Tampico	Oct. 28-Nov. 4 . .	12	4	
"	Vera Cruz	Oct. 26-Nov. 3 . .	11	12	

CHOLERA.				CASES.	DEATHS.
INDIA:	Bombay	Oct. 8-16		17	
"	Calcutta	Sept. 22-Oct. 13 . .		461	
"	Karachi	Oct. 7-14	1	1	
"	Madras	Oct. 6-12		21	

PLAGUE.—FOREIGN.				CASES.	DEATHS.
EGYPT:	Alexandria . . .	Oct. 1-14	1		
ENGLAND:	London	Oct. 30	1 case on vessel arriving from the Philippines.		
GERMANY:	Bremen	Nov. 6	1 death. Sailor from South America.		
INDIA:	Bombay	Oct. 8-16	85		
"	Calcutta	Sept. 29-Oct. 13 . .	197		

Yellow Fever.—Dr. John Guit  ras, professor in the Medical University of Havana, holds an appointment under Gov. Gen. Wood as yellow fever expert for Havana. In a recent interview he said: "There is no more yellow fever in Havana this year than in former years. More has been heard of it in the States on account of the number of Americans who are in Havana. There were 24,000 Spanish emigrants landed in Havana last winter, and it has been among them that the fever has spread this summer. This winter, 300 have arrived from Spain, but we have not allowed them to enter Havana, having erected barracks just outside of the city where they are kept until they are sent to the interior of the Island. I believe that yellow fever will be stamped out in Havana in the course of the next 2 or 3 years. There is no reason why it should exist now, if proper precautions are exercised. There was no yellow fever in Matanzas or Santiago this summer, and only a mild form in Havana. Every house in Havana will be fumigated this winter, and if the dormant germs can be exterminated there will be little or no fever in Havana next summer."

Changes in the Medical Corps of the U. S. Army,
for the week ended November 17, 1900:

HATCH, H. W., acting assistant surgeon, will report at Fort St. Michael for duty as post surgeon.
CUSHMAN, GABRIEL, hospital steward, will be sent from Camp Skagway to Port Valdez, Alaska, to relieve Hospital Steward Clinton F. Henderson.
HENDERSON, CLINTON F., hospital steward, upon relief at Port Valdez, Alaska, will report for duty at Camp Skagway.
THOMPSON, Major HENRY D., surgeon, is granted leave of absence until November 25.
HESS, First Lieutenant LOUIS T., is granted leave of absence until November 30.
LEWIS, JOHN C., acting assistant surgeon, will proceed to his home, Georgetown, Ky., from where he will report to the Surgeon-General of the Army for annulment of contract, on account of physical disability.
WHITE, JONAS S., acting assistant surgeon, will proceed to his home, Mannheim, Pa., from where he will report by letter to the Surgeon-General of the Army for annulment of contract, or orders.
DEMEY, C. F., acting assistant surgeon, is granted leave of absence until November 30.
LYSTER, First Lieutenant T. C., assistant surgeon, is granted leave of absence for 1 month, with permission to go beyond the limits of the division of Cuba.
BENTLEY, CARLE E., acting assistant surgeon, in addition to his duties at Fort Logan H. Roots, will perform the duties of examiner of recruits at Little Rock, Ark.
STARK, Captain ALEXANDER N., assistant surgeon, is granted extension of leave, to include October 29.
MEARNS, Captain EDGAR A., is granted 6 months leave of absence, on surgeon's certificate.
RICHARDS, First Lieutenant WM. E., assistant surgeon, leave of absence, granted August 31, is changed to leave for 3 months on account of sickness.
GOMEZ, VINCENT, acting assistant surgeon, is relieved from duty in the division of Cuba, and will proceed to Santiago, Cuba, and report by letter to the chief surgeon, division of Cuba, for annulment of contract.
COOKE, ROBERT P., acting assistant surgeon, is relieved from duty in the division of Cuba, and will proceed to Boyce, Va., and report by letter to the Surgeon-General of the Army, for annulment of contract.
COONEY, DANIEL C., acting assistant surgeon, is relieved from duty in the division of Cuba, and will proceed to Washington, D. C., and report to the Surgeon-General of the Army for annulment of contract.
GOULDING, TIMOTHY F., acting assistant surgeon, is relieved from duty in the division of Cuba, and will proceed to Washington, D. C., and report to the Surgeon-General of the Army for instructions.
HAYARD, Major VALERY, surgeon, is detailed to represent the medical department of the Army at the Pan-American Medical Congress to meet in the city of Havana, Cuba, December 26-29, 1900.
GORGAS, Major WM. C., surgeon, is detailed to represent the Medical department of the Army at the Pan-American Medical Congress, to meet in the city of Havana, Cuba, December 26-29, 1900.
KEAN, Major JEFFERSON R., surgeon, is detailed to represent the Medical department of the Army at the Pan-American Medical Congress, to meet in the city of Havana, Cuba, December 26-29, 1900.
CARR, Major LAWRENCE C., surgeon, orders of November 2 are so amended as to direct him, upon his relief from duty in the division of Cuba, to proceed via Havana, Cuba, to Washington, D. C., and report to the Surgeon-General of the Army for instructions.
ECHEVERRIA, Major RAFAEL, surgeon, is honorably discharged from the service, to take effect November 30, his services being no longer required.
FOGG, JOHN S., acting assistant surgeon, will proceed from Biddeford, Me., to Fort McHenry for temporary duty.

VAN HOFF, Major JOHN R., surgeon, having arrived at San Francisco, will proceed to Chicago and report to the commanding general, department of the Lakes for duty as chief surgeon of that department.

MATTHEWS, Major WILLARD S. H., surgeon, is honorably discharged from the service, to take effect November 30, his services being no longer required. Major Matthews will proceed to his home.

PINTO, A. S., acting assistant surgeon, leave of absence granted October 17 is further extended 10 days.

HEPBURN, JAMES H., acting assistant surgeon, is relieved from duty at the general hospital, Fort Bayard, and will proceed to Fort Caswell for duty, relieving Acting Assistant Surgeon Edwin I. Shores.

SHORES, EDWIN I., acting assistant surgeon, will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops destined for service in the Philippine Islands, and upon arrival at Manila will report to the commanding general, division of the Philippines, for assignment to duty.

TENNEY, ELMER S., acting assistant surgeon, is granted leave of absence for 1 month and 15 days, to take effect upon his being relieved from duty at Fort Douglas.

BYRNE, Major CHAS. B., surgeon, is relieved from further duty in the department of Porto Rico, and will proceed to Fort Sam Houston for duty.

PINTO, ALVA S., acting assistant surgeon, is relieved from duty in Cuba, to take effect upon the expiration of his present leave of absence, and will proceed from Omaha, Neb., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to the division of the Philippines, and upon arrival at Manila will report to the commanding general, division of the Philippines, for assignment to duty.

NEWGARDEN, Captain GEORGE J., is granted leave of absence for 2 months, on surgeon's certificate.

Changes in the Medical Corps of the U. S. Navy,
for the week ended November 17, 1900.

WHITE, C. H., medical director, placed on the retired list of the Navy, from November 19, 1900, having reached the age of 62 years.

BLAKEMAN, R. S., passed assistant surgeon, detached from the "Pensacola," and ordered to the Naval Hospital, Mare Island, for treatment.

BUTLER, C. S., assistant surgeon, ordered to the "Independence."

MCCLURG, W. A., surgeon, ordered to additional duty on the "Yankee."

GARTON, N. M., assistant surgeon, detached from the "Indiana," and ordered home to wait orders.

ALFRED, A. R., passed assistant surgeon, detached from the "Castine" and ordered to the "Culgoa."

JOHNSON, M. K., passed assistant surgeon, detached from the "Celtic" and ordered to the "Brutus."

CURL, H. C., assistant surgeon, detached from the "Culgoa" and ordered to the "Castine."

DAVIS, E., assistant surgeon, detached from the Cavite Naval Station and ordered to the "Brutus."

BELL, W. L., assistant surgeon, detached from duty at Guam and ordered to the "Celtic."

WRIGHT, B. L., assistant surgeon, detached from the Naval Hospital, Cavite, and ordered to the Naval Hospital, Yokohama, for treatment.

Changes in the U. S. Marine-Hospital Service,
for the week ended November 15, 1900:

CARTER, H. R., surgeon, granted leave of absence for 15 days from November 16, on account of sickness. November 10.

STONER, J. B., passed assistant surgeon, to report at Washington, D. C., for special temporary duty. November 13.

GREENE, J. B., passed assistant surgeon, to proceed to Bremen, Germany, for special temporary duty. November 13.

MONCURE, J. A., acting assistant surgeon, granted leave of absence for 30 days from December 15. November 14.

SCHLAAR, W. F., hospital steward, to report to Acting Director of Hygienic Laboratory for duty. November 9.

SCOTT, E. B., hospital steward, granted 1 day's extension of leave of absence. November 12.

MASON, M. R., hospital steward, to proceed to San Francisco, Cal., and report to the medical officer in command for duty and assignment to quarters. November 12.

RYDER, L. W., hospital steward, relieved from duty in the Hygienic Laboratory, and directed to report to the medical officer in command at Washington, D. C., for duty. November 9.

Board convened to meet at Washington, D. C., November 13, 1900, for the examination of Assistant Surgeon L. E. COFER, to determine his fitness for promotion to the grade of passed assistant surgeon. Detail for the board—Surgeon PRESTON H. BAILHACHE, chairman; Surgeon G. T. VAUGHAN; and Passed Assistant Surgeon H. D. GEDDINGS, recorder.

Menelik, Emperor of Ethiopia, has prohibited the use of tobacco in his dominions under severe penalties, and has been awarded the first prize by the French Society against the Abuse of Tobacco.

Foreign News and Notes.

GREAT BRITAIN.

The University of London.—The second meeting of the new Senate was held November 7, and it is stated that the work of reorganization was proceeded with.

The Cost of the Plague in Glasgow.—According to a despatch from Glasgow the estimated cost to that city of the recent visitation of the bubonic plague was £1,000,000 (\$5,000,000).

Diphtheria has increased to such an extent among the pupils of the Birmingham Bluecoat School that the Governors have decided to close and disinfect the building. The cases are mild and progressing favorably.

Diphtheria.—More than 60 cases have been recently notified in the Newbridge area of the Abercarn District Council and the authorities have decided to close the board schools, which were only lately reopened after having been closed for the same cause.

Sir William Thomson, surgeon to the Richmond Surgical Hospital, Dublin, and chief surgeon to the Irish Hospital in South Africa, has been appointed by the Queen to be one of the surgeons in ordinary to Her Majesty in Ireland, in place of Sir William Stokes, deceased.

Catalepsy.—David Brown, a clerk of Yarrow, has been lying at the Newcastle Infirmary in a state of catalepsy, with the exception of a recent interval when he spoke a few words, since March 31. It was stated that he had been unconscious for 5 weeks previous to his removal to the infirmary.

"Liftman's Heart."—The *London News* sounds a note of warning to people with weak hearts on the danger of using elevators. The rapid transition from the heavier air at the foot to the more rarefied air at the top is regarded as very deleterious. Elevator boys have died suddenly and "liftman's heart" has been added to the roll of diseases.

Influenza in London.—There were 12 deaths reported in London from this disease last week, which is an increase over the two previous weeks. The disease has never been known to make a start there so early in the season. Last year the disease manifested itself first in December, which was earlier than the previous year, and a few weeks later the death-rate was as high as 350 a week.

Local Authorities and Vaccination.—On the appointment of a vaccination officer at King's Lynn the guardians adopted a resolution that he was only to prosecute on special instructions. The clerk ruled that they had no power to make this stipulation, but the chair then refused to sign the appointment without the addendum. The matter will have to be adjudicated upon by the Local Government Board authorities and the guardians may find that the authority of Parliament cannot thus be set aside with impunity.

Homes for the Poor in Dublin.—The corporation of this city has sanctioned the purchase and clearing of an area of 2½ acres composed of some of the most disreputable and unhealthy streets in Dublin on which will be built housing accommodation for about 2,000 of the very poor. The total cost of the scheme is estimated roughly at £50,000, and it is thought that even with the small rent of 2 shillings a week for a room in these new buildings the plan will not be a costly one to the rate-payers.

Milk Adulteration.—A Kensington dairyman detected in selling diluted milk, contended that he was exempt from penalty as he held a warranty of the purity of the milk from the farmer who sold it to him. Proceedings were then taken against the farmer, who insisted that the warranty which he had given only covered the article as long as it was in his custody. On this ground the summons was dismissed, as the magistrate held that if any one was legally responsible, it was the carrier. If this decision be right it will be necessary for dairymen to see that the warranty covers all the time

antecedent to the actual delivery to them, or else the railway companies will have to refuse to carry milk not so guaranteed.

Newcastle Infirmary.—At the last quarterly meeting of governors of the Royal Infirmary. Newcastle-upon-Tyne, the establishment of an out-patient department for mental diseases was discussed. A proposal had been forwarded by the honorary staff to the House committee recommending that there should be such a department, and also such alterations in the rules and statutes should take place as would allow of the appointment of one physician for the department of mental diseases. This was carried.

Proposed University for Newcastle.—Lord Barnard at the recent opening of the New Science Building of the Northeastern County School, at Barnard Castle, alluded to remarks made by Lord Grey at the opening of the Durham College of Science, Newcastle-upon-Tyne, concerning a university for Newcastle. It is well known that while the faculties of medicine and science are in Newcastle-upon-Tyne, and the work is carried on in the colleges that bear these names, the university is in Durham, distant 15 miles, and though for some reasons it is desirable to maintain the connection, the development of the Birmingham University has given occasion to Lord Grey and other distinguished men to ask themselves if the time has not come for Newcastle to have a university of its own.

The Title of Licentiate.—Since the resolution of the Court of Assistants of London was communicated to the medical journals, constant applications have been made by Licentiatees in reference to the titles which they may adopt, and suggestions have been offered as to particular letters and signs descriptive of the qualification of L.S.A. 1886. By a further resolution of the Court of Assistants, it has been resolved that the only titles which the Society can authorize as a proper description of the qualification L.S.A. 1886 are those of physicians and surgeons, either added to the title of L.S.A. 1886 or used alone. And it was further resolved that the Society should discourage in every possible way the use of any other titles or letters on the ground of its tending to cause confusion and to destroy uniformity.

Proposed Sanatorium for the Tuberculous.—It is purposed to erect a sanatorium in Flintshire for the treatment of patients suffering from phthisis. The scheme owes its inception to Mr. W. J. Crossley, of Manchester, who, it is understood, will not only erect the buildings at his own cost, but will also endow them. The locality selected lies between Halkin and Rhydymwyn on the estate of the Duke of Westminster, near Moel Gaer, a commanding mountain. The scheme provides for the erection of a large central residential building for the patients and a number of small bungalows on the southwest slope of Moel Gaer, to which the patients will proceed in the daytime in order to gain the full benefit of the pure mountain air. It is also purposed to plant the place throughout with pine trees, another essential to the treatment of tuberculosis on the open-air system.—[*Lancet*.]

An Action for Libel.—In June the English journals noted an action for libel which was brought by Agnes Dowling, a nurse, against Dr. L. F. Dods. The alleged libel was contained in a document purporting to be a certificate of lunacy and addressed to the local relieving officer. The defendant pleaded justification and privilege. The judges before whom the case was tried held that the occasion was privileged, but the jury found for the plaintiff, awarding her damages to the amount of £100. The plaintiff in her evidence showed herself to be the victim of dangerous hallucinations, so that the result of the trial surprised the medical profession and the public. November 6, before the Master of the Rolls, Lord Justice Collins and Lord Justice Stirling, an application was made by Dr. Dods for judgment or a new trial. Miss Dowling attempted to show that Dr. Dods had been actuated by malice, but the judges held that there was no evidence of malice, and judgment was entered for the defendant with costs.

The Use of Tobacco on Active Service.—The *Lancet* in an article on this subject calls attention to the fact that the soldiers in South Africa endured long marches and privations when there were only 2 or 3 biscuits a day without

grumbling if only the real physical content of each 24 hours, the pipe smoked by the smouldering embers of a camp-fire, were not denied them. It adds: It is difficult, then, to believe that tobacco is anything but a real help to men who are suffering long labors and receiving little food, and probably the way in which it helps is by quieting cerebration—and thus allowing more easily sleep, which is so all-important when semistarvation has to be endured. It would be profitable and interesting could medical officers have taken special note of the capacity for sleep previously evidenced by those who broke down and also of their indulgence or nonindulgence in tobacco.

Field Hospitals in War.—It is reported that Mr. Frederick Treves will soon publish a book upon ambulances, the subject-matter of which will have been gathered from his experiences in South Africa. In a paper read before a recent meeting of the British Medical Association he said that the South African campaign had shown the value of a large mobile field hospital (taking 300 to 600 patients), which should follow the colors and have its own transport. The recent campaign also demonstrated the fact that the field hospital was no place for a female nurse, but that they might be increased with advantage in the base hospitals. The orderly had to take the place of the nurse many times in these hospitals. He urged the formation of an army medical reserve by inducing recently qualified medical men to agree to serve for 3 years, 1 with the colors and 2 with the reserve. This reserve would be called upon only in time of war, and would enable the army medical department to avail itself of a body of specially trained medical men, who, from its point of view, would have the advantage of an army training. He was of the opinion that the services of men thus trained would be more valuable than those of a number of civilian surgeons chosen more or less irrespective of their qualifications.

Meat Inspection.—The report of Dr. Henry O'Neill to the Markets Committee of the county borough of Belfast contains much of interest on these subjects. This gentleman represented the corporation of Belfast at the Congress of Hygiene and Demography held in Paris last August and devotes several pages to the inspection of meat in Paris, where all animals intended for food must be slaughtered at the public abattoirs at La Villette, Grenelle Vaugirard, or Villejuif. The meat is examined by qualified inspectors under the superintendence of a veterinary surgeon, and if it proves to be good it is stamped with the letters "P. P.," meaning Prefecture of Police. Meat obtained from animals slaughtered outside the city can only obtain entrance through the appointed city toll-gates and must be taken to the public slaughter-houses or to certain specified markets, to receive the stamp if satisfactory. Meat improperly admitted for human food is seized and either destroyed at the owner's expense, or if claimed for use in manufacturing purposes it is subjected to proper treatment before it is restored. In Berlin the method is similar, and all meat slaughtered in the country or abroad and intended for human consumption in the city must be brought to the public abattoir and meat market for inspection and receive the official stamp. In London there is no regular inspection of meat except in the market at Smithfield, and all meat is considered fit for food unless it has been condemned by the sanitary authorities. It is therefore probable that London receives diseased meat from all parts of the country. Dr. Neill suggests improved methods of inspection. In a separate report presented to the Public Health Committee of the county borough of Belfast he mentions the method of milk-inspection followed in Manchester and discusses the question of the municipal supply of sterilized milk as practised at St. Helens in Lancashire for more than a year.

CONTINENTAL EUROPE.

Bunsen Library.—The library of the great chemist, Bunsen, is now being sold at Leipsic.

Smallpox in Paris.—An epidemic of smallpox has broken out in Paris, due probably to the massing there of Arabs and other people from the East during the exhibition. Notices have been posted by the police warning persons who have not been vaccinated within 6 years to be vaccinated now.

The University of Buda-Pesth has recently conferred the degree of Doctor of Medicine on Fräulein Charlotte Steinberger, the first female physician in Hungary.

King Oscar, of Sweden, is reported in a very low state of health. His recent brain attack, it is said, deprived him of his memory and he seems unable to recuperate. The King has been in bad health for some time past and his eldest son and heir, the Crown Prince Gustaf, formally resumed the regency last month.

The Russian Red Cross Society.—The Russian government has again imposed a special tax for the benefit of the Red Cross Society. The first was a tax of from 5 to 10 rubles upon licenses to travel abroad, and now railroad tickets are taxed 5 kopecks when the fare is 2 rubles or upward. It is estimated that the ticket tax will yield \$125,000 per year and that on licenses \$100,000. It is understood that the Czarina, whose interest on the Red Cross Society is keen, originated the idea of imposing the taxes.

MISCELLANY.

A Tax on Childless Frenchmen.—A bill has been introduced into the French Senate, says the *Medical Record*, providing for a tax on celibates of both sexes after they reach the age of 30, and upon childless couples who have been married for 5 years, the tax to be maintained until a child is born to them. The aim of the bill is, of course, to provide a remedy for the threatening depopulation of France, by increasing the birth-rate.

Obituary.—DAVID YOUNG, at Ventnor, Isle of Wight, October 18, aged 61.—JOHN TILSLEY, of Bath, October 28, aged 32.—ALFRED WILLIAM HUGHES, professor of anatomy, King's College, London. He was one of the pioneers and the organizing secretary of the Welsh Hospital, South Africa.—EUGENE JANSSENS, of Brussels, aged 69.—GOTTHARD BÜLAU, of Hamburg, aged 65.—J. L. SHERLOCK killed, in the fighting in the Uganda Protectorate, October 13.

Epidemic Menaces Peking.—Sanitary conditions in Peking are reported serious. Since the foreign occupation many Chinese have died of smallpox and other infectious diseases. Fearing that their funerals would be interfered with, they have kept most of the coffins containing their dead in their houses and courtyards. The question of removing garbage has become one of grave importance. As the natives are forbidden to deposit refuse in the streets, there is now an enormous accumulation in their dwellings and yards, which threatens a serious epidemic. In view of the large number of troops in and near the capital, the consequences of such an outbreak would be serious. Smallpox, which is always prevalent, is much more malignant during the winter season.

The South German Society of Neurologists and Alienists held their latest session recently in Baden-Baden. One of the most important addresses made was that by Professor A. Hoche, of Strassburg, on "Shakespeare and Psychiatry." The substance of his theme was that the treatment of problems in belles-lettres by medical authors has recently been discredited almost urgently—not without the fault of the latter, by the way; and that the claim that the scientific treatment of such problems is impossible is a prejudice. In the formation of characters who were really diseased in mind, Dr. Hoche thinks that Shakespeare distinguishes himself from other poets advantageously; he has not lapsed into the error or arbitrary production of such figures of psychiatric illness as makes the views of many poets regarding such a condition unendurable to the expert. Numerous little traits prove to the specialist that Shakespeare must have had for his work models taken from the daily life around him. Later poets, with very rare exceptions, share the current errors of the laity in regard to the nature of mental aberration; the influence of their mistake on the great majority is therefore serious enough. The attempt made by Ibsen, in "Ghosts," to demonstrate in a paralytic the problem of hereditary transmission was, he says, unhappy and unsuccessful; his suppositions were false and the paralytic as a figure was badly drawn.

The Latest Literature.

British Medical Journal.

November 3, 1900. [No. 2079.]

1. Some Aspects of Modern Medical Theory and Practice. ALFRED H. CARTER.
2. Ambidexterity. SIR JAMES SAWYER.
3. The Diagnosis of Diphtheria. H. B. DONKIN.
4. Myelopathic Albumosuria. T. R. BRADSHAW.
5. Contribution to the Technic of Bacteriology. MARC ARMAND RUFFER and MILTON CRENDIROPUOLO.
6. The Propagation of the Filariae of the Blood Exclusively by Means of the Puncture of Peculiar Mosquitos. B. GRASSI and G. NOE.
7. Suprarenal Gland Extract as a Hemostatic. O. F. F. GRUNBAUM.
8. Mode and Rapidity of Reduction of Temperature by Quinin. WILLIAM SYKES.
9. The Bromid Sleep in a Case of Mania. PHILIP M. RAGG.
10. The Treatment of the Paroxysmal Stage of Whooping Cough. JOHN E. GODSON.
11. Abdominal Wound Inflicted by a Rhinoceros. E. WYN-STONE WATERS.
12. A Case of Scarlatina Pemphigoides. ARTHUR SOMERS.
13. A Case of Perforating Gastric Ulcer. G. MICHELMORE.
14. Foreign Body 25 Years in External Auditory Meatus. ARTHUR H. BENSON.
15. Wasp Sting of the Tongue. HERBERT W. NOTT.
16. Poisoning by Strychnin; Recovery. MAJOR DICK.
17. A Case of Ulcerative Endocarditis Terminating Fatally by Rupture of the Heart. W. DENISON WIGGINS.
18. Case of Carcinoma of the Upper Jaw Treated by Injections (1) of Yeast Culture, (2) Coley's Fluid. F. T. PAUL.
19. Case of Malignant Scarlatina. J. M. DAY.

2.—Sawyer says that a good way to acquire **ambidexterity** is to learn sinistral handwriting with pen and ink. He says that ambidexterity in the medical profession is a great acquirement, especially in laryngoscopy and ophthalmoscopy, in palpation, in percussion and in examination per vias naturales. [G.B.W.]

3.—The practical teaching which the present state of knowledge on the **diagnosis of diphtheria** seems to admit is apparently somewhat as follows: (1) Diagnosticians should at once regard and treat, without waiting for a bacteriologic report, all cases as diphtheria, in which the clinical signs and symptoms are such as would have raised but little or no doubt in their minds as to their nature in the days before the coming of the bacillus; (2) they should also regard and treat as diphtheria all cases which, although lacking the usual clinical "stigmata," are shown by bacteriologic examination to be associated with bacilli whose products kill animals and cause the characteristic lesions; albeit even here they may be in error, though on the better side; (3) the mere presence of bacilli "morphologically indistinguishable" from the pure "diphtheria bacillus," the host being healthy and inoculation results negative, may probably be ignored in practice, and so also may all negative bacteriologic reports in cases where there are any clinically recognized symptoms or signs of the concrete disease. Donkin believes that the diagnosis is best made after careful clinical observation. [J.M.S.]

4.—**Myelopathic albumosuria** may be defined as a disease characterized by an invasion of the cancellous tissue of the bones of the trunk by a cellular growth, by a disappearance of the osseous tissue, and by the presence in the urine of large quantities of a peculiar albuminous substance belonging to the class of bodies known as albumoses. The morbid anatomy of the disease consists in a remarkable change in the ribs, sternum, and the bodies of the vertebrae. The hard substance is reduced often to a mere shell, which breaks on the slightest pressure with the fingers; the cancellous tissue has almost entirely disappeared; and spontaneous fractures of the ribs are common. The interior of the bone is occupied by a reddish, gelatinous, greasy mass, somewhat like splenic pulp, that can readily be squeezed out by pressure on the thin and brittle bone. Microscopically, it consists of a vascular mass of cells round or spindle-shaped,

and in some cases islets of cartilage have been found. The whole structure resembles sarcoma, and the condition is generally known as "multiple myeloma." The disease is one occurring in the second half of life, and is apparently more frequent in men than in women. The symptoms may be classified under two heads: those connected with the affection of the bones, and those connected with the condition of the urine. The first complaint is generally of pain in the lumbar region suggesting lumbago; it is generally aggravated by movement; the patient probably looks anemic, the pains do not yield to treatment; but there is nothing to suggest the serious nature of the case unless the condition of the urine is recognized. In spite of the pain, weakness, and deformity, the patient is able to leave his bed and walk about until near the end of the case—a circumstance which is evidently due to the fact that the disease does not attack the bones of the extremities. In this respect it differs in a striking manner from osteomalacia, with which it has been sometimes confounded, in which the long bones are early affected, and the power of standing is lost almost from the first. The characteristic feature of the urine is the presence therein of a proteid which bears a superficial resemblance to albumin, but which can be easily shown to differ from albumin in several of its reactions. The characteristic reactions of the body are the following: 1. It coagulates at a comparatively low temperature ($60^{\circ}\text{C.} = 140^{\circ}\text{F.}$). 2. The coagulum is redissolved on boiling. 3. It is readily precipitated by hydrochloric acid, as well as by nitric acid, and the precipitates are dissolved on boiling. The condition of the urine appears to be pathognomonic of the disease. In the early stages the disease may be mistaken for muscular rheumatism; when deformities appear it may be mistaken for osteomalacia or for tuberculous disease of the spine. On the other hand, the condition of the urine might lead to the diagnosis of large white kidney being made, or, if the albumose is spontaneously coagulated, to that of chyluria. The disease seems to be always fatal, but sometimes its course is remarkably prolonged. No treatment which has been tried hitherto has appeared to have the slightest effect on the progress of the disease. [J.M.S.]

5.—Ruffer and Crendiropuolo found it necessary to invent a method by which the **diffusible products of the life of microorganisms** could be obtained without subjecting the microorganisms themselves, or the culture media, to the action of heat, filtration, or chemical reagents. The apparatus consists of an ordinary test-tube filled to any required level with bouillon or some other fluid cultivating medium, and plugged with cotton-wool. Through this plug another smaller glass tube is introduced, to the lower extremity of which is attached a collodion sack. This inner tube is filled to any required level with some cultivating fluid and is plugged at the upper extremity with cotton-wool. The collodion bags are prepared as follows: A small test-tube is rapidly dipped, bottom downward, into a small tumbler filled with collodion, until 2 or 3 inches of the tube are covered with collodion. It is then withdrawn and allowed to dry bottom upward. After drying, the same process is repeated 2 or 3 times. The collodion is then found to stick tightly to the glass tube. In order to separate the collodion from the glass tube, the whole is dipped alternately for a few seconds in strong spirit and then into water. The water and spirit diffusing through the collodion gradually loosen it from the glass. After a few minutes the collodion bag can easily be peeled off from the glass tube. A small glass tube of such a size that it can just enter is then introduced into the open extremity of the collodion bag, and the whole is then placed in the incubator at 37°C. The collodion bag now shrinks and tightly fits on the glass tube. All other methods of fastening the collodion bag have proved faulty in the hands of the authors as the fastenings invariably allowed microorganisms to get through. In order to sterilize the collodion glass tube, it is fixed in an empty test-tube, and the whole is sterilized at 150°C. by dry heat on one or several occasions. When this has been done the inner tube together with the plug are transferred aseptically to a tube of sterilized bouillon or gelatin of equal size, the plug now serving to close the tube of bouillon into which the inner tube is dipped. The bouillon in the inner tube is now inoculated with the microorganism to be studied, and the whole placed in the incubator. It is clear that this method may be used for a variety of purposes, as, for instance, the study of those products of the life of microorganisms that dialyse through a

collodion membrane. By filling the outer tube with therapeutic serum, for example, antidiphtheric serum, and the inner tube with a diphtheria culture, the action of serum on the dialysable products of the diphtheria bacillus may be studied; and inversely, the action of dialysable constituents of therapeutic serum on *Bacillus diphtheriae* and on its toxins. By inoculating the liquid contained in the outer tube with one kind of microorganism, and that of the inner with another, the antagonism between the two may also be studied. [J.M.S.]

6.—Grassie and Noe have demonstrated that when *anopheles* bites the *larvas of filariae* come out of the labium, and are thus **inoculated in the bitten animal**. The mechanism of exit represents one of the most singular and admirable phenomena that one can imagine for the diffusion of parasites. As is known, the *Culicidae* introduce only 6 of the 9 appendages that constitute their mouth apparatus. Of these, 2 form 2 canals, a wide canal constituted by the superposition of the labium to the hypopharynx, the other narrow, grooved along the hypopharynx itself. The wider canal serves very likely at the beginning of the puncture to emit some gases enclosed in the 3 sacs annexed to the anterior intestine (which, as we know now, have certainly a sucking function); later it serves for the passage of the blood; the narrow canal serves for the emission of saliva; the 4 stylets (mandibles and maxillas) cut with a saw movement. Of the remaining 3 pieces that constitute the mouth apparatus, the 2 palps during the puncture remain raised. When the mosquito proceeds to penetrate the skin the labium, as Reamnur admirably described, buckles up at first toward the base, forming an obtuse angle. As the stylets gradually penetrate, this angle is advanced toward the middle of the labium, becoming extremely acute, so much so that when complete penetration is effected the labium appears doubled up on itself, forming a narrow kind of loop, and thus forms, through the conformation of the parts which close together, a new canal. The halves of the olive and the little tongue, resting against the skin of the animal which is punctured, embrace the 6 pieces penetrating the skin. It is certainly through the bending of the labium stuffed with filarias that the rupture of the integuments of the labium is brought about; along the dorsal groove and through the rupture thus produced the filariae come out to penetrate the body of their definitive host. In some cases the authors believe that they have positively found the rupture in the middle of the length of the labium in correspondence with the loop. It seemed to them also that the 2 halves of the olive and the little tongue, being in the above-mentioned position, had an importance in directing the movements of the filariae toward the wound made by the stylets. Perhaps also the gases emitted in the first moment of the bite help the entry of the filariae into the body of the definitive host. However, it is certain that up to now all the *anopheles* that have punctured seemed free of the filariae they had previously carried in their probosces. [J.M.S.]

7.—Grunbaum calls attention to the use of **suprarenal gland extract** as a hemostatic in hematemesis. Suprarenal extract, when given for hemorrhage of the stomach, should be given in small doses, repeated at short intervals, for only while the vessel-wall is under the action of the extract will it remain contracted. The drug does not tend to coagulate the blood, as do the iron preparations. The sterile extract is not irritating, and may be used to wash out the bladder when bleeding occurs in that organ, also as a douche in postpartum hemorrhage. [G.B.W.]

8.—After a study of the **reduction of temperature by quinin**, Sykes concludes: 1. That quinin is absorbed rapidly, although only given as a powder suspended in milk. In the first series of observations, the temperature began to fall within 49 minutes; in the second series within 20 minutes; and in the third series within 22 minutes. 2. That the size of the dose, within certain limits, does not seem to affect the rapidity of the defervescence. 3. That the antipyretic effects of the quinin are probably due to the production of diaphoresis. [J.M.S.]

10.—Godson, as the result of a collective investigation found that in the **treatment of whooping-cough** the drugs commonly employed and chiefly depended upon were antipyrin, belladonna, bromids, carbolic acid, creosote, and opium, while as accessory and occasionally useful drugs chloral hydrate, quinin, and butyl-chloral-hydrate were

mentioned. The antispasmodics are always combined with expectorants, of which the alkalies are the greatest favorites. Inhalants appear to be in general use, the ones referred to being carbolic acid, creosote, bromoform, and chloroform. None of the answers that were received were enthusiastic except from those who had used creosote. The simplest and best method of administration is to sprinkle the drug on a cloth, and hang the cloth in the sickroom or nursery to dry. The method of treatment that the author has found most satisfactory is the following: Commence at once with the continuous inhalation of creosote. Clear the lungs of bronchitis as much as possible before using any special internal antispasmodic remedies. In bronchopneumonia, however, belladonna appears at once to do good. In all cases, if or when the chest is fairly clear, and the circulation is good, antipyrin may be given in suitable doses. Expectorants should be combined with the antipyrin. Good air, warm clothing, sunlight, and wholesome food are necessary in all cases. [J.M.S.]

11.—In this case of **abdominal injury caused by the horn of rhinoceros**, a portion of several knuckles of gut protruded through the opening, which was about 6 inches in length and about 2 inches above Poupart's ligament. The gut was thoroughly cleansed and returned to the abdominal cavity. The parietal peritoneum was then drawn together by sutures; the muscles united by another set of sutures, and the skin and superficial fascia by still a third set. The patient made complete recovery, and in 11 days was up and around and desired to go back to his duty as a soldier. [G.B.W.]

12.—Somers reports a case of **scarlet fever complicated by a pemphigoid eruption**. [J.M.S.]

13.—Death in this case occurred about 18½ hours after the first symptoms of **perforation of the gastric ulcer** were noticed. No attempt at operative relief was undertaken. [G.B.W.]

14.—In attempting to remove a mass of cerumen from the right ear, in a patient who was partially deaf as a result of the mass of pus, a **slate pencil** ¾ of an inch long came out. It had lain in the ear for 25 years, causing no pain, but considerable deafness from the accumulation of cerumen. [G.B.W.]

15.—Nott reports the case of a boy, aged 13 years, who had been **stung by a wasp** on the under surface of the tip of the tongue. He was in great pain and salivating profusely. The tongue was greatly swollen, hard, tender, and rounded in shape. The frenum was tightly stretched, and the tongue protruded nearly an inch beyond the teeth. A quarter of an hour later the organ had become still more swollen and was quite immobile. Any attempt at movement produced pain in the floor of the mouth and in the neck. In the meantime the saliva ran away in astonishing quantities. The submaxillary glands were swollen and tender, and the widely-distended lingual ducts could be seen pouring out their secretion. In an hour and a half some movement had returned and the organ had become less tense. The salivation continued throughout the night, but the swelling rapidly subsided. There is little doubt that had the insect flown far enough into the mouth to sting the soft palate, the boy's life would have been in danger in a very few moments. The enormous activity of the salivary glands was the chief feature of the case. As pain seemed the severest symptom requiring treatment, the tongue and mucous membrane of the mouth were brushed with a strong solution of carbolic acid, with the greatest relief to the sufferer. There were apparently no remote toxic symptoms; the pallor and faintness were possibly due to fright. [J.M.S.]

16.—Dick reports the case of an adult who recovered after taking one ounce of liquor strychninae hydrochloratis (British Pharmacopeia). This amount contained 4½ grains of the salt, and represented 5.29 milligrams per kilogram of body weight. [J.M.S.]

17.—Wiggins reports a case of **ulcerative endocarditis** that terminated fatally from **rupture of the heart**. The history indicates that the patient lived 3 days after rupture occurred. [J.M.S.]

18.—This case of **carcinoma** is of interest only in showing the discouraging results from injections of either yeast-culture or Coley's fluid. Neither of these had any perceptible effect in stopping the progressive growth of the tumor. [G.B.W.]

Lancet.

November 3, 1900. [No. 4027.]

1. Surgery of the Stomach. A. ERNEST MAYLARD.
2. Bacteriological Diagnosis of Disease. SHERIDAN DELÉPINE.
3. Surgery as a Science and an Art. C. YELVERTON PEARSON.
4. Uncomplicated Estivoautumnal Fever in Europeans in the Gold Coast Colony, West Africa. ALBERT J. CHALMERS.
5. On the Diagnosis of Thoracic Aneurysm by the Röntgen Rays. HUGH WALSHAM.
6. Have Maternal Impressions Any Effect on the Fetus in Utero? WM. DUNCAN.
7. Tonite Explosion as a Cause of Death. A. S. MORTON.
8. Arrested Mental Development Following Depressed Fracture of the Skull; Trephining; Improvement. ALFRED CLARK.
9. Nature's Alkaline Treatment of Gout and Rheumatism by the Use of Natural Alkaline Thermal Waters. CARL N. BRANDT.
10. The Wedge Operation for Entropion and Trichiasis. H. HERBERT.
11. Lengthening the Tendo-Achillis. R. A. HIBBS.
12. Impetigo Following Vaccination. JAMES JOSEPH HARDING.
13. Puttee Paralysis (?) after Enteric Fever. JOHN WILLIAM SPRINGTHORPE.
14. A Case of Removal of the Entire Upper Extremity (Interscapulothoracic Amputation) for Ulceration After Burn; Recovery. EDMUND OWEN.
15. A Case of Pneumonia (Double); Empyema; Abscess in the Abdominal Wall. R. W. MARSDEN.
16. Two Cases of "Traveling" Foreign Body. T. F. CHAVASSE.

1.—Maylard gives the results of 15 months' experience in the **surgery of the stomach**, reporting all cases upon which he has operated during this period. He first calls attention to the common erroneous impression given by many textbooks as to the true position of the stomach. The cardiac orifice is not, as generally depicted, slightly above the pyloric orifice, but considerably above it, and the lesser curvature instead of looking upward is directed toward the right. Four-fifths or more of the viscus is to the left of the middle line; the cardiac orifice is situated about opposite the junction of the seventh costal cartilage with the sternum, the pylorus 2 or 3 inches below the ensiform cartilage and an inch to an inch and a half left of the median line. The erroneous idea of a transverse position has doubtless arisen from the conditions found in the dissecting room and necropsies with the relaxation of the diaphragm, and general loss of support which changes the normal relations of the organ. Maynard believes that exploratory gastrotomy is a simple and safe measure which will afford relief and effect cure in many cases in which the patient has been lavaged, physicked and ordered a change of air and scene for some organic obstruction of the pylorus. He has performed this operation twice during the time mentioned and in the first case found a tumor of the epigastrium too far advanced for removal. The patient was relieved, however, by gastrojejunostomy. In a second case the pylorus was contracted from the cicatrix of an old healed ulcer and the patient was relieved. The Kader-Senn operation he has performed 4 times, and he considers that it has some advantages over the Frank method. He has also performed the operation of gastrorrhaphy with a satisfactory result and maintains that the operation is a justifiable one. Some of the results have been strikingly successful. Maylard is unwilling to express any judgment on the merits or demerits of gastrectomy for extensive disease of the stomach. However, he considers the operation a very severe one, of extreme gravity, and the doubtful nature of the result should be well weighed with other considerations when the operation is thought of. He has performed gastrolisis in one case for the relief of adhesions between the pylorus and the under surface of the liver resulting from an old healed ulcer. He believes that gastrolisis will relieve and cure various cases which have hitherto been vague in their symptoms and intractable to all forms of medical treatment. Gastrojejunostomy is considered a compara-

tively simple and safe operation, and it is replacing such operations as pyloroplasty and pylorotomy for cicatricial contraction of the pylorus. It is no doubt also of value in certain cases of gastric ulcer. Maylard reports 6 cases in which he has performed this operation: for cicatricial contraction of the pylorus, in 1 case with a fatal result; for the relief of inseparable adhesion to the liver in consequence of chronic ulcer in another case; for the relief of obstruction due to carcinoma of the pylorus in 3 cases; and for carcinoma of the body of the stomach in 1 case. [M.B.T.]

2.—De'epine gives a brief summary of the **early history of bacteriology**. He also calls attention to the growth in recent years of laboratory diagnosis in England, and gives some statistics of the work done in the laboratory of Owen's College, Manchester. [J.S.]

3.—To be treated editorially.

4.—Chalmers states that **estivoautumnal fever** is the most common type of malaria among Europeans on the Gold Coast. Predisposing causes are chills, constipation, mental worry, excesses, organic disease, improper food, and exposure to the sun. Infection takes place through the mosquito, particularly through a new species, the *Anopheles kumasii* of which he gives a description. The parasites found in the blood are usually nonpigmented, however the pigmented specimens are also quite common. The fever is frequently quotidian. With this type there is enlargement of the spleen and liver. Prognosis is good. Treatment consists of aperients, diaphoretics, cold applications often slightly acid, and quinin in 10 or 15 grain doses twice a day, and during convalescence iron is employed. Prophylaxis consists in airy, comfortable dwellings, mosquito nets, and occasional doses of quinin. [J.S.]

5.—Waldham records a number of cases of **aneurysm** in which the **diagnosis was made** or confirmed by the **x-rays**. In the first case the aneurysm was not at first detected, although it was suspected. The picture showed an enlargement at the left base which subsequently increased considerably in size. It was not certain, however, just where the aneurysm arose. The second patient had a huge tumor almost filling the right side of the chest. Under appropriate treatment the symptoms improved and the size of the tumor was considerably less in a subsequent skiagram. [J.S.]

6.—Duncan records an interesting series of **infantile deformities** apparently the result of **maternal impressions**. The first case was that of a child born with a hand from which all the fingers, excepting the thumb and little finger, were lacking. The mother had been very much worried by a photograph of her husband in which this deformity appeared to exist. The husband's hand, however, was, as a matter of fact, normal. Another woman, who saw this child, was subsequently delivered of an infant whose hands and feet were deformed. Duncan quotes other cases from literature. [J.S.]

7.—Morton reports the case of a man who was killed by an explosion of a detonating signal which he held in his hand. This was filled with **tonite** and was capable of blasting rock for the distance of a yard. There were a number of serious wounds in the body; perhaps the most interesting being one in the left lung. As a result of old pleural adhesions the lung did not retract, and this possibly explains the ability of the patient to walk several yards before falling down dead. A curious feature of all the wounds was the apparent **disintegration of all the soft parts**. [J.S.]

8.—Clark reports the case of a girl of 11, who had been in an asylum for 3 years because of idiocy and boisterous behavior. On examination he found a **depression of the skull** in the left occipital bone near the parietooccipital suture and about 2 fingers' breadths from the middle line. It was about 1½ inches long and ¾ inch wide. The depression resulted from a fall when the child was 4 years old. Recovery had been apparently uneventful, but after about a week she was subject to severe convulsions preceded by spasm of the right leg and arm, and the mental faculties remained stationary. **Trephining** was performed, and the meninges were found enormously thickened and adherent. The dura was opened and adhesions were separated. The disc of bone was not replaced and the scalp wound was completely closed by sutures. Uninterrupted recovery followed with steady improvement in every way. Convulsions have not

returned since the operation, and the child's mental condition has considerably improved. Only 2 months had elapsed at the time of report, however. [M.B.T.]

9.—Brandt believes that in all cases of **rheumatism** an excessive excretion of uric acid in the urine can be demonstrated. This can be corrected by the administration, in sufficient quantities, of alkaline mineral waters, and by suitable hygienic measures. The latter are carried out more satisfactorily at a sanatorium than at the patient's home. The treatment should be continued until the uric acid returns to its normal quantity. [J.S.]

11.—Hibbs reports operations on 5 patients for **talipes equino varus** by a new method of lengthening the tendo Achillis. He secures lengthening by transverse incision and longitudinal incision, thus preserving the continuity of the tendon. [The method does not differ essentially from a similar method that has been performed for several years and was, we believe, first suggested by Keen. M.B.T.]

12.—Harding reports a case of **impetigo** occurring 8 days after vaccination. The vaccination wound had been chafed by a dirty shirt, which sufficiently explains the infection. The organism present was *Staphylococcus pyogenes aureus*. [J.S.]

13.—Springthorpe reports a case of **paralysis of the perineal muscles following typhoid fever**. The patient had worn a puttee very tightly during the campaign in South Africa, and it is suggested that this pressed upon the anterior tibial nerve, as it wound about the head of the fibula. The toxin of typhoid should be regarded as the exciting cause. [J.S.]

14.—A woman, 28 years old, while filling a paraffin stove, caught fire, causing extensive **burns of the entire right upper extremity** so that a granulating surface extended into the right axillary and mammary regions. Ineffectual attempts were made to cover the surface by skin grafting, but it was evident that the hand was useless because of the involvement of the muscles. **Interscapulothoracic amputation** was performed, the clavicle was sawed across in its outer half, the vessels were tied with silk and the flaps were shaped so as to save as much skin in the region of the burn as possible. Bleeding vessels were secured as they appeared. The patient was much collapsed after the operation, but responded to an intravenous injection of a quart of hot saline solution. Rapid recovery followed and she is now in good health. [M.B.T.]

15.—A girl of 11 years had been ill 3 weeks with vomiting and diarrhea and an elevated temperature. The spleen was enlarged, but the Widal reaction was negative. After entering the hospital the child's temperature fell by lysis, but later physical signs appeared which were thought to indicate double pneumonia at both bases. Exploratory puncture later on demonstrated **empyema** of the right pleural cavity, which was evacuated after excision of a rib. The patient had had considerable abdominal pain previous to the operation which was thought to be of pleuritic origin. There was considerable fulness and hardness of the abdomen, but a resonant note everywhere on percussion. As the abdominal pain continued, exploratory incision was made, and on reaching the posterior surface of the rectus abdominis thick yellow pus escaped which had burrowed between the fascia transversalis and the abdominal wall; 37 ounces of pus was evacuated. The patient began to improve soon afterward and left the hospital about 2 months from the time of entrance. [M.B.T.]

16.—A girl of 3 years swallowed a brass shawl-pin, which ulcerated through the intestine into the abdominal wall, and it was removed by incision. In a second case abscess of the neck resulted from swallowing the husk of an oat, which was discharged through the tissues of the neck after incision. [M.B.T.]

New York Medical Journal.

November 17, 1900. [Vol. lxxii, No. 20]

1. Rational Physical Training for Women. GEORGE ALEXANDER SAXE.
2. Endothelioma of Bone with Many Metastases. FRANZ H. BRANDT.
3. A Review of our Knowledge of Malaria. JOSEPH MCFARLAND.

4. The Etiology of Eczema, with Reference to Recent Views as to Its Parasitic Origin. L. DUNCAN BULKLEY.
5. An Operation Devised for the Treatment of Marked Prolapse of the Rectum in Women. J. WESLEY BOVEE.
6. Delirium Tremens. CHARLES J. DOUGLAS.
7. Phoenix, Arizona, as a Health Resort for Tuberculous Patients. E. PAYNE PALMER.

2.—Brandt believes that the origin of endothelioma is not at all settled, although those arising from the bloodvessels are considerably more rapid in their growth and have more frequent metastases. Usually there is a history of trauma, and the result of this irritation starts a proliferation of the capillaries, and this in turn the endothelium. It is hard to tell if these are really bloodvessels or blood spaces, and as the walls are so thin, parts of this tissue are broken off in the circulation and are carried to other places like other emboli, and start new nodules wherever they happen to lodge. Endothelioma occur more frequently past middle life, with a preponderance to the male sex. [W.S.N.]

5.—See page 972, this issue.

6.—Douglas believes that patients suffering from **delirium tremens** should be put to sleep soon after their arrival in the hospital. This can be done with apomorphin in a few minutes without danger and without emesis. Such patients should not be restrained by physical force. Whisky or alcohol in some other form should be prescribed, because sudden withdrawal aggravates the disease and frequently causes it. The patient should be nourished with milk, egg-nog, or some other liquid food. [J.M.S.]

Medical Record.

November 17, 1900. [Vol. 58, No. 20.]

1. Differential Diagnosis in Diseases of the Gallbladder and Ducts. GEORGE EMERSON BREWER.
2. The Mortality from Diabetes Mellitus in the City of New York. HEINRICH STERN.
3. The Use of the Suprarenal Capsule in Diseases of the Lower Air-Passages. A Preliminary Report. SAMUEL FLOERSHEIM.
4. Perfect Recovery Following Gangrene of the Scrotum and Penis. EVERARD HAMILTON RICHARDSON.
5. A Case of Carbolic-Acid Poisoning, with a Question Concerning Asphyxia. H. E. KENDALL.
6. Chylous Ascites. J. P. KALES.
7. Universal Ankylosis. H. A. ELLIOTT.
8. Ptomain-Poisoning from Eating Cheese. G. LEO HAGEN BURGER.

1.—Brewer in his study of **differential diagnosis in diseases of the gallbladder and ducts**, divides them into 3 classes: (1) Calculous; (2) inflammatory; (3) new growths; this excludes actinomycosis, tuberculosis, and gumma. He thinks this is a better one than Kerr's, which is largely clinical. Under (1) we have stone in a healthy gallbladder, cystic duct free; (2) stone in a previously inflamed gallbladder, duct free, adhesions; subacute cholecystitis, without stone; acute cholecystitis with stone; acute cholecystitis in contracted gallbladder, duct closed; hydrops of the gallbladder; empyema of gallbladder, stone in cystic duct; carcinoma of gallbladder; stone in common duct, acute obstruction; stone in upper segment of common duct, chronic obstruction; stone in common duct near papilla; and obstruction of common duct from pressure of tumor of other organs. The 3 symptoms most important are pain, jaundice, and tumor. Repeated attacks of paroxysmal pain in upper quadrant of abdomen, apt to occur at night or after fasting, accompanied by fever; more probable if pain radiates to the back and shoulders, with tenderness under border of ribs, and an elastic tumor with a slight lateral pendulum movement during respiration, suggests cholecystitis; no tumor indicates lesion of the common duct. Diseases that confound the diagnosis are gastric ulcer, appendicitis, renal colic, gastric crisis of tables, inflammatory conditions of pylorus and duodenum, chronic obstruction, and syphilitic hepatitis. Tumor without pain or fever may suggest hydrops of the bladder; with jaundice and distention, pressure on the common duct; with fever and tenderness, empyema. The nodules from cancer may confound the diagnosis. Jaundice without symptoms, catarrhal obstruc-

tion; temporary, with colic, a stone passing through the common duct; intermittent with colic, a floating stone in the common duct; continued pain with chills, fever, hepatic enlargement, tenderness and sepsis, infective cholangitis; with progressive enlargement of liver, previous colic, impacted stone near papilla. These symptoms without pain or fever and with a tumor, suggest pressure from a new growth on the common duct. In a series of 100 cases of growths (mostly carcinoma) of the bladder, 17 were males, and 83 females; $\frac{7}{8}$ of these were subjects of cholelithiasis. Carcinoma of the gallbladder was diagnosed in only 4 of this series. In 53 death occurred within 9 months. Eight autopsies on cases of acute biliary colic showed the stone in the common duct in 6; in the bladder in one; and the stones were scattered through the biliary passages in one. [W.S.N.]

2.—Stern gives a series of tables which he has constructed from the records of the city of New York concerning the **mortality from diabetes mellitus**. He found that the number of deaths is lower in summer than at any time of the year, highest of all in the fall, and next in the spring. The number, however, did not vary greatly. The largest number of deaths took place between the fifty-fifth and sixty-fifth years. There were but 10 deaths recorded in persons under 25. The whole number of deaths in males was 102; in females 100. The greatest number of deaths occurred in Germans, among which nationality there were 57. Next came the natives of the United States, 51; next the Irish, 37. The high mortality of Germans is considered to be due to the large number of Jews among these people. So far as could be learned a total of about 54 deaths, that is, about 25%, occurred in Jews, and about the same mortality occurred in those of Irish origin or descent. Fatal coma occurred 60 times, but it was impossible in many of these cases to say whether the coma was true diabetic coma or not; 43% of the recorded deaths in Hebrews were due to coma. In 9 instances in which the duration of the disease preceding the coma is reported, it was found to be 4 years and 5 months. The average duration of the coma before death in 9 instances in which it was reported was 44 hours. Extensive tables are given, but as Stern remarks, mortality records are very unsatisfactory as a means of formulating statistics, as the records are very incomplete. They are certainly also extremely untrustworthy, and it seems impossible to acquire much valuable knowledge by a study of them. [D.L.E.]

3.—Floersheim reports astonishingly good results from the use of **suprarenal powder** given in 3-grain doses, in acute or chronic bronchitis, bronchiectasis, bronchial asthma, when accompanied by hyperemia of the bronchial mucous membrane, congestion of the lungs, edema of the lungs, hemoptysis, and any pulmonary tuberculosis. He directs that the powder be first chewed without water, and then swallowed. In some of the acute cases the results were said to be permanent, while in most cases it was but temporary. It is said to have influenced cough or other symptoms in from 2 to 15 minutes. [Certainly a rapid action! D.L.E.]

5.—The case reported was that of a child of 2. The amount of **carbolic acid** taken was unknown. Treatment was undertaken, consisting of the use of a solution of magnesium sulfate and brandy through a stomach-tube, and traction of the tongue to aid respiration. There was some croupy respiration, but while intubation was thought of, it was unnecessary. The child vomited afterward and the vomit contained but little carbolic acid, hence the symptoms seemed to be the result of partial asphyxia from the local action upon the tongue and epiglottis and not the result of systemic poisoning. [D.L.E.]

6.—The patient was a man of 34, who had edema of the lower extremities and abdomen beginning in the left leg. No treatment was effectual, and a diagnosis of **chylous ascites** was not made until a month before death, when he was first tapped. The fluid removed had the appearance of rich milk. No cause could be determined. The patient had never left the United States excepting to go to the Klondike. [D.L.E.]

7.—The case was that of a man of 44, who had **universal rheumatoid arthritis** which had begun when he was 21. For 13 years he had been bedfast. The disease seemed to have involved practically every joint in the body, even the jaw and the vertebrae. It was necessary to remove some teeth in order to feed him. [D.L.E.]

8.—Two boys were seen for an attack of **abdominal**

cramp, vomiting and prostration, with fever. The whole family had eaten cheese, but these boys were the only ones who showed any disturbance. Both recovered within a few days. Mineral poisons were absent from the discharges, but there was a large amount of fatty acid present. When the cheese was given to kittens and dogs, however, it made the kittens seriously ill, and one dog had severe gastrointestinal disturbance with paralysis of the posterior extremity. Lead was absent, but there was some evidence of the presence of an **alkaloid in the cheese** which precipitated with platinum chlorid. [D.L.E.]

Medical News.

November 17, 1900. [Vol. lxxvii, No. 20.]

1. The Surgical Importance of Jaundice. ARCHIBALD MAC-LAREN.
2. The Hydriatic Treatment of Tuberculosis. J. H. KELLOGG.
3. Pernicious Anemia: Report of a Case. G. R. TROWBRIDGE.
4. Some Observations on Affections of the Gallbladder. FRANK LE MOYNE HUPP.

1.—MacLaren in an article on the **surgical importance of jaundice** concludes that slight attacks of jaundice are of comparatively little importance, and that the majority of surgical diseases of the biliary passages have no jaundice at all. Persistent jaundice especially if progressive is usually a contraindication to operation, on the other hand intermittent, deep jaundice, especially if associated with chills and a rise of temperature, denotes a stone in the common duct which urgently demands removal. In 13 operations no disease was found in 2, adhesions of the gallbladder and pylorus was found in 1, and in 10, stones were found; all showed evidence of cholecystitis, yet none suffered from jaundice. He mentions a case in which all symptoms pointed to disease of the liver, but when the operation was performed, the organ was found normal, and the trouble due to a large postcecal appendiceal abscess. This patient suffered from jaundice, pain, etc. The stools were examined, but no stone was found. The patient died of shock, the postmortem confirmed operation. In cases of abscess of the liver the greatest difficulty is to secure proper drainage, and this is still more serious when it is on the upper surface. [W.S.N.]

2.—Kellogg continues his article upon the **treatment of tuberculosis with cold water**. He gives certain general rules that must be observed in all cases. First: Applications should not be made when the patient feels chilly, nor to the entire surface, unless the patient has been gradually inured to them. The duration, temperature, etc., must be adapted to each individual patient, in order to secure good reaction and to stimulate metabolism. For lowering temperature, only the mildest measures can be employed, otherwise chills are produced. If in the course of treatment there is loss of weight and strength, or aggravation of any of the symptoms, the treatment should be modified. The results that may be expected are favorable; the symptoms are alleviated, life is prolonged, and the patient made far more comfortable. He recommends the following methods for particular symptoms: For cough, sipping of hot water; to promote expectoration, drinking of considerable quantities of hot water, and at the same time the chest may be rubbed and the chest-bag applied and even worn all day. This often produces instantaneous relief. The pain may be relieved by a warm compress; hemorrhage, by hot applications to the extremities and cold applications to the chest; dyspnea, by hot applications to the spine; irritation of the throat, by the throat-bag, which may be worn night and day. Chilliness is treated by hot applications and a dry pack-bag; fever, by a neutral bath of from 92 to 95° F. for an hour; night-sweats, by sponging the surface with hot water at bedtime; cardiac disturbances, by a cold precordial compress; digestive disturbances, by a careful diet, including, in some cases, predigested foods, and by cold bathing; vomiting, by a cold compress to the abdomen and chest; diarrhea, by hot fomentations to the abdomen. The results of this treatment at the Boulder Sanitarium show that of 240 cases, 160 have been cured or more or less permanently improved, and the remaining 80 relieved. Kellogg makes a startling assertion that the general adaptation of hydriatic treatment "would result in saving at least nine-tenths of the sufferers of this disease from the untimely death

to which almost everyone is doomed under ordinary medical treatment." [J.S.]

3.—Trowbridge reports a case of **pernicious anemia** which commenced with malaise, slight rise in temperature, and extreme pallor, there was also some constipation. Blood examination proved the case to be one of pernicious anemia. Death occurred about 5 months after the first symptoms. Trowbridge believes that in those cases of apparent chlorosis in which there is a greenish tint to the skin, the blood should be carefully examined. [J.S.]

4.—Hupp reports a series of interesting **observations on affections of the gallbladder**. Case 1. Cholecystectomy, removal of one large stone by crushing; suture of the common duct; drainage; recovery. The patient presented symptoms of biliary colic without jaundice. At operation, dense adhesions were found overlying an atrophied gallbladder, which bled freely when cut, and about an ounce of thick, viscid bile escaped with some granular detritus. The lumen of the duct was obliterated, though Hupp succeeded in passing a Fenger's probe, locating a mass near the foramen of Winslow. The duct was incised and the mass, which weighed 83 grains, was removed. The duct then was closed with 5 silk stitches; a small rubber tube^t drained from the site of the incised duct, and a large one from the gallbladder, both exposed ends being immersed in a 4 ounce bottle containing a 25% solution of carbolic acid. The small tube was removed at the end of 24 hours, the large one at the end of 10 days. Case 2. Cholecystectomy, 10 large stones; choledochotomy, 1 large stone; recovery. This patient suffered from jaundice, otherwise the case was the same as the former. Case 3. Cholecystotomy, choledochotomy, removal of a friable stone, morphin habitué, cholemia; secondary hemorrhage; death. Patient had a former operation for floating kidney; symptoms were about the same as in Case 2. When the gallbladder was opened a large quantity of milky fluid escaped, far in excess of its capacity; adhesions to the liver caused considerable bleeding. Some days after the operation the patient began to suffer from fainting spells. She died on the sixth day. At the necropsy the abdomen was found filled with clots, but no bleeding vessel could be found. Case 4. Gallstones; cholemia, ulceration and perforation of common duct; no operation; septic peritonitis; death. Case 5. Gallstones, ulceration and perforation of common duct; shock and septic peritonitis; no operation; death. Confirmed by autopsy. Case 6. Ulceration, perforation of one of the bile-ducts; symptoms of peritonitis; no operation; recovery. Symptoms were about the same as in Case 1. [W.S.N.]

Boston Medical and Surgical Journal.

November 15, 1900. [Vol. cxliii, No. 20.]

1. Public Health Laboratories. THEOBALD SMITH.
2. Feeding in Typhoid Fever, with a Report of Cases. GEORGE W. MOOREHOUSE.
3. The Cooperation of the Medical and Legal Professions. GEORGE A. SANDERSON.
4. Criminal Neglect; Report of a Case. A. W. BUCK.
5. Three Cases of Gunshot Wounds. A. FARENHOLT.

1.—In the routine work of the laboratory, which deals with so much and such varied material, and which constitutes probably $\frac{4}{5}$ of the work exacted of **laboratories devoted to public health**, there is opportunity given for fine inductive reasoning, which, when put to the test of experiment, may yield very valuable results. Unfortunately, however, either the time for the careful study of the accumulating statistics and facts is wanting, or else the physicians served by the laboratory neglect to furnish the desired data and render the bulk of the material on hand almost worthless. Another difficulty arises from the close relation between the laboratory worker in sanitary science and the public. Leaving aside as well known the frequently discouraging encroachments of politics upon the functions and functionaries of the laboratory, there is danger that the genuine scientist may be misunderstood, undervalued, and eventually driven out entirely. The peculiar situation of the public health laboratory should make the investigator very cautious concerning the conclusions he may publish and maintain. Among the problems that are today clamoring for attention are those that group themselves about the conception of immunity, the

toxins, antitoxins and bactericidal forces, the variations of pathogenic bacteria, and the interrelation of human and animal infections. Crystallized methods are both a safeguard and a danger. They guide us and make our results homogeneous. They may also petrify our modes of thought if we too slavishly adhere to them. In the choice of methods we should clearly define to ourselves our purpose. If we are seeking the solution of new problems, we must create new ways and means. If we are making collective investigations to secure and broaden the basis of accepted facts, our technic must be both uniform and detailed. [J.M.S.]

2.—Moorehouse contributes an article in which he advocates a more **liberal diet in typhoid fever**. He summarizes 150 cases, some of which are counted twice, that have been treated in 17 months. In 5 cases feeding was begun when the temperature reached normal and was followed by slight irregularities in the temperature. In 39 cases feeding was begun when the temperature reached normal and there was no subsequent rise. In 21 cases the feeding was begun before the temperature reached normal and was followed by a "relapse-like" rise of temperature. In 13 cases feeding was begun before the temperature reached normal and was followed by irregular fever, thought to be relapse. In 84 cases defervescence was apparently unaffected by food. In 11 cases defervescence was apparently hastened by feeding. [J.M.S.]

Journal of the American Medical Association.

November 17, 1900. [Vol. xxxv, No. 20.]

1. Medullary Anesthesia in Gynecology. J. RIDDLE GOFFE.
2. Purpura Hæmorrhagica or Scorbutus? HENRY E. TULEY.
3. Diabetes Mellitus in Children. LEOPOLD F. W. HAAS.
4. Malarial Hemoglobinuria. WM. BRITT BURNS.
5. Massage of the Eyeball. CASEY A. WOOD.
6. Use and Abuse of Potassium Iodid in Ophthalmic Practice. ALBERT RUFUS BAKER.
7. Electric Recording Perimeter. WM. M. SWEET.
8. Glioma of the Retina. G. A. SULZER.
9. A Double Hook for Use in Advancement Operation. C. F. CLARK.
10. Symptoms and Diagnosis of Hypertrophy of the Pharyngeal Tonsil. GEORGE MORGENTHAU.
11. Iodin Used Hypodermically in the Treatment of Pulmonary Tuberculosis. ALFRED CARENO CROFTAN.
12. Hernia or Diverticulum of the Chorion. L. H. LAIDLEY.
13. Tuberculosis of the Testicle. JOHN B. MURPHY.

1.—Goffe believes that when general anesthesia is contraindicated in **gynecologic cases medullary anesthesia** may be of great use, but for psychic and esthetic reasons it is contraindicated. The chief danger seems to be from a mild form of sepsis, due to the introduction of germs into the spinal canal.

2.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1284.

3.—	"	"	"	"	"
4.—	"	"	"	"	1264.
5.—	"	"	"	"	1442.
6.—	"	"	"	"	"
7.—	"	"	"	"	"
8.—	"	"	"	"	"

11.—Croftan used **iodipin hypodermically** in 27 selected cases, 19 incipient, of pulmonary tuberculosis, with good results. The injections were started with a drop a day, increased to 60 or 100. They were given in the gluteal region and caused no irritation.

Edinburgh Medical Journal.

September, 1900. [Vol. viii, No. 3.]

1. Two Cases of Poisoning by Cannabis Indica. J. FOULIS.
2. Can the Period of Infectiveness of Diphtheria be Shortened and Its Tendency to Spread Diminished? WM. EWART.
3. Clinical Lectures on Circulatory Disorders—Lecture II. The Cause of the Presystolic Murmur. G. A. GIBSON.
4. Sarcoma of Suparenal Capsules in a Child aged Seven Weeks. JOHN ORR.
5. Jacksonian Epilepsy Due to Cerebral Abscess Following Upon Typhoid Fever. ANDREW CASSELS BROWN.

6. A Contribution to the Mechanism of Articulate Speech. S. W. CARRUTHERS.

1.—Foulis reports in detail the symptoms of **poisoning** experienced by 2 brothers, each of whom had taken 90 minims of tincture of **cannabis indica**. [J.M.S.]

2.—At St. George's Hospital, it has long been the rule for all cases of **diphtheria** admitted under Ewart's care, to receive local treatment of the nose and nasopharynx, by the introduction of carbolized oil twice daily throughout their stay in the hospital, with a view not only to relieve local discomfort or lesions, and to obviate the spread of the latter, but also to insure, if possible, in all cases, a gradual cleansing and disinfection of the entire mucous surface, by the spreading upwards of the oil, which is dropped in with a camel's hair brush, the patient's head having been thrown backwards. The long local permanence of the seeds of infection in some subjects suggests a question, whether some of the usually **late sequels**, particularly of **diphtheria** and of **influenza**, might not themselves be **late infections** and the relapses of influenza, autoinfections, perhaps preventable, if the infecting organisms were thoroughly removed. The systematic disinfection should rationally include some endeavor to clear the recesses of the tonsils of their stale contents. [J.M.S.]

4.—Orr reports the case of a female child, aged 7 weeks, who presented a swelling of the belly. On examination of the abdomen, the superficial veins were found distended, and the epigastric and both hypochondriac regions were greatly enlarged and prominent. The surface of this enlargement was perfectly smooth and uniform, presented no irregularity, and no pulsation was visible. Careful palpation revealed the presence of a solid mass which was movable during respiration and which was evidently an enlarged liver. A second enlargement occupied the left half of the abdomen. It was also movable during respiration. The 2 swellings appeared to be quite distinct from each other. The blood was frequently examined, and at first showed decided leukocytosis, which, however, disappeared. The patient steadily lost strength and emaciation began and then slight edema of the lower limbs appeared. The abdomen became increased in girth, and gradually the 2 areas of enlargement and dulness descended into the right and left iliac fossa respectively. A provisional diagnosis of splenic anemia with coincident hepatic enlargement was made. The postmortem examination revealed the fact that the enlargement of the liver was due to the presence of numerous sarcomatous nodules. The primary growth was discovered in the right suprarenal capsule. [J.M.S.]

6.—A technical discussion of the mechanism of articulate speech. [J.M.S.]

Deutsche medicinische Wochenschrift.

August 30, 1900. [26. Jahrg., No. 35]

1. Queirolo's Method of Determining the Outlines of the Stomach. PAUL EDEL and FRANZ VOLHARD.
2. Hematologic Investigations. ERNST BECKER.
3. A Case of Endothelioma Myxomatodes Palati Mollis. H. CORDES.
4. Is the Illumination by the Röntgen-Rays Sufficient for the Differential Diagnosis Between Aortic Aneurysm and Intrathoracic Tumor? E. GEBAUER.
5. Practical Examination of the Chest by Means of the Röntgen-Rays and Some Results. LEVY DORN.

1.—Queirolo's method consists in the use of a stomach-tube, on the end of which there is fastened a small bag. On the free end there are 2 openings, 1 of which is connected with a drum head and the other opens and closes with a stop-cock. The tube is introduced into the stomach, air is blown in through the free end, and by this means the bag is filled and the drum is made tense. The observer then percusses lightly over the stomach region, and observes the influence upon the tambour connected with the instrument. When the actual region over the stomach is reached the recording pencil is set in marked motion. Small movements of the pencil are seen in percussing any portion of the abdomen. Only marked movements must be considered of importance. The method is a useful one, more particularly when used in connection with other methods. The observers note, however, that in some cases results are not obtained because the

stomach contains practically no air. They have discovered that the stomach must be under moderate tension with air in order to give satisfactory results. [D.L.E.]

2.—In the first place, in discussing **pneumonia** the author notes that 3 very severe cases had a **leukocytosis** varying from 10,000 to 28,000. All these ended fatally. Two very severe cases which ended in recovery had a leukocytosis of 31,000 and 29,000. A third fairly severe case had a leukocytosis of 17,000, and in a mild case there was a leukocytosis of only 13,000. Hence the mere degree of leukocytosis does not indicate directly the severity of the disease, but a high grade of leukocytosis indicates a severe infection, a moderate leukocytosis, of from 12,000 to 16,000, is seen in both severe and mild cases, while slight leukocytosis is a bad prognostic sign. But if the leukocytosis is of high degree, although it shows a severe infection it at the same time indicates a good reaction; a moderate leukocytosis may indicate slight infection with sufficient reaction or tense infection with a poor reaction; slight leukocytosis may indicate exceedingly slight infection, but as a rule it indicates very bad reaction. The relative number of different forms of leukocytes was not influenced. Eosinophiles were never found in fatal cases, hence their absence is a bad sign. Sometimes the polymorphonuclear neutrophiles showed increased size of nucleus and poor staining. They looked like an intermediate stage between the myelocytes and the polymorphonuclears. In one case myelocytes were found, and their number reached 9%. [D.L.E.]

3.—Cordes records a most interesting case of **endothelioma** located in the left side of the soft palate. The growth was first noticed 3 weeks previous to the examination. It was removed by splitting the overlying mucous membrane and excising the larger part, a small portion remained and required curetting. The microscopic examination showed that the growth was undoubtedly a true endothelioma which had its origin in the endothelium of the lymph spaces and vessels. The character of the tumor was evident that the endothelium of the bloodvessels had also participated in its formation. The marked myxomatous and hyalin degeneration which was present made the diagnosis more difficult in that it required more time to find the characteristic portions of the tumor. [G.B.W.]

4.—The importance of the present communication is that the diagnosis of a case being in doubt between **mediastinal tumor** and **aortic aneurysm**, examination with x-rays was undertaken. A pulsating tumor was seen, and the pulsation was thought to be distinctly expansile. The diagnosis was then thought to be aortic aneurysm. There was dulness under the sternum, Oliver's symptom was present, there was a systolic murmur, and the left vocal cord was paralyzed. However, there was such marked difficulty in swallowing that it was considered unusual for aneurysm. The postmortem showed a round ulcerating carcinoma of the esophagus, with a communicating abscess cavity, the mass being situated 9 cm. below the interarytenoid folds. The diverticulum formed in the esophagus had become adherent to the posterior wall of the aorta. This evidently explained the tracheal tug, and also explained the apparently expansile pulsation. [D.L.E.]

5.—Levy-Dorn describes the apparatus which he has had made for marking out the areas of shadows seen upon **radioscopic examination**. It consists of a small rubber balloon connected with a fine sound with an angular end, which is connected with a stylographic pencil. The rubber balloon contains a weak solution of methylene-blue, and this stain is expressed through the pencil as one wishes to mark areas on the chest. [D.L.E.]

Wiener klinische Wochenschrift.

August 23, 1900. [13. Jahrg., No. 34.]

1. A Case of Malignant Endocarditis with Countless Metastases. S. GAVALA.
2. Concerning the Treatment of Epilepsy. MAX BIRO.

1.—Gavala reports a case of **ulcerative endocarditis** in a man of 20, who had had articular rheumatism 8 months before. When lifting a heavy barrel in an ice-cellar he was seized with palpitation and pain in the chest and abdomen, and in a few hours had a chill. The symptoms were those of ulcerative endocarditis. The patient died, and at the autopsy

suppurative tonsillitis and acute pharyngitis were found, in addition to acute endocarditis of the mitral valve, myocarditis, and pericarditis. The case was remarkable for the extensive metastasis that had taken place, affecting the brain, lung, spleen, liver, kidneys, small intestine, and the skin. There was an old endocarditis of the mitral and aortic valves and hypertrophy of the heart. The author looks upon the **tonsils** as the **portal of entry** for the germs, which were found to be *Staphylococcus aureus*. In the tonsils, in addition to *Staphylococcus aureus*, *Streptococcus pyogenes*, and *Staphylococcus albus* were found. Regarding the acute onset, the author is of the opinion that there was an acute endocarditis without symptoms before the strain of lifting the barrel, and that the exertion detached some of the endocardial vegetations, scattering infection throughout the body. [D.R.]

2.—It is difficult to say when **epilepsy** is cured. No definite period can be given; hence the value of methods of treatment is not easily estimated. An approximate standard is found in a comparison between the intervals before treatment and those afterwards. By a careful study of the cases under his observation during a period of years, Biro was able to determine that the epileptic attacks occurred with a certain regularity, and in 2 principal types. The first comprised those in which the attacks increased in frequency, the intervals becoming shorter—a type which he called the **acrescence type**. It was present in 60%. In 20% the intervals remained the same. In 12% the intervals became steadily longer—termed the **decrescence type**. The longest interval between attacks is not a criterion of the treatment if similar intervals occurred before. The **treatment of epilepsy** consists in general measures. The life should be quiet; hence traveling and considerable exercise, whether active or passive, are contraindicated. So are cold douches. Mild hydrotherapeutic measures are valuable. Regarding electricity the author does not express himself clearly. Alcohol and tobacco are harmful. An exclusive meat diet increases the frequency of the attacks. With a milk diet some cases improve; others become worse. A cure was never observed. The occupation of epileptics demands careful attention. Able-bodied persons may work in the field and garden; for the average epileptic, however, some indoor occupation, such as drafting, modeling, or office-work, is indicated. Of drugs, the **bromids** enjoy the greatest favor. In 33 cases the bromid treatment was carried out systematically for a number of years. Ten cases remained free from attacks for 3 years, and 2 for 5 years. In 30% the drugs proved valueless. The depressing effects of the bromids need not cause concern. They may disappear with continued use. Next to the bromids comes the **Flechsigt treatment**. This consists in giving opium in ascending doses for a period of 6 weeks, beginning with 0.5 g. ($\frac{3}{4}$ gr.), 3 times daily, until 1 g. (15 grs.) per day is reached. The dose can be increased every 2 or 3 days or once a week. For children of 6 years the beginning dose is .01 g. and the maximum .12 to .19; at 12 years the beginning dose is .3 to .4 g. per day; and from 13 to 16 years .6 to .75 g. The principal feature of the treatment is the sudden cessation of the opium and its replacement by the large doses of bromids, beginning with 6 g. per day (120 gr.). In some of the cases when the bromids had failed to prove satisfactory the **Bechterew treatment** was employed. This consists in the administration of from 4 to 8 tablespoonfuls per day of a mixture of *adonis vernalis* (from 2 to $3\frac{1}{2}$ g. to 18 ounces of water), sodium bromid, 8 to 12 g., and codein .1 to .2 g. **Atropin** has been recommended, and in 1 case the author saw decided improvement from its use. In another case the combination of bromid and antipyrin proved valuable. [D.R.]

Berliner klinische Wochenschrift.

August 27, 1900. [37. Jahrg., No. 35.]

1. Diseases of the Nose in Their Relations to General Diseases. SEIFERT.
2. Special Dangers of Acute Purulent Inflammation of the Middle-Ear in the Aged. HEINE.
3. The Treatment of Empyema of Highmore's Cavity. MAX HALLE.
4. Kidney Operation Where There is But One Kidney, or When Both are Diseased. MANKIEWICZ.

1.—Seifert points out the **influence of diseases of the nose on neighboring and distant organs** of the body, particularly the influence of **mouth-breathing**. The latter is observed not only in cases of partial closure of the nose, but also at times when the nose is of normal width but has a very dry mucous membrane, or is even of abnormal width and fails to secrete sufficient mucus. In these cases, which occur especially in young persons, there is a sensation of inadequate permeability of the nose, and this leads to mouth-breathing. The swallowing of the decomposing phlegm in some cases may bring about the disturbance of the appetite and digestion, and these may play a part in the anemia often seen in ozena. On the other hand, morbid conditions of the digestive organs bring about disturbances of the upper air-passages. Hyperemia and overfilling of the erectile tissues may be produced mechanically by disturbance in the circulation of the abdomen through tumors, torsion and injuries of the intestines, coprostasis, and especially tympanitis. Particles of food that are vomited may enter the cavities of the nose and produce inflammation, and at times rhinoliths. Pathologic conditions of the nasal cavities may also be connected with **neuroses of the heart**, manifesting themselves as oppression, angina pectoris, cardialgia, irregularity, acceleration, or slowing of the pulse. Valvular heart disease may bring about nasal changes, chiefly a tendency to coryza, and also hemorrhages. The occurrence of epistaxis without local cause in individuals past 40, is suggestive of **arteriosclerosis**, particularly of the carotid or cerebral vessels. In the absence of cardiac and renal signs and of changes in the peripheral arteries, the ophthalmoscope may sometimes corroborate the diagnosis. In **anemias**, hallucinations, and hyperesthesia of the sense of smell are sometimes noticed. In **leukemia**, the hemorrhagic diathesis may manifest itself in abundant nosebleed. In the other hemorrhagic diatheses the same conditions occur in the nose as in the skin. In **scrofula** the nosebleed may be excessive. Profuse epistaxis also occurs at times in chronic interstitial **nephritis**. Vicarious menstruation in the form of epistaxis may last from 1 to 3 days. Hemorrhoidal patients occasionally have epistaxis when the hemorrhoidal flux does not occur. Girls and women at times complain of coryza with obstruction of the nose a few days before the catamenial period, or of obstinate sneezing. Sometimes the onset of the menses declares itself in an intensification of an acne rosacea. A similar condition occurs in the early months of pregnancy. Some pregnant women have peculiar smell hallucinations and hyperesthesia of the olfactory sense. Scrofula has certain relations to diseases of the nose. Certain acute infectious diseases regularly begin with coryza. The absence of this may be of value in the differential diagnosis between **rötheln** and **measles**. Sometimes there is a diphtheric inflammation in the course of measles, the cause of which is principally the *Diplococcus lanceolatus*, with the streptococcus and the staphylococcus. Chickenpox vesicles are very rare in the nose. In **Scarlet fever** there may be epistaxis in the prodromal stage; in the eruptive stage an exanthem may form on the nasal mucosa. In severe cases the nose may become involved as the result of the extension of a necrotizing pharyngeal affection. Scarlet fever also plays a part in the etiology of empyema of the sinuses. Coryza is rare in **typhoid**, but common in **typhus fever**. In the former epistaxis is common, and may occur at any period of the disease. In **diphtheria** the nasal chambers are often primarily or secondarily involved; in infants particularly, the nose seems to be the preferential seat. **Influenza** most frequently of all the infectious diseases involves the nose. Parosmia and anosmia are common in that disease as a sequence of olfactory neuritis. The relations between **erysipelas** and the nose are very intimate. In the early stages of **whooping-cough** the upper air-passages, as well as the nose, are affected. There is sneezing, mucoid secretion, and hemorrhage. The latter is common in the spasmodic stage. The author suggests treatment of the nose in the early stage of pertussis with quinin, bismuth, or sodium-sulziodolicum. Some observers report the occurrence of vasomotor neuritis or nasal hydrorrhea in **malaria**. Wounds about the nose may lead to the development of **tetanus**. Among chronic infectious diseases, **tuberculosis** and **lupus** are very common in the nose. Tuberculosis appears in 3 forms: as a tuberculoma, as an extensive

infiltration with ulceration, and as bone disease with secondary involvement of the mucous membrane. The lupus affections of the nose usually begin in the mucous membrane. The primary lupus of the mucosa is often overlooked, and is considered to be simple eczema, scrofulous catarrh, or harmless polyps. In **leprosy** the nose is characteristically altered. It is more often affected than lower portions of the air-passages, and may be the only part attacked. The nasal secretion of lepers is, perhaps, the most important medium in the spread of the disease. **Glanders** may attack the human nose, but not so commonly as it does in horses. Among diseases of the skin bearing a relation to the nose, are eczema, acne rosacea, and pemphigus, as well as lupus. An acne rosacea may be intensified by a hyperplastic rhinitis, and the removal of the nasal disease improves the former. Regarding **syphilis** of the nose, it has been shown in the last decade that primary lesions of the nose are becoming more frequent. Much rarer than nasal syphilis is gonorrheal inflammation of the nose. It occurs in the newborn in connection with gonorrheal ophthalmia, and also in adults. [D.R.]

2.—While acute **otitis media** under proper treatment is, as a rule, not a serious disease, it may at times in patients beyond the fortieth year become a very dangerous malady. Heine found among 63 cases of uncomplicated meningitis, 31 in which the fatal disease was due to an acute or a sub-acute, and 32 in which it was due to a chronic otitis media; but while among the latter there were only 5 beyond the fortieth year, in the former 16, or more than half, were over 40 years of age. Four illustrative cases are cited. They show that the danger of the disease is due to its insidious character and the absence or insignificance of the symptoms that usually point to an implication of the mastoid process and lead to a timely operation. The peculiar condition of the bone and certain anatomic relations in advanced age are a factor in obscuring the condition. As a rule the spread of the disease is indicated by tenderness on pressure of the mastoid process. If the disease extends and destroys the osseous partition walls, it will spread towards the surface and bring about a periostitis with swelling and infiltration of the skin. Eventually the pus may burst through the outer layer or a subperiosteal abscess may form. In 4 of the 16 cases a fistula formed in the bone; in one there was an infiltration of the soft parts, and only in 7 was there tenderness of the mastoid. In 4 there was no pain on pressure at any time during the disease. If there is persistent, profuse, purulent secretion, the conclusion is warranted, even without other symptoms, that there is destruction of the bone. In many cases the conditions for the formation of a large pus-cavity are not given, on account of sclerosis or eburnation of the bone. If the inflammation has once attacked the petrous portion of the temporal bone, opening of the mastoid is not apt to bring permanent relief. In 3 cases an extradural abscess formed in the posterior part of the skull; disease of the tegmen tympani was the cause of the meningitis in one; in one the suppuration extended along the carotid canal, and 3 times along the labyrinth. The time that elapses between the acute inflammation of the ear and the development of meningeal symptoms varies from 4 to 20 weeks. It is longest in those cases in which inflammation extends by way of the labyrinth. It would not be wise to open the mastoid in every case of suppuration lasting a long time. Operation is not even necessary in every case in which there is swelling of the soft parts over the mastoid, but the **temporizing treatment is only permissible in young individuals**. In advanced life the operation is indicated in every case in which there is tenderness on pressure over the mastoid process. A symptom of importance is intense headache, especially on the affected side. If it sets in after the beginning of the ear disease and persists even after the outflow from the tympanum is abundant, it constitutes an indication for operation. [D.R.]

3.—Halle advocates the treatment of **empyema** of the **antrum of Highmore** by opening through the lower nasal fossa, as was first suggested by Krause. The method of operation is as follows: The mucous membrane of the lower nasal fossa is anesthetized by local application of 10 to 15% cocaine solution; Krause's trocar is then introduced close to the septum; it is passed along the cartilaginous septum and the point is directed laterally and a trifle downward at an acute angle, so that the opening will be made near the bottom of

the antrum. The instrument is introduced by gradual firm pressure with a boring motion, and after the bone is penetrated, it is pushed further until the hilt of the trocar enters the nose. The advantages of the method are that the operation is not difficult and is easily carried out without general anesthesia in a short time. It avoids abnormal communication with the mouth and the disagreeable taste of pus and iodoform. Healing results in most cases in a very short time, and, what is most important, it is as permanent as results from the use of other methods. Halle believes that this method should be tried first in every case of empyema of the antrum. If recovery does not follow, as occurs in rare cases, or if the patient can remain but a short time under treatment, the opening through the canine fossa is indicated. Opening through the alveolar process is recommended only in cases where a hole already exists after the extraction of a carious tooth. The opening of the antrum through the alveolar process by the extraction of a sound tooth he considers entirely unjustifiable. If recovery does not follow after opening the canine fossa and removing the granulations, he recommends operative attempt to close the fistula into the mouth and to bring about healing by an opening into the nasal cavity. [M.B.T.]

4.—Mankiewicz recommends the greatest conservatism in the **surgery of the kidney**. Surgical intervention is only permissible after the operator has used every means to determine the presence of functional activity of another kidney. In doubtful cases it is unjustifiable to remove the kidney, and nephrotomy should be performed. Later on, after sufficient observation, nephrectomy may follow. The most certain method of determining the condition of the kidneys is the investigation of separate urines after catheterization of the ureters, and particularly after subcutaneous injection of phloridzin to produce glycosuria. [M.B.T.]

Münchener medicinische Wochenschrift.

September 4, 1900. [47. Jahrg., No. 36.]

1. A Case of Azoospermia. F. A. KEHRER.
2. Cocainizing the Spinal Cord. AUGUST BIER.
3. A Review of the Life-position and Services of the Phagocytes, by Means of the Vital Neutral-red Staining. J. PLATO.
4. Supernumerary Adrenals. OTTO AICHEL.
5. Pregnancy and Ovarian Tumor. RICHARD MOND.
6. Neuritis Optica in Chlorosis; Death Following the Symptoms of Brain-tumor.
7. Fracture of a Metatarsal Bone. ERNST MAILLEFERT.
8. A Case of Intrauterine Complicated Fracture of the Lower Leg. OTTO KRAEMER.
9. Recovery of a Case of Multiple Injury to the Intestines. DEITERS.
10. A Convenient Sterilizing Apparatus for Surgical Instruments, Especially for Ear, Nose, and Throat Instruments. HECHT.
11. Lohnstein's Precision Saccharometer. JACOB MEYER.

2.—Bier says that the injection of **cocain into the lumbar spine** is most apt to be followed by severe symptoms which may go on to collapse, and even in one case reported death followed. The more common of the evils which follow cocainization of the spine are vomiting, headache, dizziness, and general weakness, which last for about 24 hours, but which may go on for 8 days before ceasing. And these symptoms may follow the minutest doses. For these reasons he believes that the time for cocainization of the spine to be introduced into general practice is not yet ripe, and especially would he warn surgeons from the injection of large doses, 15 mg. being the largest that should be used under any circumstances. [G.B.W.]

3.—Plato found that albuminous particles enclosed in living leukocytes (phagocytes) stained with neutral red. The staining of the enclosures depends upon the condition of the enclosing cell. If, by an injection of bouillon into the peritoneal cavity of a guineapig, an exudate is produced, and then recent gonorrheal pus is injected into the abdominal cavity, the human leukocytes are soon taken up by those of the guineapig. The nucleus of the included leukocyte stains with neutral red, but the gonococci contained in it

remain unstained. On the other hand, the nucleus of the enclosing guineapig leukocyte remains unstained, while the gonococci in this leukocyte are intensely colored and soon swell. The decolorization of the enclosed bacteria is brought about by the reducing action of the cells. It has been shown that **damaged and dying protoplasm** is endowed with strong **reducing powers**. The appearance of this decolorization is a criterion of the vital state of the cell. As the phagocytes die they gradually reduce the coloring matter in the enclosures and thus decolorize them. Living bacilli, as for example anthrax bacilli, contained in cells, may sometimes stain with neutral red; but very soon they are decolorized and, at the same time, they become swollen. In that case the cell is vanquished by the bacillus which it has taken up. This victory manifests itself in a decolorization of the bacillus and a swelling of the cell. Later, the intracellular bacilli multiply, and finally destroy the cell entirely. When the bacillus has been killed by previous heating and is then taken up by cells, it stains intensely and eventually becomes broken up into a deeply staining granular detritus. Natural immunity can also be studied by means of neutral red. If living gonococci are brought into contact with guineapig leukocytes, the gonococci swell, and lose their characteristic form. This does not occur in gonococci incorporated by human leukocytes. Damaged cells with numerous unstained gonococci are often found. The fewer the gonococci, the more they seem to suffer from the phagocytic cells. The different bacteria stain differently with neutral red; gonococci, stains a fuchsin red; staphylococci and certain diplococci, an orange or yellowish-red; anthrax bacilli, an orange or brownish-red, but the color depends to a large extent upon the vital condition of the cell and the state of swelling of the bacteria. [D R.]

4.—In the lower vertebrates there are 3 organs that are considered adrenal glands, the elongated body situated in the median line in front of the aorta, and known as the **interrenal organ**, which is originally paired, but fuses later into one structure, and the other 2 glands which are symmetrically disposed, run parallel with the interrenal organ, lie above the protonephros, and are called **suprarenal organs**. Their origin, it is generally assumed, is from the sympathetic. In the higher vertebrates and human beings, the adrenals consist of the medulla and cortex. It is held that the former is homologous with the suprarenal organs of the lower vertebrates, while the cortex is supposed to represent the internal organ. The accessory suprarenal glands are looked upon as dislocated parts of the principal organ, and have been considered to be analogous with accessory spleens, thyroids, etc. The author's studies lead him, however, to quite different conclusions. He believes that the **adrenals of man and animals have no relation to the sympathetic**. The nerve structures found in them enter after the formation of the organs. The first *anlage* of the adrenals develops from a section of the protonephros. He also shows that the so called accessory adrenals found in man near the testis and in woman in the broad ligament, are normal structures derived also from a section of the protonephros. The adrenals of man correspond to the interrenal body of the lower vertebrates, while the adrenals found near the testicle and in the broad ligament are homologous with the suprarenal bodies. He thinks that they should really be called by that name or **Marchand's adrenals**, since Marchand was the first to describe them. The adrenals in man are not nervous organs. That they are is a view that is based upon the erroneous conception of the origin of the medulla from the sympathetics. The various theories regarding the functions of the suprarenals are briefly mentioned. Aichel dismisses the view that the organs have any importance in the development of the fetus. The same is done with the theory that they are concerned in the blood formation. That they have something to do with pigmentation has not yet been proved. There appears to be a relation between the **sexual apparatus** and these glands. The effects of extirpation have been equivocal, probably because no attention was paid to Marchand's adrenals, which might intercede after the extirpation of the major organs. Removal of both glands at one time is fatal; removal of the organs separately after an interval is usually well borne, probably because Marchand's adrenals have time to compensate functionally. [D R.]

5.—Mond, from his own experience and from a review of literature on the subject of **pregnancy and ovarian tumors**, considers the following points as authorized: 1. Ovariectomy is the justifiable therapy as soon as an operable ovarian tumor has been diagnosed during pregnancy. With the increasing size of the tumor there will be conditions favorable for firmer adhesions, thus complicating the removal; for this reason there should be laparotomy as soon as the diagnosis is certain. 2. According to present statistics, to obtain the best results for the mother, the operation should be between the second and fourth months of pregnancy; for the continuance of pregnancy, between the third and fourth. 3. The dangerous complications resulting from delay, such as torsion of pedicle, suppuration of cyst, etc., demand immediate operation. 4. Puncture of cyst and artificial abortion are only makeshifts and not therapeutic measures. In dubious cases puncture is allowable, and eventually, incision. 5. A growth of the tumor in pregnancy is observed in most cases. 6. If the pregnancy is far advanced when the patient is first seen, then also ovariectomy is indicated. 7. During labor even a reposition of the tumor under narcosis may be attempted. In case of small cystic tumors, puncture, or even incision, is indicated. 8. In case of a solid tumor and living fetus at the time of labor, cesarean section is indicated with a removal of the obstruction to delivery. 9. After delivery we should wait 1 or 2 weeks before operating, until the question of puerperal infection is decided and involution of the uterus far advanced. 10. During the puerperium, an enlargement and growth of the tumor has been observed. [W K.]

6.—A pale girl of 18, who was said to have passed through several attacks of chlorosis, began to have headache and dimness of vision, the latter rapidly passing into complete blindness. The ophthalmoscope revealed optic neuritis and a patchy retina, such as is seen in retinitis albuminurica. The urine was free from albumin and sugar. A diagnosis of **cerebral tumor** was made. In the further progress of the case the patient lost the sense of smell, developed epileptoid convulsions with paralysis of the right arm, and anesthesia of the entire right half of the body. The optic neuritis passed into atrophy, the patient became somnolent, emaciated rapidly and soon died. Earlier in the disease the blood-count had shown 3,000,000 red corpuscles, no leukocytosis, and 50% hemoglobin. At autopsy a tumor was not found, and the only conditions in the brain that seemed to be abnormal were anemia and dryness. The author believes that the optic neuritis was dependent upon a chlorotic condition of the blood; the other nervous symptoms he attributes to hysteria. [D R.]

7.—Maillefert reports a case of **fracture of the second metatarsal bone**, an injury which is very common in the German army, but somewhat rare in civil life. The patient while attempting to spring from the edge of a water barrel slipped and felt a sharp pain shoot through his foot. The pain, however, disappeared in a short time and the patient was enabled to go on with his work. The next morning the foot was markedly swollen, the pain and disability increased until the patient was unable to put the foot on the ground. Crepitus and the x-rays confirmed the diagnosis. By rest in bed the bones rapidly united and the man returned to his work in about 4 weeks. [G.B.W.]

8.—Kraemer reports the case of a child which was born with blunt angled bend in the right leg which terminated in a clubfoot. The mother said that during the fifth month of pregnancy, when attempting to lift a very heavy chest, she was seized with such an intense pain on the left side that she sank to the floor. The fracture of the fetal bone undoubtedly occurred at that time. While the majority of **intrauterine fractures** result from direct violence, this case belongs to the rare instances in which the break was due to the indirect action of the force. [W.K.]

9.—In this case the patient had endeavored to end her life by opening the abdomen with a pair of scissors. The **intestine was wounded** in at least 12 places, and in one place was entirely divided. The surroundings were such as to render absolute asepsis impossible, but an attempt was made to save the patient's life. The different intestinal wounds were sutured with silk, mostly by interrupted sutures and a rather severe arterial bleeding stopped by a properly placed stitch. A gauze drain was carried out of the median end of the wound and the walls of the abdomen closed by 3 sutures of silk. The patient made a good recovery and was seemingly improved mentally by her experience. [G.B.W.]

Original Articles.

CONVEYANCE OF YELLOW FEVER INFECTION.

By J. O. COBB, M.D.,

of Fort Stanton, N. M.

Passed Assistant Surgeon, Marine-Hospital Service.

I CANNOT let the article by Dr. Reed and his assistants on "The Etiology of Yellow Fever," in the PHILADELPHIA MEDICAL JOURNAL, of October 27, pass without pointing out some seemingly faulty deductions, and very nearly an error by implication, inasmuch as Dr. Henry R. Carter, of this Service, is quoted in reference to the Orwood and Taylors epidemics in the State of Mississippi.

The references are :

"We were also very much impressed by the valuable observations made at Orwood and Taylors, Miss., during the year 1898, by Surgeon Henry R. Carter, U. S. Marine-Hospital Service. (A note on the interval between infecting and secondary cases of yellow fever, etc., reprint from *New Orleans Medical Journal*, May, 1890.) We observe that the members of the yellow fever commission of the Liverpool School of Tropical Medicine, Drs. Durham and Meyers, to whom we had the pleasure of submitting Carter's observations, have been equally impressed by their importance. (*British Medical Journal*, September 8, 1900, pp. 656-7.)

"The circumstances under which Carter worked were favorable for recording with considerable accuracy the interval between the time of arrival of infecting cases in isolated farm houses. According to Carter, 'the period from the first (infecting) case to the first group of cases infected, at these houses, is generally from 2 to 3 weeks.'

"The houses having now become infected, susceptible individuals thereafter visiting the houses for a few hours, fall sick with the disease in the usual period of incubation, 1 to 7 days.

"Other observations made by us since our arrival confirmed Carter's conclusions, thus pointing, as it seemed to us, to the presence of an intermediate host, such as the mosquito, which having taken the parasite into its stomach, soon after the entrance of the patient into the noninfected house, was able after a certain interval to reconvey the infecting agent to other individuals, thereby converting a non-infected into an 'infected' house. This interval would appear to be from 9 to 16 days (allowing for the period of incubation), which agrees fairly closely with the time required for the passage of the malarial parasite from the stomach of the mosquito to its salivary glands."

Dr. Carter established the Service quarantine for Taylors and Orwood, and I had charge of it immediately afterward. Much of the information of the cases referred to in Dr. Carter's article was collected by Drs. Harralson, Gant, and Birchett, of the State Board, and Dr. von Ezdorf and myself, of the Service. The notes of Dr. Birchett were the most painstaking I have ever seen, and it was on these notes that Dr. Carter placed the most reliance, as Dr. Birchett's service was principally in taking care of the sick. Dr. Carter had believed previously that it took about 14 days to establish a secondary infection, and instructed us all to keep this well in mind and make careful notes on all sides of the question. He furthermore believed that the fever was not contagious, but that it was altogether infectious. Believing this as he did, it was necessary for a period of incubation to take place in an infected house. All our previous epidemics, with the exception of McHenry, had been mixed up in such a way that it was impossible for us to keep track of the exposure. Here at Taylors and Orwood we had the most advantageous epidemic for study that has yet existed, as the country

was sparsely settled, practically free of malaria, and the disease occurred among a class of people who could and did help us in our close investigations.

Taylors, Miss., is a small railroad station on the Illinois Central Railroad, about 20 miles south of Oxford, and a few miles north of Water Valley, these two towns being the only ones nearby with a population of over 1,000. Taylors, Orwood, and Oxford lie in what is known as the "Black Jack" belt. This region is on rolling red hills, covered by scrubby oaks, these trees being popularly known as "Black Jacks." There are many such sections throughout the South, and any one familiar with these sections knows that they are high, dry and nearly always free of mosquitos.

Having been a partial, though weak-kneed, convert to Finlay's mosquito theory, before I had had any experience with the disease, I was naturally alert to the conditions existing at Taylors and Orwood, when I first went there.

At Taylors I slept in an old hall room, over a country store, which was about 200 feet from a ravine, which ran through the town. This ravine was about 20 feet deep, being what is popularly known in the South as a large gulley. It carried off flood water from rains, and at places there was some seepage into it at times, being enough to make it damp in the lower part of the town. There were no privies emptying into this, except the one near the railroad track and which is mentioned in my report to the Surgeon-General of 1898. In my room I noticed there were mosquitos and I had to have a mosquito net. I have also seen mosquitos in the ravine.

I am not familiar with the names of the different species of mosquitos, but this insect was the large gray variety that I have always heard called the woods mosquito. A mile north of Taylors was Mr. Seisenger's house, where there was a virulent case. I made a necropsy on this case in the presence of Drs. Carter, Harralson, and Gant. All agreed that the patient had succumbed to an immediate attack of yellow fever, but that it was mixed infection, the pathologic manifestations of malaria being unmistakably present. This house was near a small swamp, and there were many mosquitos in and about the house. Mr. Seisenger lived there for many years and he could hardly have contracted malaria elsewhere. During the entire service at Taylors and Orwood I did not see another case of malaria, though at Oxford I saw quite a number of undoubted cases on the east side of the town, which is near a large pond. Aside from these places, with possibly some that I did not investigate personally, there were no mosquitos in Orwood or Taylors.

It is well known that the mosquito does not travel very far from its immediate surroundings; however, I am prepared to admit that some species of mosquito are carried great distances in storms, and many voluntarily fly for considerable distances. I am also convinced that this particular variety of mosquito breeds in the woods and not necessarily in large pools of water.

It is unfortunate that my investigations were not closer in regard to the mosquito. I became so wedded to Dr. Carter's secondary infection theory that I may have grown careless about other theories, and what I have to say on the subject must be viewed from the standpoint of possible error, as my observations were merely incidental.

So far as Orwood is concerned it is only a mere set-

tlement, and the houses are far apart; in fact, nearly invariably a mile or so apart. We all know that the southern farmer, as a rule, tries to build his house on high ground, and nearly always near a good, rapid-flowing spring.

We might take one case as an example for discussion. At the post-office seat of Orwood there lived a family by the name of Gray. The house was made of logs, and very open to all kinds of weather. It was the old style log-house of the South. The people were poor, but far above the average in intelligence, and their stories were accepted with more credence than given to most others. There is no running water near this house, and the water-supply was procured from a well which was very deep, and which barely supplied enough for domestic purposes. I slept in a tent in this yard several nights, and I am positive there were no mosquitos, for if there had been they would have surely hunted me out, as I am very susceptible to their attentions; furthermore, the bite of the mosquito poisons me severely, and if bitten in the night I would have surely known it. This family consisted of five members, and the disease ran through the entire family in strict accordance with Dr. Carter's prediction and idea of secondary infection. The young lady of this house was exposed seriously in another house 5 miles away. She went home sick and about 14 days later her mother followed, and then so on through the entire family until all had the yellow fever. I could enumerate many similar cases in which it is hard to believe that infection was conveyed by insects, especially by the mosquito. I would more readily believe that the bedbug or other animal parasites become the hosts of the germ than the mosquito.

One other case seems hard to understand from any standpoint and I would like to introduce it merely as showing the great difficulty that the practical quarantine officer experiences in trying to prevent the spread of yellow fever. The following is a letter written to Dr. Carter, but which was probably lost in the mail, as it never reached him, viz:

TAYLORS, Miss., September 27, 1898.

Surgeon Henry R. Carter, U. S. Marine-Hospital Service,
New Orleans.

DEAR DOCTOR CARTER: Knowing your desire for thoroughness in all quarantine matters, and believing as you do in the possible conveyance of fomites of yellow fever by one's person, I have to submit at this time for your consideration a case well illustrative of the point, or at least well worthy of close study. If we can establish this case as introduced by fomites, it seems to me that it would be well to promulgate a rule of action for all officers operating in your field in regard to personal disinfection; for while you have already set us the example by your own actions under all circumstances, with often great inconvenience to yourself; however, your initiative may not receive the consideration from others which the importance of the subject really demands. The case in point is as follows:

David Jones, aged about 45 years, was taken sick September 16 at 9 A.M. The patient developed into a well-marked yellow fever case, dying at the end of 7 days. Mr. Jones was in the Gray house on August 9 and shaved Dr. Gray after he was dead. His son, a young man about 22, helped Mr. Jones shave Dr. Gray. This young man also "sat up" with Hampton Williams the night before young Williams died, which was on August 10. The razor and shaving materials were left at Dr. Gray's house. Mr. Jones took no precautions at all, for at that time no one knew of the fact that the deaths had been caused by yellow fever.

On August 27 Mr. Jones was in Taylors and talked to a Mr. Ragland about 10 minutes, Mr. Ragland being two days out of bed from sickness which was probably yellow fever,

as since his entire family has developed that disease. On August 30 Dr. Gant declared the prevailing sickness to be yellow fever. From that time to the date of his death, Mr. Jones never left his farm, which is four miles away, except to act as road guard a short distance from his farm, and once going into his father's house, September 14, which was free from infection. He was very anxious about his exposure, but felt comparatively safe, as such a long time had elapsed since exposure. He allowed no one to visit his house, nor did any member of his family leave the farm after August 30. No letter, no package, no food, nothing whatsoever went into his house after that time. The members of the family are intelligent, respectable, honest and well worthy of belief; and, so far as I can find, no exposure to an infected focus has taken place by any of them. Accepting then that the facts in the case are as stated, and that there is no error, let's look at the dates.

Mr. Jones was exposed to the town of Taylors, riding along the ravine by the Sisk houses and later talked to Mr. Ragland about 10 minutes on August 27, or 21 days before taking sick. That period of incubation certainly seems long. Now, there is one phase of the question, which, if we could establish, would make it plain sailing, and that is a previous case in that house, but unfortunately we cannot do that. Yet we have a sick child to consider.

John Jones, age 8 years, in perfect health previously, was taken sick with a rigor, followed by fever at 9 o'clock A.M., on September 16, or at the same time his father became sick. He was put to bed and it was thought that his fever had subsided by noon. He was seen on the second day by Drs. Gant and Birchett, who thought it to be a case of malarial fever, as there was no fever at the time of their visit. The child was given four doses of "chill tonic" on the second day, but the fever coming up that night the medicine was discontinued. The boy's fever continued about 5 days. I saw him on September 24 and 26. His pulsations were 70, he was weak, had clean tongue, was hungry, never had albumin in the urine, gums were spongy over the arches of three teeth above and beneath four below. Looked anemic.

Dr. Gray died August 9 and Hampton Williams August 10. Mr. Jones was taken sick September 16, or 37 days after exposure to Dr. Gray—a long time for the secondary infection it is true. The other exposure is 21 days, but does not seem to deserve consideration from the standpoint of conveyance of infection by fomites.

I can only conceive that the conditions at Mr. Jones' house were such that the secondary infection was of slow development, or sufficiently attenuated to pass upon the supposed incubation period of secondary infection to a time when atmospheric or other conditions made the focus operative or dangerous.

After Mr. Jones' death, the family were removed from the house and put in tents. So far all are well, but the incubation period has not yet passed.

This to me has always been a very puzzling case. I never slept at this house at night, and never asked the family if there were mosquitos, but the facts of the high location, and the great isolation of the house, the strict guard kept, the absence of contact, the keeping out of even letters and newspapers, make it exceedingly puzzling for the mosquito theory or any other theory. It is not probable that the mosquito travels 4 miles, and it was about 4 miles to the nearest infected house. Mr. Jones was undoubtedly the first case in this house.

Dr. Reed does not say so, and yet in his article he conveys the impression, that the disease may be only carried by the mosquito feeding on the blood of persons suffering with yellow fever. Of course one cannot always cover every little point in a discussion of this kind; and it is presumed that Dr. Reed would admit that the stools of yellow-fever patients may contain the specific organism, and if so, it is quite probable that the organism does live outside of the body and that the mosquito might obtain the infection from a cesspool or other infected point and thus convey the

disease. For sake of speculation we will grant that this is true, for if we do not Dr. Reed's mosquito theory would be untenable in the face of the facts of the McHenry outbreak in 1898. The recrudescence at McHenry, for surely it was such, is hard to explain from the mosquito standpoint, unless, as mentioned above, he will admit that the mosquito may secure its infection outside of the human body.

The following quotation is taken from Surgeon J. H. White's article, page 544, Annual Report of the Marine-Hospital Service, 1898, viz :

"It has been vigorously asserted that yellow fever may not hibernate from one summer to another in the United States. This outbreak gives proof to the contrary, following as it did the epidemic of 1897, which, as is now known, began in Ocean Springs as early as April, but was not recognized until the last week of August, and which visited 42 cities and towns in 10 States, with a total of 4,429 known cases and 484 deaths. The Service undertook a post-epidemic disinfection of the infected towns. It has now been ascertained that in May of the present year, although McHenry had been subjected to the post-epidemic disinfection, there was a focus of infection, which, by reason of its peculiar character, had not been suspected and had not been disinfected, namely, an ice-house which had been used as a dumping-place for refuse, including dejecta, during the prevalence of yellow fever in McHenry in 1897; no ice had been stored in it since the summer of 1897, but it was partly full of rotten sawdust. The first 2 cases occurring in McHenry worked together in cleansing this ice-house some 7 days prior to attack. They had nothing else in common, and were taken sick almost simultaneously."

After reading this quotation one cannot help but ask why will yellow fever not spread in certain zones. It is claimed that, with hundreds of people fleeing from infected localities to Nashville, Tenn., not one local case ever developed, and that the disease has never spread from cases coming there with the disease; still mosquitos are bad in Nashville; however, they may not belong to the variety of the *Culex fasciatus*. In Atlanta, upper South Carolina, and western North Carolina, no cases have ever developed, notwithstanding the influx of exposed persons. There are no mosquitos in upper South Carolina and western North Carolina, except here and there in swampy and low marshy places. I am not familiar with Atlanta. If we pursue our thought along this line, how shall we explain the spread of the disease aboard ships at sea; especially how shall we explain the frequent outbreaks aboard the *Plymouth*. This vessel was broken and frozen out twice, and thoroughly fumigated a number of times. She went to sea from Boston March 15, 1879, and all will recall that as soon she ran into hot weather a well-marked case developed 6 days after going out and being out of sight of land all this time. The life of the mosquito is short in summer, but they do hibernate and live through the winter, even at zero temperature. I once saw mosquitos on snow with a temperature close to zero. I mention this especially as bearing on the case of the *Plymouth*, for it seems hypothetical in the extreme that the mosquito should have lived through the exposure of -15° during the winter of 1878-79; with the very thorough sulfur disinfection; with a thorough washing out and tearing out of the vessel; and yet revive itself and produce the disease in 6 days after reaching the tropics. Now, if the mosquito was in the hold of this vessel, it must have been infected from the cases of the summer previous. I do not say this is impossible, for it is well known that bacteria will not perish in ice for periods of years, and if the mosquito is truly a hibernating insect, it is

certainly possible that it was stored away in some of the many recesses of the ship where sulfur did not reach; and that the yellow-fever germ had in this case also survived in the body of its host. This is entirely within the limits of possibility, and I furthermore believe it possible for the mosquito infected with the plasmodium to hibernate and produce malaria the following spring.

It seems to me that the hardest blow to the mosquito theory is the fact that it is nearly invariably 14 days after an attack in one house before there is another case developed. It is true Dr. Reed uses this to support his position, but it would seem untenable in face of the fact that the incubation period of yellow fever is usually 5 days, and even in houses nearby cases do not develop unless elsewhere exposed, in houses in which there has been a case of fever at least nine days before. This is a rule, but in Taylors a young lady and her young brother shut themselves indoors and were not exposed for weeks, but finally towards the close of the epidemic both contracted the disease. This house was on the opposite side of the ravine, directly in front of the badly infected Sisk houses, but at least a hundred yards away. This house was under my personal observation daily and was watched with much interest. I have heard Dr. Carter tell of a similar case, the distances being about the same. Here the yellow-fever germ must have traveled and spread out to these points, or it must have been our friend the mosquito, becoming infected on some case at the Sisk houses and then making an excursion, carrying the disease to these people.

As I said before, the mosquito does not travel great distances, but that he takes up his abode at one house and remains there in every instance is hardly probable; and that he would go to one house from another is likely. And yet we do know that after a mosquito has filled with blood, it usually seeks some dark and secluded spot and remains there until the blood is digested. Even though we may accept these facts, it will not explain the practical experience that many Marine-Hospital officers have had, that removing the family from an infected house to tents nearby will cut short the spread of the disease. In all our experience in the service it has never been proved that yellow fever spreads in camps made of tents, notwithstanding that the places where these camps have been established were infested by myriads of mosquitos. At Fontainebleau and Camp Hutton mosquitos are very bad. Cases of fever developed here in five days after exposure outside, but there were never any developed in the camps among those who had passed the incubation period of outside exposure.

The bacteriologist of theoretic turn of mind very often needs to have his experiments controlled by the practical worker, and the expressions of the practical observer nearly always help the seeker after truth, be he ever so gifted. Such work as Dr. Reed and his assistants have performed must receive the serious consideration of every bacteriologist and epidemiologist who may be interested in the subject of yellow fever. But, if a worthy theory is advanced, which however, does not meet the views of any one particular man, or set of men, such an investigator or set of investigators, in all honor, must go over step by step the points brought out and either prove or disprove them and not jump to another line of investigation unless such investigation will control the steps

of the first named. We respect Drs. Sternberg, Reed, and their assistants most highly, but we are not prepared to accept their mere negative positions as disproving the validity of the Sanarelli germ as the cause of yellow fever or as establishing the identity of this germ with Sternberg's *Bacillus X*. These gentlemen have not disproved the work of Wasdin and Geddings and others, and until this is effected by thorough and careful laboratory work, under the same conditions as Wasdin and Geddings worked, most of us cannot be as receptive of the mosquito theory as we otherwise might be. Personally I am prepared to believe that mosquitos, and even bedbugs and fleas, may convey this disease. I never could see any reasonable cause for the suppression of the disease in certain sections of South Carolina or Georgia, which are practically free of mosquitos, unless it were that this insect does convey the infection. In these sections the nights are hot, and the sanitary conditions in many places bad. In 1897 thousands of people fled from New Orleans to points in Illinois and other northern States. Many of these undoubtedly went to places where there were mosquitos, and still there was no spread of the disease. It will be recalled that the summer and early fall of 1897 was hot throughout the North, and I know that Dr. Murray, of our Service, was in fear that the disease might spread in Chicago or some other large northern city. And, to my mind, there is no good reason why it did not, and why it may not, if introduced in a hot summer.

It is discouraging to think that the mosquito may be the sole conveyor of the disease, for we cannot now expect to confine the disease to each infected house as we have heretofore tried to do. Undoubtedly some infected mosquitos will certainly elude us and escape to other nearby houses. Yet this is not the practical experience of Marine-Hospital officers, for we have shut up the disease and prevented its spread under the most discouraging circumstances, and, as I recall, even in the presence of mosquitos. In the midst of speculation let us not lose sight of the practical and keep in mind that the disease can be confined to narrow limits by the *cordon sanitaire*, carefully officered by trained quarantine officials. Such a service was that at Hampton last year.

THE OCCURRENCE OF MALTA FEVER IN MANILA.*

By RICHARD P. STRONG, M.D.,

Assistant Surgeon, U. S. A., Director of the Army Medical Laboratory, Manila,
and President of the Board appointed by the Secretary of War for the
Investigation of Tropical Diseases in the Philippine Islands,

AND

W. E. MUSGRAVE,

Hospital Steward, U. S. A.; Resident Pathologist to the First Reserve Hospital.

IN Manila one naturally meets with a number of fevers quite distinct from those better known in temperate climates. These fevers, which are continually being seen in our large military hospitals, are often a veritable puzzle to the conscientious observer and diagnostician. So far as we know no attempt has been made towards describing or classifying them either from a clinical or pathological standpoint. Indeed, an accurate classification of all seems hardly, with our present knowledge, possible. While in our wards we always

see typhoid and malarial fever, the cases of these two diseases all taken together do not form more than 60% (or 70% at most) of all our cases of fever. In a hospital of this size (1,300 beds) many cases naturally go down on our records with the diagnosis of malarial fever that are not malarial in origin, or in which, at least, no plasmodia have been demonstrated or no blood-examinations made.¹

Allowing for a certain percentage of patients suffering from dengue fever, which percentage varies markedly from time to time, there have still been a considerable number of cases of fever of undetermined origin or diagnosis.

It therefore seems of importance that each type of fever which is recognized here should be at least mentioned, as each variety known naturally throws some light, however small, on the separation and classification of the more imperfectly differentiated fevers which exist here.

The following cases are therefore considered worthy of report:

CASE 1.—For the clinical history of this case we are indebted to Dr. Robinson, acting assistant surgeon, U. S. A. The patient was a man, aged 21 years, and a member of the 51st Iowa regiment, which had been in Manila for about a year at the time he was taken sick. When the case came under Dr. Robinson's care, at this hospital, the patient gave a history of fever of nearly 2 months' standing, and was already anemic and extremely emaciated. His night-sweats were profuse and he complained at times of pain in his ankle-joints and in the left side of his face. The joints were never reddened nor swollen, however; the tongue was coated with a brownish fur; he had at first no delirium, but towards the end slight delirium developed. The bowels were slightly constipated; his pulse became rapid, feeble and running, and the temperature rose to 105.4° F., on the evening of the twenty-eighth day after his admission into this hospital, when he died. The temperature was very irregular throughout (vide chart). It is unfortunate that we have no record of his temperature before his admission to this hospital.

This first case came under our notice at necropsy, where, from the absence of gross anatomic lesions and the clinical history of the case, it was regarded for the moment one of typhoid infection without intestinal lesions.² But at the necropsy the cover-slips from the spleen and liver showed no bacilli, and after 48 hours in the incubator there was still no apparent growth in the cultures from these organs.

NECROPSY.—The necropsy, performed 13 hours after death, shows the body of a considerably emaciated man; rigor mortis is well marked in both upper and lower extremities; moderate livor mortis is present over the back and dependent parts; the right arm and forearm are both swollen and discolored, the tissues edematous and distended; the intercostal muscles are a little redder in color than normal.

Pericardium—Both layers of the serosa are smooth; the cavity contains about 35 cc. of clear fluid.

Heart.—The vessels of the epicardium are considerably injected, and there are small, diffuse hemorrhages in their regions; the right auricle is free from thrombi. The valves of the heart are all normal, with the exception of a diffuse reddening (probably postmortem) of all of them and of the endocardium in general. Aorta: The arch shows a number of patches of early atheroma; it is also diffusely reddened. The left coronary artery wall shows likewise a reddened internal surface, its lumen is patent; there are several small calcareous plates in the vessel wall. The left coronary, just at its entrance above the free edge of the valve, contains a calcareous mass, partially filling the lumen of the artery. The artery along its course shows other small calcareous plates. The heart is somewhat small and flaccid; on cut section the muscle is a little pale and brown in color; it shows no microscopic evidence of fragmentation.

* From the Army Medical Laboratory, Manila.

Lungs.—There are no adhesions on either side; both pleural cavities are free from fluid; the lungs are partially collapsed and very moderately pigmented.

On cut section both lower lobes are somewhat congested throughout and show moderate edema. There is no bronchitis present; the peritoneal cavity is in general free from adhesions; the vermiform appendix measures 6 cm. long, and contains no enteroliths and appears normal; the mesenteric glands are moderately swollen; on cut section they are hyperemic; the mesenteric glands along the sigmoid flexure and rectum are not visible; in the region of the hepatic flexure they are slightly swollen and hyperemic; the peritoneal surfaces of the intestines are in general somewhat reddened; the pancreas is very firm; on cut section no hemorrhagic or necrotic areas are visible.

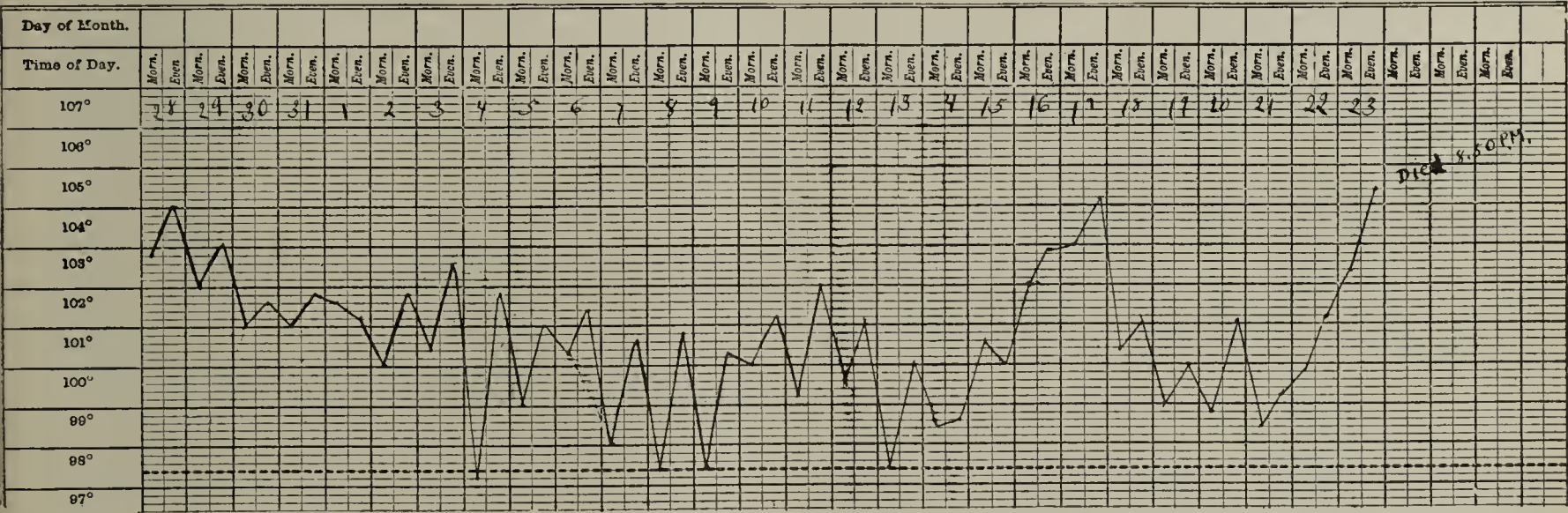
The spleen is considerably enlarged, and weighs 480 grams; it is swollen, dark in color, and very soft; there is slight old localized perisplenitis; on cut section the spleen is of a dark red color; the malpighian bodies are enlarged, and the trabeculae are somewhat prominent; the pulp is moderately increased in amount.

Esophagus and Stomach—The esophagus appears normal; the stomach is moderately distended, the mucous membrane of the cardiac half is diffusely reddened and softened, and shows evidences of postmortem digestion; the rest of the mucous membrane is bathed in mucus.

Liver.—The surface is smooth; there are minute superficial hemorrhages just beneath the capsule; on cut section the organ contains less blood than normal, and the structure is pale and cloudy.

capillaries and veins are markedly widened; there is engorgement of the vessels, the sections showing marked congestion, the sinuses being pressed apart and filled with red blood-corpuscles. The malpighian bodies are enlarged and swollen; the small round lymphoid cells are increased in number. Karyokinetic figures may be seen more frequently in the follicles; there are no areas of necrosis such as one sees after infections with typhoid fever or diphtheria, and no focal areas of inflammation with collections of leukocytes and degenerated cells; some of the endothelial cells of the veins are swollen and granular, others are proliferating; the nuclei in some are multiple. Owing to the great facility with which this organism gives up its stain to alcohol, even in very dilute solutions, it is difficult to obtain a picture of it in sections. Sections stained deeply in Unna's alkaline methylene blue and mounted in dilute glycerin, and examined at once, show a few cocci scattered here and there throughout the sinuses. There is no increase of leukocytes about the organisms.

Small Intestine.—The intestine shows scarcely any pathologic change; sections of the small intestine show no ulceration and no destruction of the epithelium of the mucosa, which is continuous over the Peyer's patches and is not thickened. Some of these epithelial cells, however, are swollen and granular; there is slight proliferation of the lymphoid cells of the follicles. There is no infiltration of the muscularis mucosa or of the submucosa with leukocytes. The vessels of the submucosa are injected and filled with red blood-cells. The muscular and serous coats appear normal. Kidneys: The vessels are filled with blood, the cap-



Kidneys.—Both are very hemorrhagic and dark in color throughout; on cut section the structure is very obscure and the distinction between cortex and periphery not well marked; the pyramids are acutely congested; the capsules strip off, but are somewhat adherent and leave in places roughened areas; the pelvis and ureters are normal; the adrenals also appear normal; the abdominal aorta shows patches of early atheroma.

Intestines, small.—In the lower portion of the ileum the solitary follicles are a little swollen, but throughout the small intestine there are no evidences of ulceration. One or two Peyer's patches in the lower end of the ileum are perhaps slightly swollen, but they show no signs whatever of ulceration; the large intestine appears normal throughout, with the exception of slight reddening of the mucosa in the cecum and ascending colon. The bladder contains about 300 cc. of bloody urine; its mucous membrane appears normal. The larynx and trachea are normal. The testicles also appear normal. The epididymes are not thickened.

Anatomic Diagnosis.—Malta fever, acute splenic tumor with chronic localized perisplenitis: Moderate hyperplasia of mesenteric lymphatic glands; acute hemorrhagic nephritis. Moderate chronic interstitial nephritis. Arteriosclerosis of coronary arteries and atheroma of the aorta. Moderate congestion and edema of the lungs. Cloudy swelling of the liver.

Microscopic examination of fresh blood-smears from the spleen were negative for malarial parasites.

HISTOLOGIC EXAMINATION.—**Spleen:** The lumens of the

sules and tubules leading from some of the glomeruli are crammed with red corpuscles. In some places the intertubular connective tissues also contain extravasated red blood cells. The glomerular capsules are often thickened and there is an exudate of albumin, granular material and degenerating glomerular epithelial cells (a few without nuclei) in the intracapsular spaces. The arteries show moderate endarteritis with slight thickening of the intima. There is some hyperplasia of the interstitial fibrous stroma; in many of the loops of Henle hyalin tube-casts may be seen; the epithelium of the tubules and of many of the glomeruli is swollen and granular.

Liver.—There is moderate increase of the interlobular connective tissue and infiltrations of small round cells occur in the interlobular fissures; the liver-cells are in places pushed apart by the dilated vessels containing red blood-corpuscles; the cells are in general swollen and granular.

Bacteriology.—Cover-slips were made at the necropsy from the heart, liver, gallbladder, spleen and distended tissues of right forearm. They were all negative for organisms. Two agar plate cultures were made from the spleen and one each from the liver, kidneys, heart's blood and swollen tissues of forearm; the plates were all placed in the incubator at 37° C. After 24 hours they were examined and were apparently all sterile. They were placed again in the incubator, but after 48 hours there was still no apparent growth. On the morning of the fourth day of their stay in the incubator, however, the two cultures from the spleen and the culture from the liver showed a number of colonies (more

abundant in those from the spleen), apparently similar, both on the surface and in the depth, too numerous to be considered as air contaminations. The plates from the kidney, heart's blood and arm were negative still for organisms and remained so.

These colonies on the plates made from the liver and spleen appeared as minute, round, viscid, pearly, white spots, measuring in the depth from about .4 to .5 mm. in diameter. The colonies in the depth under 3 objective are round or oval, yellowish in color and present nothing characteristic. After 5 days in the incubator at 37° C., the surface colonies were round, moist and viscid and slightly raised, some measuring as much as 1 or 2 mm. in diameter, and having a slight bluish refraction.

After two weeks these colonies had grown to no perceptibly greater size. Under 3 objective the margins of these colonies are smooth or more often undulating; the colonies are yellowish with a lighter periphery, and towards the center present a granular appearance; they are often nucleated. Cover-slips from a number of these colonies revealed a small coccus, occasionally in pairs but generally singly, and measuring about 3 mm. in diameter in stained specimens; this coccus completely decolorizes by Gram's solution. In hanging drop cultures very active molecular movement may be seen, but no independent motility. Inoculations from several of these colonies were made on various culture media with the following results:

On agar slants no growth is visible until the third or fourth or in some cases until the fifth day; the growth then occurs as a very faint one along the track of the needle, or as minute, pearly, white colonies. Old agar cultures sometimes show a yellowish color.

In bouillon no change is apparent for about two days, on the third day the medium is often slightly cloudy; this cloudiness gradually increases and there is eventually a slight sediment at the bottom of the tube. Cover-slips from this medium show the coccus in clumps and sometimes in short chains.

In litmus milk there is no change after one week.

In glucose-agar there is no gas production.

On blood-serum there is faint growth after 4 days.

In Smith's sugar-free bouillon there is no indol production.

On potato, after one week, there is apparently no growth.

Gelatin tubes are not liquefied; the growth is very slow and delicate.

INOCULATION EXPERIMENTS.

1. One cc. of a suspension made with sterile salt-solution and a 5 days' old agar culture was injected subcutaneously into a strong, full-grown, healthy monkey, whose temperature for the week previous to inoculation had not been above 100° F. On the third day after the inoculation the temperature started to rise, and on the fourth day it reached 104.4° F. For the next 6 weeks the temperature varied, generally between 102° F. and 104.6° F., reaching on one occasion, the seventeenth day after inoculation, 105.4° F. At the end of 6 weeks the last temperature recorded reads 102.4° F. After this date no record of the temperature was kept; the animal during the period of its fever seemed, at times, quite sick, and ate very little food; it eventually recovered. On the twelfth day after inoculation, the blood-serum of this animal in dilutions of 1 to 100, showed a marked agglutination of the organism obtained from the human spleen at the necropsy. The reaction of this monkey's blood was repeatedly tried at intervals with the same result during the next several weeks.

On the twentieth day after inoculation the monkey's spleen was aspirated, and 5 plate agar cultures made from the aspirated blood. On the fifth day of incubation all the cultures but one showed typical colonies. The organism obtained from these colonies agreed in all its peculiarities, both cultural and morphological, with those of *Micrococcus melitensis*. The bacteriologic notes from our laboratory animal book read as follows: The colonies are pinpoint to pinhead-sized, whitish and dew-like. Under objective 3 they are often nucleated, yellowish in color, with a darker periphery. In the depth the colonies are round or oval, and sharply circumscribed. Several of these colonies are planted on all media, with the following results: On agar-agar slants, after 3 days there is a very delicate, faintly bluish-white

growth. On glucose agar, a moderate whitish growth along the needle track is visible on the fourth day. There is no gas-formation. In fresh potato there is no apparent growth. Litmus milk and ordinary milk are not changed. Bouillon is clouded. A whitish sediment forms after 6 days, but no pellicle. In Smith's sugar-free bouillon there is no indol production. The organism obtained from these cultures is a coccus or short coccus bacillus which completely decolorizes by Gram's solution. It also agglutinates with the monkey's blood-serum in dilutions of from 1 to 100 within one hour. The reaction is marked.

2. A full-grown, healthy monkey, whose temperature had not been above 99.8° F. for 4 days, was inoculated subcutaneously with 1 cc. of a 5 days' agar culture, suspended in salt-solution. On the evening following the day of the inoculation the temperature rose to 103.6° F. On the eighth day after inoculation it had reached 104.8° F. On this day the blood examination showed 17,000 leukocytes. On the tenth day after the inoculation the monkey died. At the necropsy the animal was found to be already somewhat emaciated. The spleen was considerably enlarged, swollen, and dark in color. The malpighian bodies were well marked. The mesenteric glands were enlarged and hyperemic. The liver-surface was smooth and presented a mottled appearance. The cut section showed cloudy swelling. The mucosa of the intestines was pale. The kidneys were congested and of a deep-red color. The other organs presented nothing abnormal. Blood-serum taken at necropsy shows a marked agglutination both with the organism obtained from the spleen of the human necropsy, and with the organism obtained from the aspiration of the spleen of monkey No. 1. The reaction is marked in dilutions of the serum of from 1 to 100 within one hour. From monkey No. 2, a coccus was obtained by plate cultures at the necropsy from the spleen, liver, and heart's blood, which agreed both morphologically and culturally in all ways with *Micrococcus melitensis*. It is also agglutinated with the blood-serum from monkey No. 1.

LABORATORY INFECTIONS WITH THE ORGANISM.

Since 1897 we have been able to find in the literature three examples of laboratory infection with *Micrococcus melitensis* occurring in human beings. These 3 cases reported by C. Birt and G. Lamb³ have proved conclusively that *Micrococcus melitensis* can produce Malta fever in man, and supplied the last link in the chain of evidence, viz: that this organism is the true etiologic factor of Malta fever.

The first case is reported as follows: In September, 1897, a man accidentally scratched himself with a needle of a syringe with which he had just injected into a horse a living growth of *Micrococcus melitensis*. The culture was derived from an agar slant taken two years before by Hughes from the spleen of a fatal case of Malta fever. He immediately sucked the wound, plunged the hand into 5% solution of phenol which he had by his side, and almost at once cauterized the puncture with pure phenol; but to no purpose, for on October 2, 15 days later, his temperature rose and he went through a typical attack of Malta fever. His blood-serum, in high dilutions, showed the agglutination of *Micrococcus melitensis* for one and a half years after.

The second case of inoculation in man occurred on March 1, 1897, when a man in connection with some experiments in the Army Medical Laboratory at Netley regarding the elaboration of a method of vaccination against Malta fever, injected into his arm one $\frac{1}{100}$ of an agar tube of a seven days' growth of *Micrococcus melitensis*. The organism was derived from the same source as in the preceding case. On March 17, 16 days later, febrile symptoms set in and pursued a course characteristic of the fever. There was a marked increase in the polymorphonuclear leukocytes just before

the onset of the fever. The blood-serum showed agglutination of *Micrococcus melitensis* in high dilutions. Birt and Lamb also report a third case in which the patient contracted the disease in some way not known while he was working with the organism.

To this list we wish to add a fourth case of laboratory infection in which the portal of entry of the organism seems most interesting.

Cases of inoculation of infectious diseases in man, through the conjunctiva, are comparatively rare, although they have been reported in tuberculosis, gonorrhea, syphilis, diphtheria, splenic fever, and lyssa.⁴ During the operation of inoculating a monkey in regard to some immunizing experiments in this laboratory the barrel of the syringe became separated from the needle owing to the latter becoming momentarily clogged in some way, and some of the agar suspension of the organism entered the eye of one of us. The accident was commented upon at the time and the eye washed with water. Eleven days after this accident, the lower half of the left conjunctiva appeared acutely reddened and inflamed and later the lower lid became edematous and painful on pressure. A lymphatic gland at the angle of the left lower jaw became swollen and tender and a day later several other cervical lymphatics on the same side also became enlarged and painful. There was no sore throat and no tonsillitis present. The temperature rose by steps and reached 104° F. on the twelfth day. There was some sweating and excessive headache and neuralgia at times, but no other symptoms of note developed. The spleen was palpable. The blood-examination was negative for malaria plasmodia and for Widal's reaction; on the tenth day of the fever, the blood-serum showed a marked agglutination of *Micrococcus melitensis* in dilution of 1 to 60 in twenty minutes.

The fever gradually declined to normal at the end of the second month, after this there were only slight rises of temperature for a few days at a time. The blood-serum still shows marked agglutinating properties for *Micrococcus melitensis* in high dilutions.

GEOGRAPHICAL DISTRIBUTION.

Since the discovery of the microorganism of Malta fever by Bruce in 1887, cases of Malta fever have been reported in various localities. Wright and Smith,⁵ by means of the serum-sediment test, confirmed the fact that Malta fever is not confined to the Mediterranean basin. These authors tabulated 10 cases invalidated from India, in which the serum reaction gave a sedimentation value of an average of about 300-fold dilution; many of these cases at the time of the examination presented the usual sequels of the disease. C. Birt and G. Lamb (*loc. cit.*) report 10 other cases. These cases have been invalidated for such diseases as malaria, enteric fever and rheumatism; 14 of these 20 cases observed came from a comparatively small district station in the Punjab, viz: Meean, Meer; the other places in India where infection has occurred are Calcutta, Subathu, and Nowshera. One man contracted the disease in Hong Kong. This list may be extended by the following cases: Lieut. W. Glen Wiston, I.M.S., has reported a case contracted in Secunderabad in the Deccan, the serum from which gave a reaction in 80-fold dilution with *Micrococcus melitensis*. Musser and Sailer⁶ report the cases of an army officer who appears to have contracted the disease in Puerto Rico during the American-Spanish war. Malarial plasmodia were fre-

quently sought for, but never found. A culture of *Micrococcus melitensis* was agglutinated by high dilutions of the patient's blood. Kretz⁷ records the case of a physician who contracted an obstinate fever in Ajaccio, Corsica. This continued 6 months. After recovery his blood-serum agglutinated *Micrococcus melitensis* in dilutions of 300-fold. Birt and Lamb⁸ also report still another case which they state was evidently contracted in England, either in Plymouth or in London. The patient was sick from November, 1897, to March, 1898; there was edema of the feet, but the urine was normal. The edema lasted about a month and was succeeded by pain and swelling in certain joints. The hips, knees, ankles, left wrist and left temporomaxillary joints were all attacked in turn. After the disappearance of these symptoms left orchitis set in and lasted about a fortnight. Only during the period when the joints were affected was the temperature taken; at that time it was found to be about 102° F., in the evenings. The serum was not tested during the course of the illness, but was tried one year and two months after convalescence, when it was found to give complete sedimentation of *Micrococcus melitensis* in 20-fold dilution, and traces up to 50. The authors conclude that this was a case of Malta fever, contracted in either Plymouth or London, although no definite source of infection could be traced.

W. Cox⁹ reports a case of Malta fever in San Juan, Puerto Rico; the patient had 91 days of pyrexia with often marked daily remissions, with, at times, nearly a week of apyrexia, followed by fever again. The malarial plasmodia were sought for repeatedly, but not found; quinin had no effect on the temperature; Widal's test was negative with low dilutions; the blood showed agglutination of *Micrococcus melitensis* (1 to 60) in 25 minutes. Dilutions of 1 to 10, 1 to 20 showed marked reaction in 5 minutes. Cox thinks that Malta fever may be endemic in Puerto Rico. No case of Malta fever has been reported before in the Philippine Islands, though occasional references have been made in the literature to a long-continued fever occurring here. L. F. Atlee, who has lately left Manila,¹⁰ at the meeting of the College of Physicians, Philadelphia, December 6, speaks of an anomalous form of continued fever occurring here, which we think was perhaps Malta fever.

Since our first case, a second fatal case of Malta fever has occurred in Manila during the present month, the body having been received for necropsy from the Second Reserve Hospital; *Micrococcus melitensis* was isolated from the much enlarged spleen in pure cultures. This case will be reported in detail by Dr. J. J. Curry, U. S. A., at a later date.

Having convinced ourselves from our postmortem experience that Malta fever is not a very uncommon disease in Manila, we have begun to look about for these cases clinically, with the result that during the present week we have found three cases which give marked reaction with *Micrococcus melitensis* in high dilutions. One of these cases was diagnosed malarial remittent fever, though never could any malarial plasmodia be found in his blood, and he had had repeated attacks of fever while his pyrexia still persists. The other two cases were both diagnosed typhoid fever with relapse. Neither of these gave the Widal reaction nor were any malarial parasites present. Dr. J. J. Curry is now about to undertake in this laboratory a more careful study of the clinical cases.

REFERENCES.

¹ Since writing the above it is necessary to state that now, owing to the excellent arrangement of Dr. Hall, Major and Surgeon, U. S. A., commanding that hospital, blood-examinations are made in every case of fever admitted, and those patients in whom malarial organisms have been demonstrated are not allowed to return to military duty nor leave the hospital until their blood-examinations are negative for parasites. We may therefore hope from now on for more accurate statistics.

² Vide Chiari and Kraus, *Zeitschrift f. Heilkunde*, 1897, Heft 5 u. 6; Flexner and Harris, *Johns Hopkins Hospital Bulletin*, December, 1897.

³ *London Lancet*, September 9, 1899.

⁴ Knies, Freiburg, *Das Auge in allgemeinen Krankheiten*.

⁵ *British Medical Journal*, April 10, 1897.

⁶ PHILADELPHIA MEDICAL JOURNAL, December, 1898, and Proceedings of the Pathological Society of Philadelphia, February 1, 1899.

⁷ *Wiener klinische Wochenschrift*, No. 49, 1897.

⁸ *Loc. cit.*

⁹ PHILADELPHIA MEDICAL JOURNAL, September 9, 1899.

¹⁰ *Medical News*, December 9, 1899, p. 808.

HISTORY OF A CASE OF REMOVAL OF A RETROBULBAR LYMPHOSARCOMA WITH PRESERVATION OF NORMAL VISION.¹

By CHARLES A. OLIVER, A.M., M.D.,

of Philadelphia.

Attending Surgeon to Wills' Eye Hospital; Ophthalmic Surgeon to the Philadelphia Hospital, Philadelphia.

ON January 11, 1899, F. K., a weaver, 57 years old, applied at my clinical service at Wills' Hospital. He gave the following history: He was born in Germany. His health was good until 21 years of age. At that time a swelling termed a "goiter" by some government surgeons slowly developed in his neck. The enlargement became so great in size that he was rejected from military service. It was unaccompanied by exophthalmos, tachycardia, or any vasomotor symptoms, and gradually disappeared in about 16 years.

He had a chancre on the glans penis 26 years before I saw him. This lasted some five or six weeks, and was repeatedly cauterized, but was not followed by any glandular enlargements, skin-eruptions, or alopecia. Six years after this he began to complain of occasional diplopia.

Many years ago, possibly about 20, he went to Wills' Hospital for glasses, though he does not remember the exact date of the visit nor the name of the attending surgeon.

In 1837 his eyes were examined by Dr. A. G. Heyl at the Hospital of the Protestant Episcopal Church in Philadelphia. Dr. Heyl informed him that "a small vessel which would eventually give him trouble was developing in his right eye."

He again sought advice at Wills' Hospital 12 years later and became a patient of Dr. S. D. Risley. Study of the notes of the case in Dr. Risley's records shows that vision in each eye was brought to practically normal by a convex spherocylinder lens placed before the right eye and a convex spherical lens before the left one. At that time he complained of an intense pain in the right side of the head and in the right eye. This, he said, dated back for some three weeks, and had been produced by catching cold. At that time tension in each eye was normal. The right eye was congested. Its cornea was sensitive, and its iris responded to light-impulse and efforts for accommodation. The rims of the crystalline lenses were noted as being opaque, and there were four degrees of homonymous diplopia for distance.

For five years before I saw him, he had noticed a "ringing at night in the ears," this having gradually lessened. He never complained of dizziness.

Three years before his first visit he suffered from an attack of gonorrheal urethritis. A year after this he had a slight fall followed in six months' time by a prominence of the right eye. About three months before he came to the clinic he noticed that he could feel a swelling above the same eye.

He said that 8 days before he had applied to the clinic he had consulted Dr. T. B. Schneidemann of this city, who informed him that he was suffering from an orbital growth, and advised him to go to Wills' Hospital for operation.

A photograph taken when he was 20 years of age showed a swelling in his neck, which was more marked on the right side. There was not any appearance of exophthalmos. The palpebral fissures were apparently of the same size. Another photograph taken in a group some 18 years later was

unfortunately so positioned as to make the patient face the direct sunlight. In it some spasm of the left orbicularis palpebrarum associated with an elevation of the left angle of the mouth could be determined, both expressions probably having been caused by the impingement of the direct rays of the sun upon the parts. In a third photograph sat for only 5 or 6 years before he came to the hospital, the neck appeared normal. The right palpebral fissure was a trifle wider than its fellow, and there was no exophthalmos. A fourth photograph taken in a badly placed and too brilliantly lighted group some three years after the third one, exhibited a similar character of facial distortion as was seen in the second picture. In it there did not seem to have been any exophthalmos present.

At the time of the first examination it was found that the affected organ projected markedly forwards and downwards, its corneal summit being 6 mm. in advance of its fellow and 3 mm. lower. The conjunctival vessels, particularly the bulbar, were injected and swollen. Above the globe there was a rather deeply seated and freely movable mass of tissue giving a sensation to the finger-tips as though it were composed of a series of underlying swollen and twisted bloodvessels. At times, this tumor-mass seemed to pulsate synchronously with the aortic beat. Carefully repeated examination, however, failed to evidence any thrill, though an unmistakable bruit could be occasionally heard in the orbit and in the temporal region. There did not seem to be any projections or deformities in the osseous parts. Von Graefe's and Stellwag's signs were undeniably present.

The pupil of the affected side was 2.5 mm. in size, and oval, with its long axis at 80°. There were a number of equatorial striae in both the anterior and posterior cortices of the crystalline lens. The optic disc was 7 by 8 diameters in its apparent magnitude, and its long axis was situated at 80°. The edges of the disc were everywhere hazy, though a broad scleral ring with an absorbing conus beyond could be fairly well seen. The disc substance was dirty dull red-gray in tint and there was an eccentrically situated physiologic excavation. Both the retinal veins and arteries were much reduced in size, the former being exceedingly tortuous. The usual light streak along the vessels could not be determined after most careful examination. There was not any spontaneous arterial pulse, though a slight venous pulsation could be determined at times. The chorioid was quite granular, but did not evidence any signs of gross inflammation. There was a marked astigmatism, the fine retinal vessels at the long axis of the disc being most plainly seen with a convex lens of five diopters' power.

The pupil of the left eye was the same size as its fellow, its long axis being at 70°. With the exception of a few striae in the anterior and the posterior cortex of the crystalline lens, the media were clear. The optic nerve head was 7 by 8 diameters in apparent size, with its long axis situated at 80°. There was a broad scleral ring to the outside of the nerve head with a narrow one in. Annular pigmentation could be plainly seen. The currents of the retinal arteries were somewhat narrowed, although the retinal veins were not tortuous. The ordinary light streak along the main retinal vessels was quite manifest.

The iris of the left eye reacted more freely to light-stimulus and accommodation than its fellow, while varying degrees of exophoria during both near and far vision could be determined at times; particularly in the lower portions of fields of vision.

Uncorrected vision with the right eye equalled about $\frac{1}{4}$ of normal, while that with the left was $\frac{1}{8}$. Both the accommodative regions and powers in each eye were proportionate to the character and the degrees of refraction error and age. There was a marked astigmatism with hypermetropia and presbyopia.

The fields of vision for white, red, and green were normal. The field of fixation was quite large and well shaped.

General physical exploration and study of the blood, made by Dr. Joseph Sailer, of Philadelphia, was practically negative. There was not the slightest evidence of any gross organic disturbance, the signs of Hodgkin's disease being most carefully and assiduously sought for. Dr. Sailer's report in full is as follows:

"Muscular system well developed. Skin sallow. Mucous membranes good color. No scars or marks upon the body. None of the lymphatic glands can be palpated

¹ Read before the American Ophthalmological Society at the Fifth Triennial Meeting of the Association of American Physicians and Surgeons, May, 1900.

through the skin. The spleen is apparently large in size. The liver can be felt one finger's breadth below the border of the ribs and extends above to the sixth rib. The heart-dullness commences superiorly at the upper border of the fourth rib at the mid-sternum and passes to one inch to the right of the left nipple line. The apex beat is indistinctly felt in the fifth interspace in the nipple line. On auscultation there is a reduplication of the first sound at the apex, which persists with a slight roughness as the stethoscope is placed at higher levels. The second sound is somewhat roughened in the third interspace. The second aortic sound is louder than the second pulmonic. The first sound in the fifth interspace to the right of the sternum is loud, clear, and resonant.

"There is distinct pulmonary expansion at the liver border although posteriorly, at the apex, no expansion can be felt by percussion. On auscultation there is prolongation of the expiration at both apices. This is less distinct towards the base; otherwise the pulmonary sounds are clear.

"By percussion there appears to be a mass giving a tympanic note extending two inches below the ribs of the left side, and about one inch to the right of the median line, which probably represents the stomach. Palpation and percussion of the abdomen is otherwise normal.

"There are no pareses nor any gross disturbances of sensation. The right bicipital and corresponding tricipital reflexes are slightly increased. There is considerable myotonic irritability. The tendon-reflexes of the left arm cannot be elicited, though the myotonic irritability is similar to that on the right side. The thoracic and abdominal reflexes are prompt. The cremasteric reflex is very pronounced on both sides. The kneejerks are exaggerated. There is a distinct patellar tendon-reflex on each side. The Achilles tendon-reflex cannot be distinctly obtained. There is no ankle-clonus.

"Examination of the blood shows that the red blood-cells are of normal size and shape, and stain distinctly. There is about a normal proportion of white blood-cells with the following differential count: Polymorphonuclears, 64%; small lymphocytes, 29%; large mononuclears, 5%; and degenerated cells about 2%. No eosinophilic or basophilic cells were present."

Both chemic and microscopic examination of the urine failed to reveal the presence of anything abnormal in this excretion.

In other words, aside from a slight alteration in the heart, which was probably due to a commencing atheroma of the valves, and an emphysema of the apices of the lungs, the general physical examination was negative.

After a fair trial of medicinal agents, including the administration of large doses of arsenic, I performed the following operation for the removal of what I felt certain was a postocular growth. A circumlinear incision following the line of the upper orbital margin and extending nearly the entire length of the superior palpebral fold was made in the upper eyelid just above its sulcus. The underlying tissues were freely dissected until the finger tips could be gotten into the extraocular muscle cone, care being taken to avoid injuring the fibers of the levator muscle.

In this position a multilobular mass which was composed of four distinct parts could be plainly felt. The largest lobe extended into the upper inner angle of the orbit, and the entire mass was connected with a peduncle which arose from the outer side of the lobe outside of the funnel, and passed directly back to the apex of the orbit.

These masses were extirpated by means of the finger tips, scissors, and flushings of 1 to 4,000 bichlorid of mercury. The operative field was freed from all useless and ragged tissue, cleansed, and dried. The surface-wound was coated with 6 superficially placed iron-dyed black silk sutures. The conjunctival sac was cleaned with sterile water and a few drops of a 1% solution of atropin were dropped on the corneal surface. The field of operation was covered with a single figure-of-eight gauze bandage. The patient was placed in bed and iced compresses were applied on the bandage for the first 24 hours.

The specimens were given to Dr. Edward A. Shumway, in charge of the Eye Department of the Pathological Laboratories of the Philadelphia Polyclinic and School for Graduates in Medicine.

The stitches were removed on the second day, and as there had not been any postoperative reaction, the patient was given indoor liberty. A marked ptosis with almost complete want of action of the palpebral levator ensued, while examination of the extraocular muscle-balance at this early period showed but a 2.5° of exophoria at 6 meters' distance. Corrected vision in each eye was almost normal. In 10 days' time the ptosis had somewhat diminished, the patient being able to lift the upper lid some 2 or 3 millimeters. In less than a month, without the employment of any form of treatment, the eyelid operated upon could be kept lifted so well that its ciliary border was kept almost constantly on a level with that of its fellow—the closest scrutiny being necessary to distinguish any difference between the widths of the two palpebral fissures.

Examination of vision and refractive error, 4, 8, and 12 months later, gave normal results. The double vision had been quite persistent and most variable, necessitating at first, though at present to a much less degree, the employment of a shade before one eye during any attempts for near work.

At present writing, nearly 18 months after the operation, there has not been any return of the growth, the patient being well, and daily employed at his livelihood.

The pathologic and microscopic report of the orbital growth was practically as follows:

The specimens which exhibited similar macroscopic appearances consisted of 6 pieces, 2 of which were large and 4 small. The large ones were evidently a part of one mass. Together they measured 4 cm. in length, by 2½ cm. in breadth, and ½ cm. in thickness. They were imbedded in celloidin, and the sections were stained with hematoxylin and eosin.

Examination with the microscope showed the tumor to consist mainly of a dense mass of closely-packed, round, fascicular nuclei. The cell-bodies were indistinct. In places there were broad bands of connective-tissue that stained deeply with eosin. In some portions of the growth aggregations of large endothelial cells with distinct protoplasm and pale, round or oval nuclei could be seen. Many of these were associated with bloodvessels, though in a few situations they were collected into clumps without the presence of red blood-cells. The vessel-walls were somewhat thickened and exhibited a tendency to hyaline change. There were neither aggregations of true lymphocytes nor evidences of karyorrhexia in the nuclei.

A carefully conducted detailed local and general re-examination of the patient at the present writing fails to show the slightest evidence of any local return of the growth or the least appearance of any metastasis. With the exception of an almost infinitesimal degree of nondisturbing diplopia in the lower field of vision during near-work, the gross local signs have ceased. The patient is apparently healthy in every respect and is employed many hours daily as a weaver.

Remarks.—This case is one of some interest. Occurring in a goitrous subject free from any other sign of Hodgkin's disease, and with the history of acquired syphilis, the tumor furnished the ordinary symptoms of exophthalmos with bulbar displacement; mechanical and functional limitation of mobility of the eyeball; diplopia; contraction of the retinal arteries; and engorgement of the retinal and conjunctival veins. In fact, most, if not all, of the pressure-symptoms of a retrobulbar growth.

The tumor successfully extirpated without injury to the eyeball or its functioning power, merely giving rise to temporary disturbance of the contiguous

muscular structures, serves to illustrate the average results of ophthalmic surgery of today.

The findings of the microscope, which necessarily are indeterminate as to such growths being truly sarcomatous or lymphomatous in character, taken into consideration with the multilobular nature of the mass, distinctly point to its being a lymphosarcoma.

The lapse of time since the removal of the growth without the least signs of any local or metastatic expression of the former disease, although, of course, of too brief a period for any certainty of conclusion, is of much importance in showing that the growth was not malignant in character, while the return of the organ to its original healthy condition is a result which must be considered as most fortuitous.

TRAUMATIC ANEURYSM OF THE LEFT INTERNAL CAROTID ARTERY; DEATH; AUTOPSY.¹

By BURTON S. BOOTH, M.D.,

of Troy, N. Y.

On January 18, 1900 I was asked by Dr. H., of Hoosick Falls, to see Mr. P., a Dane, aged about 25, who lived in the suburbs of that village. He informed me that Mr. P. had been treated by other physicians before he consulted him, and all had supposed the man to be suffering from "chronic quinsy" of the left tonsil, which had necrosed into the walls of an artery, causing hemorrhage from the nose and throat. The hemorrhage was so severe and frequent as to be alarming. My first examination was made January 18, 1900, in the afternoon. I found him very anemic, with a pulse of 120 per minute, and temperature about normal. I also noticed a fetid odor from the breath, very penetrating in character. On making inquiries I found that Dr. H., of Troy, had tamponed the right nostril from behind, and that in some way the string which was attached to the tampon for its removal had been torn away, leaving the tampon in the right nostril since January 16, it being impossible to remove it. On superficial examination I was convinced that the man was suffering from some grave disease, and advised his family to send him to the Troy Hospital, where he could receive proper attention. This they did the same day, and on January 19, the next day after his admission, I was able to obtain the following history:

His mother died of pulmonary tuberculosis, otherwise his family history was negative. Patient had had usual diseases of childhood, measles, diphtheria, and scarlet fever. He was deaf for one year after the latter disease. His tonsils were removed when he was a small boy. About two years ago, while coasting down a hill on a bicycle, he collided with a man and was badly injured about the face, his nose being broken; he expectorated blood for some time after this accident; he also informed me that he prided himself on his strength, and often tested it severely. Present trouble began January 1, 1900; he thought he had taken cold and sent for the doctor, but was not benefited by treatment; he began to have hemorrhages from the throat and nose, and these attacks of hemoptysis and epistaxis continued, and grew more frequent, occurring almost every day, treatment having little effect.

Examination revealed that the patient was poorly nourished and very anemic, skin waxy, dry, and did not appear to be quite as elastic as usual; circulation poor, pulse ranging from 92 to 120, temperature from 98° to 101°, respirations from 20 to 24 per minute. Examination of chest showed emphysema of the lungs, hypertrophy of the right side of the heart, and a systolic murmur over the pulmonary valves; examination of abdominal organs negative. Slight ptosis of the left upper lid and contraction of the left pupil was present; urine was slightly turbid, light straw in color, strongly acid, specific gravity 1.021, no albumin, no sugar; microscopic examination negative.

Examination of Blood.—Hemoglobin, 50%; red blood-corpuscles count, 1,010,000. There also existed a leukocytosis of 16,000.

Examination of the nose anteriorly revealed a deviation of the septum to the right, a purulent offensive discharge from both nostrils, a posterior rhinoscopy revealed the tampon (which had been in place 3 days) occupying a position in the right nostril, just behind the convex portion of the deviated septum close to the floor of the nose, also purulent discharge.

Examination of the pharynx revealed a mass occupying the left tonsillar region extending into the median line filling the left half of the nasopharynx to the vault extending down into the lower pharynx as far as could be seen. In the center of the mass high up in the nasopharynx a hemorrhagic spot about 4 mm. in diameter could be seen. Laryngoscopic examination revealed nothing except a slight hypertrophy of the lymphatic tissue at the base of the tongue.

January 23, the case was referred to Dr. Adt for an examination of the eyes and he reported as follows: I found a sympathetic paralysis involving the left eye, the result of pressure upon the carotid plexus which surrounds the internal carotid artery. There is a slight ptosis on this side, the result of paralysis of Müller's muscle; also a contracted pupil, a myosis due to paralysis of the dilator of the pupil; the pupil reacted to light and no vasomotor disturbances could be detected.

On January 20, the day after admission into the hospital, the patient was anesthetized and the tampon was removed from the right nostril, it being necessary to push the deviated septum into the opposite nostril and the plug into the nasopharynx by means of the little finger. A small piece from the mass in the left tonsillar region was removed at the same time and submitted to Dr. Blumer, who reported that it was inflammatory tissue and that there was no evidence of malignancy.

The patient was kept quiet in bed on a light diet. He complained of no pain in the throat and appeared to feel fairly comfortable except that on January 25 he complained of pain in the bowels. January 26 he had a hemorrhage from the nasopharynx and vomited 500 cc. of clotted blood, January 28, at 9 P.M., he had a slight hemorrhage from the nasopharynx which was controlled by ice. January 29, 9.15 A.M., he was taken with profuse hemorrhage from the mouth and nose which proved fatal in a few seconds.

Diagnosis.—Dissecting aneurysm of the internal carotid artery.

Dr. H. O. Fairweather made an autopsy the same day the patient died and reported as follows:

Autopsy done at Troy Hospital 5 hours after death. Body of Jacob P., aged 25 years, laborer, Hoosick Falls, N. Y. Body about 165 cm. in length, strongly built and well nourished. There are no marks or bruises about the body and no evidence of subcutaneous edema. Rigor mortis well marked, also postmortem lividity of the dependent parts.

Upon any attempt to move the body, particularly the head, there occurs a profuse discharge of dark-colored blood from the mouth and nasal cavities. The abdominal cavities were not examined, but the autopsy consisted in the dissection of the larger bloodvessels from their origin in the arch of the aorta and especially in the dissection of the common and internal carotid arteries. On section the subcutaneous fat is moderate in amount and the muscles are fairly well developed. Costal cartilages are not ossified. On exposing the arch of the aorta, the dissection of the left common carotid was begun and this followed up to its division into the external and internal carotids. From this point the internal carotid was followed to its point of entrance into the canal in the petrous portion of the temporal bone. At a point in the internal carotid, about the junction of the cervical and petrous portion was found an aneurysmal sac. This had an approximal diameter of 2 cm. and its wall was about the thickness of membrane. The sac had ruptured and there was marked hemorrhage into the surrounding tissues. Heart: The pericardial sac contained a moderate amount of fluid. No adhesions to the heart-wall. The organ was apparently normal, excepting perhaps a slight thickening of the wall of the right side. The valves were apparently normal. The aorta showed some atheromatous

¹ Reported at the meeting of the Section on Laryngology and Rhinology of New York Academy of Medicine, May 23, 1900.

patches and calcareous deposits in a small area just below the arch. Anatomic diagnosis: Rupture and subsequent hemorrhage of an aneurysmal sac situated about the point of junction of the cervical and petrous portions of the internal carotid artery.

I report this case because of its being uncommon to find an aneurysm in this location. The condition might easily have been mistaken for a peritonsillar abscess.

From the history it will be observed that a slight rent existed in the aneurysmal sac for some few days prior to the death of the patient, and that the hemorrhage he suffered from on several occasions was due to this cause, and had it not been due to the tortuous course which the blood took before finding its way into the nasopharynx the patient would have died long before he did. I might say that had I manipulated the nasopharynx very much in removing the plug from the right nostril I might have ruptured the aneurysmal sac with disastrous results.

There is no doubt but that the origin of this aneurysm dates back to the accident he had two years ago, and that the external coat of the artery was ruptured at that time, and the custom of testing his strength, as he explains in his history, had a tendency to hasten its formation.

In closing I might briefly summarize the symptoms which were present:

1. The mass on the left side over the course of the internal carotid completely filled the left nasopharynx, tonsillar and the lower pharyngeal region, extending into the median line; the mass appeared to be uneven and dark-red in color, and showed the hemorrhagic spot from where the blood was oozing.

2. There was no apparent pulsation.

3. The mass appeared hard and firm to the touch.

4. The patient did not complain of pain.

5. The frequent hemorrhages from the nose and mouth.

6. The sympathetic paralysis involving the left eye, the result of pressure—a symptom not to lose sight of, as I am led to believe that this symptom is often present in tumors involving this location.

7. The diminution of the red blood-corpuscles and hemoglobin and the presence of the leukocytosis were also interesting features of the case.

A NEW ASEPTIC ETHER AND CHLOROFORM INHALER.

By ERNEST LAPLACE, M.D.,

of Philadelphia.

Professor of Surgery, Medico-Chirurgical College.

THIS inhaler, devised by myself and in use over a year in my clinic, consists of two oval cones, joined by a hinge and fastening with a clasp. The inner cone is

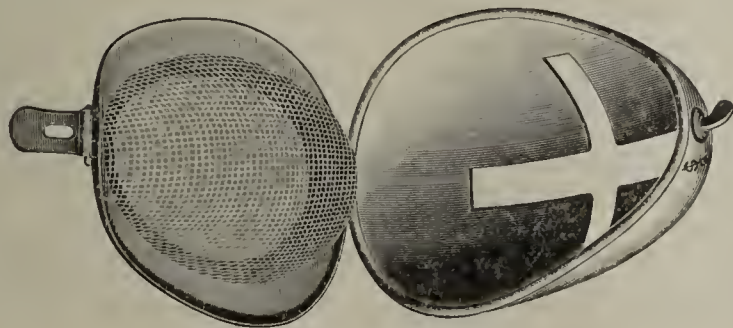


FIG. 1.—Inhaler open. Inner view.

made of wire netting and the outer cone is of solid metal, in the center of which is an opening shaped like a cross. A sufficient amount of ordinary sterilized gauze or cheese-cloth is placed between the two cones. The apparatus fits the face. Ether is poured upon the gauze through the cross-like opening of the outer cone,

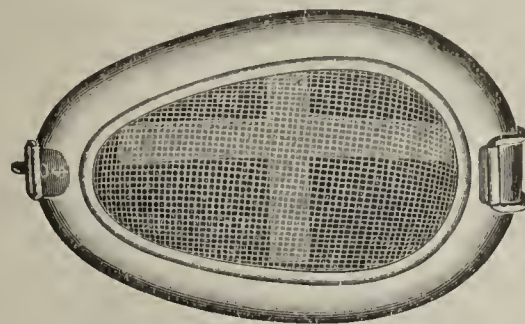


FIG. 2.—Inhaler closed, and empty.

and evaporates through the inner cone of wire netting. A smooth metal trough surrounds the base of the inner cone to receive any surplus of ether.

Should chloroform be administered, only a small amount of gauze is placed between the cones. This will permit free circulation of air.



FIG. 3.—Inhaler filled with sterilized gauze, and ready for use.

The advantages of this inhaler are:

1. It is simple, compact, and sterilizable by heat.

2. It is instantly and easily prepared for use.

3. It is always clean. The ether does not come in contact with the patient's face at any time. The gauze is changed for each patient.

4. It is adapted to both ether and chloroform.

5. There is a marked economy of ether.

This inhaler was shown by me at the International Medical Congress in Paris, August 6, 1900, and was presented to the County Medical Association, of Philadelphia, October 10, 1900. It is made by the Kny-Scheerer Co., 17 Park Place, New York.

A NEW PHIMOSIS FORCEPS.

By W. T. BAIRD, M.D.,

of Fort Bliss, Tex.

Acting Assistant Surgeon U. S. Army.

THE new "circumcision forceps" described, which I have had made for my own use and have been using for the past six months with a great deal of satisfaction to myself and the infinite delight of my patients requiring this class of work. The forceps fulfils in a high degree the object for which it was intended, that is, to facilitate the operation, and divest it of most of its disagreeable features, so that it may not be dreaded by the patient, but, on the contrary, may be the means of inducing him to cheerfully submit to it when otherwise he would not.

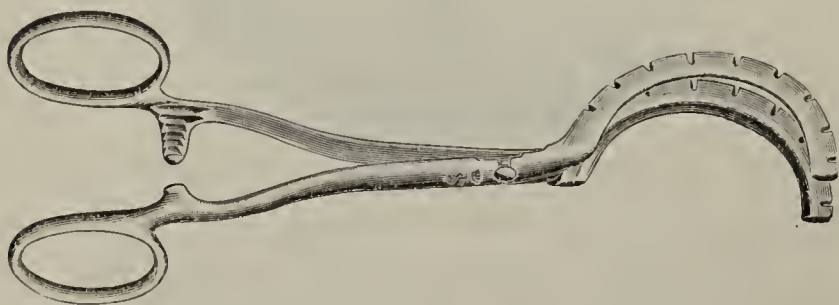
In the use of this instrument, the operation consists

of three hypodermic injections of a 4% to 6% solution of cocain, which, in the manner in which it is used, secures perfect local anesthesia (thus eliminating in all cases the dangerous and disagreeable effects of general anesthesia)—three incisions—the introduction and tying of the sutures—and the final dressing.

First Step.—Inject a few drops of the cocain-solution into the prepuce on a line directly over the center of the dorsum of the glans, as far up as the corona. In about a minute, divide the prepuce along this line, with a pair of scissors or scalpel, as far up as the corona, being guided by a grooved director.

Second Step.—Grasp the prepuce lightly (so as not to cause pain) on the right side (or left, if preferred) with the forceps, the concave border encircling and closely hugging the penis, and carefully coaptate the edges of the skin and mucous membrane where they were divided by the incision. Now inject a sufficient quantity of the cocain-solution along the convex border of the blades to secure perfect freedom from pain, next grasp the handles and close the blades firmly—then with scissors or scalpel sever the prepuce close along the convex border of the blades as far around as the frenum, and there let it remain for the time being, while the sutures are passed through the needle-guides with a straight needle carrying a fine catgut-suture, and tied.

Third Step.—Unclasp the forceps, grasp the flap on the other side, coaptate the edges carefully, inject the co-



cain, and complete the operation as it was done on the opposite side. The forceps are now unclamped and laid aside. It is generally necessary to insert a suture (and sometimes two) at or near the upper point of the first incision.

When the operation is completed, no uncovered points or surfaces should be seen, but the coaptation of skin and mucous membrane should be perfect. The instrument is made of the *very best of steel*, and so constructed that the two blades along their convex border are a perfect fit when the handles are closely approximated, and thus close the extremities of the severed vessels so thoroughly that, in the time occupied in the adjustment of the sutures, the blood in them is firmly coagulated, and therefore no hemorrhage can occur after the part is released from the grasp of the forceps.

Also, the perfect coaptation of the blades prevents the cocain from entering the general circulation, and thus serves as an effectual safeguard from any danger from that source.

The inner or concave border of the blades do not meet when they are firmly clasped by about three millimeters, and thus *pressure anemia* is prevented, and consequent inhibition of repair.

I now use in all cases a *gelatin dressing*, which I prefer on account of its being cleanly, nonirritant, elastic, thoroughly protective, and one which the patient can wear without changing until repair is complete.

I have it put up as follows :

R.—Zinc oxid.....	2 grams.
Formalin (1% solution).....	2 grams.
Gelatin	4 grams.
Glycerin	6 grams.
Aqua dest.	8 grams.

Dissolve the gelatin in the water for several hours, then add the zinc and glycerin—*previously mixed*—by the aid of heat. Don't boil—heat before using, apply with a small spatula.

I then complete the dressing by using plain, sterilized gauze, leaving the meatus free, and securing the organ in an upright position by a bandage passed around the body.

I have in this manner circumcised 30 cases, 15 of them for gonorrhea, *acute and chronic*. The average time which these gonorrheal cases were off duty and under treatment, was 15 days, as shown by the hospital register, as against an average of from 40 to 45 days in cases retaining the elongated prepuce. (These cases were also treated with injections of a mild solution of permanganate of potassium.) One of my last cases was a private in the Hospital Corps, and as soon as he arose from the table he went to the stable and harnessed a horse to a buggy and drove a mile on an errand, and after that he never missed an hour's duty, and he was entirely well in 5 days. He was not required to do duty during this time, but did it of his own free will and accord, and without once complaining of pain or inconvenience. In from 3 to 5 days, I remove the dressing by soaking in warm water, and if any unhealed points are seen, I renew it and let it remain a few days longer. In all cases, after the dressing is first adjusted, the patient is allowed to go about as he pleases, and in no case is it necessary to confine him to his room or bed. It may appear to you as though I am carelessly asking too much space in so minutely describing such a trivial operation as circumcision, but if you could fully realize how much the operation is dreaded, as usually performed, and the immense number of those who are constant sufferers for the want of the operation, and then could see the cases which come to me urgently soliciting the operation by this painless method, you would freely forgive me for urging it.

For the sake of convenience, it is well to have three sizes—one for infants, another for youths, and one for adults.

However, with a little additional care, I have very successfully used the adult's size on both infants and youths. These instruments are now manufactured by the Kny-Scheerer Co.

Surgical Treatment of Peptic Ulcer.—Wenner (*Cleveland Journal of Medicine*, October, 1900) says that Mikulicz reported the first operation for relief of hemorrhage from peptic ulcer in 1880. Various authorities agree that between 4% and 5% of persons dying from all causes have at some time during their lives suffered from peptic ulcer. A record of 10 817 autopsies showed the presence of an open ulcer in 1.5% of the cases. A report of 187 cases occurring in the Massachusetts General Hospital gives 64 as the percentage of cures, and 36% of these relapsed. Perforation varies, according to different authors, from 1.3% to 3.2%. The author has collected the reports of 42 cases operated upon, with 24 deaths, or a mortality of 57%. From a study of these cases he comes to the following conclusions: (1) The severity of the hemorrhage does not indicate the degree of ulceration; (2) the time of vomiting bears no constant relation to the location of the ulcer; (3) repeated small hemorrhages or recurrence of a second grave hemorrhage demands operation; and (4) after careful medical treatment, extending over a period of 2 months, without amelioration of symptoms, an operation should be advised. [A.B.C.]

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GEORGE M. GOULD, M.D., *Editor*

Collaborators

JOSEPH SAILER, M.D.
D. L. EDSALL, M.D.
D. RIESMAN, M.D.
J. M. SWAN, M.D.

M. B. TINKER, M.D.
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Newspaper Pathology.—The present illness of the Czar of Russia furnishes many opportunities for the newspaper scribes to air their ignorance of the very elements of the science of pathology. His Russian Majesty is reported by his physicians to have a mild attack of typhoid fever. The bulletins have indicated the accuracy of this diagnosis. On the 25th the temperature rose to 103° with a pulse of 88, and the general condition was good and without complications. With such a report from authoritative sources the public, one would think, would be content to accept the diagnosis and await patiently for the next bulletin. But this is not the newspaper's way. According to one paper, for instance, the Czar had not only typhoid fever but also pulmonary tuberculosis and traumatic meningitis, all in one paragraph. Surely all this is enough to kill even an emperor.

The phraseology of the newspaper pathologists is also extraordinary. In the case of a U. S. Senator, who most unfortunately has been suffering from blood-poisoning, we were told recently that his "invincible will-power" was the only thing that kept him alive. As the patient was delirious half of the time, we fail to see how his "invincible will-power" could act to advantage, and even if he were not delirious we cannot understand how an "invincible will-power" can act as an antitoxin to the blood-poison that is threatening life. The newspaper pathologist should mount to a higher plane.

The Transmission of Bovine Tuberculosis to Man.—An attempt has been made on the part of some to establish a differentiation between the tubercle-bacilli of man, of cattle, and of birds, respectively; but the evidence seems to point to their identity, such differences as may be apparent being attributable to variations in environment. The formation of a definite opinion in this connection is of great importance, inasmuch as in accordance therewith will steps be taken to prevent infection among the three groups of animals mentioned. To the evidence already existing in favor of the identity of the tubercle-bacillus of man and that of cows, M. P. Ravenel (Proceedings of the Pathological Society of Philadelphia, October, 1900, p. 259) adds the report of three cases of cutaneous tuberculosis in human beings resulting from inoculation with the bovine tubercle-bacillus. All occurred in veterinarians,

who received wounds of the hands in the course of postmortem examinations of tuberculous animals. In the first, a nodule developed, with a tendency to ulceration, after infection by a tuberculous cow. The growth was removed and on section presented the histologic characters of tuberculosis, although tubercle-bacilli could not be demonstrated satisfactorily. In the second case the lesion was acquired in the course of postmortem examination of a goat dead of experimental inoculation with a culture of the bovine tubercle-bacillus. A nodule formed and was excised, and a portion, examined histologically, exhibited an infiltrating process encroaching on the papillary layer of the skin, and destroying some of the papillæ. With the remainder two guineapigs were inoculated subcutaneously, and several weeks later both exhibited generalized tuberculosis involving the chest-cavity, as well as the abdomen. In the third case, in which the tubercle resulted from infection by a tuberculous cow, the growth was removed and tubercle-bacilli were found in sections.

Tuberculosis in Pennsylvania.—If in any one year the commonwealth of Pennsylvania lost 8,000 inhabitants from cholera or the plague, there would occur such a panic that the State would be partly depopulated, and many of its industries paralyzed. Yet the State of Pennsylvania loses every year about 8,000 of its citizens from tuberculosis, and these citizens are nearly all in the prime of life. So true is it that familiarity with danger breeds contempt. But surely it is as distressing for people to die of the one disease as of the others. Tuberculosis is, or ought to be, as frightful as plague in one sense; in fact, it is more frightful, for plague is only a sporadic visitor anywhere, while tuberculosis is with us all the time.

In an instructive paper read at the last meeting of the American Medical Association, Dr. Guy Hinsdale (*Journal American Medical Association*, October 20) presents the subject of tuberculosis in this State in a graphic and intelligible way. We are particularly struck with the significance of the figures of the disease in Philadelphia. Between 1870 and 1897 there was a constant fall in the number of deaths from pulmonary tuberculosis in proportion to the population, but the proportion rose slightly without apparent cause in 1899. In 15 years the percentage of deaths had fallen from 14% of all deaths to only 10%. The recent slight rise

in the percentage may be due, as suggested by Dr. Hinsdale, to the improved laboratory technic with which tuberculosis is now studied. This explains also the decrease in the number of deaths from bronchitis. These cases are now diagnosed more accurately. In spite of this improved technic, however, there were only 1,434 deaths from tuberculosis for the first six months of 1900 as compared with 1,507 deaths for the same period in 1899. Considering the zeal with which the tubercle-bacillus is searched for at present, this is a gratifying showing.

The gist of Dr. Hinsdale's paper is in the suggestion he makes for a State hospital for consumptives. Appeals have been made, so far without result, to the State legislature to provide for a hospital or sanatorium, to be erected in some mountain region suitable for the purpose. These measures have been "sympathetically" received by the committee on appropriations—but they have not been so sympathetically acted on. Politics and economy are somehow in the way. In the meantime the great white scourge keeps right on with its work in Pennsylvania, and the State legislators may yet have to answer to an awakened public opinion; for that public opinion is being gradually awakened and enlightened on this subject of tuberculosis is abundantly proved in Dr. Hinsdale's paper. In this State, the Society for the Prevention of Tuberculosis is doing genuine missionary work by distributing tracts and otherwise promoting a campaign of education. There are already some small but deserving hospitals devoted to the care of consumptives, but in the main, as Dr. Hinsdale says, Pennsylvania, and America too, is behind such countries as England, Germany, and France. In the name of the 8,000 annual victims of tuberculosis, let the legislature of Pennsylvania awake.

The treatment of tuberculosis is one of the reproaches of the medical profession. It is an infectious disease due to a microorganism whose characteristics are so well known, and of such a nature, as to render its destruction outside the body not a matter of extreme difficulty; nevertheless, in certain situations in the human body it proves to be one of the most intractable of all the infectious agents.

Obviously there are three methods of combating the disease: First, the removal of the infected tissues. This is readily accomplished by surgical measures in many of the forms of tuberculosis, as, for example, in scrofulous glands, and not infrequently the cure is permanent. Second, the destruction of the bacillus in the diseased tissue. It is possible that this is the method of cure in cases of tuberculous peritonitis; however, it is quite unknown how it is accomplished. Finally, the stimulation of the tissue to resist the action of the microorganism. For this purpose we have a varied assortment of serums, limited, apparently, only by the number of bacteriologists, or pseudobacteriologists, who have un-

dertaken to make their fortunes by imposing upon the credulity both of the profession and of the laity. None is certainly useful, and improvement, after the use of a few has been observed only when the surrounding hygienic conditions were favorable. Various drugs have been employed; tonics, stimulants, and expectorants; of these, creasote and its derivatives have attained the most general favor, but even the most enthusiastic advocate does not claim for them more than a minimum curative action. One procedure alone seems to be effective, and to be useful not only in the early, but, to a certain degree, in the later stages, in combination with rest and nutritious diet; this is, of course, the open-air treatment. It has been customary in the past, to send those patients whose financial conditions would permit, to the woods, or to high altitudes, and to place them under the most favorable hygienic conditions, and this plan, as a rule, has worked admirably. Unfortunately it is of no avail for the poor, who refuse, or are unable to afford, proper hygienic surroundings in the incipient stages of the disease, and who, only when compelled by increasing weakness, seek an asylum in some hospital that will receive them. Here in Philadelphia there is only one general hospital that does so, the Philadelphia Hospital. Unfortunately, coming as do patients in a condition frequently hopeless for cure, in many instances they are more or less neglected, the chief precaution being the prevention of infection of other inmates. These precautions are admirably carried out, but the mortality among the consumptives is alarmingly high, and although most of them manifest a temporary improvement as a result of proper clothing and food, the progress of the disease is unchecked. Now it has been shown, particularly in Germany, but also in certain places in this country, such as Boston, that the essential feature of the mountain cure is less the altitude than the fresh air, and that even in the smoky atmosphere of our cities, persistent life in the open air is of benefit. This has been tried to a very limited extent in Philadelphia, and the results have been gratifying. Why would it not be possible, therefore, to erect, in connection with some of our hospitals, pavilions, open on four sides, but with roofs to shelter the inmates from rain and snow, in which tuberculous patients could spend the greater part of their time, thoroughly wrapped up and protected from cold, but breathing fresh air continuously? If such a well-recognized procedure could be called an experiment, it could be carried out very cheaply. Such a pavilion need not cost more than a few hundred dollars, even if designed to accommodate several hundred persons, and the improvement that would accrue to the patients, not only on account of the fresh air, but also because of the added interest that would be taken in their condition, would be so pronounced that it would far outweigh the slight initial expenditure, and perhaps a greater amount of wear on the blankets. Otherwise the cost would not

exceed that at present required for the care of the patients in the wards.

We earnestly recommend the consideration of this suggestion to the various hospital boards, and particularly to the officials of the city of Philadelphia.

The healthfulness of large cities as compared to the conditions found one hundred years ago or earlier, has often been remarked of late and is greatly to the credit of the efforts of modern sanitarians, most of whom have been members of the medical profession. In a recent editorial article the *Lancet* (Nov. 3, 1900) comments on the service of the City Imperial Volunteers of London in the South African campaign. The work that was performed by the corps makes it clear that the young civilian of the present day, though his occupation be mainly at desks, is a man of fine physique and well-developed powers of endurance; in fact, is as capable in every way of taking the field as any country-bred lad brought up to open-air pursuits. During the recent campaign the City Imperial Volunteers marched under arduous circumstances of war a distance of thirteen and a half miles a day for over four months, and at one time during thirteen marching days averaged seventeen and a quarter miles a day. The *Lancet* editorial writer believes that the reason of this lies in the progress that has lately been made in the conditions of urban life generally. He finds that in London as much as in any other city of Europe athletic pursuits of various sorts are considered a necessary adjunct to healthy living; the bicycle, golf, football, gymnasiums, swimming baths, and various organizations provide most popular forms of athletics. Cricket, and lawn tennis are nearly as valuable. Fifty years ago about the only relaxations of the London city clerk were boxing and billiards, and these were often sought in the annexes of public houses and in dubious company.

This severe test of the strength and endurance of a large company of city-bred men does seem to indicate that opinions as to the improvement in the physical condition of the present dwellers in cities has not been overestimated, though no doubt the men forming the City Imperial Volunteers were a picked body of men. While this improvement in the sanitary conditions is most encouraging, we should not permit ourselves to be blind to the need for still further advances. In all of our large cities there are overcrowded slums. The tenement-house evil is still very great; in many cities the water-supply is most miserable; in all but a few of the most progressive cities the drainage is equally bad and, in many, there are many other matters of great importance, such as the milk-supply, which demand the attention of sanitarians. No doubt the improvement in American cities has been as great during the past fifty years as in London, and this rests in large part upon the efforts of the medical profession and on organized effort to secure future needed progress.

Tenement-house Legislation.—The recent publication of a report of nearly 200 pages upon "Tenement-house Legislation in New York, 1852-1900," prepared for the Tenement-house Commission of 1900 by its Secretary, Mr. Lawrence Veiller, is an admirable record and illustrates the varying phases through which this important problem has passed. It is the first account of the kind that has ever been published, and it must prove of great interest and value to architects, builders, lawyers, and sociologists. It appears that laws relating to the construction of buildings in New York City were first enacted in 1647, but it was not until 1852 that special consideration was given to houses occupied by more than three families, while the term "tenement-house" did not appear in the statutes earlier than 1862, and it was not until 1867 that the first special law with reference to tenement-houses was passed.

In this report the different statutes are classified with reference to the purpose of their enactment as Fire-provisions, Light-provisions and Ventilation-provisions, Sanitary Provisions and Health-provisions, and General Provisions Relating to the Administration of the Laws. Among the precautions against fire are considered such subjects as fire-escapes, the construction of public halls and stairways, of wall-partitions, of elevator-shafts, of dumb-waiter shafts, of light-shafts, of vent-shafts, etc. In providing for adequate light and ventilation the amount of space to be left between front and rear tenements, at the rear of tenement-houses, the percentage of the lot that may be occupied by new tenements, the size of light shafts and air-shafts, the ventilation and the size of rooms and halls, etc., are taken into consideration. An account is given of the changes that have taken place at different times with regard to the various phases of the subject, with the exact language from the actual enactments, and including the present law. A list of all of the laws that have been enacted in the State of New York with reference to buildings in general and tenement-houses in particular from 1849 to the present time is given at the close of the report.

It is interesting to note that many good laws were enacted 20 or 30 years ago that were in some respects more rigid than those of the present day. Thus, the law of 1867 required that in all tenement-houses to be occupied by 4 families or more the stairs and halls should be entirely fireproof (stone or iron) and the floor-beams of the halls of iron, with brick arches; while the present law does not require stairs to be absolutely fireproof except in buildings over 5 stories high and arranged for 4 families on every floor; under other conditions the stairs and halls must be constructed of slow-burning material, and for tenement-houses less than 3 stories high no special provision is made.

Again, the law of 1867 required that in all tenement-

houses to be occupied by 4 families or more, the hall-partitions from the foundation to the roof should be made of brick, not less than 12 inches in thickness, and that the floor-beams of such halls should be of iron, with brick arches; while the present law limits these requirements to the stairways and the partitions enclosing them, and does not apply to the whole public hallway. So, too, the law of 1871, with reference to fire-proof construction of the first story was much more rigid than the present law, the former requiring that in all tenements over 3 stories in height, occupied by as many as 6 families above the first story, the first floor should be entirely fireproof, while at present this requirement is made only of buildings 5 stories in height and higher. As early as 1867 all wood-bins and coal-bins in the cellars of tenement-houses were required by law to be constructed of fire-proof material, but this law was repealed in 1871, and a great many serious tenement-house fires have since resulted in consequence. The law of 1887 prohibited the use of any wooden building as a tenement-house; that is, by more than 2 families, while the present law permits the occupancy of such buildings by as many as 6 families. The report contains much additional valuable information, and will repay careful study by those interested in the matters with which it deals.

Medical Sermonets, No. 23. Professional Cards and Signs.—By the same mail we receive three letters concerning three phases of "professional advertising"—all relating to methods of making known the specialty. The first asks:—

"If a man should advertise in a medical journal that he did clinical microscopy for other doctors at certain rates would it be ethical and would it be in good standing?"

We think it highly desirable, as well as absolutely inevitable, that the best professional work should be done by those exceptionably able and fitted to do it. The experts and the specialists under proper professional rules and ideals are pushing forward professional progress not only theoretically but practically. That they should be paid for their special work goes without saying. In answer to the foregoing question the answer, Yes, would seem most clear.

The second inquirer asks if the words "surgery and consultations" or "practice limited to surgery," placed upon his professional cards and the circulation of these cards strictly limited to the profession, would be "professional."

The third correspondent writes as follows:—

"Many complaints are made that physicians who limit their practice do not confine themselves to their specialty. It is unfair to the general practitioner that the specialist should attempt to treat a disease that does not pertain to his specialty. For instance, a physician a few months ago sent a patient, who had recently lost the sight of one eye, to an oculist who made a diagnosis of syphilis. The patient was then sent to his family physician under whose treatment he completely recovered. As the reputable specialist depends very much on the support of the general practitioner for patients, it is his duty to place himself in such a position that every patient who enters his office will know that he makes a specialty of one thing and does not pretend to treat anything else. He can do this only by having his specialty on his sign and on his office door. For six years I have had my specialty on my office door and not more than once a year do I have a patient come to my office for anything that does not pertain to my branch of medicine.

"If every specialist would do this there would be little opportunity for him to do anything but special work. The general practitioner, also, would feel more like sending his patients where they may see that the physician to whom they are sent limits his practice, and is

not simply a physician who knows more about everything than the family physician."

At first sight these arguments seem logical. Upon closer examination we think they are more than neutralized by others. Even in the heart of great cities it is so exceptional for patients to err, e. g., in seeking for the services of an oculist when they wish an obstetrician, that the emphasis of the need for specialist signs or notices may easily be exaggerated. So far as concerns one's professional brethren, even in cities, they soon learn the specialty and desires of each as to practice. The doubt as to whether one honorably sticks to his specialty is, or may be, easily cleared up. One of our oldest and most honorable national medical societies makes it an invariable rule not to accept as a member any applicant who, on sign or card, makes known the fact that he is a specialist. We think the rule a wise one. All such methods of advertising are outgrowths of the commercialism of medicine, of looking upon the cure of disease as a business, and of thinking of the patient's ability to pay before determining as to the treatment. Medicine, it cannot be too often urged, is neither business nor knowledge nor success; nor is it all three combined. All three are more or less necessary but subordinate parts or bases of the professional life, but skill, the cure of disease, *the art of medicine*, is something far different and higher. Can we not keep the old, simple, kindly, personal relations with our patients? and also with our professional brethren? It surely is not necessary to mechanicalize our calling and harden it after the manner of the world in military and commercial life. Let us continue on our older genial and human way of quietness and modesty, wherein we need not placard our peculiar abilities. Whatever tends toward, or is in danger of being construed as advertising, does us no good in the long run, and is destructive of the true ideal of the physician. However great the skill or the knowledge, it is our most honorable pride that these qualities should but light us on the way of love and beneficence.

Exercise in the Treatment of Tuberculosis.—Parker Murphy (*Albany Medical Annals*, November, 1900) insists that a proper system of respiratory gymnastics is very essential in the treatment of tuberculosis. This is especially necessary for persons leading a sedentary life and who for that reason are denied the invigorating fresh air and the deep, full respiration induced by vigorous exercise. He says the splendid results of high altitude in the treatment of tuberculosis have not been due to any curative constituent of the atmosphere or any peculiarity of temperature, but entirely to decreased barometric pressure upon the external surface, compelling a greater expansion of the chest, opening up a larger surface for the interchange of gases and consequently a greater oxygenation of the blood. It is self-evident then, that the forced distention of the lungs and bronchi in those who live in high altitudes, alone confers immunity against the disease. The exercises available to produce better respiration are very numerous and varied, but the underlying principle is simply to bring into more vigorous play the muscles which expand the thorax and at the same time excite deep, full and free breathing; to bring the vital force of the lung to its maximum. All exercises of the thoracic muscles for the purpose of producing an increase in that cavity must at the same time be coincident with deep breathing. The amplitude of the respiratory movements must be increased; the lungs must push out from within, as well as the thoracic muscles pull from without. We should labor incessantly in the advocacy of a more general use of physical training so that the large lung surface necessary to our physically active and vigorous, savage ancestors may not become a redundancy when it is transmitted to our higher civilization, in which everything tends to produce a condition of physical inertia. [A. B. C.]

Reviews.

Tuberculosis: Its Nature, Prevention and Treatment. With Special Reference to the Open-air Treatment of Phthisis. By ALFRED HILLIER, B.A., M.D., C.M. With 31 illustrations and 3 colored plates. 8vo, pp. 243. London, Paris, New York, and Melbourne: Cassell & Company, Limited, 1900.

Tuberculosis has in all times been made the object of careful study, and efforts in its prevention and cure have been unceasing. Only since the discovery of its cause and of the unity of the various morbid processes to which it gives rise, however, has it been possible to treat the disease with the intelligence necessary to insure a fair measure of success. The last decade of the nineteenth century has witnessed great activity in the field of preventive medicine, and, all things considered, it may be said that with regard to no disease has greater progress been made in this direction than with regard to tuberculosis. Not alone has the tubercle-bacillus been made the point of attack, but also effort has been directed to fortifying the individual resistance, and the near future promises to show continued increase in the reduction in morbidity and mortality already in progress. The little manual before us discusses the various phases of tuberculosis in 8 chapters, as follows: I. Nature of Tuberculosis. II. Different Forms of Tuberculosis. III. Transmission from Man to Man. IV. Transmission from Animals to Man. V. Prevention in Everyday Life. VI. Prevention by Legislation and Public Action. VII. Treatment of Tuberculosis. VIII. National Movements Against Tuberculosis. The text is well written, the illustrations are appropriate, and the result is a book that should prove serviceable especially to the medical practitioner.

The Care of the Consumptive. A Consideration of the Scientific Use of Natural Therapeutic Agencies in the Prevention and Care of Consumption, Together With a Chapter on Colorado as a Resort for Invalids. By CHARLES FOX GARDINER, M.D. 8vo, pp., vii, 182. New York and London: G. P. Putnam's Sons, 1900.

The author of this little volume has undertaken the big and by no means easy task of laying down for popular reading "the rules that should govern the consumptive in the use of fresh air, sunlight, food, rest, and, exercise, so that these natural therapeutic agencies can be applied to the best advantage," and he has succeeded fairly well. The subject is considered in 11 chapters: I. The Nature of the Disease; II. Infection; III. House Hygiene; IV. Outdoor Life; V. Food; VI. Clothing; VII. Exercise; VIII. An Invalid's Body; IX. Psychology of the Sickroom and Treatment of Emergencies; X. Care of the Consumptive's Children; XI. Colorado. The present is essentially an era of education in preventive medicine, and to this end books like that under consideration make contribution.

Early Diagnosis of Tuberculosis.—Schaeffer (*Maryland Medical Journal*, November, 1900) insists that this is of the utmost importance; and the physician should be able to diagnose it without bacteriologic tests. Percussion and palpation will elicit a change in the affected apex; a crackling, respiratory sound is heard, and if a subfebrile temperature at the same time exists, the diagnosis is practically made. In doubtful cases the author has used injections of tuberculin. If to 1 mg. of the original fluid there is a response of 38.5° C. and over, to $\frac{2}{3}$ mg. of 39° C., he considers the result practically conclusive. Creasote does not affect the tuberculous process, but is of value as a stomachic. Ergot and styptics are valueless in the treatment of pulmonary hemorrhage. Psychical quieting of the patient, rest in bed, and the relief of cough are to be accomplished. For this purpose the sucking of ice, ice-bladders over the lungs, and morphia or codein are the indicated remedies. [A.B.C.]

Correspondence.

A PATHOGNOMONIC SYMPTOM OF TUBERCULOUS PERITONITIS.

By M. OSIAS, B.Sc., M.D.,
of New York.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

I DESIRE to call attention to a characteristic sign, which I observed in all the eight cases of tuberculous peritonitis I have treated, and which always confirmed the other symptoms of tuberculous peritonitis.

In palpation of the abdomen in a case of tuberculous peritonitis, when pressing either gently or profoundly on it, the patient will complain of little or no pain at all, while the moment the hand is taken off by the examiner the patient complains of great pain in that part of the abdomen and usually manifests the painful sensation by a cry. I elicited this physical sign from all the patients suffering from tuberculous peritonitis, and therefore think this palpatorial sign is an important factor in the difficult diagnosis of primary tuberculous peritonitis.

Problems Pertaining to Tuberculosis.—Holmes (*Denver Medical Times*, November, 1900) says that those having tuberculosis who make an early change to a congenial climate are unquestionably benefited, but that those who live in such resorts are exposed to great danger of infection. This is reacting on public sentiment in these localities and the tuberculous are not welcomed. He does not believe in establishing the quarantine, but that a mutual, intelligent understanding and spirit of cooperation should be secured between the States possessing climatic advantages and those States without them. Sanatoriums should be established in these favored localities, not only for the better care of the afflicted, but also to provide a retreat for those sadly in need of climatic treatment. [A.B.C.]

Tuberculous Lesions.—Edmund Owen (*The Canadian Journal of Medicine and Surgery*, October, 1900) says 3 important facts in connection with tuberculosis should be remembered, viz., the disease is communicable, it is preventable, and it is curable. With reference to the latter he draws the following conclusions: 1. Chronic inflammation of a joint in a child or young person is always tuberculous—except in those very rare cases in which it is due to hereditary syphilis or osteoarthritis. 2. Tuberculous inflammation may completely destroy a joint, and then leave it solidly and soundly synostosed, without the surrounding tissues or the skin having been implicated, as in *caries sicca*. 3. If tuberculous granulation-tissue breaks down into a fluid, that fluid is not *pus*, and the collection is not, properly speaking, an *abscess*—unless, by bad fortune or by worse surgery, it has become infected by septic microorganisms. 4. The fluid collection is not to be treated as an abscess—by incision and drainage, that is—but is to be opened and emptied, and scraped and cleansed of its unhealthy lining of granulation-tissue. Then the wound in the skin is to be completely closed by sutures; firm pressure is to be evenly applied, and the part is to be kept absolutely at rest—by a splint if practicable. 5. The author has failed to discover that iodoform is of any peculiar value in the treatment of tuberculous lesions. At any rate he has long since discarded it, and has not noticed any falling off in the results in consequence. He says there may be a small class of cases of angular deformity of the spine which should be treated by **forcible rectification**, but the application of such a procedure must be very limited. In the treatment of vertebral *caries* he insists upon securing absolute rest by putting the child flat on his back in a pillowless bed. There are all sorts of schemes, corsets, apparatus and braces for treating spinal *caries* without keeping the child flat. But they are all wrong in theory and in practice; and if every case of spinal disease could from the beginning be treated by continuous rest in the horizontal position, there should be no more of those unsightly humps to invite speculative interference. [A.B.C.]

Society Report.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting Held November 14, 1900, to Consider Registration of Tuberculosis.

[Specially reported for THE PHILADELPHIA MEDICAL JOURNAL.]

AT THE meeting of the Philadelphia County Medical Society, November 14, Dr. HERMAN M. BIGGS, of the New York Department of Health, read a paper entitled, **Registration of Tuberculosis** (see Original Article Department), which was illustrated by stereopticon views.

Dr. A. C. ABBOTT, who opened the discussion, said that he believed that if the workings of this system of registration and the object aimed at were definitely understood there would be no necessity for discussion; that the **opposition to registration** in connection with tuberculosis is due largely to a misunderstanding of the subject. It is not the intention of the authorities to place tubercular subjects in the same registration with those suffering from acute transmissible disease, but the object is to get precise data as to where cases of tuberculosis are located, in order that the authorities might be able to cope with the infected localities. The Board of Health of New York in dealing with the subject discriminates between those intelligent persons who know what measures to adopt in order to prevent the spread of disease and the ignorant, careless persons who have a complete disregard for the health of the community and therefore must be placed within the pale of authority.

Dr. Abbott believed that the great objection which had been made to the reporting of cases of tuberculosis, that the individual would be a social outcast, was "perfect rubbish." "There is no earthly reason why that individual should not be reported to the authorities as a tubercular subject. His physician should report him, but the individual should not know it; and if this individual occupies a social position that will guarantee intelligent observation of the directions given him by his physicians, there is no earthly reason why the authorities should fear in the least, but unfortunately these physicians cover a very small community. In a very large proportion of the community in which tuberculosis exists and in which it forms a menace to our people who cannot or will not, or perhaps both, follow the directions of the physician, my belief is, in these cases, the Board of Health should be authorized to look after them, to disinfect the premises. And how are they to know where these homes are if they are not located? I cannot see any objection to registration of tuberculosis." The doctor, in closing, said that, for a large part, these tuberculous patients should be wards of the State, that there should be organized sanitariums in which these individuals should be comfortably quartered and where proper employment could be controlled by expert sanitarians.

Dr. JAMES WILSON said that he had been deterred from coming to positive conclusions in regard to the matter, not so much by the specters that have been called up to frighten those who advocate the system of registration of cases of pulmonary consumption, as by the doubts in the matter, doubts which are fully realized by those who are most interested in the subject. He had always thought that in instituting a radical public measure, such as the one under discussion, those who seek to establish it should ask themselves definitely a question: **What good objects are to be obtained by the measure?** There are two main objects besides the collateral basis. The first relates to statistics, in a broad sense the determination of the proportion of individuals in any community who are infected, the age at which the infection takes place, progress, mortality, and matters of that kind. The second relates to preventive medicine, and the two are, of course, largely interdependent.

Dr. Wilson believed that, regarding the first proposition, the medical profession would entirely favor its accomplishment by any such regulations, but that the mental attitude of the profession was hostile to any such measure that would scarcely be enforced, except in limited areas, and limited enforcement without cooperation of the entire profession would make such additions to statistics absolutely worthless and largely misleading. It is only by the educa-

tion of the profession that the greatest value in this measure can be realized, and the education of the profession means the education of the people. He was of the opinion that the thought of social ostracism resulting from the isolation of a dear friend or member of the family suffering from this dread malady had created a panic in the minds of certain physicians who were thus influenced to oppose the proposed measures.

Dr. MEIGS was opposed to the features proposed in the essayist's paper for registration. He said there were two things that made it **undesirable that there should be a forcible registration of tuberculosis**. "The first is, I think—there will happen to us in this city, and I believe it happens in New York to a greater extent than Dr. Biggs believes or would be willing to accept. I was very much struck with the different attitudes of those engaged in Board of Health work and those engaged in the laboratory work, in the attitude of the practitioner in regard to the thing—the difference of opinion the two sets of men have in regard to the results. In the first place, I do not think it can be successfully accomplished, and I do not think there will be any adequate return of good." He was of the opinion that Dr. Biggs is deceived in the belief that such a very large number of physicians report tuberculosis. "This experiment of the registration of tuberculosis was undertaken in Naples one hundred years ago and the laws which were in force in that city long since have fallen into desuetude or were repealed. Whether, in the second place, there is any adequate gain to the health of the community is another question. I do not believe there is any adequate gain for the hardship put on the individual. I cannot drop the question without saying that I do not believe that consumption is infectious from the way that Dr. Biggs and all bacteriologists say. I do not believe that the great bulk of the medical profession believe in the communicability of tuberculosis, by those who are looked upon as authorities in this matter."

Dr. Meigs then amused his auditors by reading excerpts from Continental authorities, including the opinions of Sir Andrew Clarke. He stated that Mr. Duncan Turner termed the first edition of his book, "Is Consumption Contagious?" and in the second edition he entitles it, "Consumption Not Contagious." The doctor believed that there were a great many persons who were said to have tuberculosis when they were not suffering from that disease. In closing, Dr. Meigs said: "I am opposed to it. I do not think it can be practically carried out. I do not believe it is practically carried out in New York, though I have no direct knowledge in this matter, except from my general knowledge. There is no adequate gain if it is carried out, and I do not believe it is contagious in any form or that it does any harm in that way."

Dr. ANDERS complimented Dr. Biggs upon his temperate statement of facts and arguments in favor of placing this disease on the list of affections returnable to the Board of Health. The first question in his mind that should be settled was this: **"Is tuberculosis a preventable disease?"** He cited that there was a decrease in the death-rate of tuberculosis in Italy under the Neapolitan law; this law included among other measures compulsory notification and isolation. In his opinion tuberculosis is a preventable disease. Then, another query presents itself: "Is compulsory notification essential to the stamping out of this prevalent affection? Is it an essential part of our armamentarium, in our efforts to minimize the spread of the mortality rate of this disease?" "The foci in this disease must be recognized, and recognized by some centralized authority with sufficient intelligence and power to act; otherwise the sources of infection will not be successfully removed. Physicians can advise disinfection, but unless they are entitled to a fee, they cannot be expected to see that it is properly carried out. I also believe it is entirely practicable to institute compulsory notification. In the first place, as has been said, it does not imply placarding houses, strict isolation, as in the case of acute infectious fevers, and I was very glad to see the point brought out that it does not even necessitate publicity of any sort. On the other hand, compulsory notification would insure closer attention to important details, with regard to disinfection of sputum, of clothing, of furnishings, and, more important of all, of rooms vacated either by death or removal from place to place, and this is of especial importance among the poorer classes whom the Good Book says 'we shall always have with us,'

and who will probably never become sufficiently enlightened to protect their fellow men from the dangers of infection. This is perhaps the greatest reason for the institution of a measure of this sort. I am, therefore, for the reasons I have stated and for the reasons that Dr. Biggs and others have given, in favor of compulsory notification, provided that the simplest measures only are employed, particularly at the outset, and in order that this new law, if it should go into effect, would not lead to its rejection on humanitarian grounds."

DR. LAWRENCE F. FLICK was in entire accord with what Dr. Biggs had stated in his paper. "If it is a communicable and preventable disease," said Dr. Flick, "then I think what Dr. Biggs has shown us tonight and has said to us forces us to the radical conclusion that **registration and forcible notification are necessary**. He believed that no one could convince himself by reading, but rather by practical experience amongst the poor. He cited the case of a doctor who had previously opposed registration until, by close association with poor consumptives, he was converted to the belief that registration was essential. Whilst tuberculosis is not as intensely contagious as smallpox for the same period of time, given the length of time which the disease lasts, the habitation of the consumptive does become as intensely capable of communicating the disease as does the habitation of the smallpox patient. Therefore, there is just as much reason for the disinfection and the proper surveillance of the habitation of the consumptive as there is for the surveillance of the habitation of the smallpox patient." The doctor cited the fact that within the last 6 years, in connection with the work for the Free Hospital for Poor Consumptives, there were between six and seven hundred people that applied for admission. They lived in the most unsanitary habitations, the conditions of which making it absolutely certain that they would become infected, and that they would acquire the power of communicating the disease to the next inhabitant. The doctor thought that the proper disinfection and sterilization of the rooms and houses were of a nature too expensive for the occupants or owners of the houses voluntarily to carry out, and that the only way that these measures could become efficacious would be through the board of health. "We have in the city of Philadelphia, probably at all times, from four to five thousand tuberculous subjects. Probably at least four thousand of these are among the poor and working classes. Every physician who has had experience in that class knows that with all the instruction that the physician can give it will never induce the patient to make himself innocuous to his surroundings and those about him, or will induce him to prevent the contamination of the house in which he dwells, the contamination of the clothing and everything about his home center, and unless you know where that home center is and have sufficient means of getting at it and cleaning it out sufficiently by some one who has no financial interest in it, we cannot hope to eliminate or stamp out that distribution of disease." The doctor referred to the success attending the use of preventive measures in England and the reduction of the disease in London of 50% in 40 years. In his opinion there is no rational explanation of the reduction, except through the fact of removal of the consumptive poor from the home center. He refuted Dr. Meigs' assertion that the preventive measures practised in Italy a hundred years ago had no practical results. They did have practical results, that through isolation, etc., tuberculosis in that country, under the Neapolitan laws, for a period of 40 or 50 years was reduced to probably as high as 87%. He claimed that the same laws had never been repealed and were probably on the statute books of Italy and allowed to become a dead letter because of the active opposition which arose from the medical profession.

DR. OTT stated that Dr. Biggs' paper confirmed the conclusions that he had drawn some years ago, having spent the greater part of his medical life in general practice, and chiefly among the poor. He pointed out the **necessity for thorough sterilization of houses** previously occupied by consumptives. Of one house in particular he had warned 3 members of a certain family who successively occupied it, and in the course of 6 years, each one lost a member by tuberculosis. "I believe in the registration of tuberculosis, and not alone in the registration, but in the isolation of the cases as far as it can be humanely carried out." He pointed out, however, a possible difficulty that would have to be

overcome by the requirements of registration, namely, that of estrangement between physician and patient when the former informed the latter that such measures would be put in force. "I believe furthermore in tuberculosis being preventable, and also in its being communicable. I, however, believed that for years, and I drew that conclusion from bedside work some time before Koch discovered the tubercle-bacillus and also established the law that the germ must be discovered in the patient and must be reproduced in a culture medium, must be injected into an animal and then the same germ discovered in a disinfected animal. I believe that tuberculosis is an indoor disease, and the sooner we learn to live out-of-doors, the more quickly probably we will reduce the mortality.

"There are a great many tuberculous persons who are intelligent and understand thoroughly the necessity for care in the sputum, the possibility of communicating the disease to the family or those who are immediately around them, who exercise the requisite amount of care to prevent this transmission of disease. Those individuals require no consideration through sanitary authorities. They are to be grouped with those classes or groups of the insane who are not in any way at all a menace to those around them or to the general public. On the other hand, in the lower classes, the poor, the necessity for care is greater than in any other class. The conditions are entirely different; it is absolutely necessary that these individuals should be educated. The education of the family may be just as important as the education of the patient, and it may be more so." The doctor stated that some 8 or 10 years ago the Government appointed a commission to look into the districts of the poorer classes—the slum districts—of the cities of the United States. Dr. Coplin accompanied the representative appointed to Philadelphia on his rounds for the collection of cultures. In some cases the knowledge of the existence of tuberculous patients was secured from policemen on the beat who knew the houses occupied by individuals suffering from this disease. There was one house which had a continuous history of tuberculosis for over a quarter of a century, and there was a house on Master street in which there had been tuberculosis for nearly 23 years. "These foci are officially unknown. There is no official way by which sanitary authorities are apprised of such conditions in the absence of registration. It seems to me it appeals not only to the patient and family, but to the community."

DR. J. SOLIS COHEN spoke as follows: "I gather from Dr. Biggs' very excellent paper that his 4 years' experience in New York has done a great deal of good and has done no harm. As a matter of sentiment, the **idea of registration is objectionable to me personally**, as it is to a great many others. When we have considered the greatest good to the greatest number, I must confess, with him, that the interests of the individual and family would be made subservient to those of the community." (Applause.)

DR. MATTHEW WOODS said that when this question was brought up 3 or 4 years ago he was one of those who opposed registration. Since that time he had given attention to the subject and read most of the literature published in regard to it and that he still remained opposed to registration. The doctor said that in the Pathological Department of the College of Physicians in Dublin he saw a very interesting series of tuberculous lungs of domestic and wild animals, "A great many of these animals were not in the habit of spitting at all. You know that *man* has been defined by one of the earlier philosophers as 'the animal that spits.' (Laughter.) Some one has said, 'the animal that uses a pocket handkerchief.'" He said that in that series of animals to which he referred there were lungs of fishes that had died in a London aquarium of tuberculosis, and domestic fowls, and, you know, that consumption is the disease of caged animals. Monkeys, tigers, lions, elephants, all, or nearly all, died of consumption. "And I think that the arguments, therefore, that have been used by the gentlemen in favor of registration would apply more definitely to locations than to people. I still feel that not the people, but that the locations should be registered. The foci should be known to the authorities and these places should be stamped out by proper sanitation. Indeed, the Board of Health in Philadelphia neglects so many of its duties as it is, that I feel, as a humanitarian, as a human person, we should not load them with additional duties." He related a case of a dying consumptive to whom

he had been called somewhere in the slum districts of the city. He found the room a mass of filth, the floors slippery and the walls encrusted with dirt. In the back yards the filth was piled up right to the fences, so that he was of the opinion that the Board of Health should give more attention to the location of the houses and streets and let the poor victims of consumption alone. He was of the opinion that the registration of such diseases as scarlet fever and diphtheria did far more harm than good and that, therefore, harm can be done by the registration of acute diseases. "I think we should pause and hesitate a long time before putting these comparatively, only very comparatively communicable diseases from person to person, on the list of diseases that should be registered."

DR. SIMON FLEXNER was the next discussor and spoke as follows: "I had no intention of adding anything to the very able presentation of the subject by Professor Biggs and the very full discussion on the subject by the members of the County Medical Society, and I dare say that I should not had it not been for Dr. Woods. I take great pleasure really now in taking a cue that he suggested, that is, the **relation of the tuberculosis of wild animals**, especially after they are caged and with reference to the question of communicability of tuberculosis in man. Of course, before one undertakes to discuss this subject he should have clearly in mind what tuberculosis is. Without that it is impossible to arrive at any proper solution. Now, there are conditions which simulate tuberculosis which are not tuberculosis unless we insist that a tubercle or nodule is always tuberculosis. A nodule on the bone is not tuberculosis; every nodular disease of animals is not necessarily tuberculosis, even if it appears so. Fishes are not subject to tuberculosis, but are subject to nodular diseases and parasites and also sheep are subject to nodular diseases and parasites which are not tuberculosis, not from the ordinary pathologic and medical standpoints. Many of the wild caged animals are subject to tuberculosis, but they are not subject to it until they come into relation with man's products. As to the animals being subject to the disease, I think he simply proves the communicability of the disease when he shows that animals in the state of nature have not that disease until they are brought into relation with man, when that develops the disease. They are arguments of modern civilization. If animals are fed on tubercular food, and we do not take particular care in feeding our wild animals in cages, they will have tuberculosis just as man will. It seems to me that Dr. Woods has provided the missing link in the argument which Dr. Biggs brought forward, namely, the great danger of the communicability of tuberculosis, not alone from human beings to human beings, but from animals to human beings and from one animal to another. In regard to registration of the foci of tuberculosis, how are we going to get at the sites? The sites do not suffer, but the individuals who occupy them, and if it is important to register those sites, to be done in a mild manner, as suggested by the essayist this evening, which does not expose human beings to isolation and, therefore, there cannot be any objection, what can be more important than the determination of those sites by registration of these cases, in order that the matter may be properly dealt with by the authorities?"

DR. HINSDALE stated that he thought the time had come when the Society should take some positive action in the matter. He said that the Board of Health of Philadelphia was only waiting for some measures to be received by them and that their attitude was friendly.

DR. STENGEL said that there was no question about the position of the medical profession regarding tuberculosis, that it is a communicable disease beyond all question of doubt, not only communicable but mildly contagious—a disease which is mainly communicated through the expectoration and other secretions or excretions from the lungs. He said the question is whether registration will do any good. The only good that registration can do is to apprise public officials of the existence of tuberculosis in certain cases or certain places and empower those officials to follow that case of tuberculosis and instruct so as not to hurt the feelings and not interfere with the orderly life of the individual in the prevention or spread of the disease, or else that the physician in charge of that case shall be instructed and required by that Board of Health to so instruct the patient. "If the law is so administered in a kindly way, and as I have

always found the law administered by the Board of Health in the city in cases of other contagious diseases, there is no reason why any physician should feel aggrieved at any action of a public official. Registration can do great good and it will not injure the physician materially in his daily avocation and, therefore, it seems to me that it is high time in this city we should rescind our action formerly and appeal to the public officials again to bring up this matter and frame a definite law."

DR. ANGENY stated that the Board of Health does provide for Dr. Woods' foci disease, that someone is sent to the house after death and the house is fumigated. He believed that there is need for the proper instruction of the people to prevent them from infecting others.

DR. EGBERT was of the opinion that by the adoption of these measures each patient and his family are no longer a focus of infection but of education, and that is really the one way through which we are going to gain ground. "As has been remarked tonight, there has been a decrease in the death-rate from tuberculosis throughout the country, and I think Dr. Flick will bear me out in the statement that we have a less death-rate from tuberculosis in this city today than we did 15 years ago. If the laity were educated in this city there would be no tuberculosis in a very short time. There is one other indication besides this education by means of infection, that is, the education of hope." The doctor believed that hope will help many a patient to resist disease.

The following resolution was proposed by DR. GUY HINSDALE and read by the secretary:

Resolved, That the Society recommends to the Bureau of Health of Philadelphia the compulsory registration of tuberculosis in the class of transmissible diseases and that measures for its prevention be adopted."

Upon motion the resolution was adopted.

A motion to appoint a committee of 5 to urge the Board of Health to introduce the resolution was lost by one negative vote.

DR. BIGGS, in closing the discussion, said: "In regard to calling tuberculosis contagious or communicable, it has always seemed to me that there is a definite conception which goes to contagious diseases that does not apply to tuberculosis. There is something about smallpox, scarlet fever, and measles which is entirely different from tuberculosis and the people have that conception just as clearly as we have it. It seems unfortunate to introduce something which is an entirely different thing into that class. It has always been classed a communicable and not a contagious disease. In regard to reporting cases, about 10,000 are reported. We have about 9,000 deaths. We have estimated from 16,000 to 18,000 cases occurring in children. Of course, this is not what we would like. But 10,000 cases with 9,000 deaths gives us about 20,000 cases a year to inspect and take care of. With our present force, it is all we can attend to."

The doctor related several instances of persons contracting tuberculosis, showing conclusively its communicability, and in one case where 13 nurses had left a certain hospital within a period of 2½ years, all suffering with tuberculosis, yet they were perfectly well when they entered.

Open-air Exercise in Pulmonary Tuberculosis.—

Knopf (*Pulmonary Tuberculosis*, 1899) writes as follows concerning exercise for pulmonary invalids: "One should commence with a walk of a few minutes until a walk of an hour or an hour and a half can be taken without producing fatigue. Whenever it is practicable these excursions should begin uphill, so that the return is easy. After the promenade the patient's temperature should be taken. If it exceeds the normal it is an indication that the patient has overtaxed his powers. Whether complete rest or simply shorter walks are then indicated will be decided by the variation in temperature of the temperature before and after exercise. When the temperature of the patient only rises slightly in the evening (99° to 99½° F.), short walks in the morning, while in apyretic state, may be permitted. A lasting temperature of 100° F. or over is an absolute contraindication to exercise. Tachycardia should also be considered as such. If there is, however, a chronic tachycardiac condition, absolute rest might not be the best policy. But these patients, more than any others, should be warned against the slightest overexertion. Breathing exercises and walks may be combined." [A.A.S.]

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Calendar of Meetings of Philadelphia Medical Societies for the week ended December 8, 1900:

Monday, December 3—Academy of Surgery.
Wednesday, December 5—College of Physicians.
Thursday, December 6—Obstetrical Society.

Dr. James Hendrie Lloyd has resigned his position as neurologist to the Philadelphia Hospital.

The Epidemic at Cementon.—The cause of the epidemic at Cementon, which afflicted 160 families and claimed several victims, has been traced to its source. A dead horse was found recently in the reservoir which supplies the town with drinking water. It had evidently been there for some time.

Disposal of Sewer Gas.—Tests are now being made with the object of ridding Philadelphia of sewer gas. The best means for its disposal is claimed to be combustion through a high temperature, and a patent sewer-gas extracting and destroying lamp that has proved successful in Europe is being used in the experiments.

Disinfecting Barges have left Philadelphia, towed by the steamer *Orion* for Cuba, one to be put in service at Matanzas, and the other at Cienfuegos. Another barge is now being equipped for quarantine-work at the Kensington yard, destined for a port in Porto Rico. The Kensington works are now constructing disinfecting machinery for a fumigating barge, which is being built at Mobile, to be used at Ship Island, Miss.

Physicians Victims of Impostors.—About a year ago a man representing himself as Dr. A. C. Dolrenz called upon the physicians of Atlantic City to solicit a small loan to establish himself as a druggist at Egg Harbor City. He collected about \$50. Recently a young man representing himself as a son of Dr. A. C. Dolrenz visited the physicians with a letter of introduction stating that his father had met with financial difficulties and again asked for aid. An investigation proved that such a person is unknown in Egg Harbor City. The police are now looking for the impostor.

Vital statistics of Philadelphia for the week ended November 24, 1900:

Total mortality	426
CASES. DEATHS.	
Inflammation of appendix 1, brain 8, bladder 1, bronchi 5, kidneys 15, larynx 1, heart 1, lungs 64, peritoneum 5, pleura 4, spine 1, stomach and bowels 17	123
Lungs—tuberculosis of 41, edema of 2	43
Heart—diseases of 31, fatty degeneration of 4, neuralgia of 3	38
Marasmus 14, inanition 14, debility 5	33
Apoplexy 17, paralysis 13	30
Uremia 14, diabetes 1, Bright's disease 6	21
Casualties	16
Diphtheria	15
Convulsions	13
Carcinoma of breast 1, leg 1, larynx 1, liver 2, neck 1, rectum 1, stomach 2, tongue 2, uterus 2	13
Old age	10
Croup 1, membranous 7	8
Liver—cirrhosis of 5, sclerosis of 2	7
Colic	6
Brain—congestion of 3, softening of 3	5
Suicide—carbolic acid 2, illuminating gas 2, shooting 1	5
Septicemia	5
Burns and scalds	5
Typhoid fever	43
Gangrene	3
Scarlet fever	57
Aneurysm of aorta 1, alcoholism 1, asthma 2, cerebrospinal meningitis 2, cyanosis 1, drowned 1, dropsy 1, epilepsy 1, erysipelas 2, hernia 1, indigestion 1, jaundice 1, obstruction of bowels 1, opium poisoning 1, rheumatism 1, shock—surgical 1, electric 1, stricture of the esophagus 1, syphilis 1, tetanus 1, ulceration of stomach 1	1

Philadelphia Hospital.—By order of Dr. Shoemaker, the ambulances of this hospital will, in the future, be sent for cases heretofore taken by patrol-wagons. This, it is stated in the order, will not only save the making of long trips by the patrol-wagons, but is also a more humane and proper way of conveying people to the hospital.

Parasitic Hemoptysis.—Dr. Charles Wardell Stiles, of the Bureau of Animal Industry, Washington, D. C., read a paper on the above subject at the meeting of the Philadelphia Pathological Society, November 22. The parasite causing this disease, the *Paragonimus westermanii*, was described and specimens shown. At present it is found only in animals in this country, 50 to 100 cases in hogs having been investigated. Being an Asiatic disease, the return of U. S. troops makes it an interesting subject at present. The parasite has for its intermediate host a certain genus of snails. The disease is likely to be confounded with pulmonary tuberculosis, the diagnosis being made by finding the eggs of the parasite in the sputum. Treatment is hopeless.

NEW YORK.

Scarlet Fever.—At Williamsville, N. Y., 30 cases of scarlet fever have been reported.

Gouverneur Hospital.—There has been much delay in opening this institution in New York City, the construction of which began 5 years ago. The explanation is that the law requires that all the furniture for the hospital shall be made in the prisons of the State, and they have been slow in fulfilling their contracts.

Damage Suit Disagreement.—A suit which was instituted against Drs. Manges and Rosenberg for \$60,000 damages resulted in a disagreement of the jury, the division being 9 to 3 in favor of the doctors. The suit arose from a simple curettage of the uterus in a case of severe hemorrhage in a woman with large fibroids.

Pasteur Preventive Treatment.—It is announced that the New York Board of Health will furnish the Pasteur preventive treatment free to victims of dogs believed to have rabies. At the Willard Parker Hospital a special laboratory for the purpose will be established. For the past year, 8 or 9 deaths have been reported, a number greatly exceeding the mortality of previous years.

New York Water Supply.—The chief engineer of the Department of Water Supply has received official orders to make a complete investigation of the streams, reservoirs, lakes, and ponds in the Croton watershed to see if any improvement in the condition of the water is possible. Its impurity is stated to be due to the drought and growth of vegetation on the sides of the reservoir, and not to any outside contamination.

Purification of the Passaic River.—At a recent meeting of the mayors and engineers of the Passaic Valley municipalities the outlook was discouraging for the plan that the interested cities would unite in the construction of a great trunk sewer from Paterson to Newark Bay. Paterson is opposed to it on account of the cost; East Orange holds that the contract under which it empties its sewage into the Newark sewers makes that city responsible for its final disposal, and the other municipalities have taken no action.

Bequests to Charity.—By the will of Abraham Wolff the following institutions have been benefited: The Home for Aged and Infirm Hebrews, The Hebrew Benevolent and Orphan Asylum Society, and the Cancer Hospital of New York each received \$5,000. Mount Sinai Hospital, the Montefiore Home for Chronic Invalids, the Society for Preventing Cruelty to Children, the Colored Orphan Asylum, the German Hospital, the Hebrew Infant Asylum and the Children's Aid Society each \$1,000; the Hebrew Technical Institute of New York City, and the Edenkoben Hospital in Germany each \$2,500; the Educational Alliance, of New York, \$3,000, and the United Hebrew Charities, of New York City, \$10,000.

Brooklyn's Water Supply.—According to the *Ledger* the question of water-supply must be settled by supreme authority soon, as it is growing more urgent every year.

especially in districts dependent upon irrigation. In the Brooklyn case, the water-supply of the city is obtained largely from wells, and these wells drain private property, to its detriment. A decision has been rendered by the State Court of Appeals, that the city must stop using these wells; but this will deprive the community of a large part of its water supply, and what shall be done, not only to prevent the suffering of the people from a water famine, but also to prevent the outbreak of an epidemic, which is always to be anticipated from the conditions thus induced?

NEW ENGLAND.

Infectious Diseases in Boston.—For the week ended November 21, 1900, the following cases of acute infectious diseases were reported to the Board of Health: diphtheria, 169; scarlatina, 29; measles, 24; typhoid fever, 16.

Vincent Memorial Hospital.—By a gift of money from Miss Emma F. Monroe the authorities of this hospital at Boston have been enabled to add the Mary Lowell Stone Memorial Home for Nurses which was opened recently.

Negro Representation on Board of Health.—The colored citizens of Springfield, Mass., have presented to the mayor a petition asking that Dr. A. L. Brown, a colored physician of that city, be appointed to one of the unsalaried positions on the new Board of Health as a capable representative of the colored citizens of that place. Many of the leading white residents signed the petition.

CHICAGO AND WESTERN STATES.

A Chicago College for Nurses has been established with the intention of training women in all the duties of a skilled nurse without requiring 2 years in a hospital or training-school.

The Chicago College of Physicians and Surgeons has received from Dr. William E. Quine, its dean, a gift of \$25,000 to endow its library, and from Dr. D. A. K. Steele, another member of its faculty, a like amount to endow the pathologic laboratory.

The St. Louis Academy of Medical and Surgical Sciences.—At a meeting held November 20, 1900, an address was made by the retiring president, Dr. Ball, on "Early American Medicine." Dr. Prewitt gave a thesis on "Dislocation of head of humerus with fracture of the anatomical neck," and many pathological specimens were presented by other members.

Wesley Hospital.—Thomas Kent has recently added \$25,000 to the building fund of this hospital in Chicago, which is being built by the Northwestern University as a cooperative institution to the medical college. When complete it will cost about \$250,000, and will accommodate 300 patients. The main building is now being erected, and a wing will be added later.

Marion-Sims-Beaumont College of Medicine.—It is announced that a consolidation of the Marion-Sims College of Medicine and the Beaumont Hospital Medical College will take effect May 1, 1901. The utilization of the teaching force of the 2 institutions and a union of their clinical faculties is contemplated. The Marion-Sims building, with additions, will be used.

Disease Among Chinese.—In a recent report made to the Marine-Hospital Service by the assistant surgeon at Angels Island, Cal., a diseased and filthy condition is depicted among the Chinese aboard the vessels in the Alaskan salmon-canning industry. The condition is probably one of malnutrition with symptoms resembling those of scurvy and beriberi, but not entirely those of either. Their condition is such that they are liable to contract bubonic plague when they return to the slums of San Francisco.

Contagious Diseases in Animals.—The Supervisors' Health and Hospital Committee of San Francisco recommended the passage of an amendment to the ordinance placing the regulation of animals sick with contagious diseases in the hands of the Board of Health. The amendment

allows the owner of such animals to engage a competent veterinary surgeon of his own selection to care for them. It provides also for the quarantine of the infected animal, but the owner is given one month in which to have the proper diagnosis of the contagious disease determined.

St. Louis City Hospital.—An amendment to the ordinance recently passed authorizing the commencement of work on the new City Hospital of St. Louis, has been submitted to the Board of Public Improvements. It was found that the law, as it now stands, makes no provision for the erection of a surgical ward, and without such a building the 2 octagonal wards authorized by the ordinance would be practically worthless. The amendment includes a surgical ward in the list of building to be erected with the money now on hand.

A Temperature of 127° F.—According to the *Medical News*, Robert Bruce, lately returned from service in the Ninth Infantry in the Philippines and China to Chicago, is reported to have this high temperature. Several days ago, Bruce entered the City Hospital and asked for treatment. When the house-physician took his temperature, and found it to be 112° F., and the patient showing no signs of early dissolution, he was astonished. The next day it was found that the clinical thermometer had not sufficient range. Other physicians were summoned, and a government thermometer applied, the mark of 127° F. was registered, and for several days in succession Bruce's temperature has reached this point. It is reported that Bruce's pulse does not go up in proportion to his temperature. An explanation given as to Bruce's condition is that a bullet, which pierced his mouth, lodged in the heat-center of the brain.

SOUTHERN STATES.

Johns Hopkins University.—Dr. William H. Welch and Dr. William Osler, of the Johns Hopkins Medical School, have been named as possible candidates for the presidency of the university.

The Smoke Nuisance.—On the oath of Dr. R. L. Lynch, an inspector of the health department of the District of Columbia, 6 warrants charging violations of the smoke law have been issued.

University of Texas.—Since the storm, improvements and temporary repairs to the amount of \$25,000 have been made on the buildings of the medical branch at Galveston. The board of regents will ask the next legislature for an appropriation of \$60,000 to permanently restore the buildings of the medical department and to resupply laboratories that were destroyed. They will also ask for \$45,000 per annum for the support and maintenance of the medical department. The outlook for the year is favorable, there being 150 students present the first day.

MISCELLANY.

Condition of Alaskan Indians.—Dr. Sheldon Jackson, who cruised along 1,000 miles of coast in Behring Sea and the Arctic Ocean, reports an appalling condition among the natives from inroads of grip, measles, and pneumonia.

Industrial School for Hawaiian Lepers.—A band of Franciscan Sisters under the leadership of Mother Ann M. Schilling, of Syracuse, N. Y., are about to leave San Francisco for the Hawaiian Islands to establish an Industrial School in the leper settlement at Molokai and devote their lives to this work.

Emergency Rations.—Captain Fountain and Captain Foster have returned to Fort Reno, O. T., after an absence of 10 days testing the emergency ration which was compounded at Passaic, N. J. Enlisted men of the detachment say that the ration just tested is not as good as that tested by the first detachment. It is seasoned too highly to be palatable any length of time. The tea ration serves well for a few meals, but does not suit as well as the chocolate ration. A ration prepared in Chicago will be tested during the next 10 days. The board will devote a week to testing again the ration of the 3 which proves most satisfactory.

Obituary.—GEORGE H. BRIGHT, of Richmond, Va., November 20, aged 64.—HIRAM W. RITTER, of Soudertown, Pa., October 9, aged 46.—H. A. HAMILTON, of Marysville, Ia., November 26.—ROBERT ACTON, of New York, November 20, aged 35.—EDWIN POTBURY, JR., of Georgetown, D. C., November 20.—A. L. A. TOBOLDT, of Philadelphia, November 23, aged 40.—W. W. ANDERSON, of Farmville, Va., November 23, aged 84.—F. C. DEMUND, of Brooklyn, November 18.—JOHN FREEMAN, of Lexington, Va., November 12, aged 84.—HENRY A. LOOK, of Allegheny, Pa., November 12, aged 34.—BENJAMIN T. MOSELY, of Alexandria, La., November 14, aged 51.—SAMUEL J. PEARSALL, of Saratoga, N. Y., November 20, aged 70.—A. T. BROSEAU, of Montreal, Canada, aged 63.—MOSES C. WHITE, for many years professor in Yale Medical College, aged 81.—W. H. C. ABELL, of Portage, Wis., November 23, aged 73.—A. MILES, near Dallas, Tex., aged 94.—GEO. W. SPARKS, of Philadelphia, November 17, aged 56.—WILLIAM T. COLLINS, of Camden, N. J., aged 71.

Health-Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, for the week ended November 23, 1900.

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
MARYLAND:	Prince George Co. Nov. 9-14 . . .	9	
MICHIGAN:	Detroit . . . Nov. 10-17 . . .	1	
"	Grand Rapids . Nov. 10-17 . . .	1	
MINNESOTA:	Minneapolis . . Nov. 10-17 . . .	3	
N. HAMPSHIRE:	Manchester . . . Nov. 10-17 . . .	10	
NEW YORK:	New York . . . Nov. 10-17 . . .	1	
OHIO:	Cleveland . . . Nov. 10-17 . . .	19	1
TENNESSEE:	Memphis . . . Nov. 10-17 . . .	1	
TEXAS:	Houston . . . Oct. 31-Nov. 7 . . .	6	
UTAH:	Salt Lake City . Nov. 10-17 . . .	20	
VIRGINIA:	Alexandria . . . Nov. 18 . . .	1	

SMALLPOX—FOREIGN.

AUSTRIA:	Prague . . . Oct. 20-27 . . .	8	
BRAZIL:	Pernambuco . . Sept. 23-30 . . .		15
ENGLAND:	London . . . Oct. 27-Nov. 3 . . .	1	
FRANCE:	Paris . . . Oct. 27-Nov. 3 . . .		14
INDIA:	Calcutta . . . Oct. 13-20 . . .		6
JAPAN:	Nagasaki . . . Oct. 11-20 . . .	1	
MEXICO:	Vera Cruz . . . Nov. 3-10 . . .		1
RUSSIA:	St. Petersburg . Oct. 20-27 . . .	3	3
SCOTLAND:	Glasgow . . . Nov. 2-9 . . .	31	

YELLOW FEVER.—UNITED STATES.

MISSISSIPPI:	Brookhaven . . Nov. 16 . . .	Many cases.
"	Natchez . . . Nov. 22 . . .	2

YELLOW FEVER.—FOREIGN.

COLOMBIA:	Bocas del Toro . Oct. 31-Nov. 7 . . .	3	
"	Cartagena . . . Oct. 28-Nov. 4 . . .	1	1
CUBA:	Havana . . . Nov. 3-10 . . .		15
"	Matanzas . . . Nov. 15 . . .	1 case, Hamil-	
MEXICO:	Vera Cruz . . . Nov. 3-10 . . .	ton Barracks.	6

CHOLERA.

INDIA:	Bombay . . . Oct. 16-23 . . .	10	
"	Calcutta . . . Oct. 13-20 . . .	17	
"	Madras . . . Oct. 13-19 . . .	37	
RUSSIA:	Siberia, Novo-		
	lievsk . . . Nov. . . .	Reported.	
STRAITS SETTLEMENTS:	Singapore . . . Sept. 15-22 . . .	1	

PLAGUE.—FOREIGN.

CHINA:	Hong Kong . . Oct. 6-13 . . .	4	
INDIA:	Bombay . . . Oct. 16-23 . . .	74	
"	Calcutta . . . Oct. 13-20 . . .	15	
"	Madras . . . Oct. 13-19 . . .	1	
JAPAN:	Kobe . . . Oct. 8-23 . . .	2	
"	Osaka . . . Oct. 8-23 . . .	3	

Contagious Diseases.—In Washburn, Wisconsin, 22 cases of smallpox of a mild type are reported. The Michigan State Board of Health has detailed a physician to go to the upper peninsula to take charge of an aggressive campaign against smallpox. The situation there is pronounced critical. Two members of the Walker Theatrical Company were recently taken to the Municipal Hospital in Pittsburg suffering with smallpox. The health authorities at once went to the theater and vaccinated the entire troupe of 40 actors. A case of the disease has been discovered in King's County Hospital, Flatbush, N. Y., in a negro patient who had not been outside the institution since May. Decatur, Nebraska, and its vicinity is quarantined, having over 100 cases. A mild

type has been prevalent there for 6 months. At Naniamo, B. C., an epidemic has been reported, and the disease again prevails among the Indians near Rolla, N. D. Sir Alfred Milner, the British High Commissioner, has announced that all ports on the East Coast of South America between the 10th and 40th parallels are infected with plague, and a fatal case is reported from Merida, Yucatan. The State Board of Health of Jackson, Mississippi, has received official notice of 2 cases of yellow fever and one death at Brook Haven, about 60 miles from Jackson. In Havana 56 cases of yellow fever are now under treatment and the disease is reported as rapidly abating. The captain of the steamer *Adler*, which arrived in New York recently from Port Simon, died of yellow fever and was buried at sea.

foreign News and Notes.

GREAT BRITAIN.

Women Physicians in London.—In London alone there are now 85 medical women. Some of these hold posts in dispensaries, hospitals, infirmaries, as ophthalmic surgeons, assistant anesthetists, medical examiners, inspectors and lecturers.

Arsenic Poisoning.—Manchester is suffering from an epidemic of arsenic poisoning; at least 1,000 cases are known. It was found to be confined to beer drinkers, and an analysis of some of the beer revealed arsenic enough to account for the symptoms of poisoning.

Royal Army Medical Corps.—The Secretary for War having granted the President of the Royal College of Surgeons in Ireland two nominations for commissions in the Royal Army Medical Corps, Mr. Myles has nominated Mr. J. Langdale Jones and Mr. G. Faber Sheehan, licentiates of the College and past pupils of the College School, for the vacancies.

CONTINENTAL EUROPE.

Typhus fever is epidemic in Copenhagen. On November 20, 20 new and serious cases were officially reported.

Quails are said by high medical authorities to be a source of typhoid infection in Russia. A local paper says: "Hereafter let all quails imported from Russia be accompanied by a certificate that they have been sterilized."

Women in the Profession.—Prof. Friedrich Schanta, of Vienna, in a recent address to the students attending his course in gynecology, expressed his opinion that law and other professions should be opened to women, as too many of them crowd into medicine. Of every 100 female medical students, he said, only 33 became physicians, the others being incapacitated by the horrors of the dissecting-room and other impediments.

MISCELLANY.

Malaria in India.—An alarming spread of malaria is reported in the districts of Ferozepur, 38 deaths having occurred in one day. The rural population cannot find men to work in the fields, as the laboring classes are the greatest sufferers from the disease.

Precautions Against Disease in Greece.—It is reported that the personal baggage of a traveler when not accompanied by the owner must on its arrival at any port in Greece be accompanied by a certificate of origin, or a certificate from the health authorities of the port from which the baggage was shipped.

Gift to Hospital.—It has been announced that Raja Jyoti Prasad Gorga, of Moisadal, has offered a sum of Rs. 5,000 towards the construction of an operating room for the Midnapur hospital, in order to perpetuate the occasion of the Lieutenant-Governor's recent visit to Midnapur, and has expressed the desire that the room be called "The Woodburn Operating Room."

The Latest Literature.

British Medical Journal.

November 10, 1900. [No. 2080.]

1. Progressive Pernicious Anemia with Spinal Symptoms. DYCE DUCKWORTH.
2. Present Position and Future Work of the British Medical Association. JOHN W. BYERS.
3. The Vulgar Errors and Superstitions of West Somerset in Their Relation to Medicine. G. F. SYDENHAM.
4. Enteric Fever in the Army in South Africa, with Remarks on Inoculation. HOWARD H. TOOTH.
5. Enteric Fever in South Africa; Effective Sterilization of Excreta. MAJOR H. A. CUMMINS.
6. The Treatment of Dysentery. W. WATKINS PITCHFORD.
7. Acute Yellow Atrophy of the Liver. G. H. PEARCE.
8. A Case of Acute Yellow Atrophy of the Liver. C. T. ANDERSON.
9. Seven Cases of Acute Irritant Poisoning. W. H. PACKER.
10. Lead-Poisoning by Beer. E. R. MORGAN.
11. Glandular Fever Occurring in Epidemic Form. LESLIE Durno.
12. The "Hepatic Odor" in Abscess of the Liver. W. K. HATCH.
13. Laparotomy for Intestinal Obstruction Repeated within Seven Months. J. LEWTAS.
14. Treatment of Diphtheria by Iodin. HUGH TAYLOR.
15. Case of Bullous Urticaria. SYDNEY H. CARR.
16. Liquor Thyroidei in Hemophilia. C. ROYDS JONES.
17. Apomorphin as a Hypnotic. E. W. ADAMS.
18. A Case of Compound Dislocation of the Wrist. WM. TIPLADY.
19. Enteric Fever Associated with Malaria. J. G. McNAUGHT.
20. Calculus in the Bladder with a Flexible Catheter as the Nucleus; Suprapubic Lithotomy. HARCOURT COATES.
21. A Case of Cesarean Section for Contracted Pelvis; Recovery of Mother and Child. E. O. CROFT.
22. Urinary Calculi Lodged in the Vagina; and a Case of Suprapubic Lithotomy for a Large Stone. H. F. LECHMERE TAYLOR.

1.—Duckworth reports the case of a man, aged 36 years, who during the course of **pernicious anemia** complained of a feeling of swelling, weakness and numbness in both legs and in the hands, but no wasting. There was complete loss of sense of position; nearly complete anesthesia below a line encircling knees beneath the patella but dipping down below the popliteal space in a loop over the calf in "small sciatic area." The kneejerks were equally exaggerated; there was no ankle-clonus. During the course of the disease loss of rectal control and difficulty in micturition developed. At the necropsy the diagnosis of pernicious anemia was confirmed. There was a well-marked iron reaction in the liver and the kidneys. There were fatty kidneys and there was also softening of lumbar portion of spinal cord, which accounted for the **spinal symptoms**. Gallstones were also present. [J.M.S.]

4.—Tooth calls attention to the extreme difficulty that must attend all efforts to prevent the spread of typhoid fever by sanitation only. It is, therefore, with the greatest interest that we turn to the subject of the **establishment of an artificial immunity** in the individual soldier. Twenty-four noncommissioned officers, orderlies, and servants of the Portland Hospital, and 4 of the medical staff, were inoculated on the voyage out. Of the orderlies 9 had enteric fever subsequently, 2 of whom had refused inoculation and one of the latter died. Of the inoculated cases 5 had the disease lightly, and 2 rather severely. Of 231 patients, 53 had been inoculated at home or on the voyage out, and of them 3 died, making a percentage of deaths among the inoculated of 5.6%; 178 had not been inoculated, of whom 25 died—that is, a mortality among the noninoculated of 14.0%. The general mortality was 12.1%. The above figure comprise officers and men. Thirty-three officers were admitted with enteric fever; of these 21 had been inoculated. Only one of these officers died and he had not been inoculated. Inoculation as a preventive is still on its trial, but it has not had a fair trial. [J.M.S.]

5.—Cummins describes a method for the **effective sterilization of excreta from typhoid patients**. A 30-gallon iron "jackpot," containing 2 gallons of 1 in 20 carbolic solution, was kept boiling day and night, and the feces and urine were emptied into this solution as soon as they were passed; there was practically no smell; the vapor had a heavy odor redolent of carbolic acid, but at 1 or 2 yards distance it was scarcely perceptible. The apparatus has been in use for nearly 2 months, during which time over 200 cases of enteric fever have been under treatment. No case of enteric fever has occurred among the orderlies employed in nursing and for pioneer work. A control experiment was made by inoculating one nutrient agar tube from the contents of a bedpan that the attendant was about to empty into the cauldron. The stool was poured into the cauldron, and 10 minutes after 5 nutrient agar tubes were inoculated from the contents of the pot. All the tubes were incubated at blood-heat for 24 hours. The tube used as a control showed about 100 well-marked colonies, while the 5 infected by the contents of the pot showed no sign of bacterial growth. [J.M.S.]

6.—Watkins Pitchford during his service in South Africa had little opportunity of **treating dysentery** in its initial stages, and it is probably on this account that the treatment by saline aperients has met with little success. The much credited ipecacuanha cure also proved disappointing. The tincture of "Monsonia ovata" appeared to produce no effects whatever except nausea and depression. Greater success attended the use of mercury perchlorid in mixture with bismuth and opium. Izal combined with bismuth and chlorodyne gave a most satisfactory result. Milk was found to be an unsuitable diet for dysentery patients. Beef tea and bread with butter satisfy, and leave a residue which appears to cause but little colic or rectal irritation. Post-mortem observations show that great risk must frequently accompany the giving of rectal injections, especially when combined with abdominal massage. The coexistence of enteric fever with dysentery was more than once unexpectedly disclosed in the mortuary tent. [J.M.S.]

7.—Pearce reports the case of a man, 33 years of age, who complained of feeling tired and exhausted for several days, and who had frequently had to come in to rest while pursuing his ordinary avocation on his farm. When seen by the author, the patient's temperature was 102°, his tongue was dry and baked, his eyes were glassy, and his face was slightly flushed. His abdomen was swollen and tympanitic. The area of hepatic dulness was almost entirely gone, and there was great pain on pressure over both the liver and the spleen. The urine contained a trace of albumin, and was highly colored. Four days later violent hemorrhage occurred from the nose; the patient's skin was intensely jaundiced; numerous small hemorrhages occurred under the skin all over his body, and he vomited several times. The patient gradually grew weaker and finally died. A diagnosis of **acute yellow atrophy** of the liver was made, although there was no autopsy. [J.M.S.]

8.—Anderson reports a case of **acute yellow atrophy of the liver** which was confirmed by necropsy. [J.M.S.]

9.—On September 27, 1900, 7 members of a family of 8 living in a small farm-house partook of supper at 9 P.M., which consisted of cold stewed goose giblets to which had been added scraps of goose and slices of beef. During the night following the patients were all taken violently ill with symptoms that clearly indicated some kind of **irritant poisoning**. Two of the patients died, and a necropsy made on one of them showed intense congestion of the intestines and stomach. No indication of any special poison was found. Packer was unable to find any poison either in the remains of the supper or in the viscera of the deceased woman. [J.M.S.]

10.—Morgan reports the case of a man, aged 43 years, who was suffering from **lead poisoning**. It was learned that the patient called daily for his pint of beer before breakfast and that he was usually the first to get the "dra" through one of the leaden pipes that led from the cask. A pint of beer drawn the first thing in the morning from these pipes was found to contain lead in solution. The patient's urine also showed the presence of lead. The patient finally fell down in a fit and lingered a few hours before he died. [J.M.S.]

11.—Durno reports a series of cases of **glandular fever**. The patients were an adult and several children. The ages of the victims ranged from 2½ to 13 years. There were no premonitory symptoms, the disease being ushered in by head-

ache, nausea, vomiting, and pain in one side of the neck. The temperature ranged from 100° to 105°. From 12 to 36 hours after the onset there appeared a distinct and definite swelling of the affected side of the neck that proved to be a group of lymph glands. Except in the very mild types, there was well marked hepatic tenderness and increased dulness. In a few cases there was tenderness over the spleen. In two cases hemorrhagic nephritis was developed as a complication. About the end of the first week very offensive diarrhea with slimy stools, varying in color from pale yellow to dark green, seemed to mark a crisis. Acute anemia developed very rapidly. Convalescence in the majority of the cases started between the second and the third week of the illness, was very protracted, and even in the mild types was out of all proportion to the severity of the attacks. There were no deaths. An important element in the treatment is to maintain as thorough an antiseptic state of the mucous membranes of the throat and pharynx as possible. In a few of the earlier cases this precaution was neglected, and it was in 2 of these that otitis media occurred. Either a spray of 1 in 5,000 mercuric perchlorid or a swab of glycerin and carbolic acid was used to disinfect the throat. [J.M.S.]

12.—Hatch has observed an “**hepatic odor**” in cases of **abscess of the liver** and by this odor alone has been able to diagnose several cases. It is especially well marked when the patient is confined in a small room, while in large, airy wards it is only observed about the bed. [W.S.N.]

13.—Lewtas was called to operate on a case of **intestinal obstruction and repeat it within 7 months**. The same conditions were found at both operations; about 6 inches of the bowel was constricted to the diameter of a lead pencil; no cause could be found and it was presumed to be spasmodic. Each time the mass above the constriction was simply pressed through; the abdomen was then closed and the patient made a rapid recovery. [W.S.N.]

14.—Taylor, on being called to a case of **diphtheria**, gives a good dose of calomel, paints the throat, tonsils, back of pharynx, and uvula well with the **tincture of iodine**, and advises the repeated inhalation of the tincture of iodine in hot water, about one teaspoonful of the tincture in a quarter of a pint of hot water, for about 5 minutes at a time every half hour or so. [J.M.S.]

15.—Carr reports the case of a woman, aged 35 years, who had eaten some codfish. Almost immediately afterwards she complained of discomfort about the eyes, and itching of the face, and a marked **urticarial rash** developed over the upper extremities, face, and upper part of the trunk. This was soon followed by the appearance of a large **bullæ** on the lobes of both ears, and on the wrists and forearms, simulating closely the effects of a scald. The eruption also severely affected the mouth and the pharynx. The highest temperature reached was 103.6°. The itching was very great at first, giving way later to severe burning. [J.M.S.]

16.—In 1898 Jones reported a case of **hemophilia** in a girl of 8 years. Ordinary treatment failed to have any effect. On May 1, 1900, the author commenced to give 4 minims of **liquor thyroidei** 3 times a day. There was a slight hemorrhage a fortnight later, but there has been none since. [J.M.S.]

17.—Adams gave a drunken woman a hypodermic injection containing $\frac{1}{15}$ grain of **apomorphin**. In about 20 minutes she was quietly sleeping. [J.M.S.]

21.—Croft reports a **cesarean section** in a case of a contracted, rickety pelvis, which resulted favorably, both mother and child being well when seen 4 months later. [W.K.]

22.—Taylor reports the case of a Hindoo girl suffering from **urinary calculi lodged in the vagina**. After a slight incision of the vulva, a stone about the size of a walnut was removed with lithotomy forceps. Back of this were 4 others packed in the vaginal fornices. They were round in shape, largely composed of lime salts and weighed altogether 2 ounces and 100 grains. Sloughing continued and on the sixth day another stone (1 ounce and 45 grains) was removed, the patient dying a few days after. [W.K.]

Lancet.

November 10, 1900. [No. 4028.]

1. Urinary Pigments in their Pathological Aspects. ARCHIBALD E. GARROD.

2. Empyema following Lobar Pneumonia. W. HALE WHITE.
3. The Physiology and Pathology of Inheritance, or What do we Inherit from our Parents? THOMAS OLIVER.
4. Two Cases of Acute Hemorrhagic Pancreatitis. J. H. BRYANT.
5. The Influence of Fatigue on the Minute Structure of the Kidney and Liver; Preliminary Account. GUIDO GUERRINI.
6. A Series of 11 Operations for Perforated Gastric Ulcer. G. H. HUME.
7. A Case of Anthrax. EDWARD ALBERT CLARKE.
8. An Interesting Case of Amenorrhea. WILFRID J. H. HEPWORTH.
9. Surgical Emphysema of the Eyelids. CHARLES LEO BIRMINGHAM.
10. A Case of Sarcoma of the Sixth Rib in the Removal of which the Pericardial and Left Pleural Cavities were Opened; Recovery. C. WHIPPLE and H. W. WEBBER.
11. Varicose Condition of the Internal Saphenous Vein Complicated by Inflammation of the Internal Saphenous Nerve; Operation and Cure. E. A. MILLS ROBERTS.

1.—Some of the substances classified as **urinary pigments** are merely colored products formed by the action of reagents upon constituents of urine that are themselves colorless. Among these are urochrome and the indigo pigments. Of the true urinary pigments some are excreted either wholly or in part, as colorless or faintly colored parent substances known as “chromogens,” that quickly become converted into their colored derivatives when the urine is exposed to light and air. Colored substance may enter the alimentary canal in articles of food, in sweetmeats, or in medicines, and may be thence absorbed and excreted either altered or unaltered by the kidneys. Certain pigments are normal constituents of the body, but only find their way into the urine under morbid conditions, such as hemoglobin, bilirubin, biliverdin, and melanin. There is a group of coloring matters that may claim to be urinary pigments in a more special sense, seeing that they may all be present, if only in traces, in the urine of persons who may fairly be considered to be in normal health. Urochrome, urobilin, hematoporphyrin, and uroerythrin belong to this class. Urochrome is the most abundant of the urinary pigments, and to it the familiar yellow color of normal urine is probably entirely due. Urobilin only occurs in very small amount in normal urine and wholly in the form of chromogen. Hematoporphyrin is present in mere traces in normal urine and often in increased quantity in disease. Uroerythrin may appear in small amounts as the result of very trifling deviations from perfect health. In **morbid urines** it is often abundantly present, and it is chiefly conspicuous as the coloring matter of pink urate sediments. The chief seat of the formation of urobilin is undoubtedly the intestinal canal. Increased excretion of the pigment, evidenced by a dark absorption-band seen when the urine is examined with the spectroscope, is a very common phenomenon in disease, and we may distinguish between cases in which the band is seen for only a few days in succession and those in which it is present over a long period. A distinction may also be drawn between cases of what may be called “pure urobilinuria” and those in which uroerythrin and hematoporphyrin are also present in excess. In febrile disorders of almost every kind temporary urobilinuria may be met with, the duration of which usually corresponds with that of the pyrexia. In diseases of the liver the urobilinuria is usually persistent, as is well seen in cases of cirrhosis, malignant disease, or passive congestion secondary to cardiac or pulmonary troubles. In diseases attended by excessive hemolysis, and during the absorption of extravasated blood, there is apt to be conspicuous urobilinuria, and, unless complications are present there is no corresponding increase of uroerythrin or hematoporphyrin. The occurrence of persistent urobilinuria in pernicious anemia supplies a diagnostic sign of real value and affords an indication of the progress of the case. In association with it, Garrod has observed a marked excess of urobilin in the feces. When blood-extravasations are being absorbed a temporary urobilinuria is apt to occur in a day or two after the occurrence of the hemorrhage, and this

again may prove of service in the diagnosis of deep-seated hemorrhage such as pelvic hematoceles. Diminished excretion or absence of urobilin from the urine may be due to diminished formation of bile-pigment, as in chlorosis, phosphorus poisoning, or acute yellow atrophy of the liver; to suspension of urobilin formation in the intestine as in typhoid fever with green stools; as well as to occlusion of the common bile-duct. Viglezo suggested that renal permeability has an important influence upon the excretion of this pigment, and it is a clinical fact that albuminuria and urobilinuria very seldom coexist. There is, moreover, experimental evidence in support of this view. In normal human urine, hematoporphyrin is present in minimal quantities, as can readily be demonstrated by appropriate methods. In many morbid urines it is found in larger but still small amounts and under exceptional circumstances, and especially as a result of the administration of sulfonal, it is much more abundantly present in urines which have a deep, port-wine tint. However, such urines owe but little of their peculiar color to this pigment. It is also present in the feces, and it may be extracted from meconium. In a case of sulfonal-poisoning, A. E. Taylor and J. Sailer have recently recovered it from blood collected postmortem. Hematoporphyrin has at least 4 characteristic groupings of absorption-bands for its identification under different conditions. The amount present in urine is usually so small that the bands are quite invisible on direct spectroscopic examination, or are so faint that they can only be recognized by a trained eye. Garrod believes that we are justified in concluding that the hematoporphyrin of the body has hemoglobin for its parent substance, and is isomeric with bilirubin. Seeing, then, that at least the greater part of the hematoporphyrin of the body is derived from human sources, it is a natural supposition that its excretion in excess is an indication of increased hemolysis. Experiments seem to show, however, that there is no necessary connection between excess of hematoporphyrin in the urine and excessive hemolysis. [J.M.S.]

2.—Hale White has studied the records of cases of empyema following lobar pneumonia which have been treated of late years in Guy's Hospital, London. Altogether he has found 45 cases of this kind. It is impossible to state with accuracy the percentage of cases in which pneumonia is followed by empyema, but out of 325 consecutive cases of empyema in the medical ward of Guy's Hospital 12.6% followed a lobar pneumonia. From his experience in the treatment of this condition he concludes that it is very unlikely that simple aspiration will cure any case of empyema arising from pneumococcus infection. In a certain number of cases it appears to be curative, but it seems wiser to evacuate even small empyema by incision. The amount of pus found in his cases was quite variable. In one case 170 ounces were present; in another 100 ounces were secreted in one and a half days. Of the 45 cases reported 13 died, giving a mortality of 29%, which is considerably higher than that given by some authors. [M.B.T.]

4.—Bryant reports two cases of acute hemorrhagic pancreatitis. In the first case the history of previous attacks of abdominal pain and indigestion spreading over several years and the acute onset of severe abdominal pain after a late meal of pigeon pie seemed to point to perforating gastric ulcer as the most likely explanation of the patient's condition. A satisfactory elucidation of these attacks of pain was found at the necropsy in the gallbladder, which contained several calculi. In nearly all of the cases of pancreatitis which have been examined bacteriologically *Bacillus coli communis* has been found; the invasion of the pancreas by this organism may have been the cause in the case reported. The finding of fat necrosis outside the peritoneal cavity in the mediastinal and pericardial fat in the second case was very unusual. The previous history of abdominal pain and indigestion and the acute onset with pain suggested perforating gastric ulcer as the most likely diagnosis to explain the symptoms complained of. There was a large collection of clear, bile-stained, serous, sterile fluid found in the peritoneal cavity at the time of the operation; but no fat necrosis was found and the pancreas did not appear to be enlarged. At the necropsy a biliary calculus was found, but it was small and was not obstructing the flow of bile. The tissues in the neighborhood of the bile-passages and pancreas had a swollen and sodden appearance and were all very deeply stained with bile, but there was no abnormal opening

in the gallbladder, cystic duct, hepatic duct, or common bile-duct which could allow of the escape of this fluid. There were numerous areas of fat necrosis in the peritoneum and hemorrhagic pancreatitis. [J.M.S.]

5.—Guerrini has studied the changes in the liver and the kidneys produced by fatigue. In the kidney the grosser modifications of structure are in the cells of the convoluted tubules and of the ascending part of the loop of Henle. The modifications of structure are, naturally, in relation with the degree of fatigue undergone by the animal. The protoplasm loses its usual aspect and becomes homogeneous and granular. It appears that the cellular body enlarges, so that the borders of the cells that surround the opening of the canals fray out and break and the cellular protoplasm shows rarefied points, vacuoles and cracks, and finally crumbles into a fine detritus that collects in the opening of the tubules. In the midst of this detritus normal nuclei are sometimes found, sometimes lumps or granulous masses that stain like the nuclei. The minute modifications of structure of the liver-cells are much less than those of the kidney-cells. All the cellular protoplasm appears homogeneous, cloudy and granular. The cellular body enlarges and the edge between the cells becomes uncertain and sometimes disappears altogether. Sometimes the little biliary canals are evidently compressed, whereupon the protoplasm of the liver-cell appears rarefied, full of knots, spongy, and very dark from biliary pigment. [J.M.S.]

6.—Hume reports 11 operations for perforated gastric ulcer, all in women, which he has performed during the past 7 years at the Royal Infirmary at Newcastle-upon-Tyne. A patient, 20 years old, was operated upon 48 hours after perforation. The ulcer was situated on the anterior wall near the pylorus. The peritoneal cavity was flushed and drained; death resulted. In a second case a patient, aged 28, was treated in the same manner and death resulted. Further particulars are not given. In a third case a patient of 30 was operated upon 48 hours after perforation. The ulcer was situated on the anterior wall near the cardia; death resulted. In a fourth case, a patient of 23, 5½ hours elapsed between perforation and operation; the ulcer was situated on the greater curvature and death resulted. In a fifth case occurring in a girl of 16, 11½ hours elapsed between perforation and operation. Perforation on the lesser curvature; recovery. In a sixth case, a patient of 18, operation 43 hours after perforation which was in the anterior wall. Death resulted. In a seventh case, occurring in a girl of 19, 6 hours elapsed between perforation and operation. The perforation was on the anterior wall. The patient recovered. In an eighth case, occurring in a girl of 18, operation 28 hours after perforation. The perforation was in the greater curvature. The peritoneal cavity was wiped dry, no drainage was employed. Recovery resulted. In a ninth case, a patient of 26 was operated upon 21 hours after perforation which was located in the pylorus. The peritoneal cavity was sponged, no drainage was employed. Recovery resulted. In a tenth case occurring in a patient of 18, 7½ hours elapsed between perforation and operation. The perforation was situated in the posterior wall near the lesser curvature. The peritoneal cavity was treated as in a previous case and recovery resulted. In an eleventh case occurring in a patient of 27, 7 hours elapsed between perforation and operation. The ulcer was situated at the anterior part of the cardiac end of the stomach and the peritoneal cavity was flushed and drained and recovery resulted. In all of the cases the edges of the ulcer were not excised, but the opening was closed by a double row of Lembert catgut sutures and omentum was laid over the line of suture when possible. Hume believes that the treatment of the peritoneal cavity should depend upon the amount of extravasated stomach-contents and the general effusion. Thorough flushing he believes to be the best treatment, provided there is a large amount of stomach-contents and effusion in the peritoneal cavity. Sponging is preferable in case there is only limited and local extravasation. [M.B.T.]

7.—The case of a boy of 17 is reported, from whose forehead an anthrax pustule was excised successfully. No bacteriologic examination was made. [M.B.T.]

8.—Hepworth gives the history of a woman living in London, who consulted him for amenorrhea. He could find no physiologic or pathologic cause for it, and advised her to see him again after a 6 weeks' visit to the country, at which

time she returned to say that the menses were regular while in the country. After several repetitions of a similar experience, he has recommended her to leave London and take up her residence in the district in which she lived prior to her marriage. [W.K.]

10.—A man of 60 years of age had noticed a small pimple over the sixth rib just external to the apex of the heart 3 months previous to admission to the hospital. This pimple broke and discharged as the result of friction of his clothing. A lump then appeared at the situation of the pimple, which gradually grew to the size and shape of a hen's egg. It was firm at the periphery, soft and semi-fluctuating in the center; firmly adherent to the rib. The rib was cleared at a point $\frac{1}{2}$ inch beyond the limits of the tumor on each side and the one with the tumor was excised. In doing this the left **pleural cavity** and the **pericardium** were freely **opened**. The heart bulged from the opening and air entered the pleural cavity, causing collapse of the lung. The wound was closed with interrupted silkwormgut sutures. After the operation there was rise of temperature for several days and evidence of bronchitis. The dressings were blood-stained. There was considerable dyspnea and frothy expectoration. Gradual recovery followed and the patient left the hospital with the wound soundly healed. Pathologic examination showed the growth to be a periosteal spindle-celled sarcoma. [M.B.T.]

New York Medical Journal.

November 24, 1900. [Vol. lxxii, No. 21.]

1. Rational Physical Training for Women. GEORGE ALEXANDER SAXE.
2. The Etiology of Eczema, with Reference to Recent Views as to its Parasitic Origin. L. DUNCAN BULKLEY.
3. Postoperative Hemorrhage. A. H. CORDIER.
4. Spasmodic Wry-neck and its Treatment; Report of Two Cases with Recovery. WILLIAM M. LESZYNSKY.
5. The Pathology, Diagnosis, Special Prophylaxis, and Treatment of Tuberculosis of the Middle Ear. SEYMOUR OPPENHEIMER.

2.—After an exhaustive study of the **etiology of eczema**, Bulkley confesses that the real cause of the disease is not yet known. The most that has been shown in regard to parasitism is that some of the microorganisms that exist most abundantly on the skin cease to be saprophytic when that organ is diseased. [J.M.S.]

3.—Cordier in diagnosing **postoperative hemorrhage** finds the operative history a great aid. The symptoms of shock and those of hemorrhage are very similar and in suspected cases cutting a single stitch in the incision will tell. The surgery must be quick and decisive. Cases in which bleeding is expected, the tube (drainage) should be used. (It is not only a sentinel but has a direct hemostatic power, as blood will not coagulate quickly nor firmly in an air-tight peritoneal cavity.) Large quantities of normal salt-solution will save many patients and should be given by rectum and intravenously. Strychnin, belladonna, etc., will not control bleeding and the surgeon should do what his surgical conscience tells him is right. [W.S.N.]

4.—Leszynsky by prolonged rest in bed, massage, special exercise, and hypodermic injections of atropin into the affected muscle, has been able to cure **2 cases of spasmodic wry-neck**, and believes if routine treatment were adopted earlier, many cases would recover without surgical interference. He does not regard the disorder as analogous to the occupation-neuroses, but rather one of functional origin. The muscular hyperkinesis is apparently due to irregularity in the action of the cortical cerebral cells innervating the muscles of the neck. [W.S.N.]

5.—Oppenheimer believes the **diagnosis of tuberculosis of the middle ear** for syphilis, lupus, etc., can only be made by examining the discharge or a piece of tissue for bacilli. He divides them into 3 classes: (1) Tuberculosis of the middle ear in an apparently healthy person; (2) tuberculosis of the middle ear, secondary to it elsewhere; (3) general tuberculosis with a nontuberculous otorrhea. When the throat is the seat of disease, special **prophylactic** precaution should be taken to save the ears, as the eustachian tubes open up a very good avenue for infection. **Treatment**

consists in removing all diseased tissue, then applying some antiseptic powder like iodoform in conjunction with tonics. [W.S.N.]

Medical Record.

November 24, 1900. [Vol. 58, No. 21.]

1. Apparent Tumors of the Abdomen. MAX EINHORN.
2. Myasthenia Gravis, with Clinical Report of Case. SANGER BROWN.
3. Notes on Typhoid Fever, with a Report of 15 Cases. D. E. KEEFE.
4. The Value of Thermal Carbonated Saline Baths in Gynecology. S. W. BANDLER.
5. A Sample Method of Writing Prescriptions for Children. MAX HUHNER.
6. A Method for the Determination of Eye Defects in School Children, with a Report of 1717 Examinations. LOUIS C. DEANE.

1.—Einhorn first reviews the scanty literature on **apparent tumors of the abdomen**. In discussing the subject he does not include swellings caused by prolapse of any organ, but refers to the tumors which are found either directly in the epigastrium or in the right or left hypochondrium and are not in any sense neoplasms. He also excludes phantom tumors so far as this term applies to cases of localized meteorism. In cases which he describes there is found a resistance, or a mass discovered by palpation or even inspection, the mass having rather a smooth surface and frequently pulsating. The size is between that of a hen's egg and of a man's fist. Upon light percussion there is always dullness over the area of the mass. In 6,045 cases observed by Einhorn there were 42 instances of apparent tumor of the abdomen, 34 of these occurring in women. They are, therefore, not very frequent. He describes some characteristic cases, and then states that an apparent tumor may be produced by prolapse of the left lobe of the liver, by exposure and thickening of the abdominal aorta, by local hypertrophy of the abdominal muscles, or possibly by adhesions about the small curvature of the stomach. He has not had occasion to make an autopsy in any of these cases, as they usually do well under proper treatment, but he feels that there is no doubt of the correctness of the suggestions which he makes. The apparent tumor may be determined to be the left lobe of the liver if it is directly below the ensiform process, and if instead of liver-dullness above, where it should normally be, we find more or less resonance or tympany. That the mass felt is the aorta may be determined by discovering its vertically elongated shape and its strong pulsation. **Localized hypertrophies of the abdominal muscles** are determined by observing their superficial position, and the fact that they lie to one side of the linea alba, and usually give a horizontal resistance an inch or so in breadth by 2 or 3 inches in length, and have a flat almost smooth surface. Adhesions are difficult of diagnosis. Apparent tumors are distinguished from real tumors by their smooth surface, and the fact that they vary in distinctness from time to time. They are usually associated with a high degree of enteroptosis, and if malnutrition exists it has been present for a long time and is not actively progressive. The diagnosis is usually easy, but in some cases is exceedingly difficult, and it may be necessary to observe the case for a long period. Two points which he emphasizes in treatment are, to direct the attention of the patient away from the mass, and to give sufficient nourishment. [One cause of apparent tumor that is undoubtedly not very uncommon in cases of enteroptosis is palpable pancreas. D.L.E.]

2.—The case reported was that of a woman of 29 whose previous history was good excepting that she was of somewhat nervous temperament. Sixteen months before the report she had overtaxed herself, and found that very profound muscular exhaustion followed upon relatively slight exertion. Diplopia and ptosis soon became marked, her voice became nasal and articulation poor, the changes in the voice apparently being due largely to weariness of the tongue. There was some palpitation; the masticatory muscles tired readily, the mucous membrane of the mouth and nose were often uncomfortably dry, the hair and scalp were dry and she had lost much hair. There was no distinct mental

change, no confusion of ideas, and no evidences of ordinary neurasthenia. Voluntary motion was present, but the strength was much reduced. There was no muscular atrophy or disorder of sensation or evidences of hysteria. The examination of the eyes showed nothing but an astigmatism. The visual fields were not tested nor was any attempt made to exhaust the kneejerks by a repetition, and electric tests were not used. There was no incoordination. A description of the condition of **myasthenia gravis** is given, mentioning as the chief characteristics the fact that some severe disease has often preceded, that the affection is of gradual onset, that one of the earliest signs is weakness of some of the muscles supplied by cranial nerves; that the most characteristic symptom is profound exhaustion upon slight exercise, the muscular symptoms being bilateral. Ptosis and diplopia are very common early signs, there is often a feeling of aching and stiffness in the tongue after eating or speaking, the voice becomes nasal, and there is inability to support the head. A very characteristic symptom is that the muscles react normally to electricity but are readily exhausted by the faradic current; after rest they respond again. Atrophy is not present, there is no disturbance of the sphincters, and no incoordination. Brown believes that the disease is produced by a toxin developed in the body. The prognosis is bad, 23 of 60 cases referred to having ended fatally, with an average duration of 1½ years. Death is commonly caused by paralysis of the respiratory muscles. One case has been reported which ended fatally in 4 months. The treatment suggested by Brown is the hypodermic use of strychnia nitrate. [D.L.E.]

4.—Bandler considers **hydrotherapy a powerful curative method**, since thermal and mechanical processes are the normal stimuli which arouse, strengthen and regulate our organic functions in a physiologic way. A warm full bath causes an increase in the rapidity of the pulse, which persists after the bath. Such a bath can through weakening of the venous tonus cause an increased resistance in the minor circulation, whereby, in spite of increased work on the part of the heart, no bettering of the circulation results. This is a weakening influence, since the heart is sufficient only when it is able to force the blood to the most distant organs, in whose capillaries alone tissue metabolism takes place. A warm bath causes usually no increased demand for nutrition and exerts no stimulating effect on the central nervous system. If carbonated water is used, the action of CO₂ is to produce a feeling of warmth, and a dilation of the capillaries of the skin and of the peripheral vessels. After a bath the CO₂ causes a feeling of exhilaration, provided the amount of CO₂ and the duration of the bath be not too great. The action of thermal carbonated saline baths brings about the following results: (1) Slowing of the pulse and respiration; (2) increased oxidation; (3) increased diuresis; (4) a saving of phosphoric acid; (5) rest and protection for the heart; (6) regulation of the circulation and a subsequent strengthening of the heart through increased tonus of the entire circulatory system, and through the removal of congestions; (7) an increase in the number of red blood-cells; (8) a building up of healthy tissue; (9) an increased demand for nutrition; (10) a stimulation of the entire nervous system, especially the trophic centers; (11) the removal of congestion; (12) the resorption of exudates. Bandler believes that the results obtained justify him in claiming for the carbonated saline baths a power of resorption too valuable to be underestimated, a method which at the time benefits the general state to a decided degree, and which acts by increasing the natural and effective functions of the body, and in tuning up those pelvic structures which depend so decidedly for their elasticity and blood-supply on the condition of the body generally. [W.K.]

Medical News.

November 24, 1900. [Vol. lxxvii, No. 21.]

1. Edema Bullosum Vesicæ. FREDERIC BIERHOF.
2. The Operative Treatment of Ugly Ears. JOHN B. ROBERTS.
3. The Hydriatic Treatment of Tuberculosis. J. H. KELLOGG.
4. Absorption, Motility, and Digestive Power of the Stomach. A. E. AUSTIN.
5. The Nature Treatment of Tuberculosis. R. O. BEARD.

1.—Bierhoff cannot ascribe any diagnostic value to

edema bullosum vesicæ except that it is a sign of some inflammation around the bladder that has involved the wall of that organ. It appears as a number of clear vesicles varying in size from a small seed to a pea, with small, white particles floating between them, probably pieces of those that have ruptured, and present the appearance of an hydatid mole. A condition resembling this is cystitis papillomatosa, but they are vascular loops and are smaller than the vesicles. [W.S.N.]

2.—Roberts thinks that more **ugly ears** would be brought within the physiologic limit by persons possessing them, if the character of the operation was more generally known. [W.S.N.]

3.—Kellogg, in the third instalment of his paper on the **treatment of tuberculosis with water**, gives the notes of 8 cases, all of which were either cured, or so greatly improved that the treatment could be regarded as brilliantly successful. One of these patients was in a late stage of the disease, and had a cavity in the lower portion of the left lung. He summarizes the essential features of the treatment as follows: the graduation of the general and local applications to the skin, in regard to intensity, duration and frequency, always keeping within the limits of the patient's ability to react; and the application of hot and cold compresses for the relief of pain and cough, and the strengthening of the tissues. He thinks a dry, elevated climate is an exceedingly important adjunct to the hydriatic treatment. [J.S.]

4.—Austin, believing that the **residual albumose peptone** in the stomach-contents may be taken as an evidence of the **absorptive powers** of that organ, has undertaken to devise a method for estimating this albumose peptone in the stomach-contents removed 1 hour after a test-meal. The amount of albumen in the test meal is not stated, but it has been given in a previous article. The results show that when .6 gm. or more remain in the stomach-contents, absorption is deficient. A somewhat similar method is employed for testing the digestive power of the stomach, that is, the albumose peptone is estimated in the stomach-contents, a definite amount of albumen added, and after a sufficient interval, the amount of albumose peptone again estimated. The difference between the two results represents the amount of digestion that has taken place in the interval. The calculation is expressed in terms of the number of parts per 1,000 of its volume of albumose peptone. It varies apparently, in normal persons, from 1 to 7 parts per m. Austin believes that no examination of the stomach is complete without testing its absorptive power, and that the method he suggests is as good as any other. Retardation does not occur in cases of gastric insufficiency without dilation. The digestive power should always be tested. [J.S.]

5.—Beard believes that as the essential elements in the **open-air cure of tuberculosis** are pureness and dryness of the atmosphere, and not any particular altitude, the State should set apart large tracts of land suitable for the purpose of sanatoria for consumptives. He also thinks that much would be gained by the development of suburban life, in order that the segregation now taking place in large cities might be avoided. Another important feature in the treatment of this disease is rest. [J.S.]

Boston Medical and Surgical Journal.

November 22, 1900. [Vol. cxliii, No. 21.]

1. Diphtheria Bacilli in Healthy Throats and Noses, with Report of Cases. FRANCIS P. DENNY.
2. Chronic Diffuse Interstitial Nephritis. CHARLES J. ENEBUSKE.
3. A New Spinal Jacket. EDWARD A. TRACY.
4. Some Observations on Renal Casts. WALTER E. TOBIE.

1.—After a study of the frequency of the occurrence of **diphtheria bacilli in the noses and throats of healthy individuals** Denny concludes: (1) That diphtheria bacilli are seldom found in the throats of those who have not been exposed to diphtheria; (2) that bacilli are more frequently found in those who have been exposed, especially in persons living under poor hygienic conditions or in institutions; (3) that the one condition of institution life that favors the growth of the bacilli in healthy throats is

the living together of a large number of persons in a limited air-space; (4) that healthy individuals with virulent bacilli in their throats can spread the disease. They are just as dangerous as mild or convalescent cases of diphtheria, and ought, therefore, to be detected and isolated; (5) and that cultures should be made among those who have been exposed to diphtheria: (a) by physicians among the members of the family who have been exposed, (b) by inspectors in the schools, (c) by health-officers under any circumstances when they think the disease is being or may be spread by such individuals. [J.M.S.]

3.—Tracy recommends wood-pulp as a material for **spinal jackets** instead of plaster of paris. It is lighter than plaster; cleanly, rigid and durable. He has employed this material with satisfactory results for 5 years. [M.B.T.]

4.—Out of 200 specimens of urine, Tobie found that 27 contained **casts** without albumin. He found this condition common in cases of carcinoma. [J.M.S.]

Journal of the American Medical Association.

November 24, 1900. [Vol. xxxv, No. 20.]

1. Appendicitis. JOSEPH PRICE.
2. Post-Operative Treatment of Abdominal Section in Women. WALTER B. CHASE.
3. The Value of Blood Examination for Diagnostic Purposes. JULIAN W. BRANDEIS.
4. Differential Diagnosis Between Abdominal Typhoid and Appendicitis by Means of Iodin Reaction. SIEGFRIED WEISS.
5. Modes of Infection of the Maxillary Sinus. M. H. CRYER.
6. Syphilis of the Upper Air-Tract. GEORGE L. RICHARDS.
7. A Plea for Greater Simplicity in Therapeutics. LOUIS FAUGERES BISHOP.
8. Therapeutic Progress. J. TRACY MELVIN.
9. The Physician as a Scientist. N. SENN.
10. The Danger of Spinal Anesthesia. JOHN V. SHOEMAKER.
11. The Treatment of Adenoid Vegetations of the Nasopharynx. OTTO T. FREER.
12. Tuberculosis of the Testicle. JOHN B. MURPHY.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1280.

2.—" " " " " 1281.

3.—" " " " " 1284.

4.—" " " " " 1284.

5.—" " " " " 1296.

6.—" " " " " 1296.

7.—" " " " " 1290.

8.—" " " " " 1290.

10.—Shoemaker calls attention to the **danger of spinal injections of cocain** to produce **anesthesia**, it being a treacherous and unreliable drug, as it often produces most alarming and distressing symptoms when given in small doses hypodermically. The punctures are not easily made and often require 5 or 6 trials. [W.S.N.]

11.—Freer finds the medical **treatment of adenoid vegetations of the nasopharynx** ineffective and believes the proper method is to remove them with a ring-knife under a general anesthetic, and not in the haphazard method adopted by many. Future deafness and tuberculosis often depend upon the neglect of these lymphoid enlargements in childhood. [W.S.N.]

Domestic Animals in the Causation of Typhoid Fever.—Stokes and Fulton (*Maryland Medical Journal*, November, 1900) as a result of their experiments upon a number of animals, make the following statement: In our experiments we endeavored to produce infection through the natural route and by natural means by simply allowing the various animals to take in very large quantities of typhoid bacilli in their daily food. Although at least 500 colonies from the feces were carefully tested, we were not able to demonstrate the presence of any typhoid bacilli in 3 chickens, 2 white rats, 2 rabbits, 2 guineapigs, 1 calf, and 3 pigs. Although we have not employed a large number of animals, we feel justified in expressing the opinion that the typhoid bacillus cannot, as a rule, maintain its struggle for existence in the intestines of the domestic animals. We therefore conclude that the dejecta of animals play no considerable part in the distribution of typhoid fever. [A.B.C.]

Practical Therapeutics.

Under the charge of

A. A. STEVENS, A.M., M.D.

High Altitudes in Phthisis.—According to Van Pacht (*St. Petersburg med. Woch.* and quoted by the *Medical Review*, October, 1900), high altitudes are contraindicated when there is great anemia. With increasing elevation above sea-level and diminishing atmospheric pressure the blood becomes more concentrated. Whether the increase in the number of red corpuscles contained in a cm. is due simply to this concentration, or whether there is also an increased formation of red blood-corpuscles, is at present uncertain. If the blood is very watery, and then becomes so concentrated that there are as many as 6 to 7 million corpuscles in the cm., the total quantity of blood is reduced to a third or a half of its volume. The patients consequently deteriorate in health. When there is only moderate anemia the concentration of the blood improves nutrition, and is beneficial. The secretion of the lungs and bronchi is diminished, and, therefore, patients with copious expectoration are benefited. With diminished expectoration there is less cough, the lungs are more at rest, and the general condition improves. When, on the other hand, there is dry catarrh, or ulceration of the larynx, the desiccative action of rarefied air tends rather to increase the cough. Such patients do better in a moist climate. In pleurisy, with effusion, the fluid disappears at high altitudes, both by concentration and absorption, more rapidly than in low lying districts. In "dry" pleurisy, however, the deeper or quicker respirations, necessary at high altitudes, act injuriously by increasing the friction between the pleural surfaces. The deeper respiration may cause collapsed portions of the lungs to expand, and often acts in this way more uniformly than is possible in any form of respiratory exercises. But if acute inflammation is present, deeper inspirations may prove a source of danger; the greater pulmonary expansion causes increased movements of the inflamed parts and increases the inflammation. There is also more danger of infectious particles being aspirated into still healthy parts. These are probably the reasons why slight pyrexia often becomes high fever when a patient suddenly exchanges the plains for the mountains; it is, therefore, advisable that patients with pyrexia should travel to high altitudes by slow and easy stages.

Vomiting from Cough in Pulmonary Tuberculosis.—Mathieu (*Rev. de Thérap. Méd. et Chirurg.*, August 1, 1900) makes the following suggestions for the relief of vomiting induced by paroxysms of cough after meals. Small pieces of ice swallowed immediately after the meal often prove successful. In other cases chloroform water with an equal quantity of water to prevent burning of the fauces (4 to 8 drams of the mixture), taken 4 or 5 minutes after meals, will often serve to check the cough. The author, however, has found bromoform water less irritating than chloroform water and recommends a combination of the former with sirup of codein. Menthol is also efficient and may be given in doses of 2 or 3 grains in the form of an emulsion. When all other remedies fail morphin and cocain in equal quantities should be given in distilled water.

The Treatment of Phthisis.—Rea (*Pennsylvania Medical Journal*, 1900) believes that the combination of pulmonary gymnastics with intrapulmonary medication by nebulization under high pressure is a plausible and successful means of fighting this disease. A combination of creasote terebene, oil of eucalyptus, menthol, and a liquid form of petroleum is recommended. This is advocated on account of the belief that such drugs, particularly creasote, used in this manner lessen the fertility of the soil by improving the catarrhal condition. Of all internal remedies that have been advocated, probably creasote has stood the test of time best. It improves appetite, lessens the bronchial inflammation, decreases autoinfection from the bowels, lessens the fever, etc. Recently, however, he has administered ichthyol almost exclusively in place of creasote, and believes it served the same purpose just as well, and yet did not seem to be so irritating to the stomach. Iodoform inunctions as recommended by Flick he has used and believes that they have virtue. The deficient innervation and impaired circulation must also be carefully looked after.

The Intensive Use of Guaiacol in Pulmonary Tuberculosis.—Weill and Diamantberger (*British Medical Journal*, October 13, 1900) presented a communication on this subject in the section of Therapeutics at the recent International Congress of Medicine. They claim to have been the first in France to use guaiacol hypodermically. For the last 11 years they have employed the method and they have now a record of more than 500 cases treated and considerably ameliorated by the systematic use of guaiacol. The failures which have been recorded by other practitioners depend on (1) the inferior and variable quality of the liquid, so-called commercial guaiacol. The authors use the synthetic crystallized guaiacol, which may be given in daily doses of 45 and even 60 grains without fear of intoxication; (2) the very small quantity used. The authors use the following formula:

R.—Crystallized guaiacol..... } of each 2½ drams.
Sterilized oil of sweet almonds }
Cocain hydrochlorate 3 grains.

This is mixed with an equal quantity of distilled water and kept in a dark bottle. A daily hypodermic or intramuscular injection of 16 minims is given in the gluteal region. Besides the injections they recommend: Painting the chest-walls with the same solution every night over a space of 8 to 10 square centimeters; enemas of 3 ounces of tepid milk, to which 40 or 50 drops of the same solution have been added; and the following pills (2 every 3 or 4 hours):

—Crystallized guaiacol.....1 grain.
Crystallized terpin.....1½ grains.
Benzoic acid.....2 grains.
Extract of belladonna } of each.....⅞ grain.
Extract of hyoscyamus }

To make one pill.

The "intensive and daily guaiacolization," combined with dietetic and hygienic treatment, should be continued for several months, with an interruption of 8 or 10 days every 3 weeks. The symptoms that are most beneficially influenced by the treatment are: expectoration, cough, hemoptysis, fever, night-sweats, diarrhea, and debility.

Cacodylate of Iron in Pulmonary Tuberculosis.

—Sandoz (*Thèse de Paris*, 1900) concludes that cacodylate of iron administered hypodermically is not toxic. When exhibited by the mouth, however, it imparts a garlicky odor to the breath, and produces toxic symptoms owing to its reduction in the intestinal canal. Rectal injections produce effects intermediate between those produced by its administration subcutaneously and by the mouth. In chronic tuberculosis the cacodylate of iron usually causes rapid improvement in the appetite, an increase in the body-weight, a disappearance of the night-sweats, a lowering of temperature, and an amelioration of the general condition. The dose for hypodermic use is ½ to 1½ grains.

Diarrhea of Phthisis.—Nestor Tirard (*Medical Treatment of Diseases and Symptoms*, 1900): I have for a long time been in the habit of giving alum for the control of the diarrhea of phthisis, and I give it in 5-grain doses, repeated 3 or 4 times during the day, increasing the dose little by little, if the symptom continues in spite of this treatment. When the diarrhea is dependent upon enteritis, alum is frequently of great service, and even in cases associated with ulceration, the number of actions daily is often reduced during its employment. As a rule, this remedy is well tolerated, provided its administration is commenced gradually, and the dose increased only as toleration is established; but I have known it to produce vomiting and nausea when used for children in injudiciously large doses. Other astringents are often used, as, for example, copper sulfate, which may be given in doses of ¼ to 2 grains in pill. Lead acetate is also frequently of service in this condition, and can be given in the pill of lead and opium. Logwood is often used, and it may be given with the chalk-mixture of the pharmacopeia. The effect of these remedies is often increased by the simultaneous administration of some form of stimulant. In children I have often seen diarrhea arrested by the *mistura vini Gallici* of the British Pharmacopeia, which also appears to counteract the exhaustion which so commonly results from this symptom. The composition of this mixture is as follows:

R.—Brandy 4 ounces.
Cinnamon water.....4 ounces.
Refined sugar.....½ ounce.
Two yolks of eggs

Food in Tuberculosis.—Mitchell Bruce (*Treatment in Practical Medicine*, 1900) writes: "When anorexia, discomfort, vomiting, and the other evidences of indigestion, such as depression, languor, headache, constipation and turbid urine, make their appearance in phthisis, they are too often directly referred to the tuberculosis or to the fever. The patient is ordered milk, essences, and every description of patented and advertised foods and 'wines;' oil, tonics, malt, and the latest specific for tuberculosis are given even more freely than before. The exercise of a little common sense ought to have prevented all this. The first step to take in such a case is to prescribe a mercurial purge, followed by a saline. The second step is to order a diet of light solids, and specially to supervise the breakfast and supper menus, and to cut off stimulants and all manufactured materials, excepting a good peptonized cereal food at the evening meal. Thirdly, the times and manner of taking food must be revised. Excessive frequency and excessive amount must be temporarily avoided. If sickness be prominent and persistent, bodily rest is indicated; and the patient should lie down for half an hour before his mid-day meal and for at least two hours after it. Sometimes, indeed, obstinate cough and vomiting have to be met by confining the patient to a couch and bringing him his meals, which he takes in the reclining posture. Counterirritation is often successful in the distressing cases where feeding provokes paroxysmal cough, ending in vomiting and loss of the entire meal, a fly-blister to the epigastrium, application to the pharynx or larynx, and iodine paint over a large secreting cavity are different measures called for different conditions. The best internal remedy is a combination of sodium bicarbonate, sal volatile, diluted prussic acid, and diluted infusion of a vegetable bitter stomachic, given shortly before meals to relieve the mucous catarrh of the stomach and to promote the appetite and secretion of gastric juice. Night feeding in active phthisis is indicated by several conditions: that the night is too long for a patient with advancing tuberculosis to go unfed, patients with pneumonia being fed every two hours; and that broken sleep produces restlessness, increase of cough, sweats and exhaustion."

The Value of Antiseptic Nebulæ in Pulmonary Tuberculosis.—Thomas (*Chicago Medical Recorder*, October, 1900) draws attention to the value of antiseptic nebulæ—formalin (6%), eucalyptol, oil of cinnamon, etc.—in the treatment of pulmonary tuberculosis, and draws the following conclusions: 1. The respiratory capacity, so limited in tuberculous patients, is increased. 2. The catarrhal condition of the air-passages is diminished, thereby aiding a better introduction of air into the lungs. 3. The pulmonary passages are kept in an aseptic condition and the danger of new bacillary invasion minimized. 4. The marked relief of cough and dyspnea. 5. The alimentary tract is undisturbed by drugs, giving ample opportunity for the increase of vital resistance by suitable diet and constitutional treatment.

Prophylaxis against Tuberculosis.—Abbott (*Hygiene of Transmissible Diseases*, 1899), after dealing with the treatment of sputa, and recommending the paper "Japanese handkerchief" for use when the patient is away from his apartments, continues as follows: "Bed-clothing or night-clothing soiled with tuberculous sputum should be at once removed and scalded. The consumptive should be provided with his own eating utensils, napkins, etc., and these should be used by him alone, and should be scalded immediately after use. The refuse from his meals should also be scalded, never used by others. The living- and the bed-room of the patient should be kept scrupulously clean, and should be frequently aired. Under no circumstance should spitting about the room be permitted. 'Dusting' should not be practised, but when necessary all objects should be wiped with a cloth moistened in 1 to 1000 corrosive sublimate or 3% carbolic acid solution. The importance of this precaution is conspicuously illustrated in Cornet's investigations by the marked difference between the dusts from medical wards of hospitals, where there is more or less laxity concerning the importance of cleanliness as a factor in asepsis, and the dusts from surgical wards, where this point is kept constantly in mind. Kissing, caressing, shaking hands, and other modes of intimate association should not be indulged in by the consumptive. The hands should be thoroughly washed after manipulating tuberculous patients."

Original Articles.

THE REGISTRATION OF TUBERCULOSIS.¹

By HERMANN M. BIGGS, M.D.

of New York.

Pathologist and Director of the Bacteriological Laboratories, Department of Health, New York City; Professor of Therapeutics and Clinical Medicine, and Adjunct Professor of the Practice of Medicine, University and Bellevue Hospital Medical College.

I DESIRE to express my sincere appreciation of the honor conferred by the invitation tendered by the trustees of the Philadelphia County Medical Society to address the Society on "The Registration of Tuberculosis," and for this I wish to render my grateful acknowledgment. I have accepted the invitation more readily because for many years I have been greatly interested in the sanitary surveillance of tuberculosis, and it has been my great privilege to assist somewhat in advancing the measures adopted by the Department of Health of New York City in dealing with this disease.

There is no problem which confronts the sanitary authorities of the large municipalities at the present time exceeding in its importance and magnitude that presented by the tuberculous diseases, nor is there any other sanitary proposal which offers promise of such large returns in a diminishing morbidity and mortality-rate as one which provides successful measures for the prevention of tuberculosis.

This is not a new problem. The tuberculous diseases are not more prevalent than formerly; on the contrary, there has been a steady and very material decline in the death-rate caused by them; but only in recent years have the sanitary authorities and the medical profession begun to have some realization of the great possibilities in the way of the restriction of this disease. A comprehension of the full meaning of the discovery of Koch on the prevention of tuberculosis has very slowly found its way into the minds of the medical profession, and even now after 18 years a large proportion of the profession have not grasped its vast significance on the future happiness and prosperity of the human race. Statistics showing the great prevalence of this disease have been quoted frequently enough to have almost lost their meaning, and the people, the legislators, the sanitary authorities and even the medical profession have become indifferent to the vast expenditure in suffering and death unnecessarily paid by the human race to this evil. Only limited and ineffectual efforts are being made in its suppression. We still view with comparative indifference the ravages of a disease which causes from $\frac{1}{4}$ to $\frac{1}{3}$ of the suffering and death at the best period of life—15 to 65—and this, too, when the evidence at command should be, it seems to me, conclusive to every reasonable mind, that it can be largely prevented at a comparatively small cost in sacrifice, labor and money. I make this statement with a full realization of its meaning, and after a familiarity with the sanitary problems involved, gained by an active participation in their study in a great city for a period of more than 12 years.

In 1888, through my intercession, the Board of Health of New York City passed a resolution asking for a report from the consulting pathologist on the causation and prevention of tuberculosis. I would add today but one measure to those advocated at that time, namely

the compulsory notification of this disease. But unfortunately the position recommended then was not reached by sanitary achievement until 10 years later.

The practical difficulties in the way of the notification of tuberculosis are undoubtedly considerable and sanitary authorities generally in Europe with characteristic conservatism have pronounced against it. Sir Richard Thorne, medical officer to the local Government Board of Great Britain, in the Harben lectures, 1898, on "The Administrative Control of Tuberculosis," after a careful consideration of the various problems presented under the English law relating to infectious diseases, pronounces definitely against it, on the ground that the hardships to the individual which would follow notification and the enforcement of proper regulations would be so great as to render this measure unjustifiable.

He says: "The justification for the demand that phthisis shall be compulsorily notified lies in the fact that the person in question is suffering from a dangerous infectious disease, communicable from person to person; hence the question is already arising, whether it is right to allow such a person to be in constant association with hitherto healthy people by day, and still more so by night. It is quite certain that the need for adopting special precautions as to the sputa, etc., would lead to a large number of such persons being quietly dismissed from their posts. If such persons need fresh employment they will certainly take care to avoid directing attention to their malady by the adoption of the precautions urged on them by the interests of the public, and it is equally certain that they would to the utmost avoid consulting another medical practitioner, because their disease would again be known and the same consequences that followed the first notification might again be brought about. Without following out such cases as these for several years and to the bitter end, it will suffice for me to say (adds Thorne) that in my opinion a large amount of harm would result if phthisis were included in the list of notifiable diseases under the English act. The certain knowledge that notification and the intervention of public officers would ensue would prevent resort to medical advice in the early stages of the disease when its progress can best be arrested."

He says: "I believe that the attempt on the part of the phthisical persons to avoid notification would in itself do a great amount of harm, not only to the individuals already suffering, but to the healthy with whom they are in daily association. The English law as to the compulsory notification of contagious diseases was never intended to bring under a system of public supervision even a single individual, who during a long series of years would have to follow his or her usual avocation. This supervision might in a majority of cases be carried out with every discretion and every effort to avoid publicity, but if it were carried out under the present system of sanitary organization or under the present law it could not but run the risk of leading to hardship beyond that which the public has a right to expect others to suffer on their behalf, and indirectly this would, in the end, defeat the primary object held in view."

It may be said in reply to this, that there are several implied assumptions, which do not appear to be justified by the facts. In the first place, it is assumed that notification will give a publicity which did not previously exist. This assumption is certainly untrue, under the

¹ Read before the Philadelphia County Medical Society, November 14, 1900.

regulations adopted by the Department of Health of New York. There is no reason why notification, followed by suitable instructions to the patients, should involve such publicity. In the second place, with the increasing knowledge of the nature of tuberculosis among the laity, it is unreasonable to believe that a person suffering with cough and expectoration and showing the ordinary signs of advancing tuberculous disease would not be recognized by his associates as a consumptive, and he might, therefore, under any conditions be subjected to the same hardships which Thorne feels must necessarily follow notification. On the other hand,

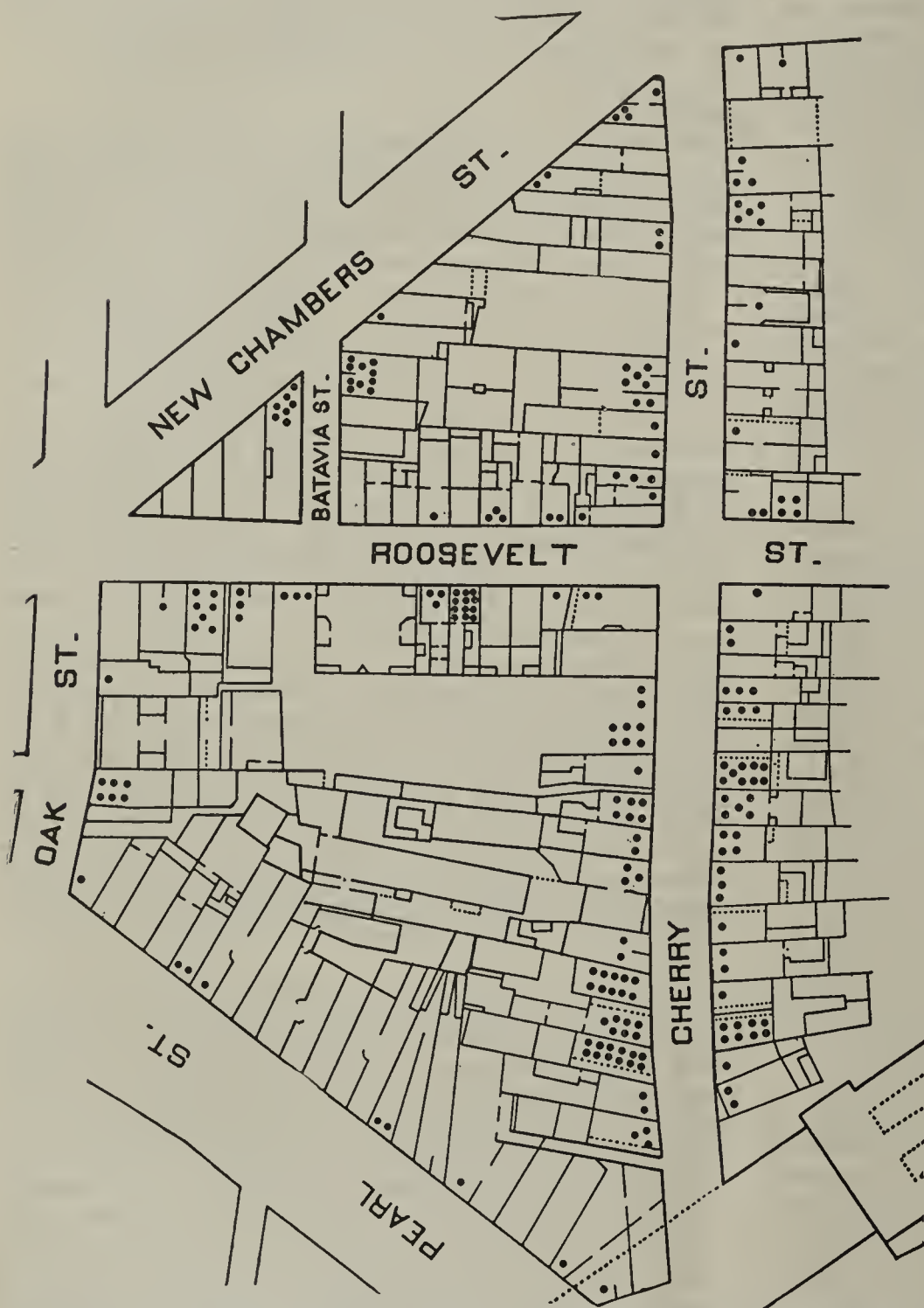
symptoms as of no consequence and to postpone from week to week and month to month consulting a medical adviser, because they believe the disease is of little importance. It is incomprehensible to me how a sanitary officer can assume the position that a tuberculous patient should be left in a general workroom carelessly disposing of his expectoration and thus exposing large numbers of others to possible infection, because it is believed that the observance of proper sanitary precautions in regard to the expectoration will be followed by a recognition on the part of his fellow workmen and his employer of the tuberculous nature of his affection and

this may result in his dismissal. This is in substance an encouragement to consumptives to neglect the required sanitary precautions, in order that no suspicion may arise as to the nature of their disease; and it involves the exposure of considerable numbers of persons, for several years perhaps, to tuberculous infection, in order that the dreaded day may be somewhat postponed for the individual. This attitude on the part of the consumptive, and the participation in it on the part of the medical adviser, to say nothing of the sanitary authorities, seems to me most reprehensible.

I believe that measures differing essentially in their nature from those which are observed in the contagious diseases should be observed in relation to tuberculosis. The facts do not warrant our classing tuberculosis with smallpox, measles, diphtheria, and scarlet fever. It is a dangerous, infectious, communicable disease, but differs in many important particulars from these highly contagious affections. But the fact that the disease requires different treatment from the contagious affections does not justify us in neglecting those things which are obviously necessary for the protection of the public health. If the sanitary authorities in England or elsewhere have not the power under the present statutes to place tuberculosis in a separate class as Thorne seems to intimate and to deal with it in a different and proper way, then certainly some attempt should be made to obtain such power through legislation. In New York State no such additional power is required, and I doubt whether it is in any one of the United States. It should be said, however, that some of the municipal sanitary authorities of Great Britain have asked for power from the local government board to institute special measures in relation to tuberculosis, and in several cities, as Manchester and Brighton, a system of voluntary notification, with measures for inspection, disinfection, etc., have been adopted; and many of

the municipal sanitary authorities of Great Britain have urgently besought the local government board to place tuberculosis in the class of notifiable diseases.

It should be said that in France also the attitude of the medical profession towards tuberculosis is much the same as that in Great Britain. A special commission of the Academy of Medicine in Paris in May, 1898, reported against such a procedure. Two principal reasons were advanced against the proposition; the first points



Reproduced from the sectional maps of New York City on which are plotted the reported cases and deaths from pulmonary tuberculosis from the beginning of the work in 1894 to January 1, 1899. Each case reported and each death is indicated by a dot (duplicates excluded). The lots in which no dots are seen are chiefly warehouses, and are not occupied at all as dwellings.

as the knowledge of the exact nature of tuberculosis becomes thoroughly disseminated among the people, they would soon understand that a consumptive who habitually disposes of his sputum with care is not a source of danger. The contention of Thorne, that these patients would recognize early the nature of their disease and avoid medical advice is unreasonable, because the experience of every practitioner is that the tendency of consumptives is always to regard the cough and

out that notification involves the divulging of a medical secret which would be harmful to the patient (this also equally applies to the contagious diseases), and insists that as the public does not regard tuberculosis as in the class with diphtheria or smallpox, and as it is considered by them as hereditary, the public would not accept such a legal enactment without protest and resistance. The second is regarded as more important, and is that in a family unwilling to follow instructions, restrictions would be impossible, as they would necessitate an almost continuous intervention on the part of the sanitary officers for months and years. The only efficient alternative in such cases, it is pointed out, would be the consignment of the consumptive to a hospital—a practice followed in Norway. This, it seems to me, is the proper course. The commission concludes that compulsory notification must not be dreamt of—at least immediately.

In considering the advisability or the sanitary necessity for the compulsory notification of tuberculosis, certain facts in relation to the disease, perfectly well known and much insisted on in all recent writings on this subject, must be repeated. These may be placed seriatim as follows:

1. Tuberculosis is an infectious and communicable disease produced by the tubercle-bacillus.

2. There is no satisfactory proof that the tubercle-bacillus multiplies outside of the living body under natural conditions; it follows as a necessary sequence that every case of tuberculosis is produced by the reception of the same *identical tubercle-bacilli* which have been thrown off by some other human being or by some animal suffering with tuberculosis.

3. The tubercle-bacilli producing an infection are generally obtained from dust contained in the air breathed, or in the drink or food taken.

4. The tubercle-bacilli thrown off by a person or animal suffering from the disease are contained solely in the discharges from the tuberculous tissues, and it should be possible to absolutely control their dissemination.

5. It follows therefore that tuberculosis is preventable, and (in the early stages) clinical experience shows that it is curable.

6. It is by far the most fatal disease with which we have to deal, and from both an economic and sanitary standpoint is of vastly greater importance than any other infectious disease, both because of the number of deaths it causes, and the suffering it produces. Its importance is further enhanced because it occurs to the greatest extent in the working period of life, and its victims are cut off at the time of their greatest usefulness.

7. Its prevention requires the exercise of enlightened cleanliness on the part of its victims, which presupposes education, suitable hospital accommodations for the care of advanced cases among the poor, and the efficient disinfection of dwellings.

These ends can no more be attained in tuberculosis without registration than they can be in the contagious diseases.

It seems to me that compulsory notification is a necessary preliminary to other measures and that little further advance can be made without it, or at most the advance must be exceedingly slow.

I believe that the arguments which have been urged



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against compulsory notification are usually based on improper or erroneous conceptions, and are not valid objections to the adoption of this measure.

It has been urged against it:

1. That the disease is not highly contagious, as are those diseases in which notification is required; that it is not of limited duration, and that long and constant exposure is required to produce infection. It may be said in reply, simply, that the evidence is conclusive, that tuberculosis is produced by the tubercle-bacillus and that every case is the result of infection by the same tubercle-bacilli, which have been thrown off by some other being suffering from tuberculosis. I cannot see

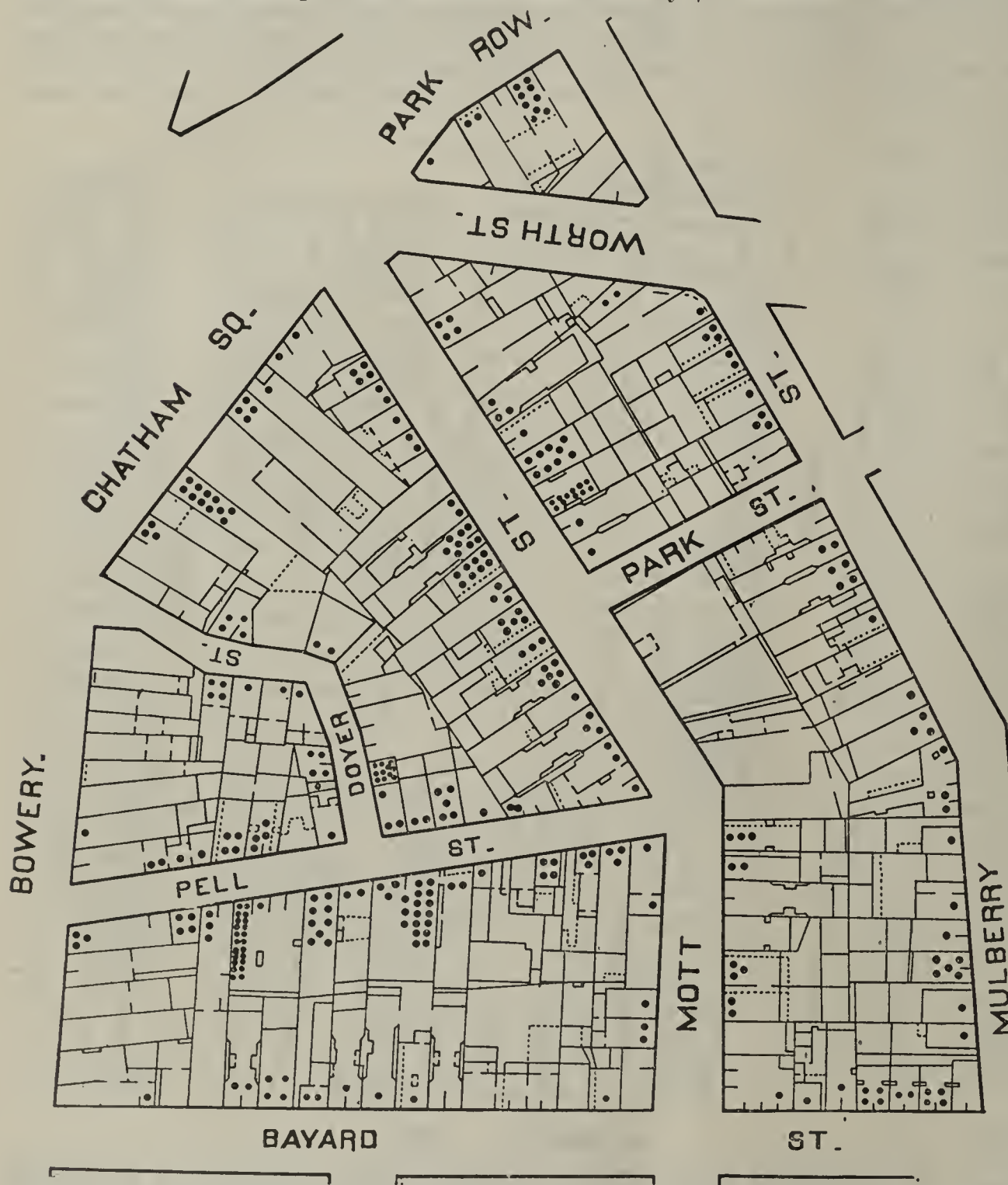
that any other answer is required, for it matters not how indirect the infection is, or how difficult it may be to trace it, or how slow and insidious may be its development, or how prolonged the exposure required, the one fact remains that tuberculosis is the result of such infection, and if the arguments quoted have any effect it is to emphasize the importance of the adoption of proper sanitary measures, including registration, because the disease on account of these peculiarities is far more easily

sources of infection will not produce more cases than 500; no one will insist that sanitary precautions are useless and are to be abandoned because they are not absolutely reliable, and because they are simply means by which we diminish to a greater or less degree the chances; all sanitary measures are subject to limitations in greater or less degree; and so in tuberculosis, while no one would assume that in a single month or in a single year all of the thousands and tens of thousands of sources of

infection in a great city can be removed, yet if one-quarter or one-third can be eradicated there will be a proportionate gain, which will be increased each succeeding year. To individualize still more, it is certain that if an advanced case of pulmonary tuberculosis is taken away from his family in a tenement house, or is taught to carefully destroy his sputum, the chances of the infection of members of the family or of the inmates of the house will be diminished, and with each source of infection thus removed a definite gain will surely follow.

3. It has been strongly urged that in many instances it is undesirable that the patient should know that he is the subject of tuberculosis, and that this knowledge will affect his well being.

This view, although earnestly held by many physicians, I believe is usually erroneous. In a considerable experience in dealing with consumptives during the last 15 years, I have become convinced that by far the best course to pursue in most cases when an individual is found to be suffering from tuberculosis is to frankly inform him of the fact. The information may be a shock and a source of mental suffering and anxiety, but the ultimate effect will, I believe, be in the patient's interest, for the patient will then observe the precautions which



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prevented than the purely contagious affections.

2. It has been urged that tuberculosis is so widely distributed—"so ubiquitous"—that any attempt at its prevention by the means advocated should not be considered. This argument again is one of the strongest seasons which could be urged for action. The proposition that any attempt to cope with this question should be abandoned because the problem is so large is certainly not worthy of consideration. It surely cannot be seriously urged that we shall give up active preventive measures because an immediate completely successful result cannot be obtained. No one will maintain that a 1,000

are required for his own recovery and for the prevention of infection in others and reinfection in himself. He will further consent to the adoption of such radical changes in his life and work, if these be possible, as are necessary for increasing his chances of recovery. I believe that the actual knowledge of the condition existing is less harmful than the apprehension and dread which these patients often have before they possess the knowledge. How frequently have I heard patients complain most bitterly of their physicians, for not having informed them of the nature of their disease. In any event it certainly will not be maintained that to

save the individual some suffering, it is justifiable that all who come in contact with him for months or for a period of years should be exposed to the danger of infection. It surely will not be maintained that the possibility of bringing suffering, disease and death to many others, to say nothing of the danger of self-reinfection, is a lesser evil than the possibility of causing some temporary suffering to the individual. Further than this, if the disease is in a curable stage this knowledge increases the chances of recovery; (if it is in an incurable stage, then at most it renders a few months of the individual's life a little less happy than they might otherwise have been). One of the fixed principles in the organization of society is that, if necessary, the welfare of the individual must be sacrificed to the welfare of the community.

4. It is urged that if it becomes known that an individual has tuberculosis, he will become socially ostracized. In reply it may be said that this statement is greatly exaggerated. Already, with the increase in popular knowledge in regard to the nature of tuberculosis, the unreasoning dread of the disease which existed at first is disappearing and is being replaced by a more intelligent conception of its nature and the means for its prevention. It cannot be too strongly insisted that, with the observation of proper precautions a tuberculous patient may be absolutely free of danger to his intimate associates. When the knowledge of this fact has become firmly fixed in the minds of the community a great advance will have been made.

5. It is urged that the disease is of long duration; that the individual may be able to carry on his usual avocation for a long period of time, and that the knowledge that he has tuberculosis may result in his being deprived of employment, or may render it impossible for him to find a suitable home.

In reply to this it may be said that too much importance is given to these latter statements; first, because notification to the sanitary authorities does not involve notification to the community at large; second, because in most occupations if the individual observes proper precautions he does not become a source of danger.

Even if all were true which is urged, certainly these considerations would not justify the continuous exposure to infection of large numbers of persons, with the moral certainty that some would contract the disease, in order that one individual might be able to pursue for a few months or a year or two longer his usual occupation.

6. It is urged that the medical profession and the community are not yet ready to accept such advanced measures, and that it is useless to attempt to enforce such measures without their support.

In reply to this it may be said that experience has shown that the people as a whole and even most consumptives will and do support this measure, and that the fact of notification in itself is in the first instance of great educational value. In no way can we impress so strongly on both the profession and the people the communicability of this disease. No reasonable sanitary officer would expect to put into force regulations requiring the notification of tuberculosis, with the same conditions and in the same way, that a similar one in regard to smallpox would be enforced. The process of the enforcement of such a law must be developmental, and it must be distinctly understood and strongly and constantly emphasized, that tuberculosis is a different kind of disease from smallpox or scarlet fever or any of

the other highly contagious affections. It should be placed in a different class, and I strongly deprecate the practice of calling it contagious. In New York City the amendment to the Sanitary Code requiring notification declares tuberculosis to be a communicable disease (not a contagious one), and it is stated explicitly in the circulars of information, that it differs in many and important essentials from those diseases commonly known as contagious. The notification must be within one week of the time that the patient comes under observation. In adopting the system of notification, it was first applied by a resolution of the board solely to public institutions, hospitals, dispensaries, etc., those dealing chiefly with the tenement-house population. After this resolution had been in force for nearly three years it was replaced by an ordinance, and its scope extended to include also cases occurring in private practice.

The ordinance adopted in New York City in 1897 reads as follows:

"Resolved, That pulmonary tuberculosis is hereby declared to be an infectious and communicable disease, dangerous to the public health. It shall be the duty of every physician in this city to report to the Sanitary Bureau in writing the name, age, sex, occupation, and address of every person having such disease who has been attended by or who has come under the observation of such physician for the first time, within one week of such time. It shall also be the duty of the commissioners or managers, or the principal, superintendent, or physician of each and every public or private institution or dispensary in this city to report to the Sanitary Bureau in writing, or to cause such report to be made by some proper and competent person, the name, age, sex, occupation, and last address of every person afflicted with this disease, who is in their care or who has come under their observation, within one week of such time. It shall be the duty of every person sick with this disease, and of every person in attendance upon anyone sick with this disease, and of the authorities of public and private institutions or dispensaries to observe and enforce all the sanitary rules and regulations of the Board of Health for preventing the spread of pulmonary tuberculosis."

I may say that when this ordinance was adopted every important medical society in New York City protested against the action of the Department of Health, but these protests showed by their wording and the remarks which accompanied them, that the protestants did not understand the scope of the action of the Department of Health, and that they had arisen in protest against an imaginary evil. They protested against tuberculosis being called a contagious disease, but the Department of Health never called tuberculosis a contagious disease, and expressly stated that it was communicable and infectious, but not contagious. A determined, but unsuccessful effort was made by the New York County Medical Society to obtain legislation which would deprive the Department of Health of the power to deal with tuberculosis.

There have been few protests, however, during the last two years against the action or attitude of the Department; there has been acquiescence, and apparently approval, and it is certainly true that the action of the Department has been followed by greatly increased interest and knowledge regarding tuberculosis, and by the institution of active measures in the State and in the city looking towards its care and its prevention.

It is true that the Department of Health has not endeavored to enforce strictly the regulations. It was not the intention to do so when they were enacted. It has not prosecuted physicians who have failed to report cases; the Board is well aware of the fact that large

numbers of cases are not reported; but still a constant advance in the right direction is being made. The attention of physicians who report deaths due to tuberculosis in cases which have not been previously notified is now called by special letter to the provision of the sanitary code requiring the reporting of such cases, and they are asked for an explanation for the failure to report the case. The superintendents of public institutions are constantly reminded of their obligations in this matter, and usually twice a year a census is made of all the cases under care in all the public institutions in the city. About 9,000 new cases (duplicates excluded) are reported annually, and these as well as the premises where 9,000 deaths occur are inspected. It is the purpose of the Board of Health to ask for a special additional appropriation for the coming year to extend and perfect the work now being done.

No method can be devised, so far as I can see, which will give the required information to the sanitary authorities regarding the cases of tuberculosis in tenement houses, lodging houses, hotels, boarding houses, etc., excepting a system of compulsory notification. It would be undemocratic, and probably illegal, to require the reporting of cases living under certain conditions, as in tenements, and to exclude those living under other conditions, as in private houses, but the sanitary authorities may use their discretion in regard to the measures which shall be adopted under varying conditions, depending upon the danger which they conceive exists as far as the public is concerned. As a matter of fact, in private houses, and in cases reported by private physicians, no action is taken, excepting as to registration; this position is assumed and conditioned upon the medical attendant giving such information as is necessary to the patient in regard to the means for the prevention of the disease. The fact that the physician reports the case is regarded as constituting proof of his realization of the communicability.

A large number of cases are reported through the examinations of sputum; and a curious feature presented in this is that physicians, who strongly object to reporting cases of tuberculosis, will send specimens of sputum for examination, with the data which constitute a report. About 2,500 cases from private practice will be reported the present year through the sputum examinations.

It does not seem to me that there has been one single valid objection advanced to a rational system of notification of tuberculosis. There is no reason why every disease in which notification is required should be placed in the same class. Tuberculosis should be declared to be an infectious and communicable disease and treated alone, or in a class including typhoid fever, and perhaps some other diseases.

In order that cases of tuberculosis shall be properly dealt with it is necessary that the sanitary supervision in every municipality shall comprise: 1. Compulsory notification. 2. Suitable plans for the education of the people, including the visiting and instruction of cases, especially those residing in tenement houses, lodging houses, boarding houses and hotels (I would not include in this measure persons living in their own houses). 3. A complete and efficient scheme for the disinfection or renovation of premises vacated by death or removal. 4. A hospital equipment, consisting of a reception pavilion for tuberculous patients, a suitable institution within or near the municipal limits, for the care of advanced cases, and a country sanatorium in a well-situated locality for the care of incipient cases. 5. The

power of compulsory removal and retention of patients in a hospital when necessary, in the same manner as is practised in the contagious diseases. In only rare instances would the exercise of this power be required, but occasions sometimes present themselves in which such action is necessary. The following is one of a number of instances which have come under my observation:

The owner of a sweat-shop in a tenement-house district was found to be suffering from advanced pulmonary tuberculosis. He employed in his workrooms, which were close and badly ventilated, a considerable number of young women. He was excessively filthy in his habits and refused to follow directions given in regard to the care of his expectoration, and he persisted in spitting on the floor, wall, or anywhere that was convenient. I should unhesitatingly favor the forcible removal of such a patient by the sanitary authorities. It may be said, however, that if the power for forcible removal was possessed by the authorities it would rarely be necessary to exercise it.

Let us consider for a moment, what registration has already shown in New York as to the nature and the extent of the problem with which we have to deal. At the beginning of this work in New York City in 1894, I had prepared sectional maps of the city, showing every house-lot in the boroughs of Manhattan and the Bronx, on a scale large enough so that reported cases and deaths could be plotted in each house-lot by conventional signs, which indicate the month and the year of the report. From these maps I have selected a few blocks in which the largest number of cases have occurred, and had them reproduced. On these maps each case reported is indicated by a dot. These show that on a single street-block as many as 102 cases have been reported within a period of $4\frac{3}{4}$ years, and as many as 24 cases in a single house. For example, on the block on Cherry Street between Pearl and Roosevelt, 102 cases have come to the notice of the department from April, 1894, when this work was begun, to January 1, 1899. The population of this block in January, 1900, as enumerated by the sanitary police of the Department of Health, was 1,165. On another block bounded by Cherry, Market, Catherine and Monroe streets, there were 241 cases of tuberculosis, with a population of 3,688. In a third one, which includes particularly the Chinese quarter, bounded by Chatham, Mott, Bayard Street and the Bowery, there were 206 cases, with a population of 2,102. These districts represent perhaps the worst conditions existing in the city, but the number of cases in many others nearly approximates the number found in these. And throughout the tenement-house districts everywhere large numbers of cases have been reported. I presume we must add to these numbers at least one-half more and perhaps nearly two-thirds as many more to cover the unreported cases, for I do not believe more than two-thirds of the cases in Manhattan and the Bronx are now reported.

With a problem of such magnitude as is here presented, how are the authorities to obtain information in regard to the cases without compulsory notification? and without knowledge, how can they hope to deal with any measure of success with the existing conditions? I have never heard those who object to registration suggest any practical alternative, and I believe there is none to be found. It may be said that such conditions as have been described do not exist in this country outside of New York City. Perhaps this is in a measure true; but no one can foresee what will be found in any

city until the cases are registered, and I have no doubt that conditions approximating those present in New York City would be found in every large city.

It may be asked, When cases are registered, what sanitary measures should be proposed for the prevention of the disease? In reply I would say:

1. The inspection of the premises in tenement-houses, lodging-houses, hotels, boarding-houses, etc., and the personal instruction of the consumptives by medical inspectors as to the necessary precautions, and the furnishing of proper circulars of information in regard to the disease and the method of its extension.

2. The disinfection or renovation of all premises vacated by the death or removal of consumptives, and, when required and practicable, the employment of the same measures during life.

3. The removal (so far as it is possible, to provide hospital accommodations) of all advanced cases, who are unable to work and who will consent to enter a hospital.

4. The provision of accommodations in country sanatoriums for incipient cases.

5. The supervision of shops, occupations, and conditions, where consumptives are employed.

6. The forcible removal, in those rare instances, in which consumptives are unwilling or unable because of weakness, to observe required precautions, and where such removal is deemed necessary, because of the unusual exposure to which others are subjected.

Shall we allow tradition, prejudice and sentiment to longer delay the solution of this the most important, as judged from every standpoint, of all the sanitary problems of the time? If opposition there be, it is largely in the medical profession, for our experience in New York has shown that the people in general and the lay press will warmly support all measures designed for the prevention of this disease. As to the final adoption of compulsory notification, I think there can be no question. It only remains to be decided whether the 18 years which have elapsed since Koch's discovery have sufficed to educate and convince the profession, for it is from them that the initiative must come.

There has been a reduction in the mortality from the tuberculous diseases in New York City since 1886 of more than 35%, and I have no hesitation in saying in conclusion that I believe, with a complete and efficient scheme for dealing with pulmonary tuberculosis, including suitable hospital accommodations and the proper enforcement of precautionary measures, the death-rate from the tuberculous diseases in New York City may be further reduced $\frac{1}{3}$ within a period of 5 years. This would mean the saving of 3,000 lives annually. Notification seems to me a logical necessity and a necessary preliminary to the adoption of other sanitary means for the prevention of this disease.

ON THE STUDY OF TUBERCULOSIS.*

By WILLIAM OSLER, M.D.,
of Baltimore, Md.

THE history of the acceptance of any great truth in medicine is an interesting study. A slow, gradual recognition seems essential to permanency and stability. As Locke well said, "Truth scarce ever yet carried it by vote anywhere at its first appearance." Even in this

electric age the practical application of new knowledge is singularly tardy. Antiseptic surgery took twenty years to win its victory, and for about the same period we physicians have been participants in another long warfare, the successful outcome of which may be said to be now in sight. The twentieth anniversary of the discovery of the germ of tuberculosis by Robert Koch is near at hand—a discovery which, in far-reaching results, will prove to have had few equals in human history. Since 1881 the laboratory phase of the question, with its experiments and researches, has so far been the most complete; the clinical side has been enriched with two facts of supreme importance; first, the earlier and more positive diagnosis of the disease; and, second, a fuller knowledge of the means for its cure; and we have now entered upon an economic stage, and the tuberculosis leagues and congresses, laws and enactments, show how alive we have become to the importance of the disease in national and civic life.

I. *General Relations of Tuberculosis.*—If we compare the mortality bills of any large city today with those of fifty years ago, the most striking change is in a reduction of the deaths from fever, and in the absence of the names of certain diseases which were formerly amongst the most fatal of their kind. Public hygiene has done a great work in ridding us of several of the great scourges, and in lessening the danger from such epidemics as cholera and yellow fever. Of the 10,152 persons who died last year in this city, 3,765 were victims of the infectious diseases. Measles, scarlet fever, diphtheria, whooping-cough, influenza and dysentery together accounted for 801. Three diseases head the list, each one as fatal as all the others combined; tuberculosis of the lungs 974, pneumonia 778, and cholera infantum 703. If we add the deaths due to tuberculosis of other organs, we are well within the mark in saying that one-tenth of the deaths in this city are due to this disease. It is estimated that above a million of persons are suffering with consumption alone in this country, of whom at least 150,000 die annually. The white plague, as Holmes called it, is the great scourge of the race, killing more than 5,000,000 yearly. Let me read you an abstract from De Quincy, which, while expressing an old, erroneous idea, gives in his strong and characteristic language the terrible, the appalling nature of this annual slaughter. "Are you aware, reader, what it is that constitutes the scourge (physically speaking) of Great Britain and Ireland? All readers, who direct any part of their attention to medical subjects, must know that it is pulmonary consumption. If you walk through a forest at certain seasons, you will see what is called a *blaze* of white paint upon a certain *élite* of the trees marked out by the forester as ripe for the axe. Such a blaze, if the shadowy world could reveal its futurities, would be seen everywhere distributing its secret badges of cognizance amongst our youthful men and women. Of those that, in the expression of Pericles, constitute the vernal section of our population, what a multitudinous crowd would be seen to wear upon their foreheads the same sad ghastly blaze, or some equivalent symbol of dedication to an early grave. How appalling in its amount is this annual slaughter amongst those that should by birthright be specially the children of hope, and levied impartially from every rank of society! Is the income-tax or the poor-rate, faithful as each is to its regulating tide-tables, paid by any class with as much punctuality as this premature *florilegium*, this gathering and rendering up of blighted blos-

* Introductory Remarks at the organization of a Society for the Study of Tuberculosis, Johns Hopkins Hospital, October 30, 1900.

soms by *all* classes? Then comes the startling question—that pierces the breaking hearts of so many thousand afflicted relatives—Is there no remedy? Is there no palliation of the evil? Let us be thankful that we can answer today—There is!

II. *Some Special Features of Tuberculosis as a Subject of Study.*—In a comprehensive view of the diseases which we are called upon to study, three only are of wide and universal interest—tuberculosis, cancer, and syphilis. In almost every particular tuberculosis out-tops the others. It is a disease of extensive distribution among animals, in which the veterinarian is interested equally with us. The general surgeon must know it thoroughly, and it occupies his thoughts almost as much as cancer, and his hands more than syphilis. The specialist must be familiar with its manifestations. Though not a disease upon which the specialist thrives, the laryngologist, the neurologist, the gynecologist, and the dermatologist see cases almost daily. Syphilis has a more enduring grasp, and, not content to follow man from the cradle to the grave, nips the fruit in the bud, and more often brands and maims than kills. Tuberculosis and cancer respect the embryo, and are not factors in intrauterine pathology. In many ways syphilis is the most benign of the three. There is a silver lining on the luetic cloud, which we never see in cancer, and not often enough in tuberculosis. And yet tuberculosis, which is a more serious disease than the others combined, offers a greater hope of a reduction in its ravages. We know the cause, the conditions under which the germs thrive and the modes of infection, and the public is at last awake to the importance of the subject, as shown by the remarkable manifestation of national and civic interest during the past few years. We have reached agreement on two points; first, the right of the State to insist that a tuberculous patient shall not be a source of danger to others, (and to this end there must be some supervision, to the extent at least of notification of the cases); and, secondly, the duty of the State, of civic authorities, or of private benefaction to provide suitable accommodation for the poor consumptives. The danger is not from the few well-to-do patients, in whose environments there may be less risk of infection than elsewhere. A person would probably run less risk of “catching” consumption in the Adirondacks’ sanatorium than living in the tenement districts of New York, or in the Jewish quarter of this city.

III. *The Physician as a Student of Tuberculosis.*—The brunt of the battle in the warfare against tuberculosis falls on the medical profession. We must not only be alive to our duties, but thoroughly prepared to carry them out. If a man looks back on the best work of his life he will find it to be that for which perhaps he has had the least acknowledgment from the public or his colleagues in either cash or credit; and so it must ever be with the work of the units of our army, and particularly in their crusade against tuberculosis. Within the past ten years there has been an extraordinary change in the attitude of the average doctor to the question of consumption; he is more expert in the early recognition of the disease; he appreciates the conditions under which cure may be expected, and he is more ready to take every advantage of the opportunities offered by the health boards and their laboratories; but I must confess he still very often lacks the enthusiasm which is necessary to make a strong fighter. I know how hard it is in general practice, particularly among the poor, to carry out instructions which we rattle off so

glibly or write down with so much self-satisfaction, but physicians cannot escape from their responsibility in this matter. To them the public must turn for help, since they alone can insist that the tuberculous patients shall live a hygienic life, and when all fully realize their duties we may look for a marked reduction in the incidence of the disease. The really serious peril is the prevalence of the disease among the poorer classes, who live in the smaller houses and tenements, who for the most part have no physicians to advise and instruct them, and who seek aid at the hospitals and dispensaries. Two years ago I was much impressed with the number of such cases applying at our out-patient department of the Johns Hopkins Hospital, and some kind friends placed at my disposal a sum of money which was to be used to promote the study of tuberculosis, and to diffuse among the poor a proper knowledge of how to guard against the dangers of the disease. A plan of systematic visiting of each applicant was organized, and Miss Dutcher will speak of her experience during the past year. It was felt that if a well-informed and sympathetic person paid a visit to the house, saw the conditions under which the patient lived, directions could be given with much more likelihood that they would be carried out. Valuable information could also be obtained as to the mode of life and surroundings of these people.

This Society has been organized to promote the study of tuberculosis among the physicians and surgeons of the Hospital, the senior students of the Medical School, and any physicians who may wish to attend our meetings. Believing in the inspiration of great names, we have called it after the name of the greatest student of the disease. An historical review of the great epochs, a minor item relating to the symptomatology of the disease, a critical summary of the conditions relating to tuberculosis in the country at large and in this city, together with a presentation from each of the departments of the work upon tuberculosis in the Hospital during the first decade, will constitute our program for the session.

WHERE THE DANGER LIES IN TUBERCULOSIS.

A Study of the Social and Domestic Relations of Tuberculous Out-Patients.*

By ADELAIDE DUTCHER,

of Johns Hopkins Medical School, Baltimore, Md.

DURING the past year I have visited in their homes 190 out-patients of the Johns Hopkins Hospital suffering from tuberculosis. These people represent the poorer classes, who are compelled to work on in their illness to support themselves or their families. They are scattered over all parts of the city, but about 85% are limited to particular districts. One large area about the hospital, within a radius of 10 to 15 squares, and extending south-eastward along the harbor as far as Canton. The other district, angular in shape, follows West Baltimore and South Charles streets in a strip from 6 to 8 squares broad and 10 to 15 squares long. Throughout these two districts, which represent the oldest parts of Baltimore, we find the greatest massing of the poor. According to their social and domestic conditions our 190 patients divide themselves naturally into blacks, whites, and

*Paper read at the Laennec,—a Society for the Study of Tuberculosis, Johns Hopkins Hospital.

Russians. The Russians are distinguished from the rest of the whites by their exaggerated unsanitary condition.

I have tabulated the details of my observations on the sanitary environment in the individual cases under the following headings: location, crowding, cleanliness, light, and ventilation. Of course, there is no absolute standard that can be taken as a basis, yet according to my impression of the now generally accepted ideas of what would constitute a fair hygienic condition, I consider this summary to be a reasonable estimate of the existing conditions.

SUMMARY OF TABULATION.

Total number of patients	190	{	Whites . . .	130
Number of houses occupied	234		Blacks . . .	40
			Russians . .	20
	RUSSIANS.		BLACKS.	WHITES.
Bad sanitary location	69%		40%	30%
Insufficient light and ventilation	83%		71%	46%
Overcrowding	76%		50%	46%
Personal and household cleanliness	75%		66%	43%

These statistics reveal a most distressing state of affairs among the Russians, who are dangerous elements in our midst as breeders and spreaders of this disease. They are fairly well limited to a triangular area bounded by Monument Street, Central Avenue and Jones' Falls. This represents one of the very oldest parts of the city, and the houses now used as tenement houses were originally built for private dwellings. They are packed into these dark, unventilated tenement houses, often families of from 6 to 10 in 2 small, filthy rooms. The halls are never lighted, and seem to be never cleaned. Thus shut in from fresh air and sunlight, living in filth sometimes absolutely beyond description, their resistance to disease must naturally be lowered. We can but fear, therefore, the danger of infection that attends the reckless distribution of tuberculous sputum about the halls and dirty rooms.

The blacks form an intermediate class between the Russians and the rest of the whites. Sixty per cent of them have at least fairly good locations. There is, however, a decided drop in the percentage of other elements that go to make up hygienic environment. Seventy-one percent have insufficient light and ventilation. The houses in the narrow alleys and courts, where so many of them live, are roughly and cheaply built, and have not the facilities for proper light. Fifty per cent of the negroes are overcrowded, and a much higher percentage (66%) are dirty. Their poverty in many instances is extreme. Perhaps on this account there appears to be among them a greater neglect of the sick. One man was found who had been confined to his bed several weeks with almost no care whatever. His father came in daily to bring him a few scraps of food. The poor fellow was spitting at random over everything within reach. His bed and the walls and floor besmeared with sputum were extremely unsightly. Some observations in similar cases were still more disgusting, because made in the season when swarms of flies were found crawling over the walls and bed, feeding on the sputum. It seems unnecessary for me to say here that such individuals should be removed to some hospital or sanatorium, and that someone should be responsible for the disinfection of such rooms.

The colored people seem to be especially careless about smearing their sputum over their clothing. While talking with them I have frequently had occasion to stop individuals from depositing their spit on the corner of an apron or some other garment worn.

Turning now to the whites, who form the most interesting and most hopeful class for the trial of our methods of prophylaxis, the statistics show that 70% have at least fairly good location. In regard to light, crowding, and cleanliness, less favorable percentages present themselves. This only emphasizes the greater need of such prophylactic measures as have here been undertaken.

Though in many cases the facilities for proper light and ventilation are inadequate, yet a large number of the 46% living with insufficient light and ventilation do so because the houses are kept dark and close by keeping the blinds and windows shut. Oftentimes the crowding is not from want of room, but from a natural tendency of the individuals of a household to huddle together.

When the consumptive is ill enough to be confined to the house, it is common to find that he has been given a couch in the corner of the family living-room, which is generally the darkest and closest room in the house. Frequently if the patient finds difficulty in getting up and down stairs, he prefers to spend his nights also on his couch in the corner.

Where large families are crowded into two or three small rooms, the kitchen must also serve as a bedroom, and almost invariably, especially in winter time, the one with a cough is favored with a place in the kitchen close to the fire.

Occupation.—The occupation of some of these patients has a practical bearing on their relation to society. In the majority of cases their occupation confines them within doors. This means that rigid precautions need to be taken to destroy the spit. Individuals at work are prone to spit carelessly about them. When this chance to be on the floor of closed rooms protected from the sunlight, the germs may retain their virulence for a long time. As these germs become stirred up from time to time, they may infect other occupants of the room, or be deposited on the materials worked upon. As an illustration: In a filthy, unventilated room I found four men working on willow ware. One of the men, a consumptive, was spitting about the floor and even on the willows. I feel certain that the other three men were in imminent danger of direct infection.

The sweatshops have a goodly representation among these 190 individuals. Patients often tell me that among the 20, or 30, or 40 individuals who work in the room with them they can point to several who have pulmonary troubles similar to their own.

Not a few of these patients have to do with the handling of food which might easily become contaminated by contact with their soiled fingers. In our list we find cooks, bakers, cracker packers, and keepers of little milk and meat shops represented.

Following the studies of Flick in Philadelphia, the Board of Health of New York City has demonstrated, by the results of an investigation made to determine the distribution of tuberculosis in that city, that much importance attaches to the idea of house infection. Their statistics show that tuberculosis is not uniformly distributed, but that the bulk of the cases are confined to narrow limits in certain streets and houses. They have noted the development of cases of tuberculosis in families that have successively occupied these houses. A look at their maps shows that sometimes six or eight patients were in a house at one time. I might state here that in several instances I learned that patients had developed the disease subsequent to

occupation of houses previously occupied by tuberculous patients. Several times I found two patients, and on one occasion four patients, living in the same house. In all these cases they were members of the same family.

While my statistics are too limited to admit of any conclusions, they do point to the rapidity with which Baltimore houses are becoming centers of infection. During the brief period that these 190 cases were under my observation they had occupied 234 houses. When the tuberculous occupants move out new occupants move in without any attempt at disinfection. In 58% of these cases the family history was absolutely negative, which suggests the possibility of a general source of infection, and may we not look to infected houses as one of the most important?

My work has been to visit these tuberculous patients in their homes and give them a few simple instructions on the nature of their disease, the mode of its contagion, and methods of its prevention by the cultivation of habits of cleanliness, the destruction of the sputum, and the admission of air and sunlight into their houses. In many instances among these poor people the patient can and will be given a sunny room in the house, in a measure isolated from the rest, with very little inconvenience, when they learn that any benefit may be derived from such a step. Most of the patients and their families as well are absolutely ignorant of the idea of contagion. The few that have begun to look upon the disease as communicable, because of their ignorance of the mode of infection and methods of prevention, live in deadly fear that they transmit or contract the disease. To such the information that the elements of contagion are in the sputum, and can be destroyed, is heralded with gladness. If the physician has not informed the patient as to the exact nature of his disease, I have not found it necessary to do so. It is enough for him to know that it is transmissible, be it in his mind throat-trouble, catarrh, or bronchitis.

The need of this kind of education of the public by house-to-house visitation is intense, and I feel that most of these individuals, unless it be the Russians, are teachable.

When we have taught the tuberculous patient to destroy his sputum, to rid his room of carpets and other germ catchers, and to throw open his windows to admit the sunshine and fresh air, we may then begin to look for a visible decrease in the tuberculous entries on our dispensary records.

The statistics of the Board of Health of New York City show a remarkable decrease in the death-rate from tuberculosis since they began a systematic education of the tuberculous poor, and the disinfection of tenement houses occupied by tuberculous patients.

On account of limited time I can but feel that my work lacks thoroughness. To really follow these cases by repeated visits has been impossible. Nevertheless I am happy to say that in the few cases in which subsequent visits were made I found visible signs of an effort to follow my directions. I recall one case in particular. At the first visit I found my patient, a young man of 21 (the oldest of 5 boys, all at home), spitting at random into his handkerchief, or into the sink, or on the floor, just as he found it most convenient. Dried sputum was in evidence all about the room, which made it very disagreeable for the rest of the family. Not one member of the family had had the least suspicion of fear of contagion. At a second visit, one week later, I found that the floor had been scrubbed

with lye, and the patient was carefully collecting his spit in a vessel containing antiseptic fluid. The mother showed herself to be especially grateful for my few words of advice and warning.

THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.

By DELANCEY ROCHESTER, M.D.,

of Buffalo, N. Y.

Associate Professor of Medicine, Medical Department, University of Buffalo.

"THE general and local symptoms, including the physical signs, may afford merely a strong suspicion of the existence of phthisis, and in such instances repeated examinations of the sputum for the bacilli are imperative, and only when they are found is the diagnosis set at rest.

"There are not a few cases in which the physical signs are clearly obvious and in which the bacilli are either not at all detectable or only after several examinations; and the fact that a certain diagnosis is made possible only by the demonstration of the bacilli in the sputum in the incipient stage of the affection, makes a continued search for the microorganisms the first duty of the physician, in cases presenting suspicious signs and symptoms."

I make this quotation from one of the later works on practice, because I believe it is not a true statement of the case, and that a positive diagnosis of tuberculosis can be made in many cases before the bacilli have appeared in the sputum. I desire to call attention to some congeries of symptoms and physical signs from which a positive diagnosis of pulmonary tuberculosis may be made before the appearance of bacilli in the sputum. In the mode of onset the disease may symptomatically point to the digestive system, the circulatory system, the lymphatic system, the blood or the respiratory system, or to any group of two or more of them.

The following cases illustrate some of these points:

July 25, 1895, J. B. F., male; single; age, 30; occupation, paperhanger. Family history, negative. Personal history, good habits; no sickness until April last, when he was sick with a fever pronounced by a physician to be typhoid fever, and by another pneumonia. Since this sickness patient has not felt well, has lost in weight 29 pounds since February; his voice is husky and he coughs a little every morning, but has no expectoration; complains of weakness, shortness of breath especially upon exertion, and a feeling of oppression in his chest.

His appetite is good, his bowels regular. He sleeps well. His pulse, 110, small and weak; temperature, 99° F.

His pharynx is normal; posterior wall of larynx is a little swollen so that the vocal bands do not come well together, though the bands themselves are in normal condition.

Physical examination of chest shows slightly diminished movements on the right side and impaired resonance noticeable particularly in the right supraclavicular region, and in both infrascapular regions; breathing slightly roughened in the right supraclavicular and infraclavicular regions; the heart-sounds transmitted with considerable intensity in the right infraclavicular and supraclavicular regions; the vocal resonance slightly increased in same regions.

This case was diagnosed as one of pulmonary tuberculosis, probably. This probably was changed to positively in August, when there developed bronchial breathing in right supraclavicular region and a few moist rales in the same place. A slight amount of

sputum was obtained at this time, which was mucopurulent in character, and contained pus-cells and organisms, but no tubercle-bacilli or pneumococci.

This case was under observation for 11 months and improved steadily for 6 months, when he had an attack of influenza and from that time lost ground. In May, 1899, physical examination revealed bronchial breathing and fine rales in right upper lobe, and coarse rales elsewhere on both sides. Sputum did not yet show tubercle-bacilli. He went to Denver, and while there, although his physical condition improved, the organisms finally showed in the sputum.

In this case the diagnosis was made when there was very little sputum and that without the organisms in it. The history, the symptoms, and the physical signs made the diagnosis easy.

Another case: July 21, 1897, C. Y., female, aged 21, shop-girl. Family history good; personal history, scarlatina 7 years ago. No other sickness. For the last 2 years has suffered more or less with nausea, and has slowly and steadily lost weight; 34 pounds lighter now than formerly.

She is weak, anemic, poor appetite, bowels regular, with tendency to looseness; menstruation regular, but painful. Her pulse 90, small and weak; temperature 99.8°.

She has almost no cough, but has occasional expectoration; no tubercle bacilli in it. Her heart-sounds are good, except for a slight systolic murmur heard in the pulmonary area, and an accentuated closure of the pulmonary valves. The heart-sounds are heard with considerable intensity in the right infraclavicular region. There is some depression in the right supraclavicular and infraclavicular regions, a slightly impaired resonance, and a prolonged, high-pitched expiratory murmur. The vocal resonance is slightly increased in intensity in both of these regions and in the right suprascapular region.

This case I consider one of pulmonary tuberculosis, although bacilli have never appeared in the sputum. In fact she ceased to have sputum, and all physical signs disappeared except a slight depression around the right clavicle, and a slight impairment of resonance in these regions and the right suprascapular.

She came under my observation again on October 23, 1900, with a few moist rales in the right infraclavicular region, but no tubercle-bacilli in her sputum. Under treatment the rales have disappeared, and she is improving in all respects. This is a case of tuberculosis that has been recognized early enough to be properly treated and not go on to the breaking-down stage when the bacilli show themselves in the sputum. I have several other similar cases in young women, chiefly shop-girls.

Another case: W. B., male, American, aged 55; married; bartender. Family history, good. Previous personal history: measles, scarlatina and mumps in childhood; gonorrhea and syphilis (?) 17 years ago; a year ago had delirium tremens followed by pneumonia. From this he recovered, but has never felt well or strong since.

October 20, 1900, he had a chill and felt miserable and weak and sick, with recurring chilly feelings. October 28, he developed a pain in the right hypochondriac, lower axillary and infrascapular regions, which was increased on deep inspiration.

Patient entered the Buffalo General Hospital October 29, 1900, in the service of Dr. Charles G. Stockton. His temperature was 99° F., pulse 88, respiration 22. After he entered his temperature persisted between 99° and 100.4°, his pulse was 80 or a little over, and his respiration 22 to 28, until November 4, when his temperature dropped to 97.2°, pulse to 72, and respiration to 22. From November 4 to November 7 his temperature has varied from a morning temperature between 97° and 98° to afternoon temperature of 99° or a little less.

Unfortunately, there is no recorded physical examination

at the time of his entrance. His sputum, examined November 1, by Dr. T. B. Carpenter, is described as follows: Color, yellow; odor, foul; reaction, acid; consistency, semifluid; character, purulent. Microscopically, it was found to contain leukocytes, small and medium sized round cells and a few red blood cells. Bacteriologically, it showed the presence of staphylococci, streptococci, diplococci and bacilli. There was not found *Bacillus tuberculosis*, *Bacillus influenzae*, or *Diplococcus pneumoniae*. The examination of the urine revealed a normally functioning kidney.

I saw him November 7. The physical examination of his chest is as follows: Slight depression in both supraclavicular regions. Diminished expansion in right supraclavicular region. Vocal fremitus increased in right supra- and infraclavicular and mammary regions. Percussion resonance diminished in intensity, and high in pitch in right supraclavicular and infraclavicular, mammary and axillary regions. On auscultation, the heart-sounds are found to be transmitted with distinctness to the right supraclavicular and infraciavicular regions, but not to the left. The heart itself is in good condition, except that the pulmonic closure is a little accentuated.

In the right supraclavicular region there is diminished vesicular breathing with prolonged expiration, the vocal resonance is increased, and there is whispered pectoriloquy during expiration.

In the infraclavicular, mammary, and axillary regions of the right side, the vesicular breathing is decidedly diminished in intensity. In the third intercostal space, between the mammillary and anterior axillary lines, there is prolonged expiration, not loud, but of distinct bronchial quality; and there is also a slightly bronchial quality to the transmitted voice.

Posteriorly there is impaired resonance in the right suprascapular, scapular, and interscapular regions, and slightly diminished resonance in left suprascapular. On auscultation there is prolonged expiration, high in pitch in the left suprascapular region; in the right suprascapular, scapular, and interscapular regions, the inspiration is decidedly diminished in intensity, and the expiration is prolonged and high in pitch. There are coarse, moist rales here and in the infrascapular region. The vocal resonance is slightly increased on the right side throughout.

In this case the history, symptoms, and physical signs all point to a pleurisy of the right side and a concomitant bronchitis with patches of bronchopneumonia. While I do not think in this case that the whole process in the lung and pleura is tuberculous, I do feel confident that in the upper right lobe there is a tuberculous infiltration. The signs that point to infiltration are there, and the organisms found in the sputum are not those that produce persistent infiltration of the lung. Under the circumstances, it seems to me but rational to refer the condition to the most common cause of localized infiltration of lung, viz., the tubercle-bacillus. The case is being treated on the diagnosis of pulmonary tuberculosis.

Another case is one of a young woman, a nurse, who had a severe attack of bronchitis in June, 1900. The case was one of apparently ordinary bronchitis, but quite severe in its manifestation. The physical signs were apparently equally distributed through both lungs and cleared up entirely as she improved. She recovered in all respects except one. Her temperature persisted a trifle above 99° every afternoon. Her morning temperature was 97.5°, or 98°, or 98.5°, the afternoon temperature being from 0.5° to 1.5° above the morning.

The only organism in her sputum during the attack was *Diplococcus pneumoniae*. During her convalescence, the sputum ceased entirely.

On account of this persistent temperature following an attack of bronchitis, I advised her going to the Adirondacks, for I felt certain that the case was tuberculous. She went and improved decidedly; her temperature came down to normal, and she wished to return after 6 weeks. I advised her, before returning, to take diagnostic injections of tuberculin. Dr. Trudeau gave her 0.001 gm. There was only

a half degree rise in temperature. Four days later she received 0.02 gm., and had a pronounced reaction. She has decided to remain there this winter.

With these cases as a text, I wish to state the symptoms and signs upon which I place reliance as positive indication of pulmonary tuberculosis. These are the history of cough, or a present existing cough, with or without expectoration; a difference of a degree or more between the lowest and the highest temperature in the 24 hours; loss of strength or weight, or both; anemia more or less pronounced; diminution or cessation of menstruation; the occurrence of night-sweats, even though only occasionally; the history of, or the present existence of, enlarged lymph-glands in the neck; the persistence or development of cough after any of the acute infections.

If cough and any other one of these symptoms are present, it is important to make a very careful examination of the chest. The first examination of the chest in a given case for the purpose of diagnosis should be made with the chest absolutely bare to the waist. A light sheet or blanket may be thrown over the back when the front of the chest is being examined, and over the front of the chest when the back is being examined, but all other covering should be removed. It is absurd to pretend to thorough examination with only a small space of chest uncovered at a time. The earliest signs show themselves, as a rule, at the apex of one or the other lung; in my own experience, the right lung has been first affected in the great majority of cases. The signs that first show are, on careful scrutiny, a slightly lessened movement in either the supra- or the infraclavicular region; the diminished expansion on one side can often be appreciated only by carefully comparing corresponding intercostal spaces with each other. Usually at this stage the vocal fremitus, as transmitted to the hand, is not affected. A slight diminution in percussion-resonance is the most suggestive sign of beginning infiltration or localized pleurisy. Even a slightly high-pitched resonance without real diminution in the resonant quality is usually indicative of beginning infiltration, except when it is found only in the right infraclavicular region where in a certain number of cases there is normally a slightly higher pitched note than on the left side.

One of the early signs on auscultation is a breathing slightly diminished in intensity, particularly if this diminution is chiefly noted during inspiration and the expiratory sound is prolonged, even though the pitch of the sound may not be materially altered from the normal. This change in breathing may often be noticed only in the supraclavicular or suprascapular region. Occasionally we get a true bronchovesicular breathing in the outer part of the scapular region, together with a slightly bronchial quality to the transmitted voice-sound.

The increase in vocal resonance and the occurrence of the expiratory whispering souffle or whispering pectoriloquy associated with prolongation of expiration, if heard in the supraclavicular region, are, I think, proof positive of infiltration and, if associated with any two or more of the previously enumerated symptoms, of infiltration of tubercular origin.

Another important sign of infiltration of right lung is the transmission of heart-sounds, first and second, to the infraclavicular region of the right side. The occurrence of a cardiorespiratory murmur just below the clavicle means, I think, an adhesive pleurisy making

traction or pressure on the subclavian artery or vein, and is an additional evidence of involvement of right lung, but is not so certain as the transmission of the heart-sounds themselves.

If in addition to any of these signs there are moist rales to be heard, as in the case of the shop-girl related, the diagnosis is made so much the more sure. Even in cases who have no cough, if two or more of the symptoms, enumerated at the beginning of this paper, are present, a careful examination of the chest is in order.

If in a given case the physician is not really certain of the diagnosis, or the patient requires to be convinced, I feel sure that in tuberculin we have a most valuable diagnostic aid. The case of the trained nurse, cited above, illustrates this point. Of course tuberculin should be administered only by a physician and with the strictest aseptic precaution. The temperature should be taken and recorded every 2 hours for 36 hours before the administration and for 24 hours after. One milligram should be given as the initial dose. If no reaction occurs, at least 4 days should elapse before giving the second dose, which may be 2 milligrams. In case there is no reaction to this dose, 4 days later 5 milligrams should be given. If no reaction occurs to this, the case may be said to have in it no tubercular focus capable of ignition; that is, no tuberculosis. If there be tuberculosis reaction will occur and no harm will be done to the patient. The patient will be convinced that he must care for himself and will consequently be benefited by the early diagnosis of his condition.

From what has been said, I hope that I have made plain that the most important diagnostic procedure is the very careful and very thorough physical examination of the chest and the careful comparison of corresponding areas on the two sides with each other. By such careful examination I believe that the vast majority of cases of pulmonary tuberculosis could be recognized before the bacilli have appeared in the sputum.

However, I do not wish to be considered as in any way belittling the value and importance of frequent and careful examination of the sputum in every case of sickness that has sputum. Only this fall there has occurred in my practice a case illustrating the point. In the middle of October, L. H., a medical student, was attacked with bronchitis which ran the course of an ordinary bronchitis. The sputum showed *Diplococcus pneumoniae* in pure culture. The temperature subsided, the patient felt better, and finally the cough ceased, except an occasional cough. The physical signs disappeared. Nevertheless, I told the young man that as long as there was any expectoration to bring a 24 hours' sample around every third day. The fourth such examination, when the total amount of sputum was not more than 2 cc., showed the tubercle-bacilli in considerable number.

Now, the physical examination shows a beginning infiltration of the upper right lobe. The whole secret of diagnosis is careful and persistent study of each case.

The Army Veterinary Corps.—The military veterinary corps has commenced its active campaign in behalf of legislation for an organized veterinary corps in the Army, as provided for in section 14. The committee on Army legislation, made up of members of the association, have asked the support of Congressmen of the veterinary section, as it stands, as part of the first army reorganization bill which passes Congress.

SOME OBSERVATIONS ON THE OCCURRENCE, EARLY DIAGNOSIS, AND TREATMENT OF INCIPIENT PULMONARY TUBERCULOSIS IN DISPENSARY PRACTICE.*

By HENRY L. SHIVELY, M.D.,

of New York.

Physician to the Presbyterian Hospital Dispensary, Department of Heart and Lungs.

THE rigorous exclusion of consumptives from general hospitals, made necessary by the assignment of tuberculosis to the group of infectious and communicable diseases, and the inadequate provision made for this numerous class in the few existing special institutions, have made the lot of the tuberculous poor in large urban populations indeed a hard one. Housed in crowded tenements and sleeping in ill-ventilated rooms, excluded from sunlight and pervaded by the noisome odors of unsanitary living, with improperly prepared food, deficient often in quantity or quality, it is sufficiently obvious that for the majority of phthisical patients applying for relief in city dispensaries, the conditions for treatment are much less favorable than are those appertaining to patients blessed with ampler fortune. Indeed, it has been said by an eminent authority some 15 years ago that the prognosis in phthisis is almost entirely a question of money. That this discouraging view does not hold with equal force today is evidenced by the steadily declining death-rate from tuberculosis and the relatively less importance attached by the profession to climatic treatment requiring change of residence and long and costly journeys to distant health resorts. For the class of patients here considered sanatorium methods are not yet generally available and doubtless will not be for many years to come. What, in the meantime, can be done for the consumptive poor as outdoor patients until some better provision is made for them either by State or by private beneficence?

In a considerable number of cases, occurring even amid the unfavorable surroundings of dispensary practice, recovery is possible, and for nearly all incipient cases improvement may be expected. And first let it be insisted that it is not so much an ideal specific which is needed in the treatment of tuberculosis as an early recognition of the disease and intelligent cooperation of the patient with the physician in carrying out for a sufficient period of time the simple hygienic and therapeutic measures which are everywhere readily attainable. Even if a specific treatment were to be discovered it cannot avail after extensive tissue changes and destruction of pulmonary substance have occurred. Of the greatest importance, then, in any case is the matter of an early diagnosis which in practice cannot be separated from successful treatment.

There appear to be presented two fairly distinct types which are especially liable to develop tuberculosis. The one in its most characteristic expression is the florid, sensitive person of nervous temperament and quick intelligence, with delicately chiselled features, oval face, fair, fine hair, large lustrous eyes with arched brows, thin, smooth, hairless skin, complexion of sea-shell tints, small bones, slight, graceful figure, and tapering fingers with long almond-shaped nails. The other type finds its most complete example in the sluggish, mentally inferior immigrant from Southern Europe with high cheek bones, irregular features, rough, thick skin, sallow complexion, large, ill-shaped hands with clubbed finger-

tips and nails of marked convexity, coarse, dark hair and thick, large bones. This latter class is not so well defined perhaps as is the former; both may appear to be somewhat fanciful, and there are, of course, many cases belonging to neither; but among the tuberculous poor of New York there are a sufficient number of patients with more or less one of these sets of characteristics to make their recognition of some value. In connection with these minor features of interest there may also be frequently observed, in cases of incipient pulmonary tuberculosis, a pinched nose of peculiar waxy pallor, against which the brownish-yellow orifices of the sebaceous ducts stand out like dots in marked relief. This anemic, dotted nose may be present when there is but little or no general emaciation or anemia. A similar appearance of the chin has occasionally been seen. In the nose the appearance is most marked at the tip and lower third.

Dyspnea on exertion and rapid heart-action are symptoms sometimes occurring very early. Indeed, from the intimate physiologic and anatomic relations existing between the heart and lungs through the pulmonary circulation, it might be *à priori* expected that there is more than an accidental relation between pulmonary tuberculosis and functional and organic heart-disease. From the frequency with which valvular lesions of the heart are found in the examination of tubercular chests, it can hardly be doubted that organic cardiac disease may be regarded in some cases as one of the predisposing causes of tuberculosis of the lungs. It may readily be conceived that a disturbed or sluggish pulmonary circulation, resulting in deficient oxygenation of the blood, hypostatic congestion and impaired vitality of the lung tissues, together with general anemia, supply both the local and constitutional conditions favorable to bacillary infection. Pulmonary hemorrhages are sometimes of early occurrence and when present should be carefully distinguished from epistaxis and bleeding from the mouth and stomach. Neuralgic pains, which are common in advanced cases, may also be felt very early in the disease. They may be limited to the affected side of the chest, or may be felt on the opposite side, or in the back and limbs, and are to be regarded usually as symptomatic of a general anemic condition rather than as of local origin. Somewhat exceptionally in this early stage there may be similar and more severe pains in the chest, due to a localized dry pleurisy, or felt elsewhere and caused by a true peripheral neuritis. Chilly sensations and abnormal sensitiveness to cold may be early noticed. A careful observation of the temperature will usually show a continued daily elevation of a fraction of a degree or a degree in the afternoon. A subnormal early morning temperature is also significant. If other causes for these thermometric variations can be excluded, and if they occur in a person with progressive loss of weight, failing strength, poor appetite and anemia, developing tuberculosis may be suspected even in the absence of cough and physical signs. Of the latter, one of the earliest of value is the jerking, interrupted, "cog-wheel" inspiration over the apices, which may sometimes be heard before dulness in the percussion note can be detected. In healthy adult chests expiration is scarcely audible and any prolongation or considerable increase in its intensity should be regarded with suspicion. Decided increase in the whispered voice may often be elicited before there is much alteration in the spoken voice. In estimating the voice and breathing and vocal fremitus,

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due allowance should be made, however, for the difference in the size and location of the right bronchus. On account of its larger caliber and higher division there is normally over the right upper lobe an area of louder breathing and greater voice sound and fremitus, situated below the clavicle and to the right of the upper end of the sternum. This may cause error in being interpreted as due to pathologic change, especially in persons with thin chest-walls. Among the minor changes which are of some value in connection with other signs are sinking in of the spaces above and below the clavicles and dilation of the superficial veins of the chest above the nipples. Chromophytosis of the skin over the chest and shoulders is frequently seen in the examination of tuberculous chests.

The detection of the tubercle-bacillus in the sputum is of course of the greatest importance, but unfortunately in the earliest stages bacilli are frequently not present, and as a practical aid the microscopic examination will often be corroborative rather than primary in establishing the early diagnosis. In many cases the skilful clinician will have sufficient reason for suspecting the existence of tuberculosis before the bacilli can be demonstrated or indeed before cough or sputum is present. The tuberculin test, which is so valuable in veterinary science in establishing the presence of bovine tuberculosis, should not ordinarily be employed in man on account of the occasional severity of the reaction and the possible danger of lighting up quiescent foci of infection. Its use will be but rarely necessary. Should it be employed at all it should be remembered that the reaction also occurs when syphilis is present. A limited experience with the application of the Röntgen-ray and fluorescent screen to the examination of chest cases would indicate that although often affording a beautiful demonstration of the extent of tuberculous lesions in advanced cases, it is doubtful whether they can give any material aid in the early diagnosis of incipient disease.

In the examination of the patient, in addition to the signs and symptoms due to the actual presence of active tuberculous processes in the lungs, evidences of tubercular lesions in early life should be carefully sought for, such as cicatrices remaining from suppurative adenitis of the cervical glands, ankylosis or atrophied limbs—the effects of tubercular bone and joint diseases, enlarged glands, and scars from cold abscesses. The frequency with which pulmonary tuberculosis has been observed to follow an attack of pleurisy with effusion may cause the family physician to view with apprehension a tardy or lingering convalescence from this disease. The co-existence of saccharine diabetes and phthisis so often seen should cause a careful examination of the chest to be made when sugar has been found in the urine. The development of an ischio-rectal abscess or the long continuance of a sluggish fistula in ano may point to latent tuberculosis of the lungs. Among boys and young men from 16 to 20 a sufficient number of cases have been observed to create a strong presumption in favor of the belief that the practice of smoking and inhaling cigars to excess may be a factor in the causation of consumption. When the disease exists even among adults excessive smoking should be discouraged, and if permitted at all should be limited to one or two cigars or pipes a day. The special evil of cigaret-smoking is that in this form, smoking is apt to be more or less continuous throughout the day and the practice of inhaling the smoke in the lungs is almost universal.

The family history should be minutely inquired into, or rather the personal history of the case in its relation to other cases of tuberculosis, for heredity is now deemed to play at most an unimportant and rather doubtful etiologic role. Cases developing in the same family are rather to be accounted for by the greater exposure to sources of infection, and the frequency of transmission from husband to wife, or wife to husband, or from patient to nurse, when proper care of the sputa has not been observed, would go far to establish this view. As bearing upon this point I have been able to collect from the case-books of my service at the Presbyterian Hospital Dispensary during the past five years, 75 cases of pulmonary tuberculosis acquired by healthy persons with no tubercular family history under circumstances which point to direct infection. Of this number 71 were cases in which the disease was acquired after marriage, the family of the healthy conjugal partner having been free from tubercular disease so far as could be ascertained. A striking fact in the analysis of these cases is the great preponderance of wives over husbands who thus acquire the disease, for of these 71 cases in but 10 was the husband infected from his wife. It would thus appear that the risk for a woman in marrying a consumptive is fully six times greater than the corresponding risk for a man. This disparity may in a measure be accounted for by the less robust constitution of the female, the indoor life she leads, the effect of frequent childbirth in quick succession, and prolonged lactation. In one case a consumptive man, who has also had a tubercular arthritis of the kneejoint, has infected two wives, the first having died of phthisis, the second is now also under treatment with him at the dispensary. A striking instance was the case of a healthy lad, 17 years old, in whose family there had never been consumption, who developed tuberculosis of a rather acute and rapidly progressive type after sleeping with and occupying for three months the room of a man with phthisis. Another case was that of a strong, healthy Irish girl, in whose family there had never been any trace of tuberculous disease, who entered a convent, and during her novitiate was required to attend a consumptive nun far advanced in the disease. After a few months she developed consumption herself and was obliged to relinquish her religious life, leaving the nunnery for treatment. An instance coming under observation some years ago, but not in the dispensary, was that of a healthy child, aged 5, of sound parentage, who shortly after an attack of measles was taken to Southern California in a sleeping-car occupied largely by consumptives. This was before the public or profession generally had accepted the doctrine of the infectiousness of tuberculosis through the sputum, and the conditions in sleeping-cars and steamers to Western and Southern health-resorts, in the light of modern ideas, were horrible to contemplate. Shortly after his arrival in Los Angeles this child developed a persistent cough and died of a tubercular meningitis. During a two years' residence in Southern California it was a matter of common remark that the native Mexican population was prone to develop consumption, among whom, in former years, the disease was practically unknown before the influx of consumptive tourists and health-seekers from the East. A similar observation has been made regarding the occurrence of phthisis among the Italian peasantry of the health-resorts of the Riviera.

It is of course possible for a certain number of these cases to be accounted for by mere coincidence, and de-

ductions of this kind are always liable to error, but in each of these 75 cases the family history was carefully inquired into and is believed to have been free from tuberculous taint. The number collected is probably considerably under the actual number, as in some cases the histories were deficient or doubtful, and all such were rejected. There have been also numerous cases of adults in the same family developing tuberculosis under circumstances which pointed clearly to direct infection rather than to heredity, but these also have been excluded from consideration on account of parentage or kinship which might possibly introduce another factor. The cases here collected are then in each instance examples of previously healthy individuals of good family history who have acquired the disease after marriage or other intimate relation with a tuberculous person. The conviction appears irresistible that there are many cases thus acquired, and that especially for women the dangers of marriage with a consumptive are grave indeed.

The occupation of the patient may to some extent create a presumption in favor of the existence of tuberculosis. The disease is apt to develop in persons who follow sedentary pursuits amid unsanitary surroundings or exposed to the inhalation of dust and unwholesome vapors. Printers, weavers, stonecutters, knife grinders, metal workers, factory operatives, tailors, tobacco-strippers and packers, workers in wall-paper, dyers, painters, and cigarmakers are occupations frequently noted in the case-books opposite the names of dispensary patients. Race does not appear to be a very important factor in the occurrence of tuberculosis in New York except that in a general way people coming from warm, equable climates to our variable one are apt to suffer. Mulatto negroes from the tropical West Indies, Italians from about Naples and Sicily, and Chinese coolies from the south of China near Canton are more apt to develop the disease than immigrants from northern Europe.

When the diagnosis has been established the patient should be frankly told the nature of his disease, explaining its curability, quieting all unreasonable apprehensions and securing his cooperation by stating that ultimate recovery will depend largely upon his faithful compliance with the hygienic instructions given and the continuance of the treatment for a sufficient time. It has been well said that the consumptive must make a business of getting well. It is a mistaken kindness to gloss over his condition, as is so frequently done through reluctance to alarm him or his friends. A case of incipient phthisis, when told that he is "run down," has "a bad cold," "bronchitis," "asthma," or "a touch of malaria," is almost certain to neglect treatment at the most hopeful period of the disease. Such an opinion from his physician, with the optimistic temperament so common in tuberculosis, readily produces a false sense of security, and thus the insidious progress of the disease is but too often unopposed. On the other hand the most timid and sensitive patient can, by the exercise of tact and by the comforting assurances of the results of treatment, be made to realize the possible gravity of his complaint and yet enter hopefully and confidently into the campaign against it. The importance of the role played by the patient himself in his recovery cannot be too strongly emphasized.

He should be told to spend as much time as possible in the open air, and the cultivation of an erect attitude with the shoulders back and chest forward should be advised. Twice a day or oftener the inflation of the

chest by a series of gentle, deep, prolonged inspirations and forced expirations, when the practice does not provoke coughing, is useful. The living and sleeping room should be the largest and best ventilated available. In the tenements and small flats occupied by most dispensary patients the sleeping rooms are usually small and either without windows or opening on a stuffy, cramped, dingy air-shaft. These small bedrooms and the kitchen are the ordinary living rooms. The one room opening on the street and accessible to abundant sunlight and air is usually least occupied by the family and is the one to which the consumptive patient should be removed. Where it is possible he should sleep alone. He should be instructed to avoid exposure to cold and damp, and it is undesirable for him to frequent crowded halls and places of entertainment where the air is vitiated. Woolen underwear, but of lighter weight in summer, should be worn next the body throughout the year. The entire surface should be uniformly clad, discouraging all coddling with the popular red flannel chest protector or the familiar porous plaster. The use of water in the form of the daily sponge bath, followed by brisk friction with a rough, huck towel, is a wholesome practice. If there is fever or night-sweats the bath is better taken in the afternoon or at night before retiring, otherwise the first thing on rising. At first the bath should be warm enough to avoid chill or shock, but the temperature should be gradually reduced until cold water can be used. The addition of a little alcohol or spirits of camphor to the water may be recommended. The bath in the evening, besides its desirable effect on fever and night-sweats, is often useful in promoting sleep. In afebrile cases moderate exercise may be permitted, always stopping short of the point of fatigue. Chest-weights, light dumb-bells or Indian clubs may be cautiously used, but never as a substitute for or to the exclusion of exercise in the open air. In progressive cases exercise of any kind is undesirable.

The patient should be carefully instructed as to the proper care of sputa, an appeal being made to his instinct of self-preservation by telling him that not only is there danger of infection to others, but that his own condition may be made worse by the inhalation of infective material. He should be specifically told to exercise care to avoid soiling his clothing and linen. Handkerchiefs are not proper receptacles for sputa. When away from home, pieces of cloth, or better, Japanese paper napkins, which are inexpensive, should be employed for this purpose. When soiled they are folded and inclosed in a stout envelop which, with contents, is burned as soon as convenient. At home the crachoir should have a sufficiently large opening to avoid soiling the sides and should contain either plain water or a solution of a simple disinfectant. The patient should be cautioned against swallowing his sputa, as there is good reason to believe that this practice is frequently a cause of intestinal tuberculosis. If there is any obstacle to free nasal respiration it should be corrected by appropriate treatment. An examination will often reveal a hypertrophic rhinitis, polypus, spur, deflected septum, or adenoids.

In the diet of the consumptive the keynote is the administration of milk, and its assimilation by the patient will often afford a reliable indication of the prognosis. In my experience patients who can take large quantities of milk, month after month, usually do well. When milk cannot be taken in some form the prognosis is likely to be bad. Too much importance

should not be attached to the patient's statement that he cannot take milk or that it makes him "bilious." The addition of a little bicarbonate of soda, lime-water, or vichy will often make it well borne. Hot milk may agree better than cold. In some cases peptonizing the milk may be necessary or matzoon or koumiss may be tried. In summer buttermilk is often relished for a change. For an adult as much as two quarts of milk a day is desirable, and where it is taken well a little cream may be added. In addition to the milk when the patient's stomach is in good condition, a full nitrogenous diet with an abundance of fats is advised. Broiled steak and chops, roast beef, eggs, poultry, oysters, soups, and a liberal quantity of butter are recommended. Pork and veal are excluded and the starchy vegetables are restricted. Cereals should have a minor place in the dietary. If milk cannot be taken the next best thing is malt liquors in moderation, such as beer, ale or stout, but I never advise them when milk agrees.

As regards drugs, the best routine treatment is the administration of creosote or some of its derivatives with codliver oil and some preparation of malt. During the hot weather of the summer months the hypophosphites may be advantageously substituted for codliver oil for a time. Nothing, however, can replace the latter as an easily assimilated fat and valuable tissue food, nor are any of its numerous commercial derivatives or so-called active principles to be considered as representing it. When it is well borne the pure oil may be taken. Children often become fond of it, and poor patients can obtain it fresh and of excellent quality at the fish markets. The amount of creosote given daily is from 24 to 60 minims, preferably in the form of an enteric salol or keratin-coated pill of 3 to 5 minims each, which is not dissolved until it reaches the intestine, thus avoiding the gastric disturbances so often occasioned by the drug. There is no advantage in giving it in the enormous doses sometimes advised. It may also be given with glycerin and whisky, in emulsion or shaken up with milk. Sometimes guaiacol or creosote carbonate or thiocol, which is freely soluble, agree better with the stomach, but are too expensive for general dispensary use. I was well impressed with ichthyol in one case complicated with tubercular infiltration of the pelvic floor in which it was used locally with good results. I have since tried it internally in a series of 60 cases, giving 10 minims every 4 hours. Of these cases 29 reported regularly for treatment and of this number 25 were much improved, gaining in weight and the temperature diminishing, with a corresponding improvement in all subjective symptoms. The average gain in weight was $4\frac{1}{2}$ pounds, and the highest observed was 10 pounds. In 5 cases it was necessary to discontinue the drug on account of the eructations and nausea produced.

When the progress of the disease has been rapid, the administration of opium in small doses for a short time is often very satisfactory in its results. Besides its effects in improving cough and arresting hemoptysis when present, it appears to exert a decided tonic effect, changing the entire *morale* of the patient and encouraging him in the beginning of treatment. Of course, it should be given with caution, but I have never seen any tendency to the formation of habit or other bad effect when thus administered. The old combination of opium with quinin and digitalis—the Niemeyer pill—is a valuable one. For neuralgic pains, apply a small cantharidal blister and rub the chest with the following liniment:

Menthol.....	3 drams.
Chloroform.....	3 drams.
Chloral.....	$\frac{1}{2}$ ounce.
Camphor.....	3 drams.
Alcohol, enough to make.....	4 ounces.

For night-sweats, the afternoon bath and friction, or the administration of atropin or agaricin, are usually efficient. In some persistent cases, potassium tellurate in daily doses of half a grain at night will relieve when other drugs fail. For blood-spitting and hemorrhages, opium and rest, with iced compresses to the chest, are employed. When sudden and profuse, a full hypodermatic injection of morphin should be given. But little dependence can be placed on internal hemostatics. When the appetite is poor, bitter tonics such as gentian, cinchona and nux vomica or strychnin are useful. Iron in any form is of very doubtful value in the anemia accompanying an active tubercular process. When there are high afternoon or evening temperatures, the temporary administration of antipyretics—one dose of phenacetin or acetanilid early in the afternoon—are sometimes useful; but generally the fever can be controlled by baths and other treatment.

Grafted upon a chronic tubercular inflammation there may be acute attacks of bronchitis and bronchopneumonia, which are treated as when they occur alone. For irritating, nagging cough, unaccompanied by expectoration, heroin in $\frac{1}{12}$ to $\frac{1}{6}$ grain doses is valuable, as, indeed, it is in all cases of symptomatic cough. It is also useful in relieving dyspnea and chest-pains. Its action appears to be much the same as that of morphin, but its administration in full doses is attended with less somnolence, constipation, and stomach disturbance. Ammonium carbonate, seneega, dilute hydrocyanic acid, codein, and hydrobromic acids have been useful palliatives in the cough of phthisis. As a rule, sirupy mixtures should be avoided, on account of their bad effect on the stomach. When the sputum is scanty and tenacious, the administration of potassium iodid will promote freer secretion, diminish the severity of the cough, and add to the comfort of the patient.

In cases of mixed infection, when streptococci swarm in the sputum, when there are severe chills and wide excursions of temperature, with profuse sweating and septic symptoms, I have seen improvement from the injection of Marmorek's antistreptococcus serum, as prepared at the Pasteur Institute of Paris. In one case, after the administration of three injections of 20 ccm. each, there was a complete disappearance of the streptococci from the sputum, the chills and sweats ceased, the temperature diminished, and there followed a marked improvement in the appetite and general condition of the patient. In other cases no improvement was seen, or the results were slight or of brief duration. Serum-therapy in general, however, as applied to tuberculosis, has not appeared to have been developed to a point to warrant its extensive trial in dispensary practice.

Such is the plan I have endeavored to follow for five years at the Presbyterian Hospital Dispensary. During the two and a half years ending last June, there have been examined in my class 1,232 cases of tuberculosis of the lungs. Of this number, 948, or more than three-fourths, were under treatment for less than a month, or did not return. Of the 284 cases receiving regular treatment for a period long enough to be of value in obtaining results, 249 have improved. Their improvement has been estimated by recorded increases in weight, reduction in temperature, and betterment of subjective

symptoms. In many instances the improvement has been sufficient to enable patients to return to and continue their usual occupations. Of the 35 cases in which no improvement was seen, 26 were advanced cases and 9 could be properly classed as incipient. I would use the word cure in any case with caution and some hesitancy, but of those under observation for two years or longer there have been as many as 12 cases in which the disease may be fairly described as arrested and in which all symptoms have disappeared.

In conclusion, I would say that it is encouraging to observe with what ready intelligence and willingness most dispensary patients will carry out hygienic detail when properly instructed, and it is obvious what a large and useful field for popular education and sanitary reform is thus afforded in our dispensary classes. It would appear that prevention, by means of widespread sanitation and improvement in the early detection of the disease, constitute the two most promising agencies whereby we may hope to successfully combat tuberculosis.

SANATORIUM TREATMENT AND ITS RELATION TO CLIMATE.

By S. EDWIN SOLLY, M.D.,

of Colorado Springs, Colo.

A RECENT visit to Europe of some 4 months' duration gave me the opportunity of considerably extending my study of the sanatorium treatment of tuberculosis, especially that which is known as the Nordrach system. Descriptive and critical articles upon the noted sanatoria of Europe have been so numerous, while especially accurate information concerning them is readily to be found abundantly set forth in the works of Dr. S. A. Knopf, of New York, and Dr. F. R. Walters, of London. It is, therefore, unnecessary to lengthen this article with a repetition of what has already been given to the public.

During the 26 years of my practice in Colorado Springs I have seen the use of open-air treatment greatly extended, so that for some years past our patients have passed most of their waking hours out-of-doors, and many during the night have slept on open porches or in tents, and the rest in rooms with wide-open windows. In Colorado we have, as is well known, air which is extremely dry, scant precipitation with an absence of dews, fogs and mists, a brilliant sunlight, and, for the most part, warm days and cool nights, hot sunshine and cool shade. The difficulty in Colorado to be overcome while sitting or lying out of doors is the almost constant movement of air and the comparative frequency of high winds. However, glass screens and other forms of wind shelters have been successfully used to obviate this disadvantage.

In such a climate as Colorado it is not surprising that the open-air treatment can be successfully carried out, but what particularly interested me in my tour was to witness the success that appeared to attend the open-air treatment in the damp, cloudy and frequently foggy climate of England. It seemed to me that if living in the open air was a success in England it would naturally follow that it would be a success in most of the low climates of Europe, and in such a climate as that of the New England States. Indeed, I have seen this treatment being carried out to the satisfaction of both patients and physicians in the excellent State estab-

lishment at Rutland, Massachusetts, under the direction of Dr. V. Y. Bowditch.

The sanatorium treatment may be divided under three heads:

1. The keeping of the patient almost constantly in the open air.
2. Superalimentation.
3. A system of supervision and control.

Not many years ago climate, that is, the quality of the air in which the patient was placed, was considered the essential, and in turn almost every variety of climate was extolled as the best; first the damp heat of Madeira; next the dry heat of Egypt; then the dry, cold, and snow-covered ground of Minnesota; and finally the dry, cold, or else warm, rarefied air of the higher altitudes.

At the next stage it was asserted that purity of air was the only essential, and that the ocean, the mountain, or the wide plain were equally beneficial.

Then followed the setting forth of the opinion that the quality of the air was not important, except that it should be pure, but that that climate was the best in which the greatest amount of out-door life could be carried on, and for this reason and for no other, dry, sunny climates, high or low, were the most desirable.

A further stage was reached when experiments with open-air life in damp, low climates proved a success. It was then declared by the extreme advocates of the open-air treatment that the quality of the air was of no account, it was simply its abundance linked with the other essentials of sanatorium treatment. For instance, in visiting a very excellent sanatorium in England where the Nordrach system was carried out, the able and enthusiastic physician in charge assured me that climate was nothing. He could cure a case in Whitechapel just as well as anywhere else; the system and the abundance of air were the only essentials, Whitechapel being one of the most crowded and poverty-stricken districts of London.

Going first to England I spent some time investigating sanatoria and in conversing with the leading physicians who were principally engaged in treating or advising consumptives, also in gathering the opinions of convalescent or cured patients.

I will mention some of my experiences at the sanatoria. I was certainly surprised to find how well the open-air treatment was succeeding and how little cold-catching occurred among the patients subjected to it. Of course, there were some who could not stand the full air-treatment, particularly during the colder weather. The most of these were those with special catarrhal tendencies, or old fibroid cases, and in whom the amount of lung-space was so limited that the heart's action was interfered with, and the consequent dyspnea curtailed their power to take exercise, thus they did not obtain a healthy reaction to the cold, especially during damp or windy weather.

I stayed a few days at St. Michael's Home, near Cheddar, Wiltshire, in the midst of the famous cheese-making district. St. Michael's Home is a handsome, well-equipped stone building. It is supported by an endowment fund for the benefit of the consumptive poor from London and other big cities. It is under the care of a Protestant Nursing Sisterhood, and one of my sisters is the director of the institution, Dr. Statham of Cheddar being the medical officer. A few years ago Dr. Statham introduced the Nordrach system. I was delighted to find the improvement that had taken place in the condition of the patients since my previous visit.

The change was undoubtedly brought about by keeping the patients out-of-doors most of the hours from breakfast to bedtime. A few shelters were provided for rainy weather. The diet, which had been quite as ample as was customary in homes and hospitals of a similar character, had been largely increased, especially in the matter of milk, the patients consuming a pint with each of their three meals. Further, the matter of rest and exercise had been systematized and regulated with care for each individual, certain definite walks being laid out and prescribed according to the case. The patients themselves were rejoicing in the open windows and open-air life and developed the air-hunger. I was told that those who had returned to their homes were generally heard from as bitterly complaining of the stuffy condition of the rooms where they had formerly lived perfectly contented. As this institution is entirely a charity, no charge being made, the statements concerning the success of the treatment were without the suspicion of any commercial prejudice. The cases for admission were not in any way limited as regards the extent of their disease, consequently their results en masse would not be as favorable as those of the generality of sanatoria where only cases are received which are likely to improve. Having known this establishment under the old regime and the new, I contrasted the happy and cheerful appearance of those under the new system with the sad, hopeless, resigned, and attenuated appearance of the patients under the old, and obtained the most convincing proof that I met with on my travels of the value of the open-air treatment. I gathered that even hopeless cases as a rule lived longer than formerly and ultimately succumbed with a shorter and less weary waiting in bed for the inevitable end.

As regards the local conditions the situation is a good one, being on sloping ground on the side of the Mendip Hills, which afford some shelter from storm and wind. The soil is good, with good drainage. The grounds are ample, with winding paths, and lawns, shrubs, flowers, and trees. It is only a few hundred feet above sea level, and the climate is mild, but is as humid as that of the country generally through the west of England.

About 10 miles distant on the top of the Mendip Hills, the Nordrach sanatorium is situated, which is a private institution conducted by Drs. Thurnam and Gwynne, both former consumptives who had been cured at the original Nordrach Colony in the Black Forest. The Mendip institution is excellently managed, with good buildings and accommodations for the well-to-do, and beautiful grounds well sheltered by pine woods.

Here the climate is more harsh and the country round bleak and exposed. The quality of the cases, being selected before admission, was rather better than at St. Michael's. The results relatively appeared to be about the same. Neither of these institutions have been carried on long enough to speak of permanent results.

Dr. F. R. Walters kindly took me to the North London Hospital for consumptives, of which he is one of the visiting physicians, where the same system is carried out. It is situated high up on the slopes of Hampstead Hill. This is an institution for the poor, but, as at St. Michael's, patients live in large wards and not in private rooms. The grounds are somewhat contracted, as they are placed in the midst of a populous neighborhood, but fortunately the houses around are mostly detached villas and are not closely built up in streets. The hospital has a fine view overlooking the great city of London. The open-air treatment seems to succeed very

well here in spite of the air being only comparatively pure. Probably, however, if an exact comparison could be made it would be found that the results are not as good as at the country sanatoria where the climatic conditions are better.

While the guest of Dr. Burton Fanning, of Norwich, I visited his private sanatorium at Mundesley, Norfolk. This lies on the southerly slopes of a low hill which separates it by a mile from the German Ocean. The building is excellently planned, hygienically and pleasantly situated in ample grounds. Here the patients appeared to be doing well, and Dr. Fanning, who displays a wise and scientific conservatism, was much encouraged.

He has also a smaller institution for the poor, a few miles distant, which I was unable to visit, but where he has also met with success.

Norfolk, being on the east coast, has a bracing and for England a sunny climate and is dry for a sea air.

The report of Sir Hugh Beevor, founded on some recent studies he has made as to the comparative slight prevalence of tuberculosis in Norfolk and its causes, is well worth reading, but cannot here be discussed.¹

I was told that the women did not do as well as the men under the open-air system. This treatment has been carried on in England too short a time to judge of permanent results, but there is no doubt at least that patients are more comfortable and hopeful, and a greater number show improvement for a time at least, than under the old system.

At the Brompton Hospital, which is surrounded by the streets of London and the gardens of which are necessarily limited, the open-air system is being tried and the physicians are well pleased with the improvement of the patients.

Of course, something must be allowed for the success which always follows any new treatment of a chronic disease in consequence of the enthusiasm and hopefulness instilled into the physicians and their patients, and the greater care that is bestowed on the details. But while making due allowance for these considerations I believe that the open-air treatment in England is a distinct advance and has come to stay. While it may only cure a few of those cases in whom the disease is well established, although its enthusiastic advocates believe to the contrary, yet I am of the opinion that where the tuberculous invasion is limited and recent, and before phthisis has well begun, that many tuberculously affected persons will be prevented by this method of treatment from developing chronic phthisis.

In order to study both sides of the question and make comparisons, on leaving England I first visited Falkenstein, which ranks next to Goerbersdorf in being the oldest and most celebrated sanatorium. Then I went to the Nordrach Colonie in the Black Forest, which is the pioneer institution of the more advanced system of open-air treatment and superalimentation, founded and controlled by Dr. Walther. From there I proceeded to Davos in order to see what they were doing in sanatoria in high altitudes, and how the sanatorium treatment compared with that of the open-resort methods for which Davos has been so long celebrated.

The Falkenstein Sanatorium stands on the southern slope of the Taunus Mountains, 1,300 feet above sea-level. It is open towards the southeast, overlooking a most beautiful landscape of plain with growing crops and green fields, while it is sheltered from the north and east and west by wooded hills.

¹ *British Medical Journal*, August, 1900.

The main building has two wings joining it at an obtuse angle enclosing a wide terrace 200 feet in length. On either side are two annexes, connected with the main building by covered corridors. Most of the patients lie out during the day upon the covered verandas which project from the buildings. These are protected by awnings to shut out wind and sun as may be required. Dotted about in the beautiful grounds are many small pavilions which revolve upon a wheel placed beneath them so that they can be readily turned away from the wind and towards the sun. The grounds are large and beautiful, with winding walks of gently rising grades. The buildings are heated with steam and well ventilated. The drainage and water-supply is excellent, and the rooms handsome and attractive, though the covered verandas rather detract from the cheerfulness of those on the lower floor.

The climate resembles that of the rest of Central Germany, is slightly bracing, moderately humid, and free from extremes and sudden changes of temperature or high winds, and the air is particularly pure and free from dust.

The whole establishment is most completely equipped with baths, electricity, and means of disinfection, and has everything to make a complete and luxurious establishment. Great care is exercised in the treatment of any morbid conditions with which the phthisical patient may be afflicted in addition to his pulmonary disease, nose and throat treatment being especially well carried out. The patients are kept out-of-doors most of their waking hours, lying on long chairs side by side upon the covered verandas.

The dominating feature of the treatment is rest. The exceptions that are taken to this excellent institution, are that the idea of rest is carried a little too far and that the patients are too much crowded together, and that there is too much shelter and not enough open air on the verandas. The culinary arrangements and the food are of the best and the medical service of the highest order.

The far-famed Colonie of Nordrach has striking features of its own. Here the buildings are quite unpretentious and are scattered about on the sides of a beautiful wooded valley in the Black Forest. It is much further removed from other habitations and highroads than Falkenstein, or, indeed, most sanatoria. The valley stands at an elevation of 1,500 feet, opening towards the southwest. The open-air treatment is here carried out to its fullest extent, except that the patients do not sleep out of doors, as many do in Colorado. There are balconies to some of the rooms, but no verandas or halls for the rest-cure. The patients sleep with wide-open windows and take their meals in a hall where the windows are all let down on three sides except in stormy weather; even then they are seldom more than partly closed.

The numerous graded walks are laid out upon the slopes of the valley walls with benches at certain intervals. When the patients are outside the house they walk, sit, or stand in the open air and generally without their hats. If their temperature indicates that they should be at rest they are kept in bed or lying on couches in their rooms. Certainly there is much less risk of cold-catching from sitting in drafts than in using rest halls and pavilions because the patients are always in the full air. If they cannot stand the exposure they go elsewhere.

Dr. Walther assured me, however that it very rarely happened that a patient could not endure and benefit by this full-air treatment.

Each bedroom has a shower-bath and two basins, all supplied with hot and cold water. One basin is for washing the face and hands, and the other for washing the teeth. The older buildings are heated by hot water, and the newer by electricity. Electric heaters are on hand for the patient to use in bed if needed. Patients dress and bathe as they please and control the opening of their bedroom windows. Dr. Walther insists, however, that at his early morning visit the air of the room shall smell as pure as the outside air.

Doubtless many of the reports about overfeeding of the patients are much exaggerated. The plate of every patient is filled by Dr. Walther himself, and a half-emptied plate is not allowed to be removed before the doctor has seen it and decided whether the patient should be urged to finish the remaining food or whether he can furnish good reasons to the doctor to excuse him from the trying task. There is no doubt that through the doctor's influence over, and his careful study of, each patient, his patients consume on an average a much larger amount of food than at the establishments which are under the old regime. The quality of the food, though good of its kind, is apt to be too teutonic in character, which often makes it repugnant to the British or American stomach. The patients are nearly all of one or other of these nationalities.

The discipline and supervision of the patients is autocratic to the highest degree, although the autocrat is extremely kind and amiable, at least when he is having his own way.

There is no doubt that the treatment at Nordrach has been very successful with many patients; but, on the other hand, there are many who are unable to stand the extreme methods in vogue.

Dr. Walther uses very few drugs and does not appear to pay much attention to the accompanying disorders, or to symptoms except hyperpyrexia, trusting almost exclusively to general hygiene, food, and regular rest and exercise. Perhaps one of the chief reasons, apart from its real value, for the popularity of his treatment is that he allows his patients when their disease is arrested, or as he terms it cured, to return to their former homes. While I met several of his former patients who had returned to their homes in England and were apparently in good health, I heard of others who had fallen behind or succumbed. Of course this is to be expected under any plan of treatment; at the same time I formed the opinion that the permission to once more live at home was, perhaps, too generally given. I have always shared the belief with Dr. Walther that most consumptives live or die according to their strength of character in adjusting their life wisely to their disease, and for this reason many can not be trusted to live again among the environments in which their disease was acquired. However, I believe in the educational power of sanatorium treatment, especially when directed by an intelligent and masterful man, to turn a certain proportion of the unwise invalids into the wise.

Leaving Nordrach, I proceeded to Davos Platz, ascending 5,000 feet in a few hours. Here I found this beautiful place prosperous, extending itself, and well filled with invalids, considering that it was the summer season. All appearances belied the statements that had been made to me by the enthusiasts of the home open-air sanatorium treatment, viz., that Davos, strangled in its own smoke, crowded with germs, and without the hygienic benefits of sanatorium treatment, was rapidly dying. On the contrary it seemed extremely prosper-

ous, the many excellent hotels were well provided with porches and sun parlors, balconies, and other resources for invalids.

As regards sanatoriums, the valley rejoices in several. There are at present two institutions for the well-to-do, Dr. Turban's and Dr. Philipi's; Dr. Turban's establishment being very complete, and evidently managed with great skill and care. This institution in its methods bears a close resemblance to those of Brehmer at Goerbersdorf and Dettweiler at Falkenstein, the rest-cure being carried on out-of-doors. Careful attention seems to be paid to all concomitant disorders and diseases of the consumptive. The town has grown round the institution, so that the grounds are not as spacious or as open as could be desired. Here the custom is to give six meals a day, while at Nordrach only three regular meals are usually allowed.

For the poor there is the Basel Sanatorium at Davos Dorf under the direction of Dr. Egger. It is an admirable and successful institution. There is also a good sanatorium for the Dutch, and another for the English.

There is now being built a very much finer establishment than any of these for the richer class. It has a very much better situation, being several hundred feet above the valley, upon a small plateau on the slopes of the Schartz Alp. Here purer air and more sunlight with good shelter from the north is procured than in the village. The building when completed will cost \$500,000. I inspected it with much interest with Dr. Neumann, who will be the resident physician; Dr. Spengler being the medical director. It is reached by a funicular railroad. It is solidly built of stone and will be as thoroughly hygienic and as fully equipped as any sanatorium at present existing. My visit to Davos closed my tour of the sanatoria.

When I tried to sort out and arrange my various observations, and to endeavor to find out what was the practical outcome of it all, I found that while I had formed certain definite opinions it was not so easy to furnish valid proofs of my beliefs. In the first place, in considering the merits of the sanatorium treatment, I was confirmed in my previous opinion of its value for a time at least, especially in the earlier stages of the disease, for a large proportion of phthisical patients.

In my work on Medical Climatology, I have given what I believe is good evidence and I will here endeavor to analyze more recent statistics with reference to the same points. The difficulty in making such statistical inquiries is in finding reports that are made out on similar lines so that they may be compared. The work of Dr. F. R. Walters' "Sanatoria for Consumptives" (pages 48 to 57 inclusive), and Dr. S. A. Knopf's book entitled "Pulmonary Tuberculosis" (pages 328 to 330 inclusive), contain summaries of the reports of results from the most important sanatoria up to date. I examined several of the original records, but could find nothing to assist me further in my search after comparative results in closed and open sanatoria in low and high climates.

I have also in the "Handbook of Climatology" given statistical evidence of the relative value of high and low climates in open resorts. What I particularly desire to obtain at the present time is the relative value of sanatoria and open resort treatment in low climates and high climates respectively, and, most of all, the relative value of closed sanatorium treatment carried on in lowland as against highland climates. From the references referred to, I extracted the following tables. The reason

of the statistics taking the form they do, and being limited to only a few of the total number of reports, will be obvious to the reader of the references :

TABLE I.
COMPARATIVE RESULTS IN SANATORIA IN HIGH AND LOW CLIMATES.

COMBINED FIRST AND SECOND-STAGE CASES ONLY.

(Taken from Dr. Walters, pp. 52 and 53.)

1876-1886.	Altitude.	Number of Cases.	Number Benefited.	Per Cent.
LOWLAND CLIMATES.				
Goerbersdorf (Manasse) .	1,840 ft.	3,615	1,294	36
Falkenstein (Dettweiler) .	1,375 ft.	1,022	746	73
Reiboldsgrün (Driver) . .	2,300 ft.	2,000	1,400	70
Total		6,637	3,440	Average, 51
HIGHLAND CLIMATES.				
Leysin (Bernier)	4,150 ft.	37	34	92
Davos (Turban)	5,115 ft.	302	269	89
Arosa (Jacobi)	6,000 ft.	259	212	82
Total		598	515	Average, 86

The total average of benefited in low climates was 71%.¹
" " " " " high " " 86%.

¹ Without Goerbersdorf.

The Goerbersdorf reports up to 1884 are so much lower in the percent. of benefited to the others—owing, perhaps, to some different method of estimating results, or, perhaps, to their being taken so many years ago, when the material was worse and the treatment perhaps not as efficient—that probably it would bring out the truth better to omit them.

TABLE II.
COMPARATIVE RESULTS IN OPEN RESORTS IN LOW AND HIGH CLIMATES.

(Taken from Handbook, pp. 132 and 133.)

ALL STAGES.			
	Number of Cases.	Number Benefited.	Per Cent.
LOWLAND CLIMATES.			
Desert Climates	154	100	65
Island Climates	568	295	52
Coast Climates	2,328	1,369	59
Inland Climates	136	77	57
Total	3,186	1,841	Average, 58
HIGHLAND CLIMATES.			
Alps (Davos)	2,027	1,551	77
Colorado	571	420	73
Total	2,598	1,971	Average, 76

The total average of benefited—lowland climates, 57%.
" " " " " highland " 76%.

My first table, Table I, deals with the comparative results in sanatoria in high and low climates, first and second stage cases combined being alone taken, and the different variety of forms of improvement being grouped

under the head of benefited. Of the lowland sanatoria the lowest elevation above sea-level was 1,840 feet, and the highest 3,300 feet. Of the highland climates the lowest elevation was 4,150 feet, and the highest, 6,000 feet. The total average percentage of benefited in low climates was 71, and in high climates 86.

Table II gives comparative results in open resorts in low and high climates. The total average of benefited in lowland climates was 57 %, in highland climates 76 %.

TABLE III.
COMPARATIVE RESULTS IN HIGH AND LOW CLIMATES IN OPEN AND CLOSED RESORTS.

SANATORIUMS.	Per Cent. Benefited.	OPEN RESORTS.
LOWLAND CLIMATES.		
Hygeia (A. Klobs)	69	
Goerbersdorf (Brehmer)	76	
Adirondack (Trudeau)	77	
Average	74	Average percent. of benefited, 58
HIGHLAND CLIMATES.		
Davos (Turban)		
Arosa (Jacobi)		
Average	84	Average percent. of benefited, 76

Table III shows the comparative results in high and low climates in open and closed resorts. The cases, however, could not be obtained in first and second stage cases alone, but only of all stages combined. In lowland climates the closed sanatoria show 74% benefited, and the open resorts 58% benefited. In highland climates the closed sanatoria show 84% benefited and the open resorts 76%, exhibiting the relative superiority of sanatorium over open resort treatment in the two classes of climates, respectively. Doubtless the sanatorium cases were on the whole in better condition upon first coming under treatment than those in the open resorts and, therefore, the superiority of sanatorium treatment over open methods is probably not as great as it appears here; but, nevertheless, I believe even if the material was exactly the same, the sanatoriums would show a greater percentage of benefited over the open resorts.

Table III also proves that climate exercises a beneficial influence over patients in closed sanatoriums as well as in open resorts. In all stages combined the percentage of benefited in sanatoriums in low climates was 74%, while in high climates it was 84%.

In the first and second stage cases combined (see in Table I), the difference in favor of mountain sanatoria is still greater,—lowland sanatoria 71 %; highland sanatoria 86 %.

These investigations, I believe therefore, establish the following conclusions: That the sanatorium treatment is a good thing, particularly when patients are kept in the full air, but that it is not quite such a good thing, or as widely applicable, as its advocates believe. It is not the quantity of the air, or the negative virtue of purity, that is alone desirable, but the quality of the air that is also of supreme importance; in other words, climate is of the greatest value, and if you give equally good hygienic conditions to your patient, that patient who is placed in the climate best suited to his needs is

going to improve the quickest, and his disease is more likely to be permanently arrested.

The oft-asserted belief of the advocates of home sanatoriums that a tuberculous patient is best cured in his own climate is, I believe, a fallacy. He is cured as much on the mountain top, the wide plain, or the sea-shore as those cured at home, and no more and no less. There are certain evident economic reasons why home sanatoriums should be encouraged, up to a certain point. I believe, however, where circumstances permit, it is safer to change the air and locality of the consumptive for a time, and by doing so results are brought about much more rapidly and surely than if he remains at home; but, as I have said elsewhere, "climate without hygiene is but as 'sounding brass and a tinkling cymbal.' "

A CASE OF ACUTE TUBERCULOSIS OF THE MESEN-
TERIC GLANDS OF THE ILEOCECAL COIL; RE-
MOVAL; PERMANENT RECOVERY.¹

By MAURICE H. RICHARDSON, M.D.,
of Boston.

THOUGH the frequency of acute tuberculosis of the mesenteric glands cannot be great, I have met a few cases. In these cases I have found the lymph-glands apparently infected as far as it was deemed advisable to push the exploration. In many instances structures other than the lymph-glands themselves have shown tuberculous lesions. The miliary form of tubercular peritonitis, with ascites, shows as a rule no special involvement of the lymph-glands. If enlarged they are not markedly so. Occasionally, however, the lymph-glands show more evidence of infection than the peritoneal areas themselves, parietal and visceral. I have come to regard that form of general tuberculosis in which there is infiltration of the mesenteric glands as more serious than the ascitic form with miliary nodules distributed everywhere throughout the peritoneum, for I have operated with most encouraging results in numerous cases of the latter. On the other hand, explorations in which large masses of tubercular deposits have been found here and there in the abdominal cavity have usually been without benefit. In some instances the patients have slowly wasted away; in others fecal fistulas have formed; in still others, however, simple exploration has been followed by that rapid and permanent recovery so hard to explain.

Acute tuberculous affections of the mesenteric glands distinctly localized have been so unusual that I can recall but two cases. One was that of a young colored girl who had a tumor about the size of an orange situated in the region under and a little above the umbilicus. There was moderate constitutional disturbance. Exploration showed a collection of cheesy pus between, and involving, folds of mesentery. Drainage of the collection was followed by temporary improvement. The girl finally died of pulmonary tuberculosis.

Enlargement of the mesenteric glands is by no means infrequently seen in the course of abdominal operations. At operations for chronic appendicitis, I have found the mesentery of the ileocecal coil studded with small, hard glands. Similar enlargements have been demonstrated at operations for other lesions. In some instances the glands are found to be cheesy, or even

¹ Read before the American Surgical Association in Washington, May, 1900.

calcified. In one recent case I found a hard, irregular, and angular tumor, hanging from the mesentery by a small pedicle.

In another case, that of a young woman, the sigmoid flexure contained, at its mesenteric border, a calcified mass about the size of an olive. This lesion was discovered in the course of an operation for chronic appendicitis. It seemed most likely an enlarged gland situated in the mesentery so close to the intestine that it finally involved it, becoming in the course of time calcareous and innocuous. There had never been in previous years any symptoms noticed which this tumor would have explained.

In the case of a man of middle life operated on in the present year, I found a chylous ascites associated with numerous enlarged glands of the mesentery of the small intestine. The lacteals were prominently injected, showing as fine white lines upon an intensely reddened intestine. The diagnosis in this case was uncertain, as no glands were removed; but it seemed not improbable that the lesion was tubercular, the glands being so numerous and so closely matted together as to obstruct the lacteals.

Enlarged glands limited to the mesentery of the ileocecal coil, whether they be regarded as cured or as only quiescent, suggest that the operation—usually performed for a supposed chronic appendicitis—rests upon an incorrect diagnosis; that the attacks of supposed appendicitis might have been attacks of acute localized mesenteric tuberculosis. Nevertheless, in such cases the appendix has shown distinct evidence of disease, and its removal has been followed by recovery thus far permanent. The infectious process in the appendix probably extended to the nearest glands, the operation in the interval exposing them in a condition of quiescence.

The only instance of acute appendicitis associated with a general tuberculosis of the abdominal viscera was that of a young boy operated upon in 1900. There had been a perforation of the appendix with a localized abscess. The peritoneal cavity was filled with disseminated tuberculous masses, the glands of the mesentery suggesting bunches of grapes.

It is by no means impossible that in some cases the infectious process of the appendix is in the first instance tubercular, and that the general dissemination is secondary; or that the infection may have started in the cecum itself, involving later the appendix and the mesenteric glands. I have resected the ileocecal coil several times for tubercular stricture of the intestinal wall. In most of these instances the operation has been performed for a persistent fecal sinus following operation for acute appendicitis. In one case the resection was performed for a stricture of small lumen in the ascending colon. In this case, even, the lesion may have started in the appendix, for the process involved the whole ileocecal coil.

The truth is, probably, that the disease starts as an acute process, and so closely resembles an acute appendicitis that a distinction before operation is impossible. Indeed, at the operation itself the tubercular nature of the infection may not be suspected, the diagnosis being suggested only after prolonged suppuration of the wound, fecal fistula, localized and persistent tumor.

In the case herewith reported, which is the only one of the kind that I have ever seen, the diagnosis of acute appendicitis was made by Dr. Craigin, Dr. Mixter, Dr. Brewster, and myself. The true lesion was never for a moment suspected.

The patient, S. M., was a strong, healthy boy, aged nearly 5. At 11 months he had had the measles. From that time to March, 1895, he was an unusually healthy child. He then had a severe attack of influenza, with double otitis media. By May 1 he had entirely recovered. On June 16, 1895, he was apparently in perfect health. Dr. Craigin's notes are as follows:

June 17 he was out of sorts, was feverish, had colicky pains, and was constipated. The pulse was 140; the respirations, while sleeping, 40. June 18 he had a restless night, with frequent colicky pains. These recurred at times during the day. The pulse dropped from 140 to 120. The temperature was 103.5° in the morning; 103.2° at night. June 19, there had been during the night frequent but transitory pains in the lower abdomen. The bowels were opened freely by means of calomel. The stool contained apple skins. The patient had been overeating before June 18. The morning temperature was 102.6°, the pulse 120. Once in the afternoon he had pain in the lower abdomen and in the right thigh. The evening temperature was 104.2°, pulse 140.

I saw the patient for the first time on the evening of June 19. I found a tender mass in the region of the appendix. Drs. Mixter and Brewster confirmed the existence of this tumor, which we supposed to be an acutely inflamed appendix with adhesions and exudations. Immediate operation was advised and performed.

The incision revealed a healthy cecum and an unaffected appendix. In the mesentery of the ileocecal coil were numerous enlarged glands, varying in size from that of an English walnut to that of a large pea. The largest glands were contiguous to the intestine; toward the receptaculum chyli they diminished rapidly in size. The glands were carefully removed from the mesentery, with as little cutting as possible. The dissection was carried up several inches, until no more affected glands could be found. The appendix was not removed. A small gauze wick was left in the depths of the wound, and the wound itself was partly closed with interrupted silkwormgut sutures.

The operation was borne well. The temperature reached normal on the third day, and convalescence was without special incident. Most of the glands removed were pink and juicy. Among them were two small cheesy ones. The gross appearances were strongly suggestive of an acute tuberculosis, and it was not at all surprising to receive from Dr. Mallory the following note:

"HARVARD MEDICAL SCHOOL, June 23, 1895.

"DEAR SIR: In regard to the lymph-glands removed from Dr. M.'s little boy, I am sorry to have to confirm what must have been your own diagnosis on incising them—tuberculosis."

The disappointment that followed the demonstration of the lesion may be imagined. Instead of a simple appendicitis—bad as that is—there was an acute lesion, which, so far as any of us had known or seen, was absolutely incurable and hopeless, an acute tabes mesenterica, an infiltration of organs and regions so close to the great channels of lymph-absorption and distribution that complete removal seemed impossible. The tone of discouragement so evident in Dr. Mallory's report, though it came when all local and constitutional signs were improving, brings back vividly the feeling of absolute hopelessness as to the ultimate outcome which prevailed in this case.

The improvement of the early hours continued, however, without a single unfavorable sign. No manifestation of local or remote tubercular infection developed. The convalescence was perfect and permanent. The patient, now, is a boy of robust health.

Cases of this kind must be extremely rare. Not that tuberculosis of the abdominal viscera is rare, for, taken as a whole, it is a common disease. Limited, however, to a single small area of the peritoneum or of peritoneum-covered viscera it is extremely unusual; limited to an area that permits complete extirpation it is more unusual still.

The cases diagnosticated as appendicitis with abscess, in which the operation is simple drainage, may in some instances be tubercular in origin. The cases of appendectomy, whether acute or chronic, do not often offer the least suggestion of a tubercular origin. Doubtless many of them are tubercular, as I have already said.

In cases of glandular tuberculosis limited to a single coil it must be assumed that the infection takes place directly through the intestinal wall. Infections beginning thus are likely to be overlooked in the early physical examination, when the patient is perhaps robust and the abdominal walls are thick, unless the inflamed and tender mass is so situated that palpation is possible.

In the case herewith reported the initial symptoms suggested appendicitis; the lesion actually found, though regarded as hopeless, was attacked just as similar lesions in the neck are attacked. The result was just as gratifying.

This case, it seems to me, is one of great value in questions connected with acute abdominal symptoms, and especially with the treatment of suspected abdominal tuberculosis. It is an argument in favor of an early operation when the symptoms are acute and severe, not only when the diagnosis is clear, but more especially when it is obscure.

The results following operations for tuberculosis are often so inexplicable—much good following an operation apparently so incomplete as to be absolutely inadequate—that one is justified in operating, even when it is clear that the dissection can be only partial. The instances of cure are so numerous after simple incisions of tubercular peritonitis, after the removal of a tubercular tube, after the curetting of tubercular fascia—after many operations which remove only part of the disease—that surgical intervention has become, it seems to me, a duty whenever intervention is possible.

In mesenteric tuberculosis, in particular, removal of the affected glands is indicated whenever their removal is technically possible,—that is to say, when the glands are limited to areas easy of exploration, and when they themselves permit easy enucleation.

PERSONAL VIEWS REGARDING THE CLIMATE OF THE ROCKY MOUNTAINS IN THE TREATMENT OF TUBERCULOSIS.

By S. D. VAN METER, M.D.,*
of Denver, Colo.

AFTER several years' residence in the South and East, followed by an experience of ten years' practice in Colorado, during which time I have visited nearly every section of the Rocky Mountains, always studying with deep interest the relative climatic advantages of the different localities, I feel qualified to give a fairly intelligent opinion on the points arising in discussing the relative climatic advantages of the different sections of North America. For practical purposes it could be divided into the East, South, Pacific, and West, the latter to mean that section of country embracing the Rocky Mountains in Wyoming, Colorado, New Mexico, Arizona, Northern and Central Old Mexico. However, it is not the intent of this paper to discuss the advantages or disadvantages of any of these sections, but to presume that it is an accepted fact in the minds of the majority of medical men that the latter, or West, as I have arbi-

trarily designated it, is so superior to all others it is not necessary to further discuss the relative merits of either; and to give my personal views and observations on the subject has been my desire for some time past, but having such a strong belief in the unquestionable superiority of the West, I have been deterred from so doing by the fear of accusation of having an ulterior motive. Several years ago I withdrew from medical practice, and limited my work to surgery, hence at present there is nothing to be feared in that direction, and to further strengthen my position, permit me to state that as far as the possibility of increasing my professional income, I care not if no more tuberculous patients come to Colorado. I am well aware many writers on Western climate have views somewhat different from mine, and some may criticise this paper as being void of scientific research and statistics. However, if I have presumed too much in supposing my personal views will be better received and appreciated than history of cases and tables of temperature and barometric readings, I will abide the consequences.

It may be claimed by some that the great climatic advantages of the West are so well known that it is not justifiable to increase the literature on the subject. Further, that the medical profession appreciate it fully, and are thoroughly posted as to how, when and where patients should be sent. Many of the profession fortunately do, but many, many more do not. Pardon my saying that the inexcusable ignorance of this subject that is displayed by a great number of the profession, in the erroneous and inconsistent directions and advice given to the patients they send to this climate, is so palpably absurd, that such alone warrants the conclusion, *much education along this line is greatly needed*. By way of excuse it may be said, it is impossible to obtain anything approaching a clear conception of the peculiar surroundings, climatic and other conditions of any section of the world, without a personal visit. Hence a summer's outing in the Rockies for every medical man who has not had that pleasure is recommended as the thing, par excellence, to eradicate erroneous impressions. He may be assured a most delightful vacation, as well as clearer ideas upon all of the many points in question than he can ever expect to have from study of the existing or coming literature.

The question is often asked, what section of the Rocky Mountains is the best. At present there is no best. The numerous points to decide, that vary in every case of consumption, unfortunately necessitate that each should be considered by itself; in the end choosing that place most suitable to the circumstances and peculiarities of the patient. The perfect and the ideal are difficult to obtain when cost is not to be considered. Unfortunately, the majority of invalids are not blessed with wealth, and the consumptive seeking the best of climate and accommodations needs to be well supplied with money.

From purely a climatic point of view that portion of Central and Northern Old Mexico traversed by the Sierra Madres offers the best all-the-year-round climate of the whole West. It combines the requisites of proper elevation, equable temperature, minimum atmospheric humidity, freedom from snow, a small annual rainfall, and, last but not least, comparative freedom from wind and dust storms. However, there are two serious objections to this section. They are the absence of accommodations, and the fact that but little English is spoken. The latter can, of course, be easily overcome, but the

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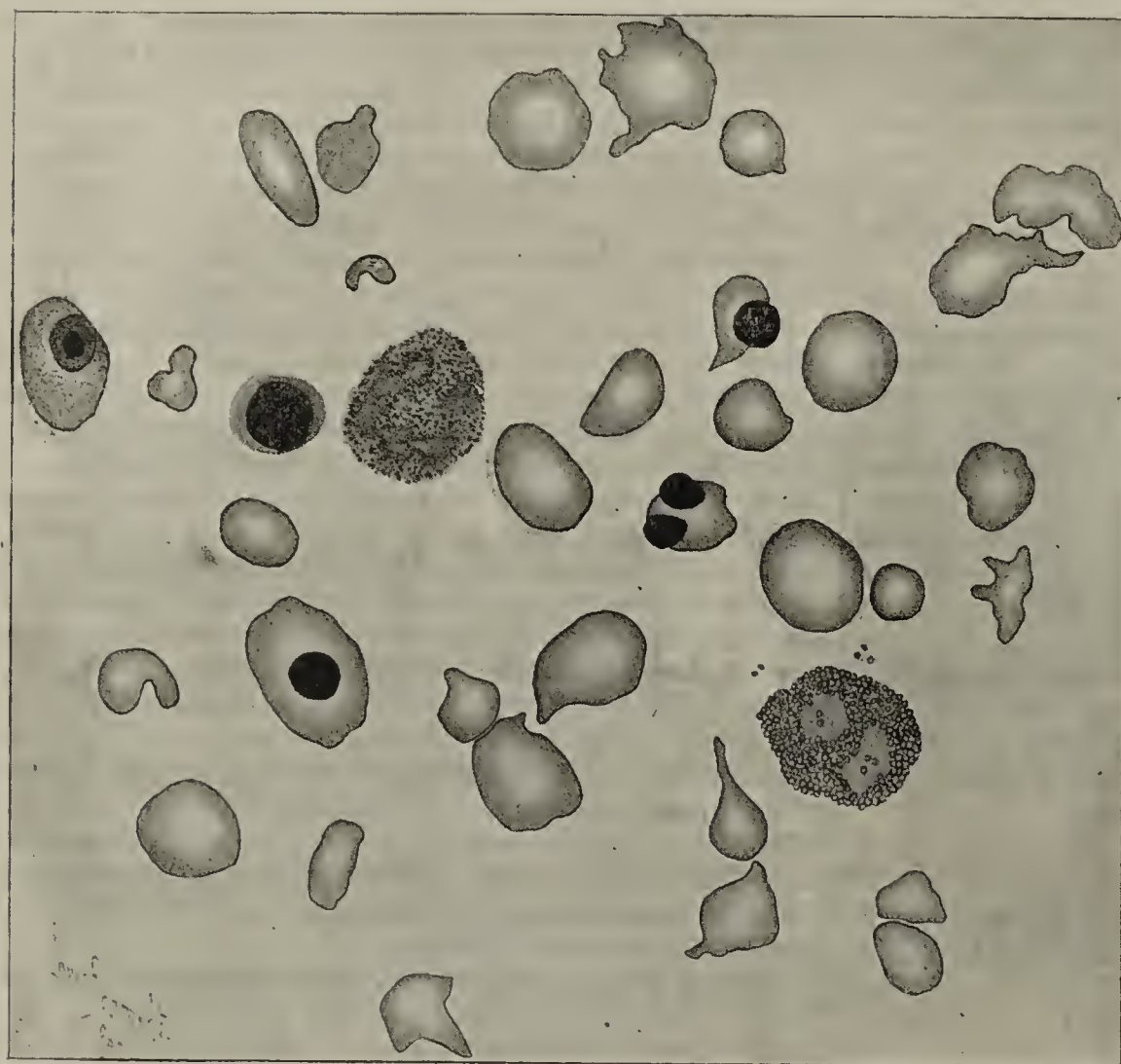
first is difficult, in fact so much so that only those well supplied with money can overcome it, by having their own cooks, provisions, bedding, and general living and camping outfits. I may convey the wrong impression in using the phrase *absence of accommodations*. There are good accommodations to be had in the large cities, but, on the whole, they are poor as compared with those the average well American wants, and the invalid seeking health, will not think my use of the word "absence" too strong. Personally, I am used to, and very fond of *frijoles*, *chili-con-carne*, and other Mexican dishes, but more than once, after a sojourn of several weeks in Old Mexico, the viands set before me at the first Harvey eating house, after reaching the United States, looked and tasted like food "fit for the gods." This serious objection keeps numerous consumptives from going to

these territories to the northern, along the Colorado State line, the country becomes more mountainous, with increase of altitude, lower mean temperature, and heavier fall of snow, but there are less wind and dust storms. Accommodations too are better, and I know of no finer section for camping and out-of-door life, which can be enjoyed the greater part, if not the whole, of the year.

Leaving this section and coming north into Central and Northern Colorado, a very grand and beautiful section of the Rocky Mountains is reached. To it may be added Southern Wyoming and Idaho, as this area of mountain parks and rock-ribbed canons does not stop suddenly at the Colorado State line. Naturally there is considerable difference as to the commencement of spring and fall in the extreme north and south of this

section, but good accommodations are to be had; and for seven months of the year the climate, *although far from perfect*, on the whole, is all that can be expected. The numerous hotels and ranches in the canons leading east and west from the main range, together with those located in the natural parks, chief of which are Middle, North, Estes, and South Park, offer homes approaching the ideal for consumptives during spring, summer, and fall, but the cold winter and wet snows of February and early March constitute objections that prevent an honest observer claiming for this section an ideal all-the-year-round climate. True, many incipient cases do well here all through the winter, but the chances are, *they would have done better had they gone South*. Like all elevated mountainous regions in this latitude, where 13,000 to 14,000 feet means perpetual snow, the great difference between day and night temperature, and the sudden change at sunset, are noticeable characteristics and features all newcomers should know, that they may avoid bad results therefrom. The sun a half hour before sinking behind the western horizon may be so intense as to blister the skin,

and a few minutes later an overcoat will be comfortable. The use of light-weight pure wool underwear for the summer months is to be strongly recommended. The scenic photographer has of late years made these canons and parks well known in the picture world, but to appreciate their full grandeur, cool atmosphere, pure mountain water, the beautiful streams which abound in the angler's delight, the wily trout, one has to see, breathe, and taste for himself. As the hotels of the eastern side of the main range are left behind, and you pass to the north and west, the country becomes less populous, being farther removed from railroad centers. This renders that part of the section less accessible, and acts as a practical quarantine against the majority of advanced pulmonary cases. However, to those who are well enough to get away from civilization, who wish to live in the open air, camp out, hunt and fish, they can find a no more delightful country in which to satisfy their desires. They will find plenty of deer, antelope



this section. Time and the rapidly-increasing American emigration to Mexico will bring about a correction, and I prophesy that the day is not far in the future when Old Mexico will be the most popular climate on this continent for tuberculous patients.

Coming north into New Mexico and Arizona conditions change somewhat, for better and worse in some of the requisites of an ideal climate. Here there is some snow, although in most localities of this section it is of short duration. The wind and alkali dust storms become serious objections at certain seasons. Accommodations, while not perfect, are fair, and each year brings decided improvement. The proper altitude, dryness, and predominance of sunny days over the cloudy, are features to which this section can well lay claim. Mining and ranching are the chief industries, although farming by irrigation is successfully carried on, but the first-mentioned industries overshadow it.

Passing from the southern and middle portions of

and grouse, some bear and elk, beside the many wild animals unfit for food, such as the panther, wild cat, and coyote. The streams not only abound in fish, but they can be caught by other than an expert angler. This being a general outline of the different sections of the West, from my personal observation and experience, it is but natural that my conclusion is that, to secure the best climate at present, a tuberculous patient must be financially able to spend from May to October in the last-named section, October and November in southern Colorado and northern New Mexico; December, January, February, and March in southern New Mexico, Arizona, or Old Mexico, returning North in April, to repeat the migration with the seasons. This plan is expensive, as distances are greater than most Eastern people think, and cannot be considered feasible by any one of limited means, unless he take up the major part of the time going and coming in a camp wagon. This method becomes monotonous to the majority, but has its advantages of insuring constant out-door life and keeping patients away from the danger of civilized life, society and its health-sacrificing requirements. It must be admitted that the evil of intemperance exists to no small degree at most resorts in the West. When I say intemperance I do not mean in the excessive use of alcoholics alone, but in its broadest sense. The fact that alcohol judiciously used is useful as a drug in the treatment of tuberculosis paves the way and stands as an excuse for a great number of invalids' intemperate use thereof. Being freed from the restraining influence of family ties and the moral example of a large home acquaintance, and finding many others of the same social position who pass unnoticed acts that would set their home circle agog, with ample and frequent opportunities and temptations, the average consumptive seeking health in the West, with human appetites, cannot be expected to do other than frequently indulge intemperately, especially when physical infirmities necessitate more or less idleness.

One of the most common histories given by the consumptive seeking medical advice in Colorado is as follows: "About a year ago I had the grip and it left me with a cough. I kept running down and my doctor told me I had better try Colorado climate. To come to Denver, throw all medicine away, live in the open air, and let the doctors alone." The ridiculousness of such advice is so self-evident it may seem needless to dwell on any discussion to demonstrate error and inconsistency. However, it is so common, and illustrates several vital points of the erroneous ideas of the East concerning the West, I must call attention to such errors. Nine chances out of ten the patient was infected with the tubercle-bacillus near the date of the attack of the grip, and the attending physician should have been able to detect the physical signs thereof long before the date of recommending Colorado climate. Furthermore, Denver, the Mecca of the West for consumptives, is no longer the place in Colorado to send patients afflicted with tuberculosis, if circumstances permit their being sent elsewhere. True, as compared with cities in the East of like population, it is far ahead, but with its dust, smoke, and smelter fumes laden with lead, arsenic, and sulphur, no one should think of Denver as the place in Colorado or the West to send consumptives. Patients should be instructed to go to the rural mountain districts, and strongly impressed with the fact that none of the cities or larger towns represent western climate. The smoke and smelter fumes in cities like Denver, a mile

above sea level, are much more objectionable than they would be in a lower and more humid atmosphere. Here, owing to the dryness of the air, the smoke and fumes from furnaces do not rise, but settle down like a mantle over the city, and the small particles of dust float in the atmosphere much longer than they would where increased humidity, and consequent absorption of moisture, would cause their precipitation to the ground. It is true there are cases of incipient tuberculosis who, from necessity of earning their daily bread through an occupation, only to be followed in a city, are compelled to reside in one of these cities when they seek the climate of the West. But these should be told the advantages of suburban residence which, fortunately, while somewhat inconvenient, is cheaper than that of a more central location. At best, however, it is but a compromise.

At no time does the consumptive need the counsel of a physician more than immediately after arrival. The many changed conditions consequent upon the great increase in altitude alone justify the early consultation of a local physician. Ignorance of such conditions often results in the *tenderfoot* consumptive doing himself irremediable harm, which might be easily avoided by timely advice. Chief of these is a great stimulating effect upon the whole system, often causing the patient to almost forget he is ill, and to attempt physical efforts unwise for a well person. Consumptives on arrival in this climate should exert themselves very little, increasing physical exercise with care, never pushing it to the point of fatigue. I have seen several cases of pneumothorax in cases of limited area of pulmonary involvement, coming on during the first week after arrival in Denver. Possibly the same might have developed elsewhere, but in my opinion the chief factor in their production was unnecessary physical effort, which in turn, owing to the rarefied air and the consequent necessity of bringing all residual lung-space into use to secure sufficient oxygen, produced an excessive strain on a weak spot in the tuberculous area, which should have been avoided. There are other points of information, such as the water-supplies of the different localities, the absence or existence of this or that objection, etc., in certain sections, that the consumptive can obtain by consulting a physician on arrival in the West, that such a course cannot be too strongly recommended. Many serious mistakes could have been avoided in the past, and may be in the future by its adoption.

Having little faith in the drug treatment of tuberculosis, I can in a measure agree with the oft-repeated instruction of throwing all medicine away. I have yet to see the direct curative effect of any drug in constitutional tuberculosis, and believe that pure air, the direct rays of the sun, pure nourishing food, an altitude from 4,000 to 8,000 feet, and careful hygienic regimen constitute the major part of the logical treatment of this dread disease, as we know it today. However, it is by no means my idea to decry the use, the judicious use of drugs. The tonics especially have done too much good in tuberculosis for us to forget or disregard their administration. In the despondent class they serve as a something material upon which to build a hope of recovery, a *sine qua non* in that class of cases which is extremely large in Colorado, where so many suffer from homesickness. A careful consideration of the possible development of this distressing condition should never be forgotten when a patient is contemplating coming to this section in search of health. Many of our numerous

suicides are found to be amongst homesick consumptives.

The cases that do best are naturally the incipient with good family history. All of these do not have the pathologic process completely arrested, but the large majority are benefited, and many cured. My idea of a cure of the disease is a complete arrest of the pathologic process. Further than hoping to prolong life, it is useless to send advanced cases West. It is worse than criminal to allow, much less advise, such cases to spend their all in so futile and expensive a journey. They come here to die, and increase the death-rate of the State, and injure the reputation of our climate. All of this the section can well stand, but when it means the last dollar to the patient, and perhaps his family also, it should be decried. Better far use that money in procuring those comforts it will buy at home to mellow the sufferings of approaching death. Often have I seen patients cooped up in cramped, uncomfortable lodgings, living on poor food, poorly prepared, who had been accustomed to all the freedom of a good Eastern home, with its abundant food of better quality than the average Western hotel. Poor, deluded victims! They felt they were getting the full benefit of Rocky Mountain climate. The incipient cases of limited means may do well by seeking employment, especially in the rural mountain districts, but those requiring the attention of another person had better be kept at home. It can be well said the advanced cases of consumption patronize the Pullman Car Company when coming west, but they go back via the Adams Express, *two tickets for one*.

In this era when the contagiousness of tuberculosis is so much discussed, it is no wonder people who do not understand the disease advocate legislation whereby this immigration of consumptives can be stopped. The unnecessary sending of advanced cases has done more to awaken this feeling than anything else. The great number that become charges in the public hospitals soon after their arrival, cannot have any other effect but to make those in charge feel something should be done to lessen or check an unjust burden. Several Boards of Trade have absolutely refused to insert paragraphs in their advertising literature describing the climatic advantages of Colorado in pulmonary diseases, feeling they would be encouraging a class of immigration detrimental to the State. This sentiment would never have developed had not that large annual number of hopelessly far advanced cases been literally sent to this section to die. In California one of the medical societies has gone so far as to pass a resolution appointing a committee to consider the advisability of some quarantine legislation against advanced cases. The medical men who are behind that resolution, more than likely feel the numerous pleadings of the resident profession to their Eastern brethren have been so wholly ignored that further effort in that direction is worse than useless. There is no danger of any legislation of this nature being passed by any of the Western legislatures, but the agitation should bring the fact forcibly to view that a medical man is doing a great wrong to patients and to the West to allow, much less advise, the coming to this section of advanced tuberculous cases.

The cases that do the very best among the incipient class of good family history are those who live the greater part of the year in camp, and out-door life, who follow out-door occupations after the arrest of tuberculous process; and, last but not less important, those who do not tempt Nature by leaving this climate, even for short

trips East. This question comes up so frequently, and after reconsidering it many times, I cannot too strongly recommend that all consumptives who come to the Rocky Mountains and are fortunate in securing relief, should "*burn their bridges behind them*." It stands to reason that the climate where a pathologic process developed in previously healthy tissue will more than probably fan a smouldering fire into new activity, too often to a flaming point beyond checking with any means known to mortal man. Three out of every five consumptives who come to the Rockies, labor under the impression they will get well in six months to a year, when they will be at perfect liberty to return to their former homes, take up their former occupations, and look upon their experience in the West to rid themselves of tuberculosis as they would a course of quinin for the eradication of malaria. Such impressions no doubt chiefly arise from that peculiar hopefulness so common in the disease, but in part is due to misinformation given by the physician fearing to tell the truth lest the patient shall not undertake the change. It may be the right thing to keep back the whole truth at times, when circumstances are extenuating, but to mislead patients into the idea of rapid recovery in so chronic a disease cannot be upheld as justifiable. On the other hand it is to be branded as unjust, and unbecoming the honor of a physician.

The good effect of this climate in laryngeal tuberculosis is demonstrated in the slow progress of the disease in the untreated cases, and the better response to treatment. I have not had the opportunity of seeing cases of this class treated at a lower altitude since formaldehyd has come into use, but it is my opinion, all things being equal, these cases do better here than in the East. The results I have seen in the hands of several of our local laryngologists have been flattering as compared with the results observed in Philadelphia under former treatment of lactic acid, etc., which usually was a steady downward progress and rapid ending of a life of suffering, torture, and agony.

While speaking of laryngeal consumption, I cannot refrain from referring to a statement made by Dr. Howard S. Anders, in an article entitled "A Visit to the Loomis Sanitarium for Consumptives," published in the August, 1899, *University of Pennsylvania Medical Magazine*, wherein he states that "nearly 50% of the cases of tuberculous ulceration of the throat have been cured—a much better showing than at the various health-resorts in Colorado." Had I not been a college-mate and hospital-chum of the doctor, and known so well his strict temperance views on the use of alcoholics, my natural conclusions would have been that the Board of Control of the Loomis Sanitarium probably got him into a peculiar condition of diplopia, with a degree of blurring in outline, and in such condition he mistook the figure 5 for 50, which would be nearer correct. After seeing figures this way, he was perfectly justified in his conclusions relative to the results obtained at the various health-resorts of Colorado. None half so encouraging have ever been claimed. It is to be hoped Dr. Anders is correct in his statement, but how he can be seems impossible. It is difficult to believe, when the most hopeful enthusiast must admit that 80% to 85% of all persons infected with the *Bacillus tuberculosis* sooner or later die of that disease. Further, it is well known that the throat cases, as a rule, are those apparently saturated with the infection, show little or no power of resistance, and too often the local manifestation is but

the signal or forerunner of a general infection or breakdown of the patient's constitution. Primary laryngeal tuberculosis is a possibility, but I have never seen it. If it exists, its rarity excludes its consideration for all practical purposes. Local treatment will frequently heal the ulceration perfectly, which means a temporary cure, at least; but the rule is to secure a palliation of pain and hold the pathologic process in check; this is all that can be expected. It is not my intention to cast any reflection on the Loomis Sanitarium, but such statements are too flagrant to pass unnoticed.

In conclusion, allow me to recapitulate and to call attention to the following: Recognize your tuberculous cases early, and lose no time in sending those patients whom you think will do well. Consider all features of the social, financial and physical conditions, not forgetting in any case to carefully judge the probable effect on the individual of a change of residence to a country very different from that to which he has been accustomed. Remember the West offers a salubrious, grand and glorious climate, but by *no means* free from objections. Keep all advanced cases from the undertaking of "trying Colorado climate," unless they are told they can expect nothing but prolongation of life at best, and that it means great increase of expenses. Instruct your patients to call on some local medical man upon arrival. We have plenty of good men, and if you are not acquainted with any, lose no time in putting yourself in possession of information which will enable you to refer your cases to competent men on their arrival in the West. Remember Colorado, with its next-to-worthless and uninforced medical law, is a haven for quacks, and many dollars annually go to them from anxious, uninitiated, *eager-to-try-anything-that-promises-a-cure* consumptives, who, perhaps, need a little honest, wholesome medical advice, and a great deal of nutritious, wholesome food.

To those physicians who have not visited the West and are interested in this subject, a cordial invitation is extended, on behalf of the section at large, to spend your coming summer's vacation with us. You will be assured of a good time, and on your departure will have a better idea of the climate, country, and conditions in general, than is possible without personal observation.

ON THE TREATMENT OF TUBERCULOSIS BY SODIUM CINNAMATE.*

By ALFRED MANN, M.D.,

of Denver, Colo.

Instructor in Medicine in the Denver College of Medicine of the University of Denver.

UP to the present time there has been brought forward no specific for the treatment of tuberculosis sufficiently successful to command the general approval of medical men. Hopes of the discovery of such an agent have been widely entertained, only to be given up after long and earnest trials.

Of these numerous disappointments many are due to the circumstance that two very important facts are lost sight of, and both of these are connected with the nature of the disease under consideration.

First and foremost is the character of tuberculosis as a disease which actually *destroys* the tissues it involves. In ordinary croupous pneumonia the lung while inflamed is filled up with products of inflammation and

the portion of lung thus affected is for the time useless for purposes of respiration. But after the process is over resolution sets in, the exudate is liquefied and removed and the lung is as good as before it became inflamed. Diphtheria, like many others of the acute infectious diseases, causes, as a rule, comparatively slight anatomic changes, but is dangerous chiefly through its toxic effects, and the complications to which it opens the door. In pulmonary consumption, on the other hand, in addition to the necrotic changes so characteristic of the action of the tubercle bacillus, there is an inflammatory reaction of the fixed elements of the tissue, and this results in the formation of new connective tissue. It is true this is a conservative process, tending to limit the development of areas of infection. Nevertheless this permanent cicatricial tissue interferes with or actually destroys the functional efficacy of the portion of the lung in which it exists. Thus it becomes largely a question of the extent of the disease process with its inevitable destruction of tissues and of the fibroid changes necessary for healing which determines in any particular case the probability of recovery with sufficient lung tissue remaining functionally efficient to sustain life. Furthermore, it must be remembered that fibroid changes once started tend to advance into unaffected parts of the lungs and so gradually reduce still further the available healthy lung area.

This reasoning takes away the basis for the hope entertained by some that a means will be found to cure even the most advanced cases.

The second circumstance that seems to me to be responsible for many disappointments is that an incorrect analogy is drawn between tuberculosis and certain other infectious diseases, for instance, diphtheria and pneumonia. It is argued that if the animal system reacts to these diseases by producing antitoxins capable of neutralizing their toxic effects, and which can be recovered in the serum of affected animals and used to immunize or cure other individuals, the same must be true of tuberculosis. But the analogy is not a very strong one. It is probable that the antitoxins which appear in the blood as a result of the reaction of the organism to the irritation of the toxins of diphtheria and pneumonia, for example, and the immunoproteidins of Emmerich and Loew in certain other cases, are the agents which bring it about that so many of the acute infectious diseases are characterized by a marked tendency toward a definite critically limited course. The so-called immunoproteidins of Emmerich and Loew, according to these authors, are combinations of bacteriolytic enzymes produced by the bacteria themselves with proteids furnished by the blood or organs of the subject of infection, and effect the cure of the infectious diseases and produce immunity by the actual destruction of the specific bacteria. Thus the immunity conferred by an attack of an infectious disease is the result of a specific reaction of the organism to the disease, or of products of the activity of the bacteria themselves, and it is by means of this immunity, whatever the physiologic character of its mechanism, aided by the nonspecific action of the alexins of Buechner and of the phagocytes of Metschnikow, that the organism is enabled to overcome the disease.

If there is a similar immunizing product of the bacillus and reaction of the organism in the case of tuberculosis, it is certainly nothing like as marked as in the examples quoted above; hence the character of the former as a disease which tends to continue indefinitely and to follow a chronic course.

* Read at the annual meeting of the Colorado State Medical Society, Denver, Colo., June 19, 1900.

We have then two important characteristics in which tuberculosis differs from the acute infectious diseases mentioned above; first, it tends to the production of marked and permanent anatomic changes in the organs and tissues involved, and, second, it causes little or no immunizing reaction in the organism.

The observation that microorganisms often produce substances which, when sufficiently concentrated, interfere with their own development, may yet be turned to account in the treatment of tuberculosis, but up to the present time there is no convincing evidence that an efficient means of treating the disease has been found in this direction. Efforts should not on that account be given up, as a more minute study of the very complex compounds existing in tuberculin may lead to better results than have been achieved in the past.

That there is a strong tendency to spontaneous recovery from tuberculosis is shown by the numerous cases of healed tubercular lesions found in the lungs of persons who have died of other diseases. Furthermore, many cases of tubercular disease of other organs—notably lymph-glands and bones—recover under very simple treatment. The most successful modes of treatment in the past, if we exclude surgical measures, have been those that aimed to improve in every way the general health of the system, those that relied upon the natural tendency of the body to resist and expel infection, and that in any way, directly or indirectly, increased its defensive powers. Among these are first and foremost the out-door and climatic treatment, the dietetic and hygienic methods and the treatment in sanatoria.

Besides these general methods there have been proposed numerous remedies supposed to act in one or another definite or indefinite way to attain the same object.

Among the suggested remedies I have selected one in particular for consideration today, the sodium cinnamate (or hetol, as he calls it) recommended by Professor Albert Landerer, of Stuttgart, Germany. This author claims in a series of publications on the subject, the first of which appeared in 1888, to have secured improvement in very many cases, and in a large proportion even complete cures. He has published in detail from time to time the histories and results of many hundred cases of surgical and pulmonary tuberculosis treated by his method of intravenous injection of sodium cinnamate solution, including about 150 pulmonary cases. A number of others have published results of the use of the same method, most of the writers being apparently favorably impressed with them.

Unfortunately there have been, with the exception of Landerer's own statistics, no large series of cases published. In presenting the results of my own short series, I wish it to be understood that it will not bear comparison with statistics of cases as ordinarily published. My cases were specially selected with reference to certain criteria which, though permitting to some extent a judgment in regard to the nature and extent of the effects of Landerer's treatment, would permit but an unfair estimate of its effects if judged only by results without regard to the class of patients reported upon.

There were two kinds of cases selected for this treatment. First, those with lesions so far advanced and so widely extended, or with such other unfavorable conditions, that a good result seemed either very doubtful or well-nigh impossible; and, second,

lighter cases in which for any reason it was thought necessary to make as rapid progress as possible in a comparatively short time. The first group naturally is the most numerous and yielded by far the poorest results, though rightly interpreted, some of these results are very encouraging. The reason for treating light or early cases by this method was usually the expected early return of the patients to the unfavorable climate in which the disease was contracted; for, as a rule, under favorable circumstances, such cases do very well in this climate under proper direction, and it is not by any means in all cases that I recommend the use of sodium cinnamate. My cases number altogether 15. One of these was a man with generalized surgical tuberculosis, in whom the primary focus was in the urogenital apparatus, which was extensively involved and complicated with several suppurating sinuses. This case had secondary foci in the skin of the buttocks, in the sternum and clavicle, and in both lungs and finally died of tubercular meningitis. The prognosis was absolutely bad when he first came to me.

The remaining 14 cases are all pulmonary and none were under treatment less than 2 months; some of the severe cases are still under treatment. All but 2, those classed as light, had daily fever. Four of the 14 were cases that from the extent and severity of the disease and the presence of large cavities bore a bad prognosis. Yet of these, 1 with widespread disease in both lungs and large cavities improved so markedly under the small doses he was able to bear, that in two months he looked like a different being. He had put on flesh, his face was fuller, the gray cachectic look had given place to a healthier rosy color, and his cough and expectoration were very much diminished. This man, who only dragged himself about wearily a few steps at a time before the treatment began, at the end of 2 months, in spite of my directions, took long walks and rode horseback without fatigue. Repeated examination of the lungs showed marked improvement in the physical signs. At this time, for reasons of no consequence in this connection, the treatment was stopped. He continued to feel well for about a month, all the other conditions of his life remaining the same. Then he began to run down; cough, expectoration and fever grew worse, and he rapidly deteriorated until in four or five months he died, with very large cavities in both lungs.

Whether arrest of the disease might have been secured in this case by continued treatment, it is impossible to say, certainly the marked and steady improvement seemed to be due to the sodium cinnamate and did not continue after the influence of this drug stopped, although climate and mode of life remained the same.

In the other 3 cases of the group classed as hopeless the treatment was instituted merely as a forlorn hope in the late stages and apparently only slightly affected the course of the disease, if at all.

Of the 2 light cases the first was a very early one with no physical signs but a single click in the left apex, but with plenty of bacilli in the sputum. Under this treatment the sputum rapidly diminished in quantity. An intercurrent attack of influenza caused it to increase again, and though smaller in quantity it still contained bacilli when the patient left for the East after receiving 37 injections in 3 months. The weight increased 7 pounds in the first 9 days, and before he left he had gained 27 pounds, weighing 7 pounds more than ever before. Now, 14 months later, this patient, a dentist, reports that in the course of a few weeks after cessation

of the treatment the slight remaining expectoration ceased entirely. He returned to his former place of residence and has been working hard at his profession ever since without a sign of returning trouble, even holding his weight.

The other case classed as light was placed in this group in spite of the fact that there was disease in both lungs, slight infiltration in the left apex, but dulness to the lower border of the third rib on the right side, with altered breath-sounds some distance below this. In spite of a duration of over a year and a half the disease in the lungs seemed to be stationary and the general health very fair. Fifty injections given in $3\frac{1}{2}$ months improved all the symptoms so rapidly and to such a degree that nothing was left but a dull area in the right apex; cough and expectoration had disappeared. At this time the patient returned East, looking very much improved, practically well, weighing 115 pounds, a gain of 10 pounds, and 3 pounds more than the highest she had ever weighed when well.

In the group I have called severe cases there are several instances which seem to show that the cinnamic acid has a very powerful healing influence, and others in which it is impossible to say whether any effect was produced or not. Of this class there are 8 cases.

The first is a man who came to Denver with well-marked trouble in June, 1892. After alternating periods of improvement and deterioration, with on the whole a downward course, he began in February, 1894, a series of recrudescences with fever, pleurisy, etc., that occupied the next 7 months. During this time there were 2 copious hemorrhages besides numerous smaller ones. Early in the fall there was an attack of acute pleurisy lasting 2 to 3 weeks.

Out-door life was persisted in for 3 or 4 months and slow improvement was noted. At this time the left lung showed dulness down to the fourth rib and the right to the second rib, there were numerous moist rales over nearly all of the left lung and the larger part of the right. Signs of cavities were detected. There was marked dyspnea on exertion. The expectorate was practically pure pus and was loaded with tubercle-bacilli, though the general condition was decidedly better than it had been 3 months previously. The prognosis, according to 2 well-known Denver physicians, was unfavorable.

At this time, early in February, 1895, intravenous injections of sodium cinnamate were begun. In the first 4 weeks of the treatment the expectoration became mucopurulent, and at the end of 4 months great progress had been made, the expectoration containing only a trace of pus and the area occupied by the rales being very markedly less than before. The patient then went one month without injections, and during this time the improvement was very noticeable. He was then given another series of injections for 3 months, then a rest of 6 weeks, followed by injections for 3 months more. The improvement was continuous. By this time his general health was good. There was slight dulness at the right apex, dulness over the left apex, and dry rales and creaking sounds over the upper lobe. There was then no dyspnea. Bacilli had gradually disappeared from the sputum and have not been found since. There has been no return of the trouble up to the present time, although 4 years have elapsed since the cessation of treatment. The patient still resides in Denver.

The second in the group of severe cases was a young woman who, when 17 years old, had had a slight infil-

tration at one apex, but who was cured by prolonged residence in the South. Several years later, after the birth of her second child, she had a renewal of trouble. Both apices were involved and in addition small areas of infection, probably peribronchial, were detected scattered over nearly the whole right and the larger part of the left lung. Dr. E. G. Janeway, of New York, gave a bad prognosis. In passing, I wish to mention the fact that in this case there was neither cough nor expectoration for 2 or 3 years after the illness began. Finally there was a very slight cough with minimal amounts of sputum which, however, contained tubercle-bacilli.

Residence in the mountains of Arizona for $2\frac{1}{2}$ years under very favorable circumstances had prevented the condition from growing worse, but had not effected any material improvement. There was a daily rise of temperature to from 99.5° to 100° F.

Eight months of injections resulted in cicatrization of all the areas. Improvement was noted after 5 weeks of treatment. At present, $4\frac{1}{2}$ years after cessation of treatment, the patient is apparently as well and strong as ever in her life, only dulness on percussion and bronchial breathing indicating the location of the scars of the former trouble.

Case 3, a woman, 26 years old, is very similar to the last except that the condition was not so widespread but more active and with a higher range of temperature. This patient bore only small doses of the drug, but was improving, contrary to expectation, very nicely, when a visit home, followed by permanent removal to a very favorable location in Old Mexico, stopped all progress, and she finally, after about a year and a half, died. The duration of her treatment by sodium cinnamate was only 2 months, yet the improvement was so marked and so constant that I felt sure of an ultimate good result, when homesickness and financial considerations interfered and stopped the cure so well begun. Her color and general appearance as well as strength had improved considerably.

The next case is a man, 34 years old, small and slender, with a very nervous, excitable disposition and a poor digestion. The area of involvement in the right lung extends down to the fourth rib in front and to $1\frac{1}{2}$ inches above the inferior angle of the scapula behind. The apex of the left lung is also affected down to the second rib. Bronchial breathing in apices, numerous moist rales in diseased areas as above, dulness marked. Had occasional slight hemorrhages. Eighty-five intravenous injections have resulted in better color and considerable general improvement, though being compelled to earn his living interferes considerably with the regularity of treatment as well as its effect. Patient is not cured, but is as well as he ever was, so far as his sensations go, and weighs as much as he ever has done. He still has bacilli in his expectoration, though the latter is very much diminished.

The fifth case of this group is a young woman with widespread and active disease in both lungs, who was improving steadily and gaining weight under this treatment, when it became necessary for her to earn her own living. The bad effect of this work and two or three severe colds, due to exposure, have neutralized the gain, and she is now gradually running down. She had but 39 injections.

The remaining 3 severe cases have received 51, 56, and 94 injections respectively. The first is a bad case in a young man with the whole right lung invaded. He is compelled to earn his living, and from time to time

throughout his illness has had slight and occasionally larger hemorrhages, necessitating interruptions of the treatment. The frequency of the hemoptyses does not seem to be greater than before the use of the hetol. He has improved considerably in strength and general health, and stops work only when he has a hemorrhage.

The next is a case that first attracted attention by causing a very copious hemorrhage. A visit to the East stopped progress, which had begun very nicely with a gain of 16 pounds in a month. Just as improvement was beginning, after his Eastern trip, financial trouble was followed by a second trip East, where the patient now is. It is doubtful if he can pull up a third time. He has had altogether 56 injections, with several long pauses.

The last case of this group is a tall young woman with a weak heart, and both lungs are widely involved. She has had 94 injections, with some improvement, though not a marked advance, during about 9 months.

In 5 of these 8 severe cases worry about financial affairs or the strain incident to earning a living have been and are retarding factors of such moment that, in my judgment, they are almost entirely responsible for the very slow and halting improvement. Six of the 8 cases would ordinarily have been accorded a very doubtful or bad prognosis.

In reviewing my results, it is apparent that the cases are not all affected alike by the treatment. Some very severe cases are rapidly improved; others, apparently no worse, fail to derive any benefit, or do so only slowly. Landerer himself, although he definitely and repeatedly disclaims any specific action for the drug, is of the opinion that purely tubercular infections are the only ones directly acted upon. With the material at my command, I have been unable to arrive at a conclusion on this point; but so far as my facts go they tend, on the whole, to confirm Landerer's position.

As intimated above, the criticism of results reached by any special mode of treatment in the climate of Colorado, so favorable to tubercular cases, is subject to considerable difficulties. Not only the climate enters into the problem, but I have not hesitated in my cases to make use of any of the well-known symptomatic and other remedies that seemed indicated. Along with the hetol I have used tonics freely, such as iron, arsenic, and strychnin, as well as expectorants, and even creosote. Thus it is impossible to exclude the subjective element in the criticism of results. It is matter of judgment, the result largely of experience, to estimate the probable course in any given case, and the extent to which this has been changed by any particular treatment.

Of the worst class of cases 1 out of the 4 apparently received so much benefit from the injections, that a very favorable opinion of the action of the drug is justified.

Of the 8 cases classed as severe the result has been a lasting cure in 2, marked improvement in 3, of whom 1 died a year and a half after the treatment was stopped, and doubtful effects in the remaining 3. I repeat that results in 5 of these cases would in all probability have been much better could the patients have been free from care and worry. In passing I wish to point out that this indicates one of the reasons for the excellent results of treatment in sanatoria. Furthermore, treatment in 2 of these cases was stopped when improvement was rapidly going on, and both patients left Denver and did badly, one in a good location in Old Mexico, the other in Pennsylvania.

The treatment I have used in these cases, and am still using, consists of the intravenous injection of solutions of sodium cinnamate, or hetol, as it is called, and I have followed very closely in all details the directions given by Professor Landerer.

Beginning with $\frac{1}{100}$ to $\frac{1}{50}$ of a grain the dose is gradually increased to $\frac{1}{4}$ or $\frac{1}{3}$ of a grain, which should rarely be exceeded. The injections are repeated every other day. It is very important to use only perfectly pure preparations, such as are made synthetically by certain German chemical houses.

The technic of the injections is very simple, the main point being to secure perfect asepsis. The hands of the operator, the skin about the point of injection, and the instruments should all be carefully sterilized. Usually the median basilic or cephalic vein in one or the other arm is selected for the operation. By encircling the arm some distance above the elbow by an elastic bandage, the vein is rendered prominent and its walls become tense. The needle is then plunged slantingly through the skin and wall of the vein at once. If immediately after the injection and before withdrawing the needle the bandage is loosened and the arm raised up, there is not a drop of blood, as a rule, when the needle is drawn out. The skin about the point of injection is rubbed with ether, then with alcohol. The needle, the point of which should be fine and kept well polished, and which ought to be used for no other purpose, is placed in strong alcohol for 20 minutes before and after using, and the same liquid should be forced through it. Boiling can then be dispensed with, which is an advantage, as it corrodes the point and causes it to pass through the tissues less easily. I have made use of this technic in over 800 injections and have never had the slightest local infection. Indeed, in one of my cases, over 100 injections were made in a single spot less than half an inch square, without a trace of visible effect remaining. An aseptic dressing should be kept over the site of the puncture for a few hours.

The duration of treatment naturally varies considerably. Light cases and those with a purely tubercular infection require a very much shorter period of treatment and furnish a much larger proportion of favorable results than patients with widespread disease, fever, cavities and multiple infections.

I have excluded from this report all cases in which treatment extended over less than two months. The number of injections varied from 25 in two months to 108 in a little over a year. Undoubtedly this treatment would yield much better results if it could be administered to patients living under the careful regime of a well-conducted sanatorium with facilities for the strict carrying out of the rest and out-door plan of treatment. Such an institution is the sanatorium Krähenbad in the Black Forest, directed by Professor Landerer, and remarkable results are reported in the treatment of tuberculous cases.

The long series of experiments and investigations that led finally to the method that Landerer uses at present were begun immediately after the discovery of the tubercle-bacillus by Koch in 1882. His first monograph on the treatment was published in 1892. For years the method was neglected, but of late years it has been commanding more attention because of the unusually good results it has yielded.

The considerations which formed the point of departure in his reasoning were the following: So long as the changes in the tissues caused by an infective agent

or its products do not progress beyond the stages of inflammatory hyperemia or serous exudation, complete restitution to the normal condition is possible. More severe processes which result in actual destruction of tissue, necrosis, are not capable of being followed by a return to normal, and here the most favorable conclusion is the formation of a scar.

The lesions of tuberculosis in the vast majority of cases with which we have to deal belong to the latter category, and the object of treatment is to convert tuberculous processes into solid scars. Now, Landerer says, it is well known that tuberculous areas have comparatively little tendency to become scarred up; in the vast majority of cases they show a tendency to be progressive, to form chronic abscesses, fistulous ulcerations, cavities, etc. He attributes this characteristic to the very moderate inflammatory reaction in and about tuberculous areas, and points for confirmation to the marked scarcity of bloodvessels in the tuberculous areas. There is too little blood present, and hence too little material for processes of repair, for the formation of scar.

This gives us the problem: To artificially provoke a more active inflammation about the areas. The treatment of lupus and slow-healing ulcers by caustics or ignipuncture is based on exactly the same principle.

Landerer now considered the fact that internal areas which are inaccessible from without can be reached by means of the blood-current, and further remembered that foreign particles injected into the blood are taken up by the white corpuscles and deposited by preference in regions where an inflammation or injury is present. He experimented on rabbits with an emulsion of balsam of Peru and found not only that after intravenous injections numerous white corpuscles carrying fine globules of the balsam closely surrounded the tuberculous foci in the lungs, but there was an evident beneficial influence on the course of the infection.

Without repeating the details of his years of careful experimental research, it will suffice to say that cinnamic acid was found to be the efficient constituent of the balsam of Peru, and at present the compound used for intravenous injection is the sodium salt of this acid, called hetol. It possesses all the efficacy of the original balsam and is free from its defects.

Landerer in his writings goes very fully into the consideration of the mode of action of hetol, and his theory of the same. In the following I give an outline of the observed facts as published by him, and corroborated by several other investigators.

In the first place he has determined by experiment upon animals as well as human beings that the injections are entirely harmless. There are no bad effects to the kidneys, and careful blood-counts show that there is no diminution of the red corpuscles, even excessive doses cause no discoverable injury to any organ.

The first effect to be noticed after the intravenous injection of hetol solution is an increase in the number of white corpuscles, chiefly confined to the multinuclear neutrophiles and the eosinophiles. This increase begins within an hour after the injection and reaches its maximum in from 3 to 8 hours, the number being doubled or more than doubled. After this a gradual decrease is observed until in from 24 to 48 hours the normal is reached. The capillaries about the diseased areas become dilated and crowded with leukocytes, which emigrate in numbers and begin to gather about the tuberculous foci, forming a dense wall. This on section can easily be seen with the naked eye.

In a few weeks new bloodvessels spring up and the granulations extend into the substance of the tubercular area, gradually absorbing and replacing the necrotic material of which it is composed. Finally this new granulation-tissue, as in normal healing, is converted into a scar. Small cavities are probably entirely obliterated, large ones are surrounded by dense connective tissue, with a smooth, dry lining of the same. The whole process may be summed up by saying that the treatment substitutes an active, aseptic inflammation for an inactive one, and the result is rapid cicatrization. The sensations of the patient undergoing this treatment are those of increased well-being commonly observed in persons improving under general hygienic and climatic treatment, except that the favorable signs appear more quickly.

Whether the increased activity in the healing process, which has been carefully followed step by step in rabbits, is due to the presence of the numerous leukocytes is as yet impossible to say. It is conceivable, as Landerer suggests, that hetol acts on tuberculous processes by forming innocuous compounds with the toxins of the tubercle-bacillus. This is a subject that cannot at present be cleared up.

There are several side-effects of the sodium-cinnamate treatment that are worthy of mention, partly because of the extremely interesting bearing on the question of the origin of uric acid in the blood.

In a recent address by Professor Ewald before the Medical Society of Berlin, in which he presented at length a report of his use of sodium cinnamate, he called attention to a marked drowsiness that he observed in many of the patients undergoing this treatment. Landerer stated that he had not observed this symptom and thought that perhaps Ewald's doses had been too large. I have noticed this symptom in quite a number of my patients, and can produce it at will by increasing the size of the dose. It does not appear until 10 or 12 hours after the injection, and usually with moderate dosage disappears in 24 to 30 hours. I think it indicates a dose that is rather too large, and it corresponds in the time of its occurrence with the period of diminution in the number of leukocytes in the blood and the probable destruction of many of them. The sensation is exactly the same as the so-called uric-acid fatigue, and according to Horbaczewski's theory of the formation of uric acid from the nucleins of broken-down leukocytes its pathogenesis would be comprehensible. A number of patients noticed and reported to me that they slept very soundly and long while they were taking the injections, more so than usual, and one found it harder to sleep each time the injections were stopped for a period.

In several patients there occurred repeated attacks of acute muscular rheumatism, which were absent during the long intervals of treatment, and seemed to have a relation with the injections, due perhaps to the same chain of causes as the drowsiness. In one patient with chronic gout the affected joints became painful two or three weeks after the treatment was begun on more than one occasion.

Generous doses, especially in severe and febrile cases, are apt to be followed within 24 hours by a slight rise in temperature. In my experience it has usually not exceeded a degree or a degree and a half, but by keeping accurate records of the daily temperature-curve it could be very plainly made out in several cases.

In my cases I have not noticed any decided tendency in the drug to cause hemorrhages. The moderate in-

flammatory hyperemia observed in Landerer's experiments would lead one to expect small leakages of blood, but I have not observed these or larger bleedings, except in cases that had been having them before the treatment was begun.

While I am a firm believer in the great value of an out-of-door life, in rest and in the advantages, undoubtedly very considerable, of certain climates, especially the high and dry ones, in the treatment of patients with tuberculosis, still I recognize the fact that in many cases all these means are not enough and we want every possible help we can get in addition.

My experience with sodium cinnamate in the treatment of consumption has given me favorable impressions of its effects. I think I have had evidence, good evidence, that it will quicken to a marked extent the healing processes when they are sluggish or altogether inactive, in some, though not in all, of the cases. Most of my experience in its use has been with rather severe cases, and the art of prognosis is here proverbially difficult, yet it seems to me that the results have been very encouraging, that is, better than they would have been without it, and I shall continue to use it, in addition to the other good methods that are available and that ought not to be neglected in any case.

STOMACH-CONDITIONS IN EARLY TUBERCULOSIS.*

By BOARDMAN REED, M.D.,
of Philadelphia, Pa.

IN what has been incorrectly styled the pretuberculous, but should be called the incipient, stage of consumption, the most noticeable symptoms are often those of flatulent dyspepsia, with eructations and pyrosis or heartburn, with or without gastric pain, nausea, and even stubborn vomiting. These are sometimes symptoms merely of a lowered nerve-tone and at other times evidences of actual gastric involvement.

All the possible affections of the stomach may, of course, precede tuberculosis. Indeed, its development must be favored by gastric dilation, the various forms of chronic gastritis, and a failure or persistently depressed activity of the peptic glands, from whatever cause, nutrition being lowered in this way to a degree which may render infection possible.

Moreover, it is probable that, contrary to general belief, hypersthenic conditions in the stomach, such as hyperchlorhydria and acid gastric catarrh, are quite as compatible with tubercular infection as are the asthenic types of gastric disease. For it is now known that a large proportion of the cases of early phthisis—a preponderance of them, according to some observers—have an excessive secretion of hydrochloric acid.

Though not a very large number of reports of analyses of the stomach-contents in the early stages of tuberculosis are to be found in medical literature—and this question, therefore, cannot be said to have been positively decided—the evidence so far available points to the conclusion that, except in advanced cases with continuous fever, there is at least quite as likely to be an abundant secretion as a deficiency of HCl in the stomach.

Van Valzah and Nisbet,¹ in 47 cases of incipient phthisis, found in 10 no signs or symptoms of any

gastric derangement. Three out of the same series had chronic gastritis, with an absence of free HCl, a diminished proportion of combined HCl, etc. In 18 of the cases there were traces only of free HCl and diminution of secretion otherwise. In 13 of this last number there was mild, and in 5 severe, stagnation, with fermentation.

Among the 16 remaining of the 47 cases, 3 were found to have acid gastric catarrh—*i. e.*, the sthenic form of chronic gastritis, with an augmented secretion of HCl; 7 had the same acid in excess, with motor insufficiency, stagnation, and delayed evacuation; and in the other 6 there was also hyperchlorhydria, with fermentation in all; while in 2 of them the stomach was unable to empty itself even during the night.

In 26 cases, first examined by the same authors during the stage of consolidation, 4 were normal as to gastric juice, 5 had chronic asthenic gastritis, one had a trace only of free HCl, and in 13 the secretion was variable, which means that sometimes it was in excess, and at other times normal or deficient.

Thus in 47 incipient cases there were 26, or 55%, with either a normal or overacid gastric juice; and of the 26 in the stage of consolidation, in 4, or 15%, the secretion was normal constantly, and in 50% more it was variable, that is normal or above a part of the time. In 65%, therefore, of the 73 comparatively early cases studied by Van Valzah and Nisbet the secretion of the peptic glands was normal or above at least a part of the time.

Riegel² quotes Klemperer as thus summing up the results of his observations in 14 cases, 10 of early and 4 of more advanced phthisis. In the beginning the secretory capacity of the stomach was mostly increased, often normal, seldom lowered; in the final stage markedly lessened. Klemperer found, however, that in all the forms of dyspepsia associated with tuberculosis, the motor function of the stomach was depressed.

Brieger,³ quoted by Riegel, studied 64 cases of tuberculosis, all except 6 of which were in a more or less advanced stage. In such a series there would naturally be a preponderance of depression in all the gastric functions. Still in 16% of even the more severe cases, Brieger found a normal condition of the gastric juice, while the same was observed in 33% of the cases classed as moderately severe. In the 4 incipient cases he found 2 with normal secretion and 2 with disturbed chemism, the inference being that in the latter there was a variable condition.

Riegel⁴ states that the results of his own observations accord in the main with those of Klemperer and Brieger.

Croner⁵ in 36 cases of early phthisis found in only 5 a complete failure of HCl. The total acidity varied from 21 to 80, but it was in most cases normal. He does not seem to have determined the proportion of free HCl, and must have relied upon imperfect tests of motility, since, contrary to most other observers, he reports not having found a lack of motor power in any of the cases.

Unfortunately for the cause of medical science and for the best interests of patients, physicians in general practice rarely make, themselves, or have made, analyses of the stomach-contents except when cancer is suspected, and the pulmonary specialists, I fear, have been in the past almost equally indifferent to the modern exact methods of studying the gastric functions. During 15 or more of my own busiest years of practice, when I

* Read before the American Climatological Association, in Washington, May 2, 1900.

saw many tuberculous cases, I have to confess having never made a chemical analysis of the gastric contents, nor even employed the simpler methods of determining the motor power of the stomach. And now that my work is limited almost exclusively to diseases of the digestive system, I do not often have the opportunity of seeing tuberculous patients. The following case, however, which is now under my care, presents some features of peculiar interest :

A married lady, aged 29, resident in a neighboring city, consulted me in November, 1899, on account of a stubborn and aggravated form of dyspepsia with light fever of a hectic type, slight perspiration at night, considerable emaciation and much debility. She had been treated for malaria with quinin, etc., and had also taken much creosote without apparent results, unless a very marked hyperchlorhydria could be considered a result. She has a lateral curvature of the spine dating from girlhood, and had worn for years at that time, a plaster jacket. The results of my examination in her case were as follows: Liver apparently about normal, kidneys not palpable. Heart normal as to size and sounds. Apex beat in right place, but not strong. Stomach enlarged from normal above to level of the umbilicus. Weak motility. Pelvic organs: Uterus slightly retroverted. Tender on palpation in region of left ovary, but no swelling could be made out in the adnexa.

Tuberculosis was naturally suspected, though no abnormal signs could be made out in the lungs. No cough, except after colds. No sputa could be obtained, and no bacilli were found in the stomach-contents. The blood was examined for the plasmodium of malaria twice, with negative results. Finally, diagnostic doses of tuberculin were cautiously administered 3 times at intervals of 12 to 24 hours, beginning with .11 cc. of a 1% dilution prepared with a .75% aqueous solution of carbolic acid and increasing to .5 cc. finally. After the third injection there was a decided reaction with a temperature 2 degrees higher than the average at the same time of day for a week or more before. There was also severe headache and backache, sleeplessness and some sharp pains about the neck and throat, but no other local reaction could be made out, except that a few slightly enlarged glands on both sides of the neck were markedly swollen and somewhat tender.

The secretory function of the stomach proved extraordinarily sensitive to drugs. It fell rapidly within a few days after putting her on full doses of soda and belladonna, all the free HCl disappearing, and then, on withholding these medicines, returned gradually to the normal. Even moderate doses of almost any tonic medicine showed a tendency to make the percentage of HCl go up again above .100. The treatment has been mainly by diet, outdoor air, and gentle exercises, with the help of galvanism to the spinal centers and over the course of the pneumogastrics in the neck, as well as of faradism through the stomach externally. Intra-gastric electricity was also administered for some time, but, though helpful, was not so well borne as it is by most other patients. At one time during the past winter, while she was in a suburb of Philadelphia under my care, there was, after some imprudence in diet, an increase of the gastric pain with such marked tenderness locally as to make one think of the possibility of gastric ulcer. She was then kept in bed either on the piazza or in a room with the windows all open for two weeks on a diet mainly of milk and given large doses of bismuth, according to Fleiner's method. The result was decided improvement in all ways. The patient has had periods of gaining markedly in strength and weight alternating with less well intervals, but there has been no fever since her recovery from the reaction following the diagnostic use of tuberculin 3 months ago. As to medicines this patient has tolerated well and responded favorably to 1-drop doses of creasote combined in capsule with codliver oil, minute doses of arsenic, and at times even when there has been too much HCl in the stomach, has found help from the administration of some of the digestive preparations made from the carica papaya plant. She has been at home for some time past, carrying out the line of treatment prescribed by me, though it is difficult to induce her to remain as much in the open air as is indispensable to a cure.⁶

The series of cases reported by Van Valzah and Nisbet, by Brieger and by Klemperer show that in early tuberculosis there is present very frequently—and probably in a majority of cases—a condition of the peptic glands which contraindicates the administration of any considerable doses, by the stomach at least, of highly stimulating remedies such as carbolic acid, creasote and its derivatives, the mineral acids, and most of the familiar stomachics. That is, in these cases when the gastric function is not entirely normal, there is usually either an excess of HCl, or a very impressionable and variable condition of the secretion—a condition in which the exhibition of stimulating drugs produces harmful irritation resulting often in hyperchlorhydria or acid gastric catarrh, which complicates the treatment of the tuberculosis and lessens the prospects of cure. Riegel's experience agrees with that of the authors cited, and my own case well illustrates the point just made, besides showing how tuberculosis for a long time may masquerade in the guise of a stomach trouble.

In the light of these facts, it is easy to understand why such directly opposite views are held by clinicians of equal ability as to the value of large doses of creasote and of other irritant drugs in tuberculosis. Whether the remedy does good or harm, depends mainly upon the condition of the stomach, and, it not having become yet the settled practice, as it ought to be, always to ascertain the state of the gastric functions before instituting active drug treatment in any chronic disease, a confusing contrariety of results follows such modes of treatment.

For exactly the same reason the profession is divided as to the value of codliver oil in pulmonary phthisis. Recent experiments prove that the oils markedly lessen the secretion of HCl in the stomach.⁷ In the cases therefore, in which the gastric functions are almost always depressed, as in the later stages of phthisis, codliver oil, or much fat of any kind, impairs digestion and injures the patient; whereas, in the cases of hyperchlorhydria, which are so often found in the earlier stages, the same remedy exerts a double influence for good, since here it tends to correct the injurious hypersecretion at the same time that it helps to fatten and strengthen the patient. In the cases between these extremes—cases in which there is a nearly normal gastric secretion—a moderate amount of oil may prove helpful for a time, and by means of an occasional analysis of the stomach-contents to see when it has begun to depress secretion unduly, advantage may safely be taken of its valuable medicinal and nutrient qualities.

Let me turn aside right here to advise that in doubtful cases, in which an analysis of the stomach-contents is not practicable, as well as in cases in which the gastric juice has been found to be about normal, it would be well to combine creasote or one of its congeners with codliver oil, so as to have the stimulating properties of the former neutralize the depressing influence of the latter upon the peptic glands.

It is generally conceded that the motor function of the stomach, which is always seriously lowered in advanced phthisis, is very apt to be depressed somewhat in even the earlier stages. That is, the muscular walls of the organ lose their tone and there results a tardy evacuation of the contents with consequent stagnation and fermentation. This weakened motility must be overcome before tuberculous patients can get well.

Drugs are of little avail for this condition, but breath-

ing exercises, especially in the open air, as from hill-climbing and bicycling and rowing, are highly curative in conjunction with a diet which is at once digestible, nourishing and not too bulky. We should avoid in such cases overloading the stomach, and much liquids should not be taken with the larger meals. Pulley exercises and gymnastics for the trunk-muscles generally are very useful. Massage of the abdomen can also do great good, except when the gastric glands are irritable and inclined to overaction; then it can overstimulate and do much harm, as has been pointed out by me in a previous paper.⁸ Intra-gastric faradism is also most helpful, but must be used with discretion.

The points emphasized in this paper may be thus summarized:

1. In early tuberculosis the secretion of HCl in the stomach is very frequently excessive, the peptic glands being in a condition of irritability which causes stimulant remedies of the creasote class to disagree and act injuriously.

2. Oils tend to depress the secretory function of the stomach and in consequence codliver oil is likely to help the cases which the creasote class of drugs hurt; but, on the other hand, hurts the cases in which the gastric secretion is inactive, the very ones in which creasote and the like often do good.

3. Therefore it ought to be the rule to ascertain the condition of the secretory function of the stomach before pushing either class of remedies.

4. When analysis of the gastric contents cannot be made, it is safer to combine creasote with codliver oil, so as to let one neutralize the other in their influence upon the stomach.

5. The motor function is very generally depressed in tuberculosis and must be restored before a cure can be brought about. Drugs avail little in this direction, but diet, exercise, especially in the open air, faradism and abdominal massage—except when hyperchlorhydria complicates—are all valuable means of effecting the result.

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² *Erkrankungen des Magens.* Wien: Alfred Hoelder, 1897, pp. 946-947.

³ *Loc. cit.*

⁴ *Loc. cit.*

⁵ *Deutsche med. Woch.*, 1898, No. 48.

⁶ Since the above report was written the improvement of the patient has been marked. At the end of July she had gained in all 19 pounds, and had remained free from fever. Very slight impairment of resonance could then be detected at the left apex posteriorly, and there was a little roughness in the respiratory sounds there. She was eating well and almost free from dyspeptic symptoms as a rule. For a month she had spent most of her time in the open air and had been sleeping out at night.

⁷ Bachmann; "Experimentelle Studien über die diätetische Behandlung bei Superacidität." *Archiv f. Verdauungskrankheiten*, B. v., Hft. 3.

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THE FALLACY OF CLIMATE IN THE TREATMENT OF TUBERCULOSIS.

By J. W. KIME, M.D.,

of Fort Dodge, Iowa.

A MISTAKE that is far reaching in its consequences in the treatment of tuberculosis is the popular and, I regret to say, professional error that a specific climate exists and is of great importance in the therapy of this disease.

When we have examined a patient and find it necessary to inform him that he is suffering from tuberculosis the usual question is, "Where shall I go, Doctor? What climate do you recommend?"

The belief that a specific climate exists for this disease is as phantasmal as the vision of the fountain of immortal youth, and, even as the enthusiasts of this latter belief grew old and weary in their search for this fabled elysium, so do the seekers for health scatter their substance and exhaust their lives in the effort to find the land where basking in the sunshine and breathing in the air will magically remove the greatest scourge that afflicts our race. Nor is this the saddest feature of this error, for, even today, more than 90% of our profession are still pointing toward the West and South and are issuing the mandate, "Go;" while the pale wan army, trusting in the wisdom of its commanders, takes up its heavy burden and staggers forward to its almost certain fate.

Happily, Colorado and California have proclaimed that the Utopia sought does not there exist, that the land where climate alone brings health is to them unknown.

Sadly have they learned that not only do the strangers die, but dying leave behind an awful heritage that threatens the prosperity of their commonwealths. The native-born of every climatic resort are alike afflicted with this malady, but, seized with the fatal belief that somewhere exists the specific sought, they flee to die as others do, "among strangers and in a strange land." This talismanic superstition is as inseparable from this disease as are the cough, the hectic and the wasting frame. Yet it has been demonstrated over and over again that persons who have never resided elsewhere than in the climates most noted as antagonistic to tuberculosis have contracted the disease and have promptly died with it. This observation is a most common one in Colorado, California, New Mexico, Arizona, Florida, the Carolinas and in all the so-called climatic resorts.

This error concerning climate is the most cruel and the least excusable of the many that have been woven into the history of this malady. Consumptives in all possible stages, some dying before reaching their destinations, are advised by physicians who ought to know better, to go "to some other climate," and encouragement is given that health may await them there. Of all those sent, many more have been injured and their lives have been shortened, than have ever profited thereby.

There is so little in climate that it should be prescribed in but the rarest of cases, for in climatic resorts there is but little or no intelligent medical supervision, the patients depending wholly upon the climate, aided perhaps by a few stock prescriptions written by the family physician before leaving home. These same patients kept at home, with the comforts of the home life, under the careful supervision of an intelligent physician, would live longer and die more comfortably and more content than where, far from home and friends, their declining days are passed alone, homesick and heart-sick, among those whose only interest in them is a financial one. It is far more important that every act and every movement of the phthisical patient be directed by the physician than that a little rarefied air be breathed on some barren mountain peak. In far too many of these sad cases has the last dollar been raised at great sacrifice to themselves and to others when no possible good could come from the effort.

Writers on climato-therapy are so divergent in their views that we can accept few statements upon this subject as authoritative. It may be safely accepted, however, that that climate is of greatest value which permits of the greatest number of hours being passed in

the open air. With the exercise of proper care and proper intelligence there is no climate in this country that is not well adapted to the treatment of tuberculosis.

The ultimate solution of the tuberculosis problem lies in the direction of the special sanatoria that are being constructed all over the country and all over the world, and wholly independent of the question of climate. It is in these institutions that the best results are secured, both to the patients themselves and to the State at large. A much greater percentage of cases will be cured in these institutions than will ever be favorably influenced by the most noted of climatic resorts and these results will be obtained alike on the rugged New England coast, in the Adirondack mountain region, in the pineries of Wisconsin, in the elevated regions of the Carolinas, in the Valley of the Mississippi, in the Rocky Mountain region, in the rigid climate of Minnesota, and in the balmy sections of California, New Mexico and Florida. It is not a question of climate, of elevation, of heat or cold, of dryness or of moisture. Wherever an abundance of God's pure air and sunshine may be had, there may this disease be successfully treated. Results are the same in the high latitudes of Sweden, in the forests of Germany, in the mountains of Switzerland, in sunny France and Italy, and in the humid climate of the British Isles. In our own country like results are now obtained on the lower Hudson, on the coast of Massachusetts, in the Adirondack region and in the Carolinas.

The abundant sunshine of our arid Southwest may have certain advantages, but, unfortunately, relief there obtained is not of such a nature that it may be carried home to our northern and eastern portions.

Recently, much has been said concerning the acquisition of land by the various States in New Mexico for the purpose of founding State sanatoria in that arid climate. Such a movement would be ill-advised. Much greater good may be accomplished, with the same expenditure of money, by erecting these sanatoria in the various States supporting them. Such institutions, so placed, would be accessible to a greater number of people, would be nearer to their homes, and would be more liberally patronized. But a small percentage of consumptives could be sent from our Eastern and Northern States to sanatoria so inaccessibly located as in the region proposed, and while a few might be benefited by the climate, the great majority would be deprived of institutional care which is vastly more important.

On the whole, it is better that the question of climate be made subordinate to other considerations in the treatment of tuberculosis, and that our undivided efforts be turned in the direction of the proper treatment of these cases in the climates where they are found. By so doing we will cure more of our patients and save more persons from infection than if we attempt to transport a few isolated consumptives across the continent principally to enrich those who advertise "specific climates."

OPERATION IN TWO CASES OF TUBERCULOUS PERITONITIS.

By W. L. GRANT, M.D.,
of St. Thomas, N. D.

ON March 28, 1900, Miss Julia N—, aged 20, came to me with the following history: For the past 2 months she had been increasing in size so that her clothes would not fasten about her. She had some wandering abdominal pain, and

an annoying cough, and a watery diarrhea. She did not feel like working and was gradually growing weaker. She had nursed her sister through an attack of pneumonia, my connection with the case having terminated but three weeks before, and the difference in appearance as to size was very noticeable for such a short space of time.

Upon examination I found a pulse-rate of 120 and temperature of 100°. Rales were to be heard over the lower part of the chest on both sides. The abdomen was prominent and all signs of fluid present. Operation was recommended and declined.

She was a faith-cure faddist and only came to me upon compulsion, her parents and friends suspecting her of being pregnant; she had been from home dressmaking in the city during the preceding winter. I also learned that 3 years previous she had been under treatment for pulmonary tuberculosis, and had had more or less trouble since that time. It was with much persuasion that she consented to treatment of any kind. I gave her 3 m. of creosote four times daily, and 4 grs. of calcium chlorid, with syrup hypophosphites co. three times a day, but with no signs of improvement, either in the lungs or abdominal cavity.

She rapidly grew weaker and lost flesh. The temperature varied between 100° and 102°, and the pulse was never below 120 and often 140 and more. During the first part of April she began vomiting and by the middle of the month very little food was being retained, and she was confined to her bed most of the time. The bowel movements, 3 to 6 at the beginning, increased to a dozen or more during the 24 hours. On the 24th she consented to operation, no food having been retained by the stomach for 4 days preceding.

On the morning of April 25, the peritoneal cavity was opened and about 4 gallons of clear fluid, much resembling urine in appearance, was removed. On enlarging the opening the whole peritoneum within reach could be felt studded with tubercles, these being particularly abundant in the region of the right ovary. The cavity was mopped out as well as possible and a gauze drain inserted. The fluid continued discharging for about a week, when the drainage was removed and the last stitch, a loose one, drawn tight. The temperature continued to rise to about 100° during this time. At the end of the first week there was a sudden rise of temperature with pain in the side, soon followed by all the signs of pneumonia in the base of the right lung. At the end of 36 hours the lung was completely pneumonic. It went through quite an ordinary course, except that there was no crisis. The lung gradually cleared up, but the temperature continued irregular for 3 weeks longer. The wound healed very nicely, except at the point of drainage, where there was a fistula leading down to the closed peritoneum. This was not finally healed until the beginning of August, since which time it has shown no signs of reopening.

There were no signs of fluid perceptible for two weeks after removing the drainage, when they again appeared, and a considerable quantity accumulated in the cavity. About the middle of May this reaccumulation reached its maximum, and then began to diminish until by the last of July there were no longer any signs of fluid. During this reaccumulation there was tenderness over the right ovary, where the tubercles had been found most abundant, but this disappeared with the signs of fluid.

The original pulmonary trouble began to improve almost immediately after operation. There were fewer rales and less cough until the pneumonia supervened. This was probably due almost entirely to the relief of pressure. But with the resolution following, all signs of trouble in the lungs gradually disappeared until there was neither a rale to be heard nor a cough. Rales, cough, and rise of temperature disappeared at about the same time—the beginning of June. The patient was kept in bed for 6 weeks from the time of operation, and was kept upon the same treatment outlined in the beginning. The creosote has been continued until the present time.

At the present writing, over 6 months after operation,

the girl is in fair health. She has gained in flesh and color, and has nursed her little niece through a very severe attack of ileocolitis. Altogether, she is in very fair condition, with a prospect of years of usefulness before her.

Another patient, John S., aged 36, a Swede, was operated upon on February 22, 1900. He had had slight pulmonary symptoms for some time and irregular painful conditions in the abdomen, particularly in the region of the appendix. There was but little fluid present, and that seropurulent. The appendix was rudimentary and not involved, so was allowed to remain. The next morning the temperature, which had been from 100° to 102.50° was normal and remained practically so thereafter. The drainage was left in 10 days, the same seropurulent fluid coming away during that time. The pulmonic signs remained for about 2 weeks, when they began to subside gradually. He remained in bed 5 weeks. Since that time he has gone about his work, harness making, and has had better health than for years. He was on creosote for 2 months, since which time he has had no treatment. He, too, was a firm believer in faith-cure and submitted to operation only as a last resort and after much entreaty by his friends.

In both cases the patients were opposed to operation on account of religious belief, and submitted to radical treatment only when everyone, themselves included, were persuaded that death was very near. I have no hesitation in saying that operation alone saved their lives at the time. But it has done more than that. In both cases a preceding pulmonary affection has been relieved, if not cured, though it is yet too early to make a claim of permanent cure.

When operation is so simple and practically free from danger, there is no reason why every case showing signs of tubercular peritonitis should not be submitted to operative treatment, unless there is so much involvement elsewhere that the case is hopeless on that account. And I should not feel that I had done my duty in a case where I had failed to make such a recommendation.

Had I such a case as that of Miss N——, first recorded, to deal with again I would close the abdominal cavity at once. This would avoid the danger of the fistula in the track of the drain and shorten the period of confinement to bed. Such cases as the second always demand drainage.

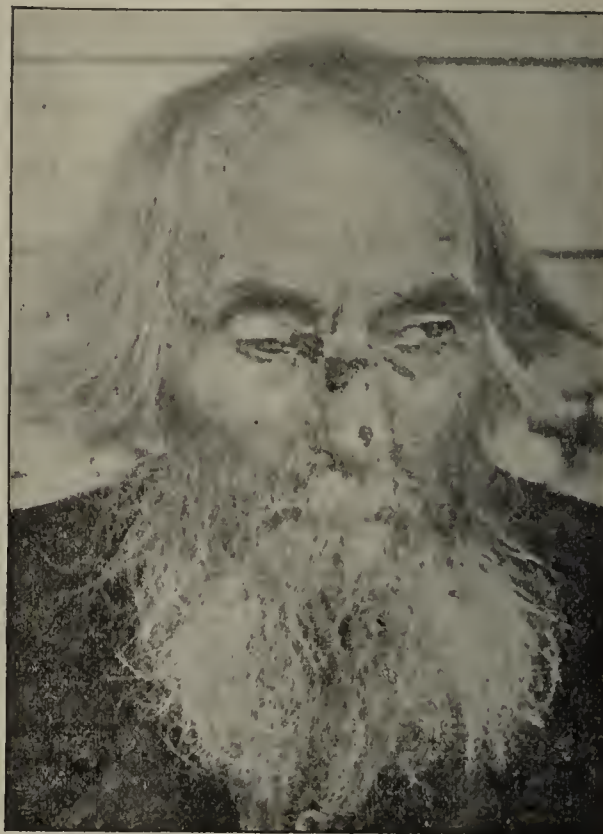
LUPUS VULGARIS OF FIFTEEN YEARS' STANDING SUCCESSFULLY TREATED AND CURED BY EX- POSURE TO X-RAY.¹

By A. EVERETT SMITH, B.S., M.D.,
of Olean, N. Y.

THAT lupus vulgaris is a skin disease of the most persistent and incurable type is evident to the student when he notices the long list of possible remedies which our best authors recommend. That the pathology and treatment of the disease has been little understood, most practitioners of any great experience must admit when they recall their fruitless attempts to alleviate these suffering patients. Such has been my experience. After using the remedies usually advised, I have seen the patient, uncured, drift on to others only to get similar results. To the conscientious physician such results are most humiliating, and ought to spur him on to diligently seek for other more successful treatment.

About two years ago, while making some experiments

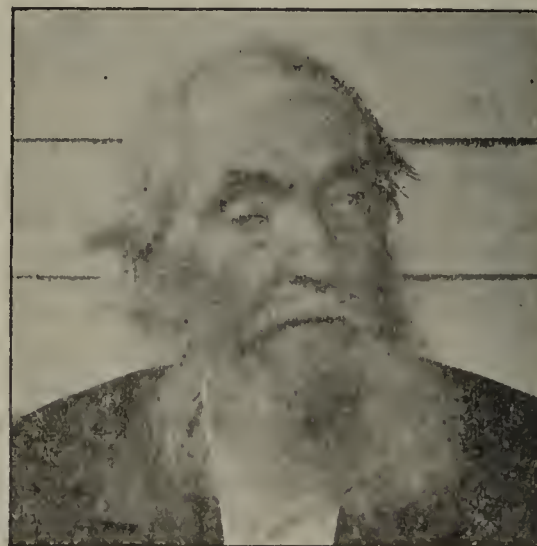
with bacteriological cultures, I observed—the well-recognized fact, I believe—that cultures did not thrive so well when exposed to light. About this time, or later, I noticed some experiments were being made in Copenhagen, Denmark, applying this principle in the



The patient before treatment. The two patches were connected by a crust.

treatment of bacteriologic skin diseases. The light used, I believe, was the high-power arc electric light, the diseased surface being exposed to light-rays at stated intervals, with improvement in many cases. Among the cases so treated, lupus showed improvement.

I was desirous of making some experiments with cases of lupus vulgaris, believing that by the use of the x-ray much better results could be obtained than with the arc electric rays. I have accordingly the following case to report:



As he appeared about two months after the first treatment. All parts perfectly sound, and a healthy cicatrix formed.

Frank Nichols, aged about 80, of Shingle House, Pa., consulted me May 3, 1900, for an ulceration of nose and face which was involving his right eye. I found he had a lupus patch which extended from the left side of nose, going over the bridge and involving the right side of nose and inner

¹ Read before the Olean Medical and Surgical Club, August 1, 1900.

canthus of right eye and the inner thirds of the lids, together with the bulbar conjunctiva. He gave the following history: About 15 years ago he was slightly injured by a chip striking him on the nose, breaking the skin. It never healed over, but slowly increased in size, notwithstanding he had been treated by a score of physicians, a few skin-specialists and numerous quacks. About a year ago it invaded the eye, since which time it had progressed more rapidly in the mucous surface. There never was much pain; it bled occasionally and disfigured him much. His general health and family history were good. No specific taint was elicited.

I made a mask for the face of sheet lead, cutting a hole for the nose and diseased part of right eye, and with this on exposed him about every fifth day for 20 minutes at a time, the diseased surface being placed about 2 inches from the light. He received in all 12 treatments. No medicine whatsoever was allowed. He was using applications of vaseline at first, but that was denied him. Marked improvement commenced after the second treatment, and was not interrupted until the sore was completely and entirely healed. After the second treatment healthy granulations appeared and healing was remarkably speedy. There was no burning from the light, or any other unpleasant symptoms complained of, except a slight headache and a decided "crawling sensation" in the sore after the first two treatments. The cicatrix has produced a slight ectropion by everting the inner end of the lower lid, and has drawn the upper lid down and in, but vision is normal.

I do not claim priority in the use of x-ray in this treatment, though I have not noticed reports of its having been used previously for this purpose.²

THE DISEASES OF THE BRONCHIAL GLANDS.*

By J. N. HALL, M.D.,
of Denver, Colo.

AMERICAN medical literature is singularly barren upon the subject of the diseases of the bronchial glands. Vastly more attention has been bestowed upon scores of subjects of so little comparative importance that the oversight is almost inexplicable. It is with the hope of calling attention to this little-studied field, so far as our textbooks deal with it, that I address you.

From the great number of cases of diseases of these glands quoted by English writers I feel certain that they are much oftener and more seriously involved in English children than in those of this country. Osler, who has doubtless had as wide a clinical experience as any American physician, formerly stated, although I cannot now find the reference, that he had never seen bronchial obstruction from pressure of enlarged glands, and but few cases have been reported in this country in comparison with these abroad.

The bronchial glands, over a score in number, are grouped about the bifurcation of the trachea, being larger and more numerous upon the right than upon the left. Some of the largest are found immediately under the arch formed by the two main bronchi. A chain of small glands extends upward along the left recurrent laryngeal nerve as it winds under the aorta, and another along the right as it passes under the subclavian artery. These glands intercommunicate freely, and receive also the lymphatics of the neck, chest and the organs therein contained, especially the trachea, the bronchi, the lungs and the pleurae. Their relationship with the supraclavicular glands is affected, according to Baréty, by the

group of glands found behind the sternoclavicular articulation, made up by the confluence of the chain situated in front of the cervical fascia, the internal mammary glands, and the tracheobronchial chain; with this group the supraclavicular glands communicate freely.

Along the branches of the bronchi extending into the lungs are smaller lymphatic glands, of less interest pathologically, but nevertheless capable of causing trouble similar to that originated by the tracheobronchial glands on a larger scale. They are found near the primary divisions of the bronchi, especially posteriorly, we are told by Quain, and at the bifurcations of the branches of the pulmonary artery.

All of these glands are relatively larger in the child than in the adult, and, because of the activity of the lymphatic system in the child, they are especially prone to be involved by disease.

These glands have a free vascular supply from the bronchial arteries, and receive the afferent lymphatics from the lungs, pleurae and neighboring parts. Guéneau de Mussy and Peter¹ have shown that lesions of the nasopharynx and even facial erysipelas may react upon the bronchial glands through the intervention of the deep cervical glands.

As the bifurcation of the trachea is found opposite the fifth dorsal vertebra posteriorly, and behind the lower end of the manubrium sterni anteriorly, and as the bronchial glands lie chiefly at or above the bifurcation, it is at or above these points that we look for the chief signs of their presence when enlarged.

The glands are enlarged in conjunction with the involvement of the lymph-glands of the entire body in leukemia, pseudoleukemia, leprosy, syphilis, general tuberculosis and possibly of other diseases. Primary lymphosarcoma and lymphadenoma, the latter formerly mistaken for cancer, also occur, as well as cancer and fibroma. The largest glands are found in connection with disease of bone, especially tuberculous disease.

Simple lymphadenitis arises from any acute or chronic process inflaming the organs the lymphatics of which reach the bronchial glands. As examples of these diseases we may mention acute bronchitis, pneumonia, bronchopneumonia, pleurisy, chronic bronchitis, the subacute or chronic lung-changes following measles and whooping-cough—typhoid fever and diphtheria.

Marfan¹ states that the individual ganglia may reach a diameter of 2 or 3 centimeters. During the acute stage of the inflammation they are reddish or liver-colored, becoming, as the process becomes subacute or chronic, paler, firmer, and even sclerotic.

At the postmortem we find, aside from the above changes of simple lymphadenitis, many other conditions of interest. In this region, where, from the extensive mining interests, great numbers of men are affected with miner's phthisis, the absolutely black glands described by Wilson Fox² are frequently seen, a real melanoma, often softened into a black, pulpy mass. The gritty feel, from the presence of particles of coal, silica or other mineral substance, is notable, these particles being arrested by the glands as by so many filters, until the limit of capacity is reached. Dust particles not arrested by the mucous corpuscles, swept thence outward by the ciliated epithelial cells, and expectorated, are taken up by the swollen alveolar cells, if not too numerous. If so, they penetrate the mucous membrane, reach the lymph spaces, and even enter the lymph current to be carried to the small lymph nodules surrounding the bronchi and the bloodvessels; to the in-

² I wish to acknowledge the kind assistance of my friend and colleague, Dr. Joseph C. Clark, of Olean, N. Y., who so cordially placed his static x-ray machine at my service in this case.

* Presidential Address before the Colorado State Medical Society, June 21, 1900.

terlobular septa beneath the pleura, or along the lymph channels to the bronchial glands, in the cells of which they lodge. (Arnold.) Weigert²⁶ has shown that when densely pigmented glands adhere to the pulmonary veins, some of the carbon particles may pass into the general circulation, to be arrested in the liver and spleen, although in all but extreme cases the bronchial glands are a sufficient defense to the system.

The particles deposited in the follicular cords of the tracheal and bronchial glands and the smaller lymph nodules finally excite proliferation of the connective tissue elements (Osler), the glands becoming sclerotic, as above described. M. Carrien¹ lays stress upon the impermeability of the hypertrophied glands as a condition precedent to pulmonic anthracosis. Marfan¹ ascribes the development of emphysema in pneumoconiosis to the damage to the lymph channels and consequently to the alveolar epithelial cells, atrophy of the alveolar walls resulting.

It is, however, in tuberculosis that we find the most important changes in the bronchial glands. They are greatly enlarged and often show tuberculous granulations, although we may find, as Fox has mentioned, a true "lymphadenitis tuberculosis, in which, from the swelling and diffuse infiltration, no granulations may be discernible." Cheesy degeneration is often found, but it is not a necessary part of the transformation, for the swollen gland and probably the tuberculous granulations may have fibroid metamorphosis, thickening of the reticulum and septa, and the whole tract of glands becomes a glistening, semicartilaginous substance with scattered nuclei through it. The glands are likely to be deeply pigmented, especially those nearest the lung, are hard and resistant upon section, and, by a continuation of the process outlined, may shrink to less than the normal size. They adhere, not only to each other, but to the connective tissue of the mediastinum, and the edges of the lung. In other cases we have all gradations "from the grayish granulations sown in a congested parenchyma to the uniformly yellowish and caseous gland, sometimes with a thick, fibrous capsule, sometimes a real cyst of pus, sometimes more dry and cheesy;" while a true cure results in those cases where lime salts have been deposited in abundance. The tuberculous bronchial glands may be found deep in the lung. Cruveilhier states that the glands at the bifurcation of the trachea enlarge most in tuberculosis, although the others may attain a very large size.

In a recent case at the Arapahoe County Hospital, in which the characteristic cough and other signs existed during life, so that I had entered the diagnosis as "pulmonary tuberculosis with enlarged bronchial glands," a single gland near the bifurcation of the trachea was an inch in diameter, and entirely caseous. Many others were found enlarged, but less matted together than one would have expected. Extensive and advanced tuberculous lesions were found in both lungs. We should note, however, that Ziegler lays especial stress on the frequent presence of such large glands in cases with but a small focus of disease in the lung. E. Smith states that if the glands remain large in any case they are presumably tuberculous.

It has long been recognized that the bacillus of tuberculosis is found in the bronchial glands of children and adults, and may be demonstrated by inoculation experiments, if not microscopically. Thus H. P. Loomis³ found that the bronchial glands were infective to rabbits in 8 out of 30 cases in which no signs of tuberculosis

were found. Pizzini⁴ injected, with aseptic precautions and control animals, the bronchial glands of 40 patients dying suddenly, all adults but one, and not appearing tuberculous, into animals, and, throwing out 10 in which mixed infection occurred, found that 42% of these animals developed tuberculosis. Of those injected with the cervical glands from the same subjects, but 2% became tuberculous, and none of those upon whom the mesenteric glands were used.

In children the bronchial glands are tuberculous in most cases coming to autopsy. Northup's record of 125 autopsies in which these glands in every one were tuberculous has often been quoted. In fact, this is by no means a new discovery, for Steiner,⁵ in 1865, found the bronchial glands macroscopically tuberculous in 275 of 302 children. Spengler⁶ concludes that the bronchial glands are the most frequent seat of primary tuberculosis, and the tendency amongst pathologists is to agree with him. Thus Weigert,⁷ states that infantile tuberculosis is not primary in the lungs as commonly as in the adult, but secondary from the bronchial and pulmonary glands. He quotes many authorities who agree with this view.

The influence of these glands in the origination of other tuberculous processes than those of the respiratory tract has been underestimated in the past. Bertalot⁸ found tuberculous bronchial glands in 20 out of 24 children dead of tuberculous meningitis, while but one showed primary tuberculosis in the mesenteric glands. Reimer,⁹ in 42 cases of the meningeal infection, found caseous bronchial glands 36 times, miliary tuberculosis of these glands 5 times, but one being free from involvement.

Henock¹⁰ reported 17 cases of tuberculosis of these glands in 18 of meningitis, in 3 the mesenteric glands being affected.

Further quotations would be superfluous. The wonder is that, with the almost constant involvement of these glands, tuberculous meningitis is so comparatively rare.

Lesage and Pascal¹¹ explain the origin of tuberculous meningitis through communication of the lymph vessels of the neck with the perivascular lymph spaces of the brain-membranes. The cervical glands are infected intermediately. It is probable, they state, that infection may occur by way of the spinal canal.

Weigert¹² believes that the disease remains local in the bronchial glands owing to closure of the lymph-vessels leading from them. A lack of tendency to soften is favorable, for tuberculosis is often spread by the breaking down of the glands which results from a mixed infection.

Induration of the glands from the presence of mineral dust, with the development of fibroid contraction, and consequent smaller blood-supply and lack of oxygen, is to be considered a conservative process as regards tuberculosis elsewhere.

General miliary tuberculosis probably originates more frequently from the bronchial glands than from any other source. Communication of a disintegrating gland with the blood-current by ulceration into a vein is probably certain to cause a general infection.

Guthrie¹³ believes that the thoracic glands are the place of origin of many cases of tuberculous meningitis, and that these glands may become tuberculous not only through inhalation of bacilli, but by the entrance of the latter through the lymphatics of the pharynx, tonsils, and esophagus, intestines, and abdominal glands, and even from the thoracic duct by way of the pulmonary

circulation. We should particularly insist upon the predominating influence of the tracheobronchial glands as compared with any other lymph-glands, in the origination of tuberculous processes elsewhere in the body.

The lung may be involved by way of the lymphatics, a lymphangitis, connecting the distant focus in the lung with the glands, setting up the process.

As evidence that the lymph-glands in the child are often primary sources of pulmonary tuberculosis we have the statement by Welcker that the disease often involves both lungs, and spreads outward from the hilus, contrary to the usual rule in the adult.¹⁴ I believe it is quite probable in some cases in adults in which we recognize tuberculosis in the apex of the lower lobe of the lung after that at the true apex, that it comes from a local infection from caseous, ulcerating glands.

Practically all phthisical patients have tuberculous bronchial glands, while the bronchial phthisis of the older writers, a tuberculosis of the glandular apparatus rather than the lung, is much more frequent in children than in adults. It has been suggested that they inhale the bacilli during babyhood from unusual exposure in crawling upon the floor, but extreme susceptibility seems to me to be the most important factor in the infection of these glands in childhood, for all residents in civilized communities inhale the omnipresent micro-organism.

Parrot formulated the statement that tuberculosis of a group of glands always followed tuberculosis of the tributary viscera. This so-called law is now known to be incorrect, for the bacillus may penetrate the bronchial mucous membrane or other membranes, and reach the lymph-glands without affecting the lung or other organ at the point of entrance. Thus we have undoubtedly in the past failed to realize the vast importance of the bronchial glands in filtering out from the lymph stream the individual bacilli, and holding them prisoners in a place of comparative security. The organism is for a long time protected. It is only when enormous numbers of bacilli invade the respiratory tract that the glands are overpowered. Then, in the performance of their function, they sacrifice their own integrity, offering themselves as a forlorn hope in the attempt to prevent the general infection which is imminent.

Manfredi¹⁵ shows that the lymph ganglia not only hold but tend to render innocuous the tubercle-bacillus, and many other microorganisms as well. Schleich⁵⁶ presents the most convincing evidence of the great value of this process. Marfarn and Manu⁵⁹ have found in the glands, even of the newborn, Friedländer's bacillus, Frankel's pneumococcus, and the streptococcus. None of these infections, however, compare in frequency or importance with that by *Bacillus tuberculosis*. Other bacilli of less serious import are also found, notably the staphylococcus.

The enlarged glands frequently undergo the caseous metamorphosis, and remain innocuous. Calcareous matter may be expectorated as a result of the disintegration of such a gland, or a true lung stone be expectorated.

Charles West found but 6 out of 72 cases of enlarged bronchial glands in children in which the cretaceous deposit had occurred, but the proportion is greater in adults.

Hoffman¹⁶ states that in favorable cases the sloughing gland may be coughed up, but neither he nor any other author, to my knowledge, has quoted a specific instance

of such an occurrence until the publication of my own probable case.¹⁷ I have there given references to 15 cases, in 14 proven by autopsy,¹⁸ "in which obstruction occurred in the air-passages from a sloughing bronchial gland too large to be expectorated." "In the remaining case, some partially disintegrated fragments of the gland were removed by means of a catheter through the tracheotomy wound, when it was found that the operation had afforded no relief, and a still larger piece was ejected afterward. The child recovered." (Peterson's case.)

After noting the scant mention of the diseases of the bronchial glands in the textbooks, and the slight attention given to them in works upon physical examination, it is a great surprise to find how the literature teems with postmortem records of the finding of the glands in the air-passages, or the cavities, especially near the root of the lung, left by their disintegration. Poland,¹⁹ Parker,²⁰ Nachod,²¹ Bayeux and Audion,²² Poupon,²³ Eichhorst,²⁴ Ogle,²⁵ Voelcker,²⁵ and a score of others have noted many such cases. So frequently have they been found that one should always bear in mind the accidents from the diseases of these glands in the consideration of possible causes of sudden death, especially in children. Thus Parker²⁶ reports a case of sudden dyspnea, resulting fatally in a previously healthy child, from rupture of a gland into the trachea just above its bifurcation, and Gulliver, Goodheart, and others have seen similar ones. The reported cases of sudden death from similarly diseased glands in children previously ill are too numerous to mention.

As we shall see, the acute process, either of simple or tuberculous origin, not infrequently ends in suppuration. The gland, as the inflammation proceeds, adheres to the bronchus, the trachea, the esophagus, the pericardium, the pleura, the pulmonary veins, the pulmonary artery, or even the aorta, and finally ulcerates through the intervening wall. We then find, as secondary processes, pericarditis, pleurisy, pneumothorax, infection of adjacent lung, hemorrhage, establishment of a cavity, caused either by the sloughing out of the glandular mass or necrosis of adjoining infected lung, or both, pulmonary abscess, or pulmonary gangrene. The cavities from sloughing glands, according to Rilliet and Barthez,³⁶ have no bands crossing them, as do those in lung parenchyma, for in the latter case the resistant vessels remain until the last. The interior wall is smoother also. In such a cavity Cruveilhier even found a lumbricoid worm, after perforation of the esophagus.

Pericarditis and pleurisy may occur from contiguity, without perforation. The pericarditis may be typically tuberculous, a large, caseous mass, or a thin membrane with sparsely scattered tubercles.³⁷ (Baréty.)

The hemorrhage may be immediately fatal, as in case the pulmonary artery or the aorta be opened, or less severe in case the smaller branches be affected. Many hemoptyses are of this latter origin, being often sharp and repeated in character. If the rupture occur into the esophagus, much pus may be immediately evacuated with recovery, as in the Denver case reported by Dr. H. B. Whitney,²⁸ or the Chicago one by Dr. F. E. Waxham.⁵⁷

If the bronchial tract or the pulmonary parenchyma is invaded, an intense capillary bronchitis is often set up, resulting, in many cases, in abscess or gangrene, as indicated above. It has been suggested that these processes may arise from compression of the vagi, repre-

senting the termination of a vagus pneumonia, although many of them are from direct pulmonary damage.

The secondary enlargement of the bronchial glands from malignant intrathoracic disease we need mention but briefly, since the original disease rules in diagnosis, prognosis and treatment. Powell²⁹ has seen the left bronchus narrowed by compression in carcinoma of the glands, the head of the pancreas being involved probably primarily. Bennett has seen abscess of the lung, with similar obstruction of the left bronchus, from cancer. It is noteworthy that the glands are not always involved in cancer of the lung, and may remain free in cancer of the esophagus even where perforation of the bronchus or of the trachea had occurred.³⁰ Tumors of the mediastinum are said by Hoffman¹⁶ to cause enlargement of these glands but rarely, contrary to our expectations.

Since the involvement of the bronchial glands in lymphoma and lymphadenoma is but a minor part of a general disease, we shall not study these conditions at length, for it would lead us beyond the boundaries of our subject.

In gangrene of the lung, Schroeder³¹ saw the bronchial glands gangrenous, and the lymphatics leading to them filled with gangrenous matter. Cruveilhier³² and Lebert³⁸ have reported cases in which gangrene of the bronchial glands apparently preceded that of the lungs.

The especial interest of the glands in question lies as much in their situation as in their importance in the economy. J. L. Smith,³⁴ for instance, states that the bronchial and mesenteric glands are the only ones in the body which materially increase the danger of tuberculosis, or give rise to special symptoms, these symptoms being mechanical, or due to rupture. Meigs and Pepper³⁵ call attention to the fact that the bronchial glands cause trouble from the immovable organs and unyielding walls about them, while the mesenteric glands, situated amongst freely movable organs in a cavity which easily accommodates its walls to its contents, are comparatively innocuous.

Aside from the infections of other organs, chiefly occurring in tuberculosis of the bronchial glands, these ganglia, as Rilliet and Barthez long ago pointed out, cause most damage by compressing neighboring organs, or by adhesion to them with consecutive perforation. The arteries, being movable and resistant, often escape harm. The aorta may be pushed upwards. Baréty believes that even a simple lymphadenitis predisposes to tuberculosis of the lung by compressing the pulmonary artery and thus lessening the blood-supply. It is well known that phthisis is frequent in narrowing of the pulmonary artery from any cause. A suggestive fact is found in the greater liability of the branch to the upper lobe to pressure from this source, for here pulmonary tuberculosis ordinarily begins.

The enlargement of the bronchial glands, from whatever cause, leads to pressure upon contiguous organs, and we shall profit by a review of the mechanical disturbances so produced.

The upper mediastinal space, in which the glands lie, may be divided into the anterior, or vascular plane, and the posterior or tracheoesophageal plane. The former contains the vena cava superior and brachiocephalic veins, the aorta and its branches, the pulmonary arterial system, and the pulmonary veins; the latter, the trachea, bronchi, esophagus, the pneumogastric and recurrent laryngeal nerves, and branches of the sympathetic system.

The symptoms of compression relate to the organs affected, and therefore those tumors, glandular or otherwise, in the anterior plane, as Rendu¹ has pointed out, are generally of slow evolution, venous pressure being the most prominent symptom. Bulging of the sternum and contiguous chest-wall, and corresponding dullness, are to be found frequently. The disease in this region is more likely to be malignant, frequently affecting the thymus gland, while the posterior plane is more often involved by lymphatic growths.

In this posterior plane, then, and usually from glandular enlargement, we are likely to find evidences of mechanical interference with respiration, from compression of the trachea or bronchi, hoarseness or aphonia from pressure upon the recurrent laryngeal nerves, dilated pupil from irritation of the sympathetic, or contracted pupil from its paralysis; dysphagia from compression of the esophagus or of the filaments of pneumogastric origin supplying its upper portion; vomiting of similar origin, or tachycardia, either constant or intermittent, from abolition of vagus influence from pressure.

Compression of the phrenic nerve gives rise to diaphragmatic neuralgia, to hiccough, and to a definite phrenic dyspnea, we are told by Marfan. It should be remarked here that certain of these, as of following symptoms, are rare, and have not come under my personal observation, unilateral salivation has been noted from sympathetic paralysis. The weakened pulse of inspiration, reminding one of the *pulsus paradoxus*, in which, however, the pulse is slowed but not weakened, is accounted for by pressure upon the great vessels. It is at times unilateral, at times found in both arms. A systolic murmur may originate from pressure upon the base of the pulmonic artery, or the aorta.

Tachamer¹⁶ has seen the fingers clubbed, a result of interference with the venous return, as in other chronic chest diseases. Hoffman lays much stress upon venous stasis as the result of pressure, showing itself in the whole upper portion of the system. If the vena cava superior be involved, the stasis occurs in the facial veins, and over the shoulders and arms, sometimes unilaterally. The anterior surface of the thorax becomes covered by a network of veins, if the compression be complete, and the blood enters the vena cava inferior by anastomosis of the greater and lesser azygos veins, and the intercostal, internal mammary, epigastric, abdominal, subcutaneous and circumflex iliac veins. (Marfan.) If the collateral circulation fails, edema of the hand and face occurs, with cyanotic lips, injected eyes, epistaxis, vertigo, headache, and, if we are to credit Rilliet and Barthez,³⁶ meningeal hemorrhage.

If the pulmonary veins are compressed, edema of the lungs, hydrothorax, and occasionally hemoptysis may be found. Hydrothorax may be unilateral, Marfan states, that limited to the right being found where the vena azygos major alone is compressed.

Ruhle³⁷ believes that dilation of the left ventricle may occur from pressure of enlarged glands upon the aorta.

Cruveilhier (quoted by Fox²) states that suffocation in infants probably occurs occasionally from pressure upon the laryngeal and vagus nerves. If thick mucus closed a glottis already in a state of spasm in a weak child this would be readily explicable.

Since venous obstruction, the most prominent symptom of tumor in the anterior mediastinum, is borne with much less difficulty than the symptoms noted above as found in the glandular enlargements of the posterior plane, the latter are more immediately dangerous, suffocative acci-

dents being especially to be feared. Although, with any considerable increase in the size of these glands many organs are pressed upon, the brunt of the trouble is usually felt by certain structures more than by others. By inflammation the glands become adherent to contiguous organs, and may, indeed, show the most varying symptoms of pressure, as the different structures are more or less involved.

Of the utmost importance is the pressure exerted upon the trachea and the larger bronchi. From the position of the larger glands these tubes rarely escape, the right main bronchus being most frequently involved.

With increasing pressure the entrance of air is more and more interfered with. If the lower end of the trachea be affected, the respiratory murmur upon both sides of the chest is enfeebled, while but one side, most often the right, is so affected if a main bronchus is compressed. The French have described particularly³⁸ the tracheobronchial *cornage*, caused by the passage of the inspired air through the narrowed tube, a sign of the first importance, and most noticeable in my own recent case of obstruction. With this is commonly associated *tirage*, or inspiratory retraction of the thorax, as a whole if the trachea is obstructed, otherwise limited to the side of the affected bronchus; due, of course, to the difficulty of filling the air vesicles because of the obstruction.

If we add to these two signs the enfeebled vesicular murmur with conservation of the vesicular resonance, bilateral in case of tracheal obstruction, otherwise unilateral, we have sufficient evidence upon which to base a diagnosis of respiratory obstruction. If the signs be bilateral, we must exclude edema of the glottis, spasm of the glottis, polyp and membranous exudate, for tracheotomy has been uselessly done for compression of the trachea by simple lymphadenitis, as for aneurysm. In all of the last-mentioned diseases, however, the voice is affected, while the larynx remains immobile and the voice comparatively clear despite the most violent dyspnea, if the obstruction be below it—the latter sign being strikingly prominent in a case I have recently seen with Dr. Love, of Denver.

From the compression of the air-passages the number of respirations is decreased, inspiration and more especially expiration being prolonged, we are told by Grancher.⁵⁸

Marey long ago observed the increased frequency of the pulse in such respiratory difficulty, contrasting markedly with the slow respiration. Slowing of the pulse from pneumogastric irritation must not be forgotten. The expansion of the affected side is notably diminished, so that finally a unilateral thoracic retraction may be noted, as after pleurisy. Guéneau de Mussy³⁹ even believes that the scoliosis with retracted chest and lowered shoulder in children is commonly from this cause.

Lagging of the affected lung is noticeable.⁴⁰ The indrawing of the affected side is greatest below because of the fact that the air reaches this part of the chest last, while the diaphragm pulls in the attached ribs in its contractions.

Long-continued obstruction frequently produces a shortened anteroposterior diameter of the chest. Oftentimes the patient lies upon the side of the enlarged glands, as upon the side of a pleural effusion, obviously that he may use the better lung. Quain mentions a boy, who recovered, whose favorite position was on his face and knees.

Patients with obstruction of the trachea or a main

bronchus eventually perish by (1) slow suffocation, (2) pulmonary edema, (3) bronchopneumonia, (4) pneumonia, (5) gangrene, (6) abscess of lung, or (7) by immediate suffocation from collapse of the weakened cartilages of the tube at the point of compression. To these causes we should obviously add (8) sudden suffocation from lodgment of a sloughing gland in the air-passages, and (9) obstruction of a much narrowed canal by tough mucus.

We should here speak of the sudden exacerbation of symptoms, relating either to air-passages or to other structures, from sudden fluxion to the periganglionic tissues and consequent increase of pressure. Such fluxion, coming from exposure to cold or other irritation of the respiratory tract, may cause very serious symptoms in a few hours, in the more advanced cases, especially if obstruction from thick mucous secretion be superadded.

From the position of the esophagus we may readily see that dysphagia must result in some of the cases we are studying. I have seen it in at least two cases. Spasm of the tube is also found at times, as mentioned by Hoffmann. The obstruction may not be apparent upon passing the sound, and is thus at times thought to be hysterical. Hoffman believes that it may be due to pressure on the branches of the vagus supplying the esophagus as well as to direct pressure upon the tube. It may diminish or disappear upon the bursting of an abscess of the glands. Marfan¹ mentions that direct pressure gives rise to constant difficulty of swallowing, while painful esophagismus and pharyngismus arise from pressure upon the nerve-fibers above-mentioned supplying the upper esophagus and the pharynx, as in the case of other mediastinal tumors. It is stated by Quain⁴¹ that dysphagia was present in 10 of 58 cases, in one case especially for liquids.

The laryngeal and tracheal symptoms caused by pressure from the diseased glands are of the greatest interest. Marfan states that at times the larynx does not move upon swallowing and during respiration, because of fixation of the trachea in the mass of glands, evidently.

The trachea may be pushed forward or displaced laterally, but the signs pertain to cases of mediastinal tumor of other than glandular nature as a rule.

The paroxysmal cough, so strikingly like whooping-cough, is the most prominent symptom in many cases. It is stated by Hoffman¹⁶ that the pressure of the glands near the tracheal bifurcation causes the specially severe cough seen in certain cases, because of the presence of the recurrent laryngeal nerves in this situation, where they are subjected to pressure, to traction or to hyperemia from contiguity to the inflamed glands. The expectoration is often mucous, as in bronchial catarrh, and may contain pus if glands be breaking down, often mixed with air. Calcareous particles from the disintegrating glands may be expectorated. Many patients raise absolutely nothing. (Quain.) The cough differs from that of pertussis in its noncontagious character, in the fact that there is no inspiratory whoop, and in the longer duration, not subsiding in a few weeks as in the contagious disease. Notable cough was present in 39 out of 58 cases, in 21 of them being the most troublesome symptom. (Quain.)

Hoarseness or aphonia may result from involvement of the recurrent nerves, especially of the left, which passes deeper into the mediastinum than the right, and is therefore more subject to pressure.

Eustace Smith⁴⁸ states that many supposed cases of

asthma in children are paroxysmal attacks of dyspnea from the irritation of enlarged bronchial glands. Day⁴² believed that laryngismus stridulus was due to the same cause. He also mentions that the spasmodic cough, lividity and threatened asphyxia may simulate asthma closely, and may end fatally.

Much interesting work has been done in studying the effect of compression of the recurrent laryngeal and other nerves upon the larynx. Paralysis of all the muscles of the glottis leaves it open as in the cadaver. (Krishaber.⁴³) Paralysis of one cord cannot produce dyspnea. The only paralysis producing closure of the glottis is that of the abductors, the cricoarytenoidei postici, allowing the opponents to act unopposed. But double paralysis of this nature is rare, and none of the cases quoted by Ziemssen or Riegel were caused by tumors. Johnson reports one such case. (Quoted by Fox.²)

Further, the recurrent nerves supply nearly all the muscles of the larynx, and paralysis of any single muscle or pair of muscles could hardly occur from compression of the whole nerve. Stimulation of the recurrent may give dyspnea, but does not always do so, while aphonia is the most constant symptom of paralysis.

Krishaber states that dyspnea, in these cases, if the voice be preserved, demands tracheotomy (or in these days, intubation,) since the preservation of the voice indicates that the trouble is spasmodic, the nerves therefore being still intact. Dyspnea with loss of voice is not benefited by the measures indicated, for such dyspnea, not being due to paralysis alone, must be due to pressure upon the trachea below, not capable of relief by these measures; hence they are useless. As paralysis may coexist with spasm, however, these indications are less valuable than they otherwise would be. The most urgent dyspnea may arise in paralysis of the larynx from sudden stopping of the glottis by accumulated mucus. Compression of the trachea probably explains most cases of severe dyspnea from enlarged bronchial glands, either by intermitting degrees of pressure, or by superadded accumulation of mucus.

Fox states that paroxysmal dyspnea without compression of the trachea or aphonia has been proved postmortem to be due to a thrombosis of the pulmonary artery, although simulating the former condition.

Of Quain's 58 cases, 13 had dyspnea, in 4 of these cases resembling spasmodic asthma, and occurring especially at night.

Quain found pain at the fourth or fifth dorsal vertebra on one side or on both in 22 out of 58 cases. It occasionally existed under the manubrium. Tenderness may coexist with pain in either locality.

We have seen that vomiting occurs from irritation of the pneumogastric nerve in certain cases. It is probable that this symptom in phthisis occasionally arises in like manner, from the pressure of tuberculous glands.

The theory of de Mussy,³⁹ that whooping-cough is simply a manifestation of pressure by enlarged bronchial glands, has not been established. He went so far as to suggest that this disease was an exanthem of the bronchial mucous membrane causing great enlargement of the glands, which pressed upon the recurrent nerves and thus gave rise to the crouping cough and vomiting. Neither has the theory that spasmodic croup depends upon pressure from the diseased glands obtained credence.

J. L. Smith³⁴ states that enlarged bronchial glands may so interfere with the return circulation from the

brain as to cause the child to present most of the symptoms of tuberculous meningitis, serum being probably effused into the cerebral cavities. In one of his cases he states, however, there was no sighing respiration nor vomiting, nor was the temperature that of meningitis, so he was not deceived.

The extreme wasting spoken of in Hare's monograph as due to pressure of mediastinal tumor upon the thoracic duct I have not found mentioned in the literature of the bronchial glands.⁴⁵

Barry⁴⁴ saw a fatal result in a woman of 71 years, emphysematous, but not tuberculous, from hemorrhage from the vena cava superior, into which a gland had ulcerated. Thus neither age nor absence of the macroscopical signs of tubercle give any assurance of freedom from this form of death. In Griffin's case⁴⁶ hemorrhages around the tracheal glands, amounting in all to less than 3 ounces, caused death with symptoms of internal hemorrhage.

In Rautenberg's⁴⁷ case the bloody stools were found to come from perforation of a gland into the vena cava and esophagus.

It is not alone the pressure of the enlarged glands that causes symptoms of compression in certain organs, for the latter may proceed from the contraction of the gland or the cavity left by it after an acute inflammation. Traction diverticula in the esophagus may arise in this manner. The radiating scars found occasionally in the esophageal wall commonly originate from these processes. We are told by Eichhorst²⁴ that contractions in caliber in the trachea or bronchi may originate in similar manner, leaving a puckered, radiating, pigmented scar. In a case reported by Eichhorst and Seydel²⁴ the patient died with increasing dyspnea, and many such scars were found in the smaller bronchi, where minute glands had ruptured and eventually caused contraction.

Voelcker¹⁴ describes a case of surgical emphysema extending from the eyes to the navel in a child in whom an ulcerating bronchial gland opened into the air-passages. With the occurrence of this symptom there was profuse expectoration of blood and pus, with the disappearance of severe dyspnea. This author states that offensive breath in a child is often from an ulcerating bronchial gland. This suspicion would be corroborated by the finding of dulness and especially by hemoptysis.

Extensive mediastinal abscesses may arise from perforation of an ulcerating gland, and may open spontaneously through the chest wall⁴⁸ or be evacuated surgically. Class⁴⁹ saw the chest wall perforated spontaneously. Fuller saw death from pyemia from rupture of a suppurating gland into the posterior mediastinum.

Many curious instances of perforation of several organs are on record, as Letulle's, in which the esophagus and pleura were opened by a suppurating gland, and food was found in the purulent pleural contents.⁵⁰

Numerous cases of recovery after vomiting of pus have been recorded, several being quoted by Hare. I believe the latter author hardly gives due weight to the glandular diseases we are studying as factors in the origination of mediastinal abscess.

The greatest discrepancy exists among different writers and teachers as to the possibility of detecting enlarged bronchial glands clinically. Some would lead one to infer that they may be found as easily as the cardiac dulness, while Ashby and Wright and others doubt if tuberculous glands can be detected, but think that sarcomatous ones may be. Henschel, than whom no greater authority could be quoted, doubts the possibility of the

diagnosis. Many such contradictory opinions might be brought forward. The truth seems to me to be beyond question that large glands may be detected, for many observers have made the diagnosis and confirmed it; it is likely, however, that not one case in a score reaches the degree of enlargement at which diagnosis is possible.

Guéneau de Mussy³⁹ states that percussion of the spine to the fourth dorsal vertebra, where the trachea ends, gives rise to a tubular resonance, but, if the bronchial glands are enlarged, to dulness. Below the fifth dorsal vertebra he states that vesicular resonance is normal. I certainly do not believe it possible for one examiner in a score to detect these changes in resonance, and, considering the thickness of the solid tissues, and the smallness of the trachea in the child, in whom so much of this work must be done, I think that *a priori* we have no good reason for expecting to obtain any good results here. I have certainly not obtained any.

There seems to be a fair consensus of opinion in favor of the proposition that dulness may be found in the interscapular region when considerable enlargement of the glands exists, although Henoch and Ashby and Wright⁶³ deny it as mentioned above.

Quain⁴¹ found dulness in one or both sides near the fourth and fifth dorsal vertebrae, 47 times in 58 cases, and under the manubrium sterni in 8 cases. The latter result was obtained by examining after deep expiration with the head held backward.

F. C. Wilson⁶¹ claims that dulness is normal opposite the root of the lungs, at the second and third dorsal vertebrae, which dulness is increased according to the amount of disease in the glands. Guéneau de Mussy³⁹ states that the dulness is found about the last cervical and first three dorsal vertebrae. Hoffmann rather doubts the diagnosis by percussion, front or back, but states that Arnoux⁵² finds dulness from the second to the sixth dorsal vertebrae. He mentions that by palpatory percussion one may feel the increased resistance. This may easily be the case if the glands are large enough to give rise to considerable dulness. As a matter of fact, much more depends upon the size of the mass of diseased glands than upon all other factors, in their detection by percussion.

In front they are more easily found. Authorities are in much better consonance here. The manubrium sterni and the adjoining clavicular articulations, particularly upon the right,⁵² cover the usual dull area. Still, in young children the normal dulness of the thymus gland, and the fact that the lungs cover any but the largest lymph glands, must be taken into account. Further, the difference between the normal apical resonance of the two lungs, and the difficulty of determining slight degrees of dulness in the upper sternal region, must prevent any but fairly marked dulness from being determined.

The cracked-pot sound in the upper chest of children has lost its former significance in the diagnosis of diseases of the bronchial glands, Eustace Smith stating that, on account of the pliancy of the chest-wall in the child, the sound is not necessarily indicative of disease.³⁴

Much divergence is found in the statements as to auscultatory sounds. Voelcker¹⁴ believes that alterations in the breath-sounds are more important than those of percussion, especially if they be unilateral. F. C. Wilson⁶¹ finds coarse moist rales with increased vocal resonance and fremitus, in most cases, and bronchial respiration heard further out from the root of the lung the more the glands are diseased. Rilliet and Barthez⁵⁶

mention that the solid mass of glands conduct the tubular sound to the surface, even though the lungs be not infiltrated nor broken down. Ashby and Wright⁵³ state that auscultation is still more worthless than percussion unless the glands are very large. These writers speak of the value of weakened respiratory sounds upon one side, though this sign is often masked by tuberculous disease of the lung. Marfan¹ mentions the presence of tubular respiration upon the side of the enlarged glands when they surround a bronchus, heard between the spine and the angle of the scapula. It was present in 14 of Quain's cases.

This writer speaks of an "interscapulo-vertebral souffle" simulating cavernous or amphoric respiration, and lays much stress upon it. Hoffmann speaks of the exaggerated respiration between the scapula, with whistling rales, often with striking difference between the two sides. Widerhofer emphasizes the importance of any great increase in the normal difference between the two sides. Williams⁵⁴ mentions that tubular respiration above the scapula in children is often due to enlarged glands and disappears frequently under treatment.

Quain found diminished respiratory murmur in 14 of his cases, sometimes over a whole lung and sometimes less extensive. Of coruage and tirage we have already spoken sufficiently.

Eustace Smith⁵⁵ has stated that swollen bronchial glands may be detected by bending the child's head backward, thus tilting the bifurcation of the trachea forward, when the bronchial glands, if enlarged, so compress the left innominate vein against the sternum as to give rise to a venous murmur which disappears as the head is brought forward again. The thymus gland, lying in front of the vein, cannot bring about such a result. The murmur, however, may be heard in the normal posture, and with any tumor of the lower neck. It is not produced by flat chest in the absence of glandular enlargement. If old adhesions prevent movement of the trachea the sign cannot be produced by bending the head backward.

It is evident that no very definite diagnosis can be based upon signs and symptoms so indefinite as those we have recorded. The whole matter is in an evolutionary state, and careful work will in a few years give us much better light upon it.

The cases in which the diagnosis is possible are probably generally overlooked because of our general neglect of the subject rather than from any other cause. As instances of the value of closer study of the glands in obscure cases I shall quote briefly the following:

Dr. J. T. Eskridge has kindly given me brief notes of three cases in which pressure neuritis existed, twice in the right arm, once in the left, from involvement of the branches of the brachial plexus by pressure of enlarged lymph-glands. Although the bronchial glands could hardly produce such a result, those mentioned above as communicating with, and often secondarily infecting them, might easily do so, and in fact, did in these cases so far as Dr. Eskridge could determine, for all recovered. I quote his closing sentence, for it is full of suggestive thoughts bearing upon our subjects:

"This patient has remained well for a period of about 6 months. The second case has been well for a similar period, while the first remained free from all pain for a period of 18 months, but I understand that his trouble is returning. The first and third cases were evidently due to syphilis; the second, in all probability, to rheumatism. In none of these cases was there any tender-

ness to pressure on the nerves, external to the thorax, but the pain radiated down the nerves, as we find to be the case in pressure neuritis."

The very striking result in Eskridge's second case from the use of antirheumatic remedies convinces me that his theory of their action is correct, namely, that they modify a rheumatic inflammation of the fibrous tissue of the capsule of the gland.

Whatever the explanation, these three cases call our attention sharply to the need of considering syphilis and rheumatism affecting the thoracic glands in cases not otherwise explicable.

I shall merely direct attention to my own recently reported case,¹⁷ in which obstruction of the left primary bronchus, with all the classical signs, was followed by bronchopneumonia of the lung below; expectoration of more than a pint of pus daily, obviously secreted as expectorated, for no signs of an accumulation of pus existed; this ceasing abruptly upon the expectoration of a fleshy mass, undoubtedly a sloughing bronchial gland, with complete recovery in a few weeks. The obstruction of the bronchus in the early stages, and the staphylococcic infection of the lung in the later, were evidently due to the swelling of the gland and its final disintegration by a suppurative process.

Treatment.—The diagnosis of the diseases we are studying, though often obscure, is sufficiently clear, by inference at least, to direct us as to the treatment. In tuberculous and bronchopneumonic enlargements, and those following measles and whooping-cough, codliver oil is the remedy above all to which we must turn, with the hope of influencing these glands as we do those of the neck in scrofulous enlargements. The sirup of iodid of iron should be given if anemia exists. The general tonic and roborant measures indicated in early tuberculosis are of the utmost value here. Such treatment should be long continued, for the danger of development of tuberculous meningitis has been shown to be a grave one. Until the child has fully regained his health and the weight normal for his age, he should be carefully watched, that nothing avoidable may be allowed to interfere with his general health.

Simon and many English physicians insist that counterirritation with iodine is of great value, while arsenic is given internally for its resolvent effect. Creosote is stated by Voelcker to be of great value. Spengler⁶ believes in the use of tuberculin in cases of tuberculosis of the glands if there be no mixed infection. This has not yet met with general approval. For the syphilitic cases the usual iodid treatment should be vigorously pushed.

For the enlargements secondary to malignant growths we can do nothing, and adenitis found as a part of the various blood diseases calls for no measures beyond those otherwise indicated.

In case suppuration takes place, and the pus lies near the surface of the chest, it may be possible to evacuate it by aspiration or incision, although cases are very few in which such a line has been followed. I saw Whitney aspirate in his case unsuccessfully, the glands probably being still too firm to yield fluid, although subsequently the pus was evacuated freely through rupture into the esophagus;—a brilliant diagnosis and a happy result. In a case of my own, seen also by Drs. Elsner, Parkhill, and Bagot, in which the diagnosis yet lies between sarcoma and tuberculosis, probably originating in the mediastinal glands, four exploratory punctures yielded nothing. Some three months subsequently, after

the case had passed from my observation, the swelling at the second left interspace ruptured and discharged pus, so that I now incline to the diagnosis of tuberculous bronchial glands. In this case numbness extended down the left arm, suggesting pressure upon the brachial plexus by communicating glands, as in Eskridge's cases. Edema of the feet not accounted for either by cardiac, renal, or hepatic trouble, nor by anemia, suggested a possible pressure of enlarged glands upon the inferior vena cava, which lessened somewhat under a tonic treatment directed to the possibility of tuberculosis. This case is rich in suggestions rather than in positive results.

Voelcker¹⁴ recommends free exploration by resection of ribs and the use of the needle, although the results of this treatment have not been at all brilliant, all dying shortly after its adoption. Since, however, these measures have been used where extensive cavity-formation and even gangrene of lung have been diagnosed, we should not be discouraged. His suggestion that gangrene in these cases tends to extend downward, so that the operation should be a low one in case of doubt, seems to be sound.

Sudden dyspnea, not otherwise accounted for, especially in a child who, from previous disease involving the respiratory tract, may be suspected of having breaking-down bronchial glands, would call for the same vigorous measures as if a foreign body had been inhaled. Petersen's case, already quoted, is the only successful one within my knowledge, but, in spite of the often rapidly fatal result of the sloughing of a gland into the air-passages, successful removal may follow correct diagnosis in case the patient lives long enough for the attempt.

A very extensive search of the literature leaves me with the conviction that a member of this society, whose case I have reported above, is the only patient who has been reported as having presumably coughed up a sloughing bronchial gland who lived to bear witness of it.

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- 44 *Philadelphia Medical News*, 1885.
- 45 *Affections of the Mediastinum*, 1889.
- 46 *New York Medical Record*, 1891.

- ⁴⁷ Quoted by Fox.
⁴⁸ Eustace Smith: Wasting Diseases of Women and Children.
⁴⁹ Arch. phys. Hellk., Bd. iii.
⁵⁰ Sem. Médicale, 1890.
⁵¹ Int. Clinics, 1897.
⁵² Quoted by Hoffmann.
⁵³ Diseases of Children.
⁵⁴ Pulmonary Consumption.
⁵⁵ Lancet, 1875.
⁵⁶ Pediatrics, 1900.
⁵⁷ Chicago Med. Jour. and Exam., 1897.
⁵⁸ Adénopathie Trachéo-bronchique, Paris, 1887.
⁵⁹ Revue Mens. des Mal. de l'Enfance, 1892.

COLORADO CLIMATE: A COMPARATIVE STUDY.

By EDWIN G. DEXTER, Ph.D.,

Professor of Pedagogy, University of Illinois.

IF THERE is any one thing which characterizes a true Coloradoan, it is pride for his climate. He may be proud of his mountains and of the gold output and even of the plurality his State gave Bryan in '96 (if his politics run in that direction), but when he mentions these things once during a journey east, he is in a continually boastful mood about what nature has done for his State in the way of prevailing weather. He may be getting a little afraid of the consumptive who makes it his Mecca, since he is becoming convinced that indigent phthisis is increasing, yet he is as firmly as ever of the opinion that his is the only climate on earth which will stay the ravages of exotic cases.

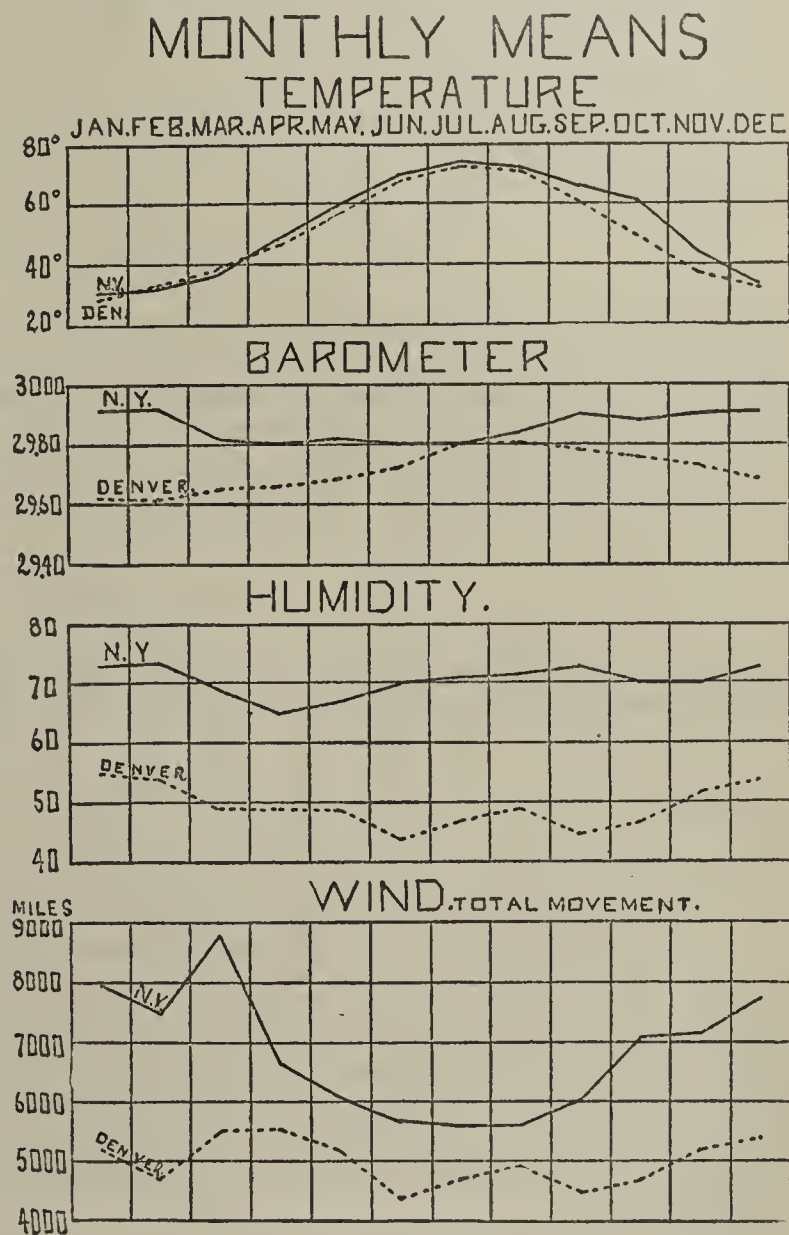
Still the fact remains that he has, at times, to apologize for its vagaries. Let a Raymond excursion but strike the State for a few days, or a session of the National Educational, or American Medical Association announce itself, and weather which shames the memory of the oldest inhabitant is on hand; excuses are profuse and the weather man is sufficiently calumniated, but the fact nevertheless remains that the visitor goes away with the belief that conditions are not all they are "cracked up" to be and that even the Colorado climate has its weak spots.

That this latter is true must be acknowledged, for what earthly thing has not and what western thing is not a little overboomed? Yet a dignified and scientific analysis of conditions does not fail in proof of the fact that these same weak spots are fewer and farther between than similar climatic blemishes in most other regions, and that the Coloradoan has some just excuse for his weather pride. In a study which I have recently made of the effect of weather upon mental states,¹ I found it necessary to study very carefully the prevailing meteorologic conditions for the city of Denver, Colorado, and for New York City. It is my intention in this paper, with hardly any allusion to the mental influences disclosed, to state briefly the contrasts and resemblances which the study of the two climates revealed. In the problem alluded to, the mean temperature, barometer and humidity, the total movement of the wind, the character of the day and the precipitation for each day for a long series of years was used. The period for Denver was 5 years (1,816 days). For New York City, 10 years (3,632 days). In both cases the period was sufficiently long to give us the normal prevalence of any definite meteorologic condition. The data were all taken from the records of the United States Weather Bureau at the stations in the two cities.

The first figure used in illustration of this paper shows the monthly means for the Colorado climate and those for the sea level at New York City.

As will be seen, the two curves for temperature run very nearly parallel, the only marked difference being that the heated season for Denver extends a little later in the autumn, giving October a temperature a few degrees warmer than the eastern city.

It will also be noted that the western mean for the hottest months is a little below the other. This fact is undoubtedly due to the cooler nights, the temperature of which is included. A study of maximum temperatures showed the higher temperatures at the middle of the day, for Denver.



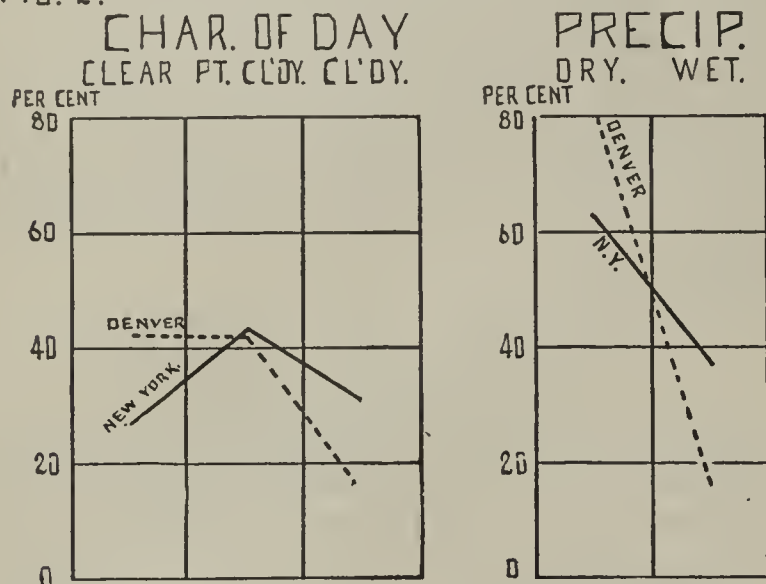
The barometer curves are of not much value for our present study, because of the difference in altitude. The Denver curve must be read exactly 5 inches below its position on the chart, and other than this indicated difference in pressure perhaps little can be deduced from it. The curves for humidity are, however, of interest. The differences in atmospheric moisture shown by them are well recognized elements of contrast in the two climates. The noticeable fact is prevailing low humidity (dryness) for Denver, compared with the sea level, with the highest mean for the year (June) ten one-hundredths below the lowest (April) for New York. This factor is, however, discussed in connection with other curves later in this paper.

The means for the total movement of the wind (anemometer registration for the month) are, I believe, a veritable surprise to the Coloradoan. If there is any

¹See "Conduct and the Weather," Monograph Supplement, No. 10; *The Psychological Review*; "Crime and the Weather," *Scientific American Supplement*, May, 1899; "The Influence of the Weather upon the Mental State," *Science*, August 11, 1899; "The Influence of the Weather upon Crime," *Popular Science Monthly*, September, 1899.

vulnerable point in his climate he has always supposed it to be the wind. "These horrible winds" and "the windiest place I ever knew" have been common expressions of the newcomer, and the old resident has hardly dared to contradict them. Here, however, we

FIG. 2.



have irrefutable evidence to the contrary, for these figures were taken from the Weather Bureau's records for 21 years. Yet the highest movements for Denver (March and April) are less than the lowest for New York (July and August), and the average for the year 2,000 miles per month less. The eastern March, with

obscured; and "Cloudy" if eight-tenths or more. In this table under precipitation "Wet" days (those having rain or snow) are compared with "Dry" (those without either) without taking into consideration the amount of downfall. The percentages of days of this character are read by reference to the scale at the left.

The actual precipitation for New York City is about $3\frac{1}{2}$ times that for Denver.

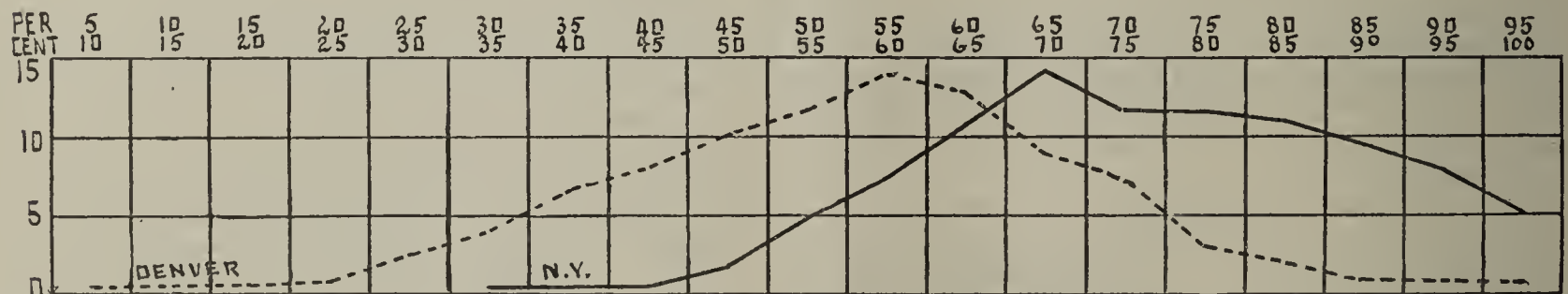
As will be seen by a glance at the curves, the latter city has 42% of clear days to 27% for New York. The partly cloudy days are about equal, while the eastern city has about double the number of cloudy days. About this same relation exists too for days upon which precipitation was registered (Denver 16%, New York 37%).

In this paper no charts are shown either for temperature or barometer. The former is left out, since the monthly means for the two cities so nearly coincide that there could be but little difference between the conditions when tabulated in percentages. The latter, since the difference in altitude is such that when five inches are subtracted from the New York readings we practically have those for Denver. However interesting the difference in density of the atmosphere thus indicated may be, and however valuable to the sufferer from any pulmonary trouble, it remains pretty nearly constant and would fail to show in any important manner upon curves constructed as these are.

With the humidity, however, it is different. If the Colorado air has any therapeutic value, it is because of

FIG. 3.

HUMIDITY.



its 8,800 miles, fairly puts to shame its western contemporary, and the patriotic Denverite can add one more arrow—perhaps an unexpected one—to his quiver. It is true that the anemometer at the New York station stands about 75 feet higher than the one at Denver, but this difference can hardly account for the difference in registration.

Yet it must be conceded that in one respect the western wind is more disastrous than that of the east. The studies referred to prove conclusively that its mental effects are greater. During high winds the prevalence of suicide and of murder, also of misdemeanors in the public schools, ran up to 6 or 8 times the normal; while for the east the increase in all but suicide was found to be slight for such conditions. This was hypothetically accounted for by reference to the high electric potential of the atmosphere at such times. (See "Conduct and the Weather.")

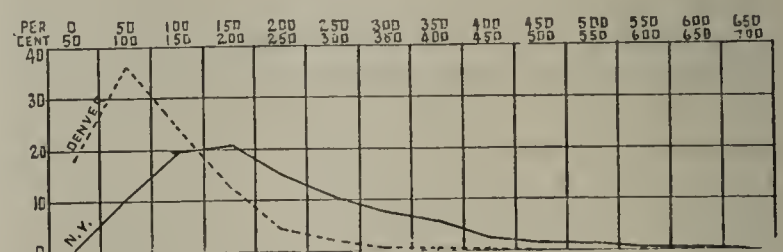
Figure 2 shows the relative prevalence of "Clear," "Pt. Cloudy," and "Cloudy" days, and also those with and those without precipitation for the two climates studied. A day is characterized by the Weather Bureau as "Clear" if three-tenths or less of its possible sunshine hours (those from sunrise to sunset) are obscured; as "Pt. Cloudy" if from four-tenths to seven-tenths are

its dryness, and the relative conditions of humidity are shown upon Figure 3.

In it the numbers at the top indicate conditions of humidity, and the percentage of days under each are to be read by means of the scale at the left. For example, 5% of the days were found to have had a mean humidity of between 5 and 10 (hundredths) at Denver (none of that character at New York); 7% between 10 and 20; 10% between 10 and 15, and so on as indicated by the

FIG. 4.

WIND.



curves for the two cities. A mere glance at the relative position of the two curves is sufficient to show the excessive dryness of the western compared with the eastern city, and tells more than whole pages of text can do—for humidities below 50, many times more days at

Denver than at New York, and for those above 75, the reverse relation.

The facts shown upon Fig. 4 are perhaps of not much importance from the therapeutic standpoint, but are inserted because they seem so inexplicable to one who has been familiar with the climates compared. The figure is constructed exactly as the preceding, except that conditions of wind are indicated at the top instead of those of humidity. The relation of the curves tells the whole story, showing 18% of the days at Denver, with a total movement of between 50 and 100 miles (practically calm) to less than 1% for New York, and the same deficiency of movement is shown all the way through.

It may be argued that the local nature of this study lessens its value, and that is undoubtedly more true for the wind than for any of the other meteorologic conditions discussed. Denver is only about 15 miles from the foothills and there is little doubt that the movement there is less than for other more exposed positions on the plains. Yet the other larger Colorado cities which figure to any extent as health resorts, as Colorado Springs and Pueblo (the former much nearer the mountains than Denver), are under practically the same conditions, and the study, I believe, is valid for the health region of Colorado. New York, too, is a typical eastern seacoast city, and the comparison would probably be equally as true for any other.

In conclusion I wish to say that I am not a physician. I have no selfish interest in wishing to exploit the virtues of the Colorado climate. Members of the medical profession may be able to interpret the plain facts here presented into terms of health for some unfortunate. If so, the mission of the study will have been fulfilled.

PUBLIC EDUCATION AND THE PREVENTION OF DISEASE.

By H. L. JOHNSON, M.D.,
of Franconia, N. H.

It requires no very discerning mind to see that preventive medicine is the banner under which our profession must march in order to bestow upon mankind the highest fruits of its labors. The brightest aspect of the many rapid strides, which in recent years have been made in medicine, is the increasing importance that is being accorded to the prophylaxis of disease. The brilliant work of the pathologist, made possible through the perfection of our modern instruments, has placed at our disposal the knowledge and weapons which enable us to meet disease upon its own grounds; to oftentimes anticipate and assume the aggressive, instead of blindly awaiting the attack. From the mere empiricism of former times the practice of medicine has arisen to the dignity of a science, and as such is daily adding to the list of achievements that have made our profession second to none other in honor and usefulness.

When we consider the loss of time, the expense, the privation and suffering that so often follow in the wake of disease, we realize that to prevent even a small part of the many ills to which flesh is heir, is an object worthy of the most strenuous efforts.

The brilliant results already accomplished in limiting the ravages of acute contagious diseases require no discussion here. We have but to compare the horrible records of mortality in former times with those of the present, and they will speak eloquently for the science

of medicine. In marked contrast to the energy and scientific manner in which the prophylaxis of acute contagious diseases is carried out, there is apparent a strange apathy and lack of energy toward the prevention of the chronic and more insidious diseases, which, though less rapid and startling in manner of destroying life, yet slay their scores where smallpox, yellow fever, and diphtheria kill one.

While in many respects the present generation may thank its stars for the improved conditions under which we live and carry on business, the situation is not altogether in our favor. The rapid growth of our country, the enormous increase of business due to the development of our natural resources, and the consequent tendency toward the concentration of population about business centers, has greatly altered the national mode of life. From the simple outdoor life of our forefathers, whose task it was to subdue nature, we have become, as the most enthusiastic optimist must admit, a race of dyspeptic money-getters, whose highest ambition is too often the almighty dollar, and whose chief regard for health lies in the fact that its possession assists in the making of money.

It is evident to anyone who will stop to consider, that one of the great social problems of our time, and one that very nearly concerns the welfare of a nation, is the preservation of the highest possible standard of health, physical and mental, among its people. I put physical health first. "*Mens sana in corpore sano*," is an old philosophical dictum so common to our ears that perhaps the ancient adage has lost much of its force. It is a motto, however, which should be emblazoned upon the walls of every home in our land. Given a nation every individual of which should live in the enjoyment of perfect physical and mental health, and it would be easy to conceive such a people dominating the whole world by sheer force of its vitality. "The survival of the fittest," is a doctrine that in the long run must prove true as surely as that a sound body is the necessary complement of a sound mind.

The natural province of the physician is to combat disease: without disease the profession could not exist and the prevention of disease must therefore, to a certain extent, prove self-destructive to the profession. To the honor of our cult be it said, however, that no selfish consideration has ever weighed against the public welfare and never can. The public already owes an immense debt to the careful, conscientious toil of the modern scientific physician, who has freely given for the good of humanity the results of his labors. In the coming years this debt must constantly be increased and in no way can it be more gratefully done than in the promotion of adequate public education in things hygienic and sanitary; in the prevention of disease by the dissemination of knowledge and the dissipation of ignorance.

It is a fact that the masses are far less well-informed in matters pertaining to medicine than in any other branch of science. This condition of things should be remedied, for that ignorance and prejudice are two mighty obstacles in the march of modern hygiene and sanitation, no one, has he ever served on a board of health, will attempt to deny.

There are many ways by which a great deal of much-needed and salutary information may be conveyed to the public in respect to healthful living and the prevention of disease. It is my purpose to touch briefly upon but one—a plea for a better and more scientific method

of instruction in hygiene and sanitation in our public schools. "It is hard to teach old dogs new tricks," and while it is surely fitting to disseminate knowledge as widely as possible, it is to the coming generation rather than to the present that we must look for the best results. That it is possible in a great measure to prevent by proper and rational living such diseases as tuberculosis, the great scourge of mankind, arteriosclerosis, rheumatism, gout, dyspepsia, and a host of other ills, no one will attempt to deny. To be sure there are many who sin wilfully against the laws of health, but sinning through ignorance ought not to be permitted in these days of books and letters; and sinning through carelessness might be made far less common should the proper and needful emphasis in these matters be accorded to the education of every individual.

I believe the physician as an important factor in our public educational scheme has been too long neglected. I believe the coming generation ought not to look in vain to the medical profession as the source of a higher and more rational method of education in the science of healthful living. The nature of his business tends strongly to keep the physician out of public affairs; but the time has come when his voice should be heard in no uncertain tones upon a subject of such vital importance.

That the present system, as now taught, is almost entirely lacking in practical results, as well as in interest to the pupil, is evident. It is true that physiology and hygiene are taught in our public schools, and it is also true that in so far as the benefiting of the public health is concerned, both subjects, as at present handled, might almost as well be dropped. In many States the teaching of hygiene, as required by law, consists mainly of a symposium upon the evil effects of alcohol and tobacco, with enough physiology to demonstrate the series of pseudo-scientific sermonets which are supposed to supply the pupil with sufficient knowledge of things hygienic and sanitary to meet every emergency in life. The average pupil might be pardoned in thinking an unfair advantage had been taken in compelling him to study upon a week-day that which he had been accustomed to consider the especial prerogative of a Sunday temperance lecture. The great majority of teachers, especially in the smaller schools, are almost as ignorant of the subjects of physiology and hygiene as their pupils, and certainly must utterly fail in the attempt to make these branches even of passing interest. A great deal of anatomy is taught in the physiologies that no one but the surgeon need know, and is of no practical use whatever to the ordinary individual. The personal side only of hygiene is taught. There are no textbooks in the country that meet the requirements of these modern times. There is not one teacher in a hundred capable of intelligently teaching these branches of study were such books today placed in our public schools. The result is that these subjects which are of the very highest importance in the education and development of healthy men and women and useful citizens, and are capable of being made most interesting, occupy a position of little importance in our educational scheme, and certainly are productive of almost no practical benefit, in so far as the prevention of disease is concerned and the promotion of better public sanitation.

Is not this a matter that directly concerns the medical profession? We are today struggling for many needed reforms in public sanitation. We are striving to pass through legislature measures of the most vital import-

ance to the integrity of our profession and for the protection of the masses. The greatest stumbling block in our way is the widespread ignorance that prevails among the people in regard to things pertaining to medicine. Why in these enlightened days does there remain so much of the mysticism and superstition that from bygone ages to the present time has characterized the attitude of the laity toward the medical profession? The blind faith reposed alike in the incantations of the Hindoo medicine-man and the remedies of the modern medical quack are a sufficient index to the abysmal ignorance that prevails generally among the people in regard to the simplest laws of health. Why is it possible to sell annually so many millions of dollars' worth of patent medicines? Why do our newspapers reek with filthy advertisements that are a disgrace and a reproach to any civilized nation? Why can any smooth-tongued charlatan grow rich upon the credulity of his fellow mortals? Why is it possible for such fads as "christian science," "osteopathy," "divine healing," and the like, to spring up and flourish? Simply because the majority of the people are profoundly ignorant of their own bodies and the proper way to care for them. They are looking for a miracle and gravitate naturally toward that source that promises the one most wonderful. We look on in amazement at the gullibility displayed by every class and condition of men, and perhaps forget that we are looking through different eyes than theirs; that what is simple to us is darkness to them, and any straw however light which may be wafted toward them is eagerly grasped; one failure of relief makes the next chimera the more acceptable.

What is the remedy for this state of affairs? Can the medical profession hold itself entirely blameless for this condition of ignorance that prevails among an otherwise well-educated and intelligent people? The remedy I believe is simple and may be comprised in the one word—Education. When the science of healthful living receives the attention it deserves in our public schools, when it is made equal in importance, as it should be, with mathematics and the languages, when it is taught practically and systematically from the beginning of the child's education to the time when he receives his college degree, we shall then be in a fair way to rear a generation less susceptible to the germ of the faddist Hysteria, less prone to kneel at the shrine of divine healers, and who may even object to the sight of from one to a dozen patent-medicine advertisements upon every telegraph pole, fence, and wall in our country, as unesthetic and unnecessary. Possibly civilization might so far advance as to make it feasible to shut out from our newspapers such advertisements as "Sure relief for ladies," and the thousand infallible remedies for the cure of all weaknesses due to youthful indiscretions. The remedy, I stated, for much of the disease prevalent, both social and physical, is simple. The application of the remedy—the development of a common-sense system of instruction that shall equip the youth of our country with a practical knowledge of personal and public hygiene will be a huge task, but one that certainly ought to be possible of accomplishment.

I am aware that in some of the better and richer schools where the proper appliances may be afforded and where the highest talent is found among the teachers, that instruction in physiology, hygiene and sanitation is slightly more effective, yet still far below the proper standard. Such schools, however, are few in comparison to the hundreds of smaller and poorer ones

where the teaching of these subjects with any degree of effectiveness under the present methods is an utter impossibility, and indeed, where it is regarded as a farce by both teacher and pupils.

For the reformation of this deplorable state of ineffectiveness, two things are essential, both of which are lacking. The first is a thorough, systematic and above all *scientific* system of instruction in hygiene and sanitation. Such a system should comprise a series of textbooks as carefully graded as mathematics or languages. All the ground necessary should be completely covered for a practical mastery of the subjects, and especial attention should be paid to the prevention of disease. All unnecessary matter should be omitted. Less physiology and anatomy should be taught. The simplest elements will suffice and much of the weary memorizing which makes these subjects unpopular with most pupils might be avoided. The child should be early taught the personal side of hygiene. A profound respect for his own body and the proper way to care for it should be inculcated. The importance of good health to his future success in the world should be strongly emphasized. As he grows older, he should be taught that the proper care of his body is not only a personal duty but a public one. He should be made to feel a certain responsibility in the public welfare. He should know that in the prevention of disease and the preservation of health lies one of the greatest safeguards to the nation. All children are easily taught patriotism, and a little patriotism along this line would surely do no harm. The fact that intemperance means something besides the abuse of alcohol and tobacco is certainly worthy of consideration. The pupil might with great advantage be taught that excesses in eating, work or play are directly responsible for the larger share of human ills. He should be made to understand that any practice tending to lower the vitality is but the opening of another road to the easy approach of disease. He should realize without any doubt that his health is his capital in life, which once squandered cannot be regained; and should comprehend that posterity has claims upon him not lightly to be set aside. The germ theory of disease should be introduced to the pupil and the acquaintance kept up. The microscope and camera should be brought into play to practically demonstrate the deadliest enemies to mankind. As he grows older, he should be taught the habitat, manner of growth, and the conditions under which a few of the more important disease-germs flourish, are disseminated, and the avenues by which they finally reach the human body, together with the precautions necessary to avoid them and limit their spread. A sufficiency of this kind of practical knowledge concerning the more prevalent diseases might be as easily taught as botany or geology, and would prove far more useful.

The subject of sanitation should embrace everything that the word implies, from its personal application to its paramount importance in the public welfare of our great cities. This subject should occupy a position second to none in the curriculum of all our colleges and academies. The chair should be held by experts capable of making this branch both interesting and practical. In fact the aim should be to make a practical sanitarian out of every high school and college graduate. His diploma should imply that he is as well grounded accordingly in the subjects of hygiene and sanitation as in any of the other branches of education. I am confident that the introduction of a little "horse sense" in these matters

into the education of the youth of our country will do more to limit disease and promote a higher standard of public health than any other method. The fact that subjects of such vital importance have been so long relegated to the background should be felt as a personal reproach by every physician; and we should neglect no opportunity to rectify the mistake.

Instruction from textbooks should be supplemented by lectures and plain common-sense talks upon matters that may be better handled in this way than by means of books. To this end there are plenty of physicians in our towns and cities able and willing to take up the task. Indeed the medical profession should be in close touch with our public schools.

The medical inspection of schools is a subject that is attracting widespread and favorable notice. Such inspection should include not only the testing of the hearing and eyesight, but should apply to the general physical fitness of every pupil for the pursuit of his studies. There are thousands of children in our public schools, who, through their own ambition or that of misguided parents and friends, are wrecking their nervous systems. Such children are not themselves to blame; but that they should be permitted to do so, is a lasting reproach to their elders. They need more physical culture; more of the ozone of the open fields, and less Greek roots and Latin prose to make of themselves healthy and useful men and women. We are coming too often into contact with nervous breakdowns in the young. It is a pitiful thing that so many of our youth with bright careers opening before them, find themselves either incapable of making the most of opportunities or break down altogether at the critical moment. A little wholesome restraint and wise advice in school and college may do much to lessen the number of disappointed lives, cases of chronic invalidism, insanity and suicide.

The tendency of our modern civilization is strongly toward the neurotic. More bone and sinew is needed to counteract this tendency and to establish a healthier equilibrium between the physical and the mental. There is a growing and salutary importance attached to athletics in all our schools and colleges; but by far the largest share of attention is given to the comparative few in training for the various athletic teams. It is of vastly greater importance that each student should receive the proper share of advice and training demanded by his individual condition, than that the athletic manager should be able to turn out a few highly-trained men capable of winning a signal victory in some athletic contest.

Teacher and physician should work together in perfecting the development of the student's body and mind; to make the most of each and to avoid a misshapen growth of one at the expense of the other; to make of the body a fit and willing servant to a healthy mind; a body free as possible from tendency to disease; a mind capable of appreciating the worth of its servant and on the alert to guard it from decay. When as much care is bestowed upon the pedigree, rearing, development, and education of children as is accorded to blooded stock—if ever civilization shall attain to such a pinnacle of progress—there will come into existence a far more sane, healthy, and happy class of human beings than may today be found upon the face of Mother Earth.

The second essential to a rational system of hygienic education is competent instructors. The fact that so few are capable of teaching hygiene, as it should be

taught, is no fault of the teacher. The fault lies rather in the fact that a branch of science of most vital importance to the public welfare has been kept too long in the background. A superficial book knowledge, and that too often gathered from questionable and unscientific sources, is all that is required of the instructor. The result is precisely as might be expected. The subject is of little interest to the teacher and naturally of less to the pupil. That which should be made interesting and productive of much practical good, becomes a mere drudgery, barren of any result. When hygiene, sanitation and physical culture are given the prominence they deserve in our public schools, when as high a degree of proficiency in these branches as in others is required of teachers, there will be no lack of efficient instructors, for demand, be it strong enough, will produce the supply. I believe it is the duty of the medical profession to make this demand and to present to the public a system of instruction in hygiene and sanitation that may be favorably compared with any of the other branches of science taught in our public schools and colleges. This is a matter which ought to engage the attention of the best minds of our profession. It is time that some influence other than that of publishers and their friends, or a society with an axe to grind, should select the textbooks for our public schools. The preparation of a sensible and practical series of such books placed in our schools and efficiently taught would accomplish far more good than any number of new editions in practice or surgery.

All the labor of the medical profession, whether it be in practice, in teaching, in legislation or the authorship of books, tends ultimately to the public good. Why not strike at the root of the matter and educate the public, especially the coming generation to a higher appreciation of our efforts? We need the hearty and intelligent cooperation of our coming men and women in the struggle against quackery and fraud, the limiting of disease and the thousand evils against which we have fought so long and with mediocre success. We have been handicapped too long by ignorance and prejudice. Let us eliminate as much of it as possible by the cultivation of a soil that has too long laid neglected, and which in the future should be made to yield rich returns.

Surgery of the stomach is reviewed by Carless (*The Practitioner*, November, 1900). He calls attention to the many operations now performed on the stomach, and says **gastrectomy** is indicated only in carcinoma of that organ. This operation has now been performed about 15 times, with 5 deaths so far. Attention is called to the fact that the vagi nerves are severed in gastrectomy, which leads to accelerated action of the heart, and death from cardiac exhaustion has been reported. **Gastroenterostomy** is performed in many cases in which formerly it was not attempted. It is indicated in the following conditions: (1) In cases of gastric ulcer which have not yielded to the ordinary treatment; (2) in hemorrhage from gastric ulcer, which occurs either as an acute or chronic complication; (3) in pyloric stenosis due to gastric ulcer; (4) in pyloric cancer; (5) in atonic dilation of the stomach; (6) in hyperchlorhydria with eructations and heartburn. Using the posterior rather than the anterior wall of the stomach in performing this operation is a great improvement. **Gastroplication** may do much to remedy a chronic dilation of the stomach. It consists in doubling the organ over itself and throwing it into a large horizontal fold. **Gastrostomy** is now frequently performed for any condition which leads to atresia of the esophagus. It should be done under a local anesthetic, as a septic pneumonia is apt to follow a general anesthetic, septic material being regurgitated from the stenosed esophagus. Gastric troubles should be carefully studied. If this were

done greater success would attend the physician's efforts and more cases of carcinoma of the stomach would come to the surgeon in time to be cured. [A.B.C.]

The Etiology of Acute Pneumonia.—Howard (*Cleveland Journal of Medicine*, October, 1900) reports the result of 174 autopsies. Of these, 67 were found to be acute nontuberculous inflammation, of which 14 were primary pneumonia and 53 were secondary pneumonia. The pneumococcus was found in all cases of primary **croupous pneumonia**, in pure culture in 8, with *Streptococcus pyogenes* in 1, and with *Bacillus mucosus capsulatus* in 1. In the 13 cases of secondary croupous pneumonia the pneumococcus occurred alone in 6 cases, *Streptococcus pyogenes* alone in 2 cases, *Streptococcus pyogenes* and *Staphylococcus aureus* in 2 cases; *Streptococcus pyogenes* and *Bacillus mucosus capsulatus* in 1 case; *Streptococcus pyogenes* and *Bacillus coli* in 1 case, and *Bacillus mucosus capsulatus* in 1 case in pure culture. Thus the pneumococcus occurred alone in nearly 50% of the secondary croupous pneumonias, while the streptococcus was concerned in the etiology of the same number, but occurred alone in only 2 cases. In all 13 cases the pneumonic process was clearly secondary and often accidental. One case of primary **bronchopneumonia** was due to the pneumococcus alone, one to the pneumococcus and bacillus of influenza, and one to the streptococcus and to *Staphylococcus aureus*. In the secondary bronchopneumonias the pneumococcus occurred alone in 8 cases, with *Staphylococcus pyogenes aureus* in 2 cases, with *Bacillus coli* in 1 case, and with streptococcus and *Bacillus mucosus capsulatus* in 1 case; *Streptococcus pyogenes* occurred alone in 4 cases, with *Staphylococcus pyogenes aureus* in 1 case, with *Bacillus mucosus capsulatus* in 1 case; *Staphylococcus pyogenes aureus* occurred alone in 3 cases, with *Staphylococcus albus* in 1 case, and with the pneumococcus in 1 case. *Bacillus mucosus capsulatus* occurred alone in 7 cases, with *Bacillus coli* in 2 cases; *Bacillus coli* occurred alone in 2 cases, with "cocci" in one case and with the pneumococcus in 1 case. [A.B.C.]

The Diagnosis of Ectopic Pregnancy before Rupture.—Baldwin (*St. Louis Courier of Medicine*, October, 1900) says the sharp, colicky pains, the syncope and collapse, at once attract attention and point almost unerringly to ruptured ectopic pregnancy. The author, however, points out that it is dangerous to defer diagnosis until rupture has occurred, and says there are no pathognomonic symptoms of tubal pregnancy, or of any other form of ectopic pregnancy. Usually, however, we find the following points: The patient gives a history of several years of sterility (many exceptions); she has missed a menstrual period, perhaps 2 of them (numerous exceptions); she has noticed some unusual pains in the pelvis, which she will probably describe as boring, griping, or colicky in character, these pains being situated usually in the region of an ovary; she has, perhaps, within a few days of the time of consulting her physician had a more or less irregular hemorrhage; perhaps has discharged pieces of membrane which she supposed indicated an abortion owing to hemorrhage, pain, and suspicion of an existing pregnancy. Possibly, however, there has been no suspicion of a pregnancy, as the woman has accepted her sterility as incurable. On making a vaginal examination, if the conditions are at all favorable the examiner will find upon one side or the other of the uterus, or back of it, a fusiform, well-defined cystic tumor, the size of a pullet's egg or a little larger. This tumor will probably be tender on pressure, symmetric in outline and distinctly pulsating. When the uterus is found somewhat enlarged and having the feel of pregnancy, but not enlarged so much as we would expect, a presumptive diagnosis of tubal pregnancy is warranted, and the matter of an operation should be carefully and without delay considered. There are few conditions which give us the same kind of a tumor as is found in these cases. An enlarged and adherent ovary in Douglas' culdesac cannot, perhaps, be differentiated from a tubal pregnancy in the same location. An old pyosalpinx, a hydrosalpinx, a small cyst of the broad ligament, or an enlarged ovary in its normal location, might be mistaken for an unruptured tubal pregnancy. It is not likely, however, that any of these conditions would be accompanied by symptoms pointing to an ectopic pregnancy, and yet they may; but all these conditions are such as to justify operative interference. [A.B.C.]

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GEORGE M. GOULD, M.D., *Editor*

Collaborators

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To take the hospitals out of politics is the praiseworthy ideal of the advisors and proposers of charter revision in New York City. The movement chiefly relates to the control and management of Bellevue and its subsidiary hospitals, and to some others. The plan is simply to take their government from the Department of Public Charities, and to vest it in a board of seven trustees, appointed by the Mayor, from lists furnished by the presidents of sundry charitable organizations. The benefits from such a change will be all those derived from a permanent and stable administration; benefits both to the hospital and the community, easily recognized, and fully illustrated by the success following its adoption in Boston, Cincinnati, and other cities. The evils thus avoided are those inevitably connected with the administration of hospitals by politicians, medical and lay, interested in the degraded condition of our politics. These also need no enumeration, as they are in horrible evidence everywhere. We trust that the honorable members of the profession, and those medical societies not moribund with apathy and "esprit de corpse" may bestir themselves to further this reform, not only in New York, but wherever it is needed.

Misogyny in Medicine must be looked upon as an incongruity in a liberal profession, but prejudice and tradition die hard. While woman in medicine is no longer a novelty in this country and to a certain extent also in England, her demand for equality with man in this respect has only grudgingly as yet been responded to on the continent of Europe. Nevertheless concessions are gradually being made, and time, which adjusts all things, will see that woman gets her rights. By a recent regulation women are admitted as ordinary students to the universities and colleges of Austria, but when a short time ago a number of them appeared upon the benches before Professor Nothnagel in the Medical Department of the University of Vienna, this distinguished man refused to proceed with his lecture on the somewhat remarkable ground that it had not been prepared for women students. A not dissimilar experience occurred at Gratz. Such things will, however, cease as the novelty of the situation wears off and prejudice yields to common sense. It is not likely that woman will be dislodged from the secure place in medicine she has made for herself.

A Professional Relation to Insurance Companies.

—Good lawyers are aware that a great deal of ill-advised ingenuity and great expense to the community are the result of the attempts of some life-insurance companies to avoid the just payment of policies. It has come to such a pass that no one should now pay a premium without the advice of an astute legal mind upon the question whether in case of death in any way and from any cause the company cannot wriggle out of the payment of the claim. Perhaps the only way to avoid this injustice is professional watchfulness of companies and the preparation of a sort of blacklist of those which habitually exhaust every device to avoid their plain obligations. Here is a work for our apathetic and disorganized medical organizations. Let us suppose that a physician suffers a martyr's death from septicemia in the performance of his professional duty. Should physicians continue to patronize the company that, having accepted his hard-earned premiums, evades its assumed obligations and cheats the widow and children out of the payment of the claim? Many such things have occurred in various parts of the country, and an end should be made of them.

The Abuse of Cross-Examining.—A recent trial in New York, in which a valet sued a young millionaire, was the scene of extraordinary license and abuse by the plaintiff's lawyer. This attorney was permitted by the judge to go to the extreme limits of provocation and insult. A recent correspondent in the New York *Sun* calls attention to the fact that this unbridled license on the part of lawyers in conducting cross-examinations has been made the subject of judicial decision, and that the highest court in that State has on one occasion given a judgment in favor of defenseless witnesses. The very fact, however, that this judgment was given in reversal of the decision of a lower court, shows that there is by no means unanimity among the judges on this subject.

We do not hesitate to say that the chief responsibility for this gross abuse rests with the judges themselves. They have absolute control in the courts, and can call a swaggering lawyer to order in a moment. In medicolegal cases, especially criminal cases, these abuses have been witnessed in our Philadelphia courts, and they are highly discreditable to the cause of justice, and especially to the judges. No one expects aught

else from lawyers of a certain type, but from the judges a rule of severe impartiality and decorum is demanded.

Height and Weight in Life Insurance.—At the fourteenth annual session of the National Fraternal Congress Dr. M. E. Moss presented to the medical section the report of his committee on the subject of heights and weights. The following table gives the average weights of 133,940 applications of selected risks:

HEIGHT	5 ft	1	2	3	4	5	6	7	8	9	10	11	6 ft	1	2	3
AGE, 18 to 25	120	122	124	127	131	134	137	142	146	150	154	159	165	170	176	181
“ 25 to 30	125	126	128	131	135	138	142	146	151	155	159	164	170	177	184	190
“ 30 to 35	128	129	131	134	137	141	145	150	154	159	164	169	175	181	188	195
“ 35 to 40	131	132	134	137	140	143	147	152	157	162	167	173	179	185	192	200
“ 40 to 45	133	134	136	139	142	146	150	155	160	165	170	175	180	186	194	203
“ 45 to 50	134	136	138	141	144	147	151	156	161	166	171	177	183	196	198	204
“ 50 to 55	134	136	138	141	145	149	153	158	163	167	172	177	182	188	194	201

The committee come to the conclusion that longevity depends largely upon build. The greater the variation from average of 5 feet, 7, 8, or 9 inches the greater the risk. The lighter the weight the greater the liability of death short of the expectancy from tuberculosis and nervous diseases. Overweights suffer from heart-disease and apoplexy. The table shows the constancy of weight-increase with age-increase. Dr. Moss considers underweights poor risks when over 20% below the limit, and overweights when over 25% above. In the discussion Dr. Warner observed:

In earlier years there were quite a number of persons who were 6 feet and 6 feet and 1 in. and 2 and 3 in., but that on the sheet on which were those above 45 and 50 years, scarcely a single one of these persons appeared. They either were so well fixed financially that they did not need life insurance or they were not in existence to insure. And those people who were 6 feet and above that who appeared on the sheets up to 30 years of age, the same proportion of them did not appear on the sheets after 30 years of age, and on to 40, 45 and 50. I arrived at the conclusion, then, that an increased height beyond 5 feet 10 in. is an increased hazard for some cause, which I cannot explain, except that they are not here to seek life insurance.

If it should become sufficiently certain that stature is such an important factor in longevity, the expectancy tables should evidently be revised. But whether this is done or the risks individually declined by the examiners, it is evident that life insurance is operating with natural selection to weed out the extremes. Whether one considers the alliance an unholy one will depend upon the “personal equation.” The overweights and underweights, according to the fashion, might combine, syndicate their interests, and teach the insurance people a lesson. Even giants and pigmies have some rights.

The Treatment of Plague by Extirpation of the Infected Lymphatic Glands.—The plague has been decreasing slowly in Rio de Janeiro. From April to October there had been 492 cases with 248 deaths—a

mortality of not quite 50%. The Brazilian authorities seem to have combated the disease with intelligence and some degree of success. The latest news from Rio is that the plan has been adopted there of extirpating the lymphatic glands in cases of plague, on the theory that the infection takes place through the skin and thence by way of the lymph channels and the lymphatic glands. Dr. W. Havelburg, of the U. S. Marine-Hospital Service, has written an account of this treatment. The measure itself is, of course, very simple, consisting merely in the enucleation of the cervical, axillary, or inguinal glands, as the case may be. The theory is what attracts attention, and may be said to take a number of important things for granted. In the first place it is not clear by any means that the bacillus of plague always finds entrance into the body by way of the skin. But granting that it does the theory is about as follows: The germ settles in the lymphatic glands, develops and produces toxins. If a reactive inflammation, producing pus, occurs, the development of the bacilli is checked, and the plague is localized. If, however, this reactive inflammation is not sufficient, then the toxin and the bacilli enter the circulation and cause a general infection. According to this view, the glands act as protective ramparts; if the germs succeed in breaking through the ramparts, then the consequences are general and indeterminable. Therefore the plague has two periods of infection: (1) the local or glandular, (2) the general or systemic. The indication for treatment is to determine when the local period is still present, and promptly extirpate the glands. Evidently, this plan of treatment cannot be adopted in the pneumonic and intestinal types of plague. Dr. Havelburg claims that the results at Rio de Janeiro seem to have been favorable. The temperature is favorably influenced, and the therapeutic results are better. But his report contains few details by which we can judge of this treatment. It seems to us to be an exceedingly theoretic one, with small promise of practical results.

Insanity Among the Jews.—Although the Jews no longer constitute a nation they often exhibit certain racial qualities in common; but these tend gradually to disappear in the process of assimilation with the communities in which they reside. When, however, such assimilation does not take place, and the Jew, by choice or by force of circumstances, segregates himself, he will continue to exhibit peculiarities, as a result, in part of hereditary influences, in part of environmental conditions. There can be no doubt, also, that certain religious customs and perhaps the general moral status of the Jews are responsible for the lessened prevalence of certain diseases among them. Thus, syphilis, tuberculosis, alcoholism and crime are believed to be less common in general among Jews than among Gentiles. By reason of his history the Jew is on the other hand usually more neurotic than his neighbor, and insanity

appears to be more common among Jews than among others. Thus Beadles (*Journal of Medical Science*, October, 1900) in a study of 1,000 cases of insanity at the Colney Hatch Asylum noticed a great preponderance of general paralysis among Jewish males, over 21% of all male Jews admitted being subjects of that disease, while the proportion of cases of general paralysis among all males admitted to hospitals for the insane in England and Wales is 13%. No such disparity has been observed among Jewesses, although puerperal insanity was more common among them than among others—namely in 15% as compared with 6%. At the same time syphilis appears to be rather less than more common among Jews than among others; and drunkenness also is said to be less common among the poorer Jews than among others of the English lower classes; while sexual excesses are frequently assigned as a cause for insanity among Jews. As a result of the intensely emotional life of the Jews, the males are often neurotic, the females hysterical. It was found that insanity appears earlier in Jews of both sexes than in non-Jews, at 37 as compared with 43 years; and that likewise death occurs earlier, at 44 and 47 years for males and females respectively, as compared with 51 and 55 years. Relapse occurred twice as frequently in Jewish patients discharged from hospitals for the insane as in other patients. As has already been stated, the explanation for the peculiarities that the figures cited bring out is to be found in part in hereditary, in part in environmental influences. That this is so is indicated by the fact that over 80% of the Jewish patients or their parents were born abroad, and that many had suffered from impoverishment and privation.

Appendicitis with Undescended Cecum and Appendix.—C. A. Hamann (*Cleveland Medical Gazette*, October, 1900) calls attention to the fact that congenital anomalies of the cecum and appendix must be borne in mind in the consideration of obscure intraabdominal affections and cites the case of a patient who had suffered from pain in the right hypochondrium for 5 or 6 years. The pain was almost constant, though worse at intervals, and had disabled him from work for the last few months. There had never been any acute attacks resembling gallstone-colic or appendicitis or any other acute abdominal disease, nor was there a history of traumatism. There was localized tenderness, just below the costal border, at the outer edge of the right rectus muscle; the muscle was rigid. No tumor could be felt. It being impossible from the symptoms present to make a positive diagnosis, an exploratory incision was devised. Upon opening the abdomen in the semilunar line, over the point of tenderness, it was found that the caput coli looked directly upward, and appendix lay partly under the liver. The cecum was of the "second type" described by Treves, *i.e.*, the appendix arose between 2 equal sacculi; it had a short mesentery. The appendix was $4\frac{1}{2}$ inches long and had a mesentery throughout its entire length. About an inch from its base lay a soft cecal concretion, around which there was a shallow ulcer. The coats of the appendix were somewhat thickened, and presented the changes described by Deaver under the head of "chronic interstitial appendicitis." There were no adhesions. The patient was completely relieved of pain and tenderness and made an uneventful recovery. [G.C.C.H.]

Special Article.

FURTHER REMARKS ON THE BISECTION OF FEES, SURGICAL DRUMMERS AND DRUMMING SURGEONS.

By G. FRANK LYDSTON, M.D.,

Professor of the Surgery of the Genitourinary Organs and Syphilology, Medical Department of the Illinois State University; Professor of Surgery, Chicago Clinical School.

IN THE PHILADELPHIA MEDICAL JOURNAL, issue of November, 1899, I published an article entitled "The Surgical Commission Man and Surgical Canvassing." In this article I offered positive proof that with a large proportion of men occupying high places, the practice of medicine and surgery is not a profession, but a trade—and a pretty low trade at that. Since writing this article, I have discovered that conditions are even worse than I thought. Not only do surgeons of prominence solicit "surgical trade," while general practitioners auction off their surgical cases to the highest bidder, but public apologists for the nefarious custom have appeared upon the scene. Upon specious and sophistical pretexts, certain medical journals have either tacitly sanctioned or openly commended the practice. One drumming surgeon has gone so far as to put in a piteous plea for patronage on a commission basis, under the guise of excusing the poor country doctor. This article has appeared as "original" matter in four or five medical journals. I have received many letters upon the subject, most of which, I am happy to state, endorse the position I took in my previous article. Anonymous abuse I have received not a little of—which latter is confirmation of the opinion I have expressed of men of the commission kidney.

The time seems ripe for a further communication on "surgical drumming."

The arguments advanced by the champions of the struggling general practitioner are based upon the same business principle that actuates the pickpocket and others of his ilk. I have been asked by many if I did not think the general practitioner who brings a case to the city specialist should be paid for his services. Others, again, have intimated that my former article would tend to increase the evil, rather than to repress it.

I have used the expression, "drumming surgeons." Exception may be taken to this by many, but, can there be any logical opposition to this nomenclature? Laying the code question aside altogether, there is a standard of professional conduct that is tacitly accepted by all reputable men in the profession. This standard, while difficult of crystallization, is an unvarying one so far as its main principles are concerned.

As I understand the matter, a "drumming doctor" is a man who has paid agents upon whom he depends wholly or in part for his "business." The medical drummer is the man who takes his business to him. The drumming doctor and the doctor's drummer of Hot Springs, Arkansas, constitute the most definite type of their class. Let us see how they are regarded by the profession.

The reputable men of Hot Springs have an organization in affiliation with the American Medical Association, which rigidly excludes the drumming doctor as unfit for association with decent medical men. Should a member be caught red-handed in drumming he is forthwith expelled. Be it remarked that the drumming doctor of Hot Springs pays 50% commission. The reputable physicians of Hot Springs refuse to consult with drumming doctors on the ground that they are disreputables and quacks. The profession in general throughout the country condemns the Hot Springs drummer and his principles—and his lack of principles—and, so far as may be, prevents any of its patients who chance to go to the Springs from falling into their hands on the ground that they are wolves and quacks. Wherein lies the difference between the drumming quack of Hot Springs and the so-called reputables who are giving medical agents a 50% commission for such work as may be brought to them? Now I am going to do the Hot Springs drumming doctor the justice that is denied him. He is not to take it as a compliment, for I do not intend it as such, but he is, in my opinion, the ethical and moral superior of the "reputable" (sic)

commission man. He is no more nor less than he pretends to be. He might well quote Omar Khayyam :

"A Shaikh beheld a harlot, and, quoth he,
'You seem a slave to drink and lechery';
And she made answer, 'What I seem I am,
But, master, are you all you seem to be?'"

He is a "drumming doctor," no more, no less. He is not a hypocrite. He does not belong to the American Medical Association, nor to societies in affiliation with it. He pretends to be no more than he is. He has this in his favor, viz., it is possible for those who believe not as he believes, to hold aloof from him. He prostitutes the profession not at all, for he is not a part of it. He prostitutes himself not at all, for he has no ethics, and is a mere business man, as he would say, "out for the stuff." He does not prostitute his agents, for they are also business men and have no ethics to violate. More than all, they are not medical men.

The commission man who carries on his trade beneath the cloak of professional ethics, who perhaps belongs to the American Medical Association or numerous societies in affiliation with it, is an arch hypocrite. He is a wolf in a wool jacket, he prostitutes not only the noble profession of which he pretends to be a part; he prostitutes not only himself, but he also prostitutes the medical man whom he employs as his agent. He is, moreover, an advertiser of the most flagrant kind—for what is the employment of paid agents but most effective mercantile advertising? He by no means occupies so high a plane of respectability as does the man who walks up to the cashier's window at the newspaper office and pays for his weekly advertising. This fellow does the profession no harm, and the public is welcome to him.

Apropos of drumming, I know of numerous instances in which surgeons of repute are in the habit of approaching general practitioners in this manner :

"By the way, Dr. B., who is doing your surgical work?"

"Why, I have been in the habit of sending most of it to Dr. J."

"Well, do you get anything out of it?"

"No, I have never thought of asking for anything."

"Well, now, you ought to get something out of your cases. If you'll send your work to me I'll divide fees with you."

This is the substance of a recent experience of one of my medical friends, whom I am proud to know as being immune to such contagion. In my previous contribution I mentioned one gentleman who volunteered to have his assistant at the train to meet any patients that might be consigned to him at 50% commission.

The extent of the commission evil is simply appalling. A very large proportion of Chicago surgeons are practising it. Those in other large cities are as bad, or worse. The percentage shown by my investigations—already published in this journal—is a very low estimate. Some of the men who answered the letter from a supposed medical drummer, in a tone that suggested an impeccable standard of professional conduct, are in the commission business, but the letter which they received was so broadly businesslike that the recipients were suspicious. Others, against whom I have incontrovertible evidence, "smelled a rodent," and did not answer the letter at all. The letter was purposely made very broad, to guard against the possibility of any of the commission men claiming that they did not know what the writer of the letter meant. The man who answered that letter must needs be committed absolutely. It is worthy of note that men whose answer repudiated the commission business, yet are continuously engaged in deliberately doing that which they know and acknowledge to be morally wrong.

It might be edifying to the general practitioner who reverences the college men to know that many of them are in the commission business. I'd rather not say how many of my own colleagues, like Barkis, are "willin'."

Now, I desire to submit certain propositions, which I am willing, aye, anxious to debate in the columns of this journal. Indeed, I hope my commission friends will come out from their hiding place beneath the frazzled skirts of that good old witch-wife, "Granny Code," and, nailing their colors to the mast, have it out with me. These propositions are as follows :

1. There is no difference between the so-called reputable surgeon who pays commissions (or the man who works for him on commission), and the Hot Springs drumming quacks, that is not in favor of the latter.

2. The commission man is an advertiser on a lower plane than the quack advertiser in the newspapers.

3. The commission man does not dare come out in open meeting and advocate the practice as such. He is in most instances a subscriber to the code. He is a hypocrite.

4. He is a menace to the general prosperity and respectability of the profession. He is degrading himself and his profession every day he lives.

5. He is as dishonest as a man can be without violating statutory law. This requires a word of explanation: He is dishonest in his treatment of the patient by virtue of a charge which is supposed to be for his own services alone, whereas it embraces a commission for the medical steerer who has brought the case. Neither the operator nor his drummer dare present the details of the transaction to the patient, hence I cannot see the difference in the matter of "shadiness" between this and other transactions of a so-called "business" nature that will not bear the light of day. I maintain that any dealings of a monetary character between the surgeon, the man who brings the case to him, and the patient, which will not bear presentation to the latter in black and white, is dishonest.

The rank and flagrant dishonesty of the commission surgeon is most thoroughly established by the following indubitable facts :

1. He divides with the man who demands a division.

2. He divides with him whose patronage he can get in no other way.

3. He does not divide with those who send him the bulk of his work. If he is justified in paying commissions to one person he should pay them to all. If he is honest in paying any commissions whatever, he is a swindler if he does not divide with every one, lay or professional, who sends him a case. He does not so divide, hence he may take his choice of the two horns of the dilemma. I am not inclined to mince words. I herewith assert that the commission surgeon is of necessity a swindler. I do not think he robs himself. He robs his patients, and all of his lay and professional friends who send him cases, yet to whom he pays no commissions.

4. The practice of commission paying is even now leading to criminal collusion on the part of the surgeon and his drummer. Inoperable cases are being *operated at* for a divided fee. Cases in which operation is unnecessary are being operated on a fee bi-section basis. Dishonest diagnosis followed by dishonest operations are being made. There's nothing so "thick as two thieves," and as the chief malefactor—the commission surgeon—and his "pal"—the drumming doctor—are in duty bound to stand by each other, the poor patient is of necessity playing the role of football. Do I overdraw? No; I can prove that cases of an inoperable character are being auctioned off to the highest bidder. I can also prove that the drumming doctor with any case that he wants "operated," is never allowed to leave our great medical centers unsatisfied.

5. Having degraded himself by the commission business, the fee bisector has gone further and formed an offensive and defensive alliance with out-and-out quacks. I know of one gentleman who makes periodic excursions to a neighboring small town to operate for an advertising quack. He operates upon every patient that the quack has in readiness. He worries not over diagnoses. The quack has advised operation, the patient has consented to it, the fee is to be divided and—what would you more?

6. The general practitioner who refers a case to a specialist for operation is supposed to be actuated by a desire to further the best interests of his patient. Is it this that actuates him in demanding a commission for his patronage? In justice to the general practitioner who is in the drumming business, I should say that it is my belief that the first advances on a commission basis were made by the specialists themselves. The general practitioner is intrinsically decent. Most of those who are drumming have been corrupted by the specialists.

The drumming practitioner dare not let his patient know of the financial arrangement he makes with his principal. Once let the public get an inkling of the business and it will demand a better knowledge of the practitioner's character than it now possesses before operations will be consented to. Let the patient and his family discover the deal which some family physicians are making with the commission men and

there'll be a change of doctors very quickly. The commission business is shady, my brother, and you dare not let your patient find you out. Come now, do you? Will you, my brethren, who have occasionally asked me how much I would give you if you would turn certain cases over to me for operation, permit me to ask your patients what they think about your methods? It will be no trouble to me, I assure you. I have names and dates a' plenty. Besides, I am ever ready to oblige. The patient would open his heart to me, you know, just as he has opened his pocket to you and your principal in the "surgical trade."

The drumming doctor does not worry much about who will be likely to render the patient the best service. All he wants to know is, what surgeon asks the fewest questions of diagnostic import and pays the biggest commission. The commission man has put up a very pathetic plea in behalf of the drumming doctor. The burden of this plea has been, "The poor fellow ought to have something for his trouble."

This is a plea that fools nobody. The commission surgeon has about as much philanthropy in his composition as a shark, and less warm, red blood than a clam. But the plea sounds well and brings him business. I believe the general practitioner to be overworked and underpaid. But does this justify him in dishonest practices? Is the argument that he needs money any more cogent here than in its application to out-and-out quackery, the abortion business, or even to picking pockets? I grant that the general practitioner should be paid for everything he does; but should he be paid money he does not earn? Should he be paid for something he has not been employed to do? Should he receive money from a transaction which, if known to his patients, would lose for him the respect, confidence and esteem, not only of the patient, but of his entire clientele?

It is often said that the doctor who brings the case has never received any fees from it. Well, if not, why not? If he is not a sufficiently good business man to get such fees as may be due him from the patient, should he hold the specialist responsible and demand that he collect them for him surreptitiously? Or, granting that the surgeon charges no more than is just and fair for his operation—and anything within the range of the patient's financial capacity is just and fair, due regard being paid to the seriousness and responsibility of the case—should the general practitioner expect the operator to pay him for real or imaginary services rendered the patient? By no means. The practitioner often accompanies the case to the medical center, it is true, and guides it directly to the office or hospital of the specialist. This has been urged as a special plea for his compensation on the part of the specialist. But let us inquire into this bit of sophistry a little, especially as to the reasons actuating the practitioner who accompanies the case. In many instances the practitioner is asked to accompany the patient by the patient or by his friends. In such an event the doctor who does not give the people employing him due and proper notice that he is not traveling for his health, is a fool. Not only does he lose his time and services, but the family will have little respect for him in future, and their opinions will permeate the place in which that doctor practices like a pernicious and deadly miasma. It will blight his hopes of ever obtaining a competence in that community. Make the people pay you, my brother, and pay you well. Surely you do not think the specialist ought to pay the bill. In not a few instances the practitioner accompanies his patient for purely politic motives. The family is an influential one, and he wishes to keep or make himself "solid" with it. Perchance he has had a steady income from that family for years. Actuated by this motive he accompanies his patient to the city. Should either specialist or patient pay for this? I believe the patient should pay; but if the practitioner has accompanied the case out of alleged sheer good-will, I fail to see that he should expect compensation from anybody. He is a fool who makes such an arrangement, but having made it he should stand by it. Supposing the patient should learn that his generous and self-sacrificing doctor got a "divvy" for bringing him to the specialist, what a precious row there'd be. The doctor thus caught would best change locations, and stand not upon the order of his going.

If the doctor is under no obligation to the patient—he or she being a new one—there is no earthly excuse for his going to the city with the case unless he is employed by the patient to go as a matter of pure business. In some instances the

general practitioner accompanies his patient for another reason. The case has been upon his hands for a long time. If he has not received pay for his services, he should have done so; it is his own fault if he has not. The case is a puzzling one and he is anxious to see it through. "Well," he then says to himself, "I will see what Prof. X. says about it; I will watch the operation, so that I may know what to do and how to do it next time." Should the patient pay for this, unless with a clear understanding that he is expected to pay for the doctor's company? Should the specialist pay for it?

The thing that puzzles me most in the commission practice, is how the specialist and the general practitioner figure out their standing upon the same operative and diagnostic plane. The practitioner would not take the case to the specialist if he could help it. He cannot handle it and so is perforce compelled to seek higher authority. Having sought it, he attempts to put himself on the same plane with that authority by demanding an equal division of the fee—a fee earned by a man who understands and skilfully handles a case in the presence of which the general practitioner is absolutely helpless—a fee that the latter not only does not earn but could by no possibility earn, as he himself admits.

A point to be remembered is this: The general practitioner may have enjoyed a lucrative practice in the family of which a given patient is a member, for many years. The surgeon specialist has never competed with him in any respect. He has had a monopoly of the practice in that particular family—why should he object to the surgeon having a monopoly in the occasional case which he himself is not competent to manage? "Render unto Cæsar those things which are Cæsar's." In order to obtain preeminence as a specialist one must sacrifice a goodly portion of the field of practice. He is entitled to his own, no more, no less. If he does enter into competition with the general practitioner, then the latter should not refer cases to him. The specialist, too, should "render unto Cæsar those things which are Cæsar's." Get your fees, my brother overworked, and let them be good ones, but do not try to compensate yourself for your own lack of business ability by participating in any transaction which is so shady that, if you were found out, it would ruin you.

This objection has been urged to my ventilating the "drumming business": "You only serve to advertise those fellows and make the practice more prevalent than ever." Well, there's something in that, I admit. But, brethren, *I wish to advertise them. I wish to compel them to bisect their incomes by dividing with all their patrons who refer cases to them.* If they divide with one, why not with all? Because they are dishonest in two directions. They are not as square as the professional crook who believes in "honor among thieves." When I am ready I am going to advertise them in another way that will make their hair curl—unless, mayhap, they are bald.

Is there any basis of copartnership upon which the general practitioner and the specialist can possibly meet? Yes, there is:

1. A general practitioner and a surgeon may form a copartnership out and out, and announce the fact, presenting joint bills for services.

2. The specialist may present a joint bill which openly claims a fee for combined services, the general practitioner and surgeon each receiving his fair and just proportion of the fee—adjusted according to the services actually rendered by each.

3. The general practitioner may conduct all the financial negotiations with the patient, call a surgeon in to operate and pay him whatever sum is agreed upon between the two physicians. Here the general practitioner presents a bill which is understood by the patient to be a bill for joint services. If the patient is satisfied with the total amount he is not likely to concern himself with the arrangement that his physician has made with the operator. If the surgeon is satisfied with his own fee, it is a matter that concerns nobody else.

4. There are cases in which the general practitioner may render honest and competent assistance to the surgeon. Here a joint bill should be rendered.

If there are any other ways in which the surgeon and the physician can cooperate financially, I should be glad to know of it.

I hope that the question of whether we are practising a profession or a trade may be settled in the near future. At present the matter is somewhat confusing. In Chicago things are very complex. It is an unwritten law that a reputable physician does not advertise in the newspapers. Several

reputable men may do so, however, without stain. A certain postgraduate school has "an ad" in one of the papers containing the names of four or five of the faculty. In this the public is informed not only that they are great doctors, but are engaged in teaching "practitioners of medicine" only. I wonder what part of the school's clientele is reached in this way. I wonder, moreover, how the other members of the faculty like to pay their *pro rata* for that ad. Mind you, the men aforesaid are men of great ability, and personal friends of mine for whom I have great admiration, but!—

There are physicians in Chicago who are supposed to be reputable, yet demand a division of the spoils from the undertakers to whom they refer "cases" or into whose hands their "cases" fall. And the instances of this ghoulish practice are not isolated ones either, nor are the doctor-ghouls so very obscure in some cases.

Certain hospitals have an arrangement for a "divvy" with particular undertakers. The family of the deceased must "hustle" if it would have anything to say as to the disposition of the remains so far as the selection of an undertaker is concerned. The ice melts pretty fast around some hospital corpses, and one would be justified in suspecting that the remains had been put on pretty hot in some cases.

The latest thing in "divvies" is the insurance frauds in which two supposedly reputable practitioners have been detected. This is only a little worse than paid testimonials for new drugs.

Apropos of testimonials, when a practitioner discovers a remedy that cures 100 cases of gonorrhea in from 4 to 5 days to 3 weeks, and within six months after his report has appeared has abandoned the drug for a rival preparation, there's a "nigger in the fence." The man who discovers such a remedy can live in a gold house.

Pregnancy and Heart Disease.—G. G. Sears (*St. Paul Medical Journal*, November, 1900) details a series of 15 cases in patients who were 19 times pregnant under his observation, which were successfully gone through with after cardiac lesion was acquired. The course of these cardiac cases under the influence of repeated pregnancies is not necessarily progressively downward, since a pregnancy with severe cardiac symptoms may be followed by one in which they are scarcely noticeable, yet the net result in most instances has been a decidedly weakened heart. Six patients had mitral stenosis, 2 mitral regurgitation, 1 aortic regurgitation, 3 both mitral regurgitation and stenosis, 3 combined aortic and mitral lesions. Two patients died, one with mitral stenosis and one with a double mitral lesion. In 5 cases abortion was induced, 2 patients having mitral stenosis, 2 combined mitral and aortic lesions, 1 mitral regurgitation and stenosis. There seems indicated the necessity of inducing abortion, if marked symptoms of failing compensation develop before the third month and do not respond to treatment, and on its probable necessity if they appear between the third and sixth month. The ease with which patients passed through an abortion brought on before the fifth month is a decided argument for its early performance, before the mechanical difficulties from the increased size of the child have become too great. He has never seen reason for reproach for having advised an abortion in any case, while he has twice had reason to regret that an opinion was sought too late for premature delivery to be effective. [G.C.C.H.]

Fatal Lead Poisoning.—Baines (*The Canadian Practitioner and Review*, November, 1900) reports 2 cases of fatal lead poisoning occurring in children aged respectively 5 years and 9 months and 2 years and 8 months. In addition to the signs and symptoms ordinarily given in textbooks there was a well-marked dark-blue circle about the anus. The condition resembled basilar meningitis very closely. The younger of the 2 children lived about 3 weeks after the onset of the attack, and the elder about 1 week. The convulsions in each case were very numerous. Attacks of vomiting, constipation, contracted abdomen, offensive breath, dilated pupils, abdominal pain, and loss of reflexes were noted. The urine contained 1 milligram of lead to the ounce. The poisoning was caused by the inhalation of the fumes from the burning staves of a barrel which had previously contained white lead. The mother was also poisoned and suffered from lead colic and other classic symptoms of lead poisoning. An infant at the breast was not poisoned. [A.B.C.]

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Calendar of Meetings of Philadelphia Medical Societies for the week ended December 15, 1900:

Monday, December 10—College of Physicians, Section on Medicine.

Tuesday, December 11—Pediatric Society.

Wednesday, December 12—County Medical Society.

Thursday, December 13—Pathological Society.

Sneak thieves' latest scheme is to enter a physician's waiting room under pretence of wanting a consultation, and appropriating overcoats and other personal belongings of those who entered the consulting room.

Impure Milk.—The Berks County Dairymen's Association at its recent annual meeting decided to call the attention of the Food Inspector to alleged adulterated milk sold in Reading by some of the 100 dealers outside the Association who serve routes in that city.

Hospitals for Epileptics and the Tuberculous.—At a recent meeting of the State Board of Charities in Pittsburgh the question of State institutions for the care of epileptics and tuberculous individuals was discussed. All members were in favor of the project, and a recommendation to the next legislature for the establishment of such hospitals may result.

Medical Inspectors.—A resolution recommending that the medical inspectors of schools be paid a salary of \$500 each for their services from September to May inclusive was adopted at a recent meeting of the Committee on Medical Inspection of the Public Education Association. The committee suggested that the corps of visiting physicians should number 200.

Franklin County Medical Society.—At the regular meeting at Chambersburg, October 16, 1900, the following officers were elected for the year 1901: President, Dr. Jos. K. Snively; vice-presidents, Drs. A. W. Thrush and A. D. Dalby; recording secretary, Dr. J. J. Coffman; corresponding secretary, Dr. H. Clay Devilbiss; treasurer, Dr. D. MacLay; censor 1901 to 1903, Dr. A. H. Strickler.

Vital statistics of Philadelphia for the week ended, December 1, 1900:

	CASES.	DEATHS.
Total mortality		446
Inflammation of appendix 1, bladder 1, brain 5, bronchi 12, kidneys 13, lungs 63, pericardium 1, peritoneum 11, pleura 1, stomach and bowels 18		126
Lungs—tuberculosis of 58, edema of 2, abscess of 1		61
Heart—diseases of 38, fatty degeneration of 2, neuralgia of 2		42
Uremia 19, diabetes 5, Bright's disease 6		30
Marasmus 8, inanition 11, debility 3		22
Apoplexy 13, paralysis 7		20
Old age		20
Carcinoma of breast 4, face 1, larynx 1, pelvis 1, stomach 7, uterus 2, bladder 1, sarcoma of jaw 1, stomach 1		19
Casualties		16
Diphtheria	105	14
Brain—congestion of 3, softening of 2, hemorrhage of 1		6
Typhoid fever	42	6
Convulsions 5, puerperal 1		6
Alcoholism		6
Liver—diseases of 1, cirrhosis of 4		5
Membranous croup		4
Scarlet fever	39	4
Suicide—hanging 2, Paris green 1, shooting 1		4
Burns and scalds		3
Cerebrospinal meningitis		3
Dropsy		3
Obstruction of the bowels		3
Aneurysm of aorta 2, asthma 2, atheroma 1, childbirth 2, cyanosis 2, diarrhea 2, drowned 1, epilepsy 1, erysipelas 1, jaundice 2, locomotor ataxia 1, rheumatism 1, arterial sclerosis 1, surgical shock 1, septicemia 1, syphilis 1		

Milk from Tuberculous Cows.—The State Inspector last week condemned to death as tuberculous 95 cows of Reedhurst stock farm. They have been appraised at \$1,300, which the State will have to pay. The milk from this herd brought high prices on account of its supposed excellence.

NEW YORK.

The Medical Society of the State of New York will hold its ninety-fifth annual session in Albany, January 29, 30, 31, 1901.

Bequests to Hospitals.—R. G. Dun bequeaths in his will filed recently to the Presbyterian Hospital, St. Luke's Hospital, Mount Sinai Hospital and the New York Institution for the Instruction of Deaf and Dumb \$5000 each.

Gift to the Woman's Hospital.—At a recent meeting of the Woman's Hospital in the State of New York it was announced that Mrs. Frederick F. Thompson had offered to build a nurses' home in connection with the hospital, the home to cost from \$100,000 to \$150,000 and to be erected on the hospital grounds. This gift is in addition to \$55,000 given early in the year.

Cost of Public Baths.—Before the Tenement-House Commission recently, an estimate was given of the expense of running the People's Bath at Center Market. Last year the cost was a little over \$5,000, and with a fee of 5 cents for each bather for use of soap and towel, paid a slight profit over running expenses, though 6,000 free baths were given. This is only $\frac{1}{3}$ smaller capacity than the Rivington street bath, for which an appropriation of \$51,000 has been asked of the city for maintaining it one year.

A West-Side Plague Spot.—A meeting was recently called at St. Michael's parish-house, New York City, to hear the report of experts on the conditions of life in a block on the West Side. It has been called the plague spot of the West Side. In 1897 this spot contained 3,580 persons living in 2,639 rooms, of which only 1,198 had windows on the outer air. There was not a single bath-tub, except in 2 houses where 6 families were provided with a private bath, leaving more than 800 families unprovided for. Of these 89 families had hot and cold water, the remainder cold water only. It is reported that the general feeling is that the board of health has not done its duty by this block.

NEW ENGLAND.

Salem Sanitarium.—The main building at Lowell Island in Salem Harbor, Mass., used for a children's sanitarium, will be torn down and a more convenient structure erected on the same site.

The Dickinson Hospital at Northampton, whose trustees appealed for aid in their last annual report, has had a gift sufficient to build the needed annex at a cost between \$15,000 and \$20,000. The building is to be a memorial.

The new Willard Hospital, of Bedford, Mass., established for the care and treatment of chronic alcoholics, reports great encouragement in the work. Improvements involving an outlay of \$5,000 are contemplated. The Willard Hospital is named in honor of Miss Frances Willard, who did so much in her short life for purity and temperance.

Christian Science.—A recent report of a committee read before the Newton, Mass., School Board contains the following clause: "Now that there is said to be an increasing number of people called christian scientists, who deny the existence of disease, it seems to us that some additional precaution should be taken against this danger. We are informed that the Newton Educational Association is seriously considering this matter, and has called upon the physicians of the city for advice."

CHICAGO AND WESTERN STATES.

Chicago Wesley Hospital.—Many generous contributions have been made in that city for its erection, amounting to \$140,000.

St. Edward's Free Hospital is the name of a new institution to be erected at New Albany, Ind., by the St. Mary's Catholic Church.

Oleomargarine Dealer Fined.—John R. Roney, of Chicago, was recently fined \$1,000 and costs for selling oleomargarine without having paid a wholesale tax and without marking his goods.

SOUTHERN STATES.

Anilin Dye in Sausage.—Two dealers were fined recently in the Baltimore Criminal Court for selling Frankfurt sausage colored with anilin dye, which the jury decided was unwholesome.

Richmond (Va.) News.—Dr. John F. Winn, Superintendent of Dispensaries for Lying-in Women, in connection with the University College of Medicine, Richmond, Va., has just handed to the faculty of that institution his report for the past 12 months. In all, there were 281 cases of delivery in the out-door department. This number includes full-term deliveries and miscarriages, embracing exceptional opportunities for the students to assist in the work.—At a recent meeting of the Academy of Medicine steps were taken by the body to vigorously prosecute all illegal practitioners and concerns engaged in the treatment of diseases. This includes the cancer-curiers, rupture-curiers, osteopaths, viavists, etc. A strong committee was appointed to look up evidence in order to aid the Commonwealth's attorney and, if necessary, appear before the Grand Jury to maintain the principle.

CANADA.

A Medical Defence Union.—At a recent meeting of the St. Francis District Medical Association, the medical men of the eastern townships of Quebec took steps to form a medical defence union. Copies of the rules will be at once sent to all medical men in that district for their signatures, when the organization will seek the endorsement of the Canadian Medical Association. The association also decided to accept and adopt the Ontario code of ethics. Hereafter the society will meet every 2 months.

MISCELLANY.

Pan-American Medical Congress.—A committee of the Pan-American Medical Congress met at Washington, D. C., December 4, to consider the advisability of postponing the meeting of the proposed Congress at Havana, owing to the prevalence of yellow fever there. It was decided to hold the convention in that city from February 5 to 9, instead of December 26-29.

Obituary.—ROMAINE J. CURTISS, of Joliet, Ill., November 20, aged 60.—RUFUS P. LINCOLN, of New York City, November 27, aged 59.—GEORGE HEUSSY, of Seattle, Wash., aged 54.—JOHN S. HOLSTEIN, of Florence, La., November 19, aged 28.—A. S. JORDAN, of Riegelsville, Pa., November 23, aged 61.—WILLIAM F. MAHNEKE, of Pittsburg, Pa., November 18, aged 50.—EDWIN PATBURY, of Washington, November 20.—JOHN SWAN, of Westbrook, Me., November 18, aged 60.—THEODORE J. YOUNG, of Titusville, Pa., November 22, aged 68.—EDGAR VOELCKER, of San Antonio, Tex., November 24, aged 26.—J. W. BRICK, of Leavenworth, Kan., November 26.—LUDGER MARK FINNEY, of New Orleans, November 30, aged 38.—FRANCIS M. CLARK, of Shamokin, November 30.

Changes in the Medical Corps of the U. S. Army, for the 2 weeks ended December 1, 1900:

HARVEY, Major PHILIP F., surgeon, will proceed to Zamboanga, Mindanao, reporting to the commanding general, department of Mindanao and Jolo, for duty as chief surgeon of that department, relieving Major Richard W. Johnson, surgeon.

JOHNSON, Major RICHARD W., surgeon, will proceed to Ilo Ilo, Panay, reporting to the commanding general, department of the Visayas, for assignment to duty.

EWING, Major CHARLES B., surgeon, is relieved from duty in the department of Northern Luzon, and will report to the commanding officer, Santa Mesa Hospital, for duty.

MATHEWS, Captain GEORGE W., assistant surgeon, is relieved from duty in the department of Northern Luzon, and will report to the provost marshal general, Manila, P. I., for assignment to duty.

WOLF, EDWIN P., acting assistant surgeon, is granted leave of absence for 25 days with permission to leave the limits of the division of Cuba.

HAVARD, Major VALERY, surgeon, is granted leave of absence for 1 month, with permission to go beyond the limits of the division of Cuba.

FRICK, Captain EUCLID B., assistant surgeon, will report to the chief surgeon of the department of Porto Rico for duty as attending surgeon at department headquarters, vice Major P. R. Egan, surgeon, relieved.

EGAN, Major P. R., surgeon, is relieved from duty as attending surgeon, department headquarters, department of Porto Rico.

MACCLEERY, HUGH H., hospital steward, will report at the medical supply depot, San Juan, P. R., for temporary duty.

EMERSON, HERBERT, hospital steward, U. S. Army, will report at the medical supply depot, San Juan, P. R., for duty.

KUHN, CHARLES F., acting assistant surgeon, is relieved from duty on the Army transport "Lawton," and is assigned to duty with troops on the Army transport "Sheridan," to sail for the Philippines about November 16. Upon arrival at Manila he will report to the commanding general, division of the Philippines, for assignment to duty.

DOUGLAS, GEORGE C., hospital steward, Army General Hospital, Washington Barracks, is transferred to Fort Monroe, for duty.

HESS, First Lieutenant LOUIS T., leave of absence is extended 1 month.

SHORES, ERWIN I., acting assistant surgeon, orders of November 13 are amended so as to direct that upon being relieved from duty at Fort Caswell by Acting Assistant Surgeon James H. Hepburn he will proceed to his home, West Bridgewater, Mass., and report by letter to the Surgeon-General of the Army for annulment of contract.

HEPBURN, JAMES H., acting assistant surgeon, is relieved from duty at the U. S. general hospital, Fort Bayard, and will proceed to Fort Apache for duty.

WEBBER, First Lieutenant HENRY A., assistant surgeon, is granted leave of absence for 1 month, with permission to leave the limits of the division of Cuba, and to apply for an extension of leave for 1 month.

THOMASON, Major HENRY D., surgeon, is granted extension of leave of absence to include December 31.

THOMASON, Major HENRY D., surgeon, is honorably discharged from the service of the United States, to take effect December 31.

TRUEHOLTZ, CLARENCE A., acting assistant surgeon, is relieved from duty in the department of California, and will proceed, via Seattle, Wash., and Skaguay, to Fort Egbert, Alaska, and report to the commanding officer of that post for duty.

KIERULFF, H. NEWTON, acting assistant surgeon, now at Seattle, Wash., is relieved from further duty in the department of Alaska, and will proceed to San Francisco, Cal., and report by letter to the Surgeon-General of the Army for annulment of contract.

WHITTINGTON, WILLIAM L., acting assistant surgeon, will proceed from St. Joseph, Mo., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to temporary duty en route to the Philippine Islands, and upon arrival at Manila will report to the commanding general, division of the Philippines, for assignment to duty.

KUCH, HERMAN, hospital steward, chief surgeon's office, division of the Philippines, Manila, P. I., will, when able to travel, be sent to the Army general hospital, Presidio, for duty.

GRAHAM, GEORGE, hospital steward, (appointed November 19) now at the Army general hospital, Presidio, will report for transportation to Manila, P. I., for assignment to duty.

DOHLE, MAX, hospital steward (appointed November 19) now at West Point, N. Y., is assigned to duty at his present station.

POTTER, Major SAMUEL O. L., surgeon, is granted leave of absence, on surgeon's certificate, until December 1.

BANTA, WILLIAM P., acting assistant surgeon, is granted leave of absence, on surgeon's certificate, for 1 month.

FRY, CHARLES W., acting assistant surgeon, will proceed to his home, Huntington, Ind., where he will report by letter to the Surgeon-General of the Army for annulment of contract.

FITZSIMMONS, ALBERT P., acting assistant surgeon, will proceed to his home, Tecumseh, Neb., where he will report by letter to the Surgeon-General of the Army for annulment of contract.

HOFF, Major JOHN VAN R., surgeon, is granted leave of absence for 1 month, with permission to apply for an extension of 10 days.

STOCKARD, JAMES K., acting assistant surgeon, is granted leave of absence until December 14.

MCCALLUM, F., acting assistant surgeon, is granted leave of absence until December 14.

TRUBY, First Lieutenant ALBERT E., assistant surgeon, department of Cuba, is relieved from duty at Columbia Barracks, and assigned to Rowell Barracks, relieving Acting Assistant Surgeon H. M. James.

JAMES H. M., acting assistant surgeon, department of Cuba, will proceed to Cabana Barracks for duty.

BISPHAM, First Lieutenant W. M., assistant surgeon, department of Cuba, is relieved from further duty at Cabana Barracks, and will proceed to Columbia Barracks for duty.

GEDDINGS, First Lieutenant E. F., assistant surgeon, department of Cuba, is relieved from further duty at Santiago de Cuba, and will report at Morro Castle, Santiago, for duty as post surgeon.

SHIMER, First Lieutenant IRA A., assistant surgeon, is detailed as acting chief surgeon of the district of Santiago, Cuba.

ALLEN, FREEMAN, acting assistant surgeon, is relieved from further duty at Quemados, Cuba, and will report at Columbia Barracks, Cuba, for duty.

STONE, RANDALL C., acting assistant surgeon, will report for duty with troops on the transport "Meade" during the voyage of that vessel to the Philippine Islands, to sail about December 1. Upon arrival at Manila he will report to the commanding general, department of the Philippines, for instructions.

TRUEHOLTZ, CLARENCE A., acting assistant surgeon, is relieved from further duty in the department of California, and will proceed via Seattle and Skaguay, to Fort Egbert, Alaska, for duty.

COOK, ROBERT P., acting assistant surgeon, is relieved from duty at Columbia Barracks, Cuba, and will report to Major Walter Reed, surgeon, president of the board for the investigation of infectious diseases in Cuba, for temporary duty.

BUSHNELL, Major GEORGE E., surgeon, is granted leave of absence, on surgeon's certificate, for 3 months.

POTTER, Major SAMUEL O. L., surgeon, having tendered his resignation, is honorably discharged from the service, to take effect December 1.

HOFF, Major JOHN VAN R., surgeon, is relieved from further duty in the department of the Lakes, and upon the expiration of the leave of absence granted him November 19 will report to the Surgeon-General of the Army for duty in his office.

BUSHNELL, Major GEORGE E., surgeon, is relieved from duty in the office of the Surgeon-General of the Army.

KIERULFF, NEWTON H., acting assistant surgeon, now at Vancouver Barracks, is relieved from further duty in the department of Alaska and will proceed to Seattle, Wash., and report on the transport "Kintuck" for duty as surgeon on that transport.

FLETCHER, JR., RICHARD M., acting assistant surgeon, leave of absence for 7 days is extended 23 days, with permission to apply for a further extension of 1 month.

HAY, Second Lieutenant WILLIAM RIDGELY, recently appointed, with rank from November 5, 1900, will proceed to Governors Island and report in person to the commanding general, department of the East for further orders.

Changes in the U. S. Marine-Hospital Service, for the 2 weeks ended November 29, 1900:

STONER, J. B., passed assistant surgeon, is relieved from duty at Quebec, Can., and directed to proceed to Norfolk, Va., and assume temporary command of the service during the absence of the medical officer. November 20.

THOMAS, A. R., passed assistant surgeon, granted leave of absence for 4 days. November 3.

WILKES, H. W., passed assistant surgeon, granted leave of absence for 7 days from November 28.

COFER, L. E., assistant surgeon, directed to rejoin station at Los Angeles, Cal. November 17.

HOBDY, W. C., assistant surgeon, granted extension of leave of absence for 2 weeks from November 3.

BAHRENBURG, L. P. H., assistant surgeon, relieved from duty at Liverpool, Eng., and directed to proceed to New York, N. Y., and report to Surgeon L. L. Williams, at Immigration Depot, for duty. November 16.

GIBSON, L. P., acting assistant surgeon, granted leave of absence for 10 days from November 13.

GOODMAN, F. S., hospital steward, granted leave of absence, for 30 days from December 19.

STONER, J. B., passed assistant surgeon, bureau letter of November 20, directing Passed Assistant Surgeon Stoner to assume temporary command of the service at Norfolk, Va., amended, and directed to assume command of the service at Norfolk, relieving Passed Assistant Surgeon J. M. Eager. November 24.

EAGER, J. M., passed assistant surgeon, relieved from duty at the port of Norfolk, Va., to take effect November 30.

HOBDY, W. C., assistant surgeon, granted leave of absence for 7 days, from November 25.

BILLINGS, W. C., assistant surgeon, to proceed to Clarksburg, W. Va., for special temporary duty. November 24.

THORNBURY, F. J., assistant surgeon, granted leave of absence for 4 days. November 23.

MOORE, DUNLOP, assistant surgeon, to proceed to Port Townsend Quarantine, and report to medical officer in command, for duty. November 28.

EARLE, B. H., assistant surgeon, to proceed to Columbia River Quarantine, and report to medical officer in command, for duty. November 28.

LONG, J. D., assistant surgeon, to proceed to Baltimore, Md., for temporary duty during the absence of Assistant Surgeon Billings. November 24.

LLOYD, B. J., assistant surgeon, to proceed to San Francisco Quarantine, and report to medical officer in command for duty and assignment to quarters. November 28.

PIERCE, C. C., assistant surgeon, relieved from duty at the Tortugas Quarantine Station, and directed to proceed to Key West, Fla., and report to medical officer in command for temporary duty. November 27.

BAILEY, W. C., acting assistant surgeon, granted leave of absence for 3 weeks, from November 14.

BROWN, F. L., hospital steward, relieved from duty at Cape Charles Quarantine, and directed to proceed to Boston, Mass., and report to the medical officer in command, for duty and assignment to quarters. November 27.

PROMOTION.

Assistant Surgeon L. E. COFER commissioned as passed assistant surgeon, November 23.

Changes in the Medical Corps of the U. S. Navy, for the 2 weeks ended December 1, 1900.

DUNBAR, A. W., passed assistant surgeon, detached from the "Monongahela" and ordered to the "Vermont" for temporary duty with the crew of the "Wisconsin," and then to the Naval Hospital, Mare Island, Cal.

WILLIAMS, R. B., assistant surgeon, appointed assistant surgeon, from November 17, 1900.

KENNEDY, J. T., assistant surgeon, detached from the "Monocacy" and ordered to the Cavite Naval Station.
 BURR, C. R., assistant surgeon, ordered to the "Monongahela." December 1.
 McCLANAHAN, R. K., assistant surgeon, detached from the Navy Yard, Washington, and ordered to the "Indiana." December 1.
 SPEAR, R., passed assistant surgeon, detached from the Naval Hospital, New York, and ordered to the "Buffalo." December 5.
 WILLIAMS, R. B., assistant surgeon, ordered to duty at the Naval Hospital, New York. December 5.

Health-Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, for the week ended November 30, 1900.

SMALLPOX—UNITED STATES.

		CASES.	DEATHS
ALASKA:	Skaguay Nov. 24	1	
"	Whitehorse Nov. 24	1	
KENTUCKY:	Lexington Nov. 17-24	1	
LOUISIANA:	New Orleans Nov. 17-24	1	
MICHIGAN:	Detroit Nov. 17-24	1	
MINNESOTA:	Minneapolis Nov. 17-24	3	
MISSOURI:	St. Joseph Oct. 1-31	1	
NEBRASKA:	Omaha Nov. 17-24	3	
N. HAMPSHIRE:	Manchester Nov. 17-24	3	
NEW YORK:	New York Nov. 17-24	1	1
OHIO:	Cleveland Nov. 17-24	23	
PENNSYLVANIA:	Pittsburg Nov. 17-24	3	
"	Steelton Nov. 17-24	2	
TEXAS:	Houston Nov. 17-24	17	
UTAH:	Salt Lake City Nov. 17-24	31	

SMALLPOX—FOREIGN.

BELGIUM:	Antwerp Nov. 3	1	
BOHEMIA:	Prague Oct. 27-Nov. 3	19	
BRIT. COLUMBIA:	Nanaima Nov. 23	12	
ECUADOR:	Guayaquil Sept. 8-30		33
EGYPT:	Alexandria Nov. 5	1	
ENGLAND:	Southampton Nov. 3-10	3	
FRANCE:	Paris Nov. 3-10		11
GREECE:	Athens Oct. 27-Nov. 3	3	
GIBRALTAR:	 Nov. 11	1	
INDIA:	Calcutta Oct. 20-27		1
"	Madras Oct. 20-27		3
ITALY:	Naples Nov. 14	5	1
MEXICO:	Mexico Nov. 4-11		1
RUSSIA:	Moscow Oct. 27-Nov. 3	7	2
"	Odessa Nov. 7-10	16	7
"	St. Petersburg Oct. 27-Nov. 3	7	1
"	Warsaw Oct. 27-Nov. 3		30
SAN DOMINGO:	Puerto Plata Nov. 10-17		3
SCOTLAND:	Glasgow Nov. 9-16	22	
SPAIN:	Corunna Nov. 3-10		1

YELLOW FEVER.—FOREIGN.

CUBA:	Matanzas Nov. 19	3	
MEXICO:	Vera Cruz Nov. 10-17	9	1

CHOLERA.

INDIA:	Bombay Oct. 23-30	10	
"	Calcutta Oct. 20-27	8	
"	Madras Oct. 20-27	13	
STRAITS SETTLEMENTS:	Singapore Sept. 22	1	1

PLAGUE.—FOREIGN.

CHINA:	Hongkong Oct. 15-22	3	3
EGYPT:	Alexandria Oct. 22-29	1	
INDIA:	Bombay Oct. 30		85
"	Calcutta Oct. 20-27		7
"	Madras Oct. 20-27		1
JAPAN:	Kobe Nov. 2	2	
"	Osaka Nov. 2	11	
MADAGASCAR:	Tamatave Oct. 8-15	4	4
STRAITS SETTLEMENTS:	Penang Oct. 16		2

Coffee Substitutes.—The year-book of the Department of Agriculture, soon to be issued, will contain an interesting article on coffee substitutes. Such substitutes as parched corn, wheat, peas, beans, and corncobs, as well as sweet potatoes cut into small pieces, dried and parched, have long been used. Chicory, a well-known substitute for coffee, is generally used, mixed with true coffee, and by many is thought to improve the flavor. Recently there has appeared on the market many coffee substitutes which claim to be made from cereals.

The Latest Literature.

British Medical Journal.

November 17, 1900. [No. 2081.]

1. Varix. WILLIAM THORBURN.
2. Some Exceptional Cases of Gastric Surgery. WALTER SPENCER.
3. Two Unusual Cases of Stricture of the Esophagus in which Gastrostomy was Performed. WALKER DOWNIE and ROBERT KENNEDY.
4. Successful Removal of an Enlarged and Displaced Spleen. D'ARCY POWER.
5. Abdominal Tumor (Including Fetus) Occurring in a Child Aged 3 Months; Laparotomy; Death. G. A. WRIGHT and D. S. WYLIE.
6. Four Cases of Laparotomy for Intussusception. KEITH MONSARRAT.
7. A Case of Appendicitis with Abscess Perforating Into the Bladder; Recovery. A. PERCY ALLAN.
8. Operation for Severe Hypospadias. R. HAMILTON RUSSELL.
9. A Case of Severe Subcranial Hemorrhage; Operation; Recovery. F. G. PROUDFOOT and G. W. FARMER.
10. Notes of Two Cases of Excision of the Gasserian Ganglion for Epileptiform Neuralgia. J. CRAWFORD RENTON.
11. The Management of the Soft Parts in the Mastoid Operation. J. K. LOVE.
12. A Plastic Operation for the Closure of Retroauricular Postoperative Fistulas. RICHARD LAKE.
13. Death From an Insect Bite. CHAS. J. MOORE.
14. Shock Caused by High Explosives. A. W. FORRESTER.
15. A Case of Tolerance of Abdominal Section in Two Different Pregnancies. F. EDGE.
16. A Successful Case of Gastrotomy for Foreign Body Impacted in Esophagus. F. EDMUNDS.

1.—Thorburn divides varix into three clinical classifications: 1. Developmental, that due to some hereditary weakness, as eczema, usually common in young males and apt to occur more frequently on the left side. 2. Obstructive, from pressure either systemic or outside, (tight garters) and more common in females. 3. Hyperemic, usually from some inflammatory disturbance, and appears as small stellate patches of dusky red streaks. But in all cases there seems to be some congenital defect with the venous system. [W.S.N.]

2.—Spencer reports among a group of exceptional gastric cases the case of a woman, who suddenly developed symptoms of acute gastritis, and a few months afterwards a fixed lump in the epigastrium; an exploratory incision revealed the pyloric third of the stomach-wall adherent, a small thick-walled abscess in the center of which was a fish bone 2½ inches long; the point had penetrated the left rectus muscle. [W.S.N.]

3.—Downie and Kennedy report 3 unusual cases of stricture of the esophagus in which gastrostomy was performed. In the first, Frank's operation, 16 months afterwards the valve-like flap still held the contents of the stomach without the slightest leakage except when the patient coughed there was a slight ventral hernia. No cause could be found for the stricture, which was located opposite the second tracheal ring and was supposed to be syphilitic. The second case was of tuberculous origin, opposite the first tracheal ring with involvement of the larynx. Witzel's operation was performed to save suffering. [W.S.N.]

4.—Power successfully removed an enlarged and displaced spleen, which bears out the conclusions that recovery is to be looked for in most cases of splenectomy if the enlargement is not leukocythemic. [W.S.N.]

5.—Wright and Wylie report a case of a tumor in the left lumbar region of a child 2 months old; the lower border extended below the umbilicus, the upper above the costal margin. The abdomen had been swollen from birth. It appeared cystic and they tapped it, drawing off 19 ounces of albuminous fluid, and a week later the tumor had regained its former size. An operation was then decided upon and the cyst was found to occupy the lesser peritoneal cavity with adhesions to the walls and no pedicle. The child lived for 3 hours afterward and died in an attack of vomiting. The

necropsy showed that the other organs were normal, the tumor on closer examination proved to be the remains of a fetus and the case one of **fetus in fetu**. [W.S.N.]

6.—Monsarrat reports 4 cases of **laparotomy for intussusception**; 2 recovered and 2 died; one of them, with only mild symptoms, was an invagination of the appendix. In none of these cases did he try the injection method, as he regards it as a loss of valuable time. It is not wise to allow the child to reach its limit of endurance before operating, besides one is always in doubt if the bowel has been reduced or not, and if so its tendency to recur. [W.S.N.]

8.—Russell has devised a **new operation for cases of severe hypospadias**. He first passes a thread through the glans and draws the organ into position, dividing all adhesions that may bind it down; then a tenotomy knife, with its edge toward the dorsum, is thrust through the glans close to its under surface; he next makes an incision from the base of the penis on one side, up along the organ, around the top, over the dorsum, and down the other side, to a point opposite the starting place; the loop of skin over the dorsum is freed, and the flap exactly resembles a clergyman's stole; the free top of the flap is then slipped over the glans and a pair of forceps, which have been passed through the opening made by the tenotomy knife, pulls this flap through the glans and the redundant portion of it is cut off, and the lateral portions are stitched to form the new meatus. The sides of this flap are then inverted, and stitched with Lembert sutures. The adjustment of the preputial flap, from where the loop was taken, is the same procedure as in circumcision, but one must bring the four edges at the top carefully together. This is all done under strict aseptic conditions. After the above operation has healed, a second follows which consists of a suprapubic cystostomy and closure of the perineal urethra. There is one point of paramount importance in this operation and that is to define accurately the ridge where the urethral mucous membrane merges into the skin of the perineum, and with great precision to cut the flaps exactly; the edges must approximate when the thighs are brought together, and are best held by collodion and not stitches. The eighth or ninth year is the best stage to perform this operation. [W.S.N.]

11.—Love sets forth the principles of the mastoid operations of Schwartze and Ballance and the serious disadvantages of both procedures compared with what he terms the **single channel operation**, in which the bone is dealt with as in the ordinary radical mastoid operation. Special attention has to be given to the upper and lower margins of the groove, which results from the removal of the posterior wall of the external auditory canal, for it will form the posterior wall of the new and wider canal, and the slit cartilaginous meatus must be closely applied to this new surface. The bony edges, therefore, must be smoothed off, and a plain walled cavity produced. The posterior superior wall of the cartilaginous canal is then slit throughout its entire length. The mastoid skin-wound is then closely stitched, and a careful packing *via* the external auditory canal causes the slit posterior cartilaginous wall to apply itself to the posterior wall of the widened bony canal. A groove of granulation tissue fills up the gap in the slit cartilaginous canal, and the result is a much widened canal through which it is easy to conduct future treatment, which consists almost entirely of careful packing with special absorbent gauzes. Individual granulation masses in canal or middle ear may require special treatment, such as the application of chromic acid. The accommodation is so ample for manipulation of this kind that grafting of pieces of skin would be easy through this external auditory canal. The advantages claimed for this method are: That the patient may resume work in a fortnight, as all bandages are removed by that time; the capaciousness of the widened canal, which admits of every part of the healing surface being viewed through the speculum; complete healing within 3 months, 2 dressings per week being sufficient, as a rule.

13.—Moore reports the case of a girl, aged 8, who died from heart failure after **insect bites** on the nose and in the orbit. At necropsy the primary area of infection was found inside the lower lid of the right eye, from which infection had extended, causing orbital cellulitis. There were no signs of meningitis, but there were several pyemic infarcts in the left lung and a pyemic abscess beneath the visceral layer of the pleura. Bacteriologic examination of the blood

showed a general septicemic infection by **Staphylococcus pyogenes aureus**.

14.—Forrester made an autopsy on the body of a miner who was killed by an accidental **explosion of dynamite**. There was a wide laceration on the posterior surface of the left ventricle, extending to within a few lines of the apex, a second rupture on the superior surface of the left ventricle, and a third on the right ventricle. [J.M.S.]

Lancet.

November 17, 1900. [No. 4029]

1. The Treatment of Sprains and of Some Fractures. A. H. TUBBY.
2. Ten Cases of Enteric Fever in which the Blood was Examined Periodically for Agglutinative Properties. WILLIAM G. SAVAGE.
3. Acute Emphysematous Gangrene; a Clinical and Bacteriological Digest, with Details of a New Case. EDRED M. CORNER.
4. Fibroid Tumor as a Complication of Pregnancy and Labor. J. E. GEMMELL.
5. The Microorganisms of Vaccine Materials. J. B. BUIST.
6. Two Cases of Landry's Palsy. T. WARDROP GRIFFITH.
7. A Case of Acute Rheumatism with Previous Mitral Regurgitation Followed by Pericarditis. ALBERT R. HENCHLEY.
8. A Case of Complete Inversion of the Uterus. DAVID DURRAN.
9. Unusual Conditions at Birth. A. J. RICE OXLEY.
10. A Case of Tetanus; Subdural Injection of Antitetanic Serum; Recovery. A. E. BARKER.
11. A Case of Tubal Gestation with Rupture in a Woman Previously Operated on for Tubal Gestation with Missed Labor. J. B. LYTH.
12. A Case of Intrathoracic Growth Simulating Heart Disease. E. CURETON.

1.—Tubby considers as a sprain injuries which may be so slight as to cause only temporary inconvenience or which may be so severe as to rupture ligaments or tear off a small portion of bone. Many different **methods of treating sprains** have been devised. The true treatment consists in the appreciation of the right time to apply different methods of treatment. Discredit is often due, not to the agent employed, but to the want of intelligence in applying it. At the time of receiving a sprain numerous small blood-vessels are ruptured and there is instantaneous pouring out of blood and lymph, which goes on for 3 or 4 hours after injury. During these hours the application of cold is effective. It acts as local constrictant of the vessels, lessening their size and limiting the effusion. If the amount of effusion is limited the probable stiffness is decreased and the time of healing is lessened. Pressure is usually applied by a bandage, but with the ordinary bandage the chief points of pressure are on the bony prominences about the joint. But the pressure should be made to bear evenly on all parts of the joint capsule. Hence it is important to wrap the joint with 3 or 4 layers of cotton-wool and place it in such a position that there is the least potential cavity for effusion and then firmly bandage the part. During the period of quiescence which follows the first few hours, slight effusion is still going on. At this time it is best to apply heat not only to diminish the pain, but the heat promotes absorption. After the hot-water bath the cotton-wool and bandage should be reapplied, also assisting absorption. During the period of absorption Tubby believes that the joint should be kept at rest. As a rule joints are rested too long. On an average, 3 or 4 days after the swelling has subsided the movement of the joint should be commenced. When the amount of swelling is considerable hot applications and rest are not sufficient, but properly applied massage is important together with gentle passive movements. Sometimes when the patient attempts to use the joint acute pain sets in, which is due to subacute or chronic congestion. In such cases absolute and complete rest is important. This is best obtained by applying plaster of paris, and from 4 to 6 weeks is frequently not too long a period. After removing the cast the joint is often stiff and painful, but the pain does not arise from adhesions but from conditions of the muscles which are

somewhat wasted and their tendons glued in their sheaths. In such cases Tubby prefers the use of friction, hot air and electricity to breaking up adhesions forcibly under an anesthetic. The practice of treating sprained joints by mobility from the first is believed to be applicable only in case of very slight injury, and if the symptoms become worse, permanent thickening and disability of the joint often remains. In the **treatment of fractures about the elbow-joint** except fracture of the olecranon, Tubby advocates the acute flexed position. If the arm is put up at a right angle, as is usual, a large mass of callus is thrown out on the front of the humerus, and at the end of 3 or 4 weeks the range of movement is limited to a few degrees. In the acute flexed position the ulnar and radial portions of the elbow-joint maintain the fractured parts of the bone in their proper position and the pressure of the coronoid process into its fossa maintains this comparatively free from callus. In treating separation of the lower epiphysis of the femur, division of the tendo-Achilles and forcible extension may be necessary if the line of fracture passes above the attachment of the gastrocnemius. In certain other cases the limb may be put up with the heel touching the buttock. In case both these methods fail Tubby advocates opening the joint and fixing the epiphysis in place with a steel nickel-plated screw. This is the best method to adopt in doubtful cases. [M.B.T.]

2.—Savage has undertaken a series of investigations upon 10 cases of **typhoid fever**, that are of extreme value. The objects, as he states them, were to determine whether the **serum reaction** is any aid to prognosis, and if any connection exists between it and the presence of complications or relapses; also to determine whether the blood of typhoid-fever patients agglutinates the *Bacillus coli communis* better than the blood of other patients, and whether the cases in which this reaction occurs have any peculiarity in their clinical course. Incidentally he determined the reaction of different varieties of typhoid bacilli to the blood of the same patient. Fourteen cultures of the colon bacillus were obtained, and a number of specimens of typhoid bacillus, 5 altogether. Two of these were not virulent, although they reacted. The blood was stored in sealed glass pipets, and the serum accurately diluted with a .75% solution of sodium chloride. The technic was exceedingly careful. In 3 cases, without complications, the reaction reached its maximum shortly after the temperature began to fall, and then also decreased. In one of these the most intense reaction occurred 4 weeks after the temperature had become normal. In 4 cases in which relapses occurred, the blood, shortly before the return of the fever, reacted very feebly, or not at all. However, this weakness of the reaction does not necessarily imply relapse, because it occurred in one other case. In other cases the marked diminution in the agglutinating power occurred after a hemorrhage, and is probably to be explained by it. Savage believes that the diminution in the intensity of the immunity attained is not the sole cause of relapses, but there is also, in all probability, an increased virulence of the microorganisms. The reactions made with the different specimens of colon bacilli gave some curious results. Of the 13 specimens, 11 failed to react, 1 gave a very slight reaction in 2 out of 5 trials, and another 17 positive reactions in a dilution of 1%, and 15 negative reactions. This micro-organism did not react with all cases of other disease, excepting one in which typhoid fever had probably been present, and another of appendicitis. Further investigations, however, showed that it was probably an organism that clumped readily. Testing the serum of the same case with different varieties of typhoid bacilli showed that a well-marked difference of the agglutinative power existed between the different varieties, particularly when bouillon cultures were employed. These facts, in Savage's opinion, are not sufficient, however, to justify the belief in distinct species. [J.S.]

3.—Acute emphysematous gangrene is reported following a lacerated wound of the right arm. A man of 26 was knocked down by a tramp and the skin was torn from just below the elbow to a point half way up the back of his arm. The wound was immediately cleansed and sutured under an anesthetic. Within 24 hours there was great pain and rise of temperature to 105.2. The arm was dressed and below the elbow an area of brownish-red color was seen. After the dressing the temperature fell but rose again and a crackling emphysematous "feel" was present in the tissues.

At this time the discoloration had extended and had become olive green in color. The arm was amputated at the surgical neck of the humerus, and the wound cleansed and sutured. On the third day there was recurrence of pain and the flaps were found to be gangrenous. Amputation at the shoulder-joint was performed. On the fourth day the temperature rose again and there was found gangrene in the flaps. A large area was excised and antiseptic dressings were applied. Several sloughs were removed at later periods and eventually a good recovery followed. A somewhat incomplete review of the literature of the subject of emphysematous gangrene is given. [M.B.T.]

4.—Gemmell reports **2 cases of fibroid tumor complicating pregnancy** under his care during the last year. In the first, labor was complicated by puerperal eclampsia, and the delivery was with forceps, followed by such an acute peritonitis that on the ninth day an abdominal section was made. As the uterine wall contained many smaller fibroids, in addition to the removal of the large fibroid hysterectomy was performed, with ultimate recovery of the patient. In the second case, when the pregnancy had advanced 3 months, multiple fibroids, simulating retroversion of the uterus, were enucleated without interrupting the pregnancy. [W.K.]

5.—Buist mentions some work done by him 15 years ago in order to determine the cause of turbidity in tubes of **vaccine lymph**. He found that it was due to the growth of cocci, which are, he is now convinced, contaminations. He believes that the true organism occurs as a spore and probably cannot be cultivated. [J.S.]

6.—Griffith reports 2 cases of Landry's palsy. The first, a man of 40, had some pain in the limbs, followed rapidly by weakness and a right-sided facial paralysis. Then the muscles of the trunk were involved and at the end of 11 days the patient died of respiratory failure. The reflexes were lost from the beginning, but the sphincters functioned normally. The second patient, a woman of 24 years, noticed the earliest symptoms in the left hand, which became numb. Then there was dissociation of sensation in the left arm, and finally this spread over almost the entire left side, and then there was almost total anesthesia, except in the face. There was weakness, more pronounced on the left side, and finally bulbar symptoms. The patient died about 11 weeks after the onset. Griffith believes that Landry's palsy is a disease in which either the upper or lower neurons may be involved. [J.S.]

7.—Henchley attended 2 cases of acute articular rheumatism in the same family, both complicated by mitral regurgitation. The second, who may have contracted the disease from the first, developed pericarditis, thrombosis, and ultimately died. [J.S.]

8.—Durrant reports a case of **complete inversion of the uterus** following labor, with its reduction and recovery of the patient. [W.K.]

9.—Oxley reports 2 cases of **unusual conditions at birth**. In one case there was a fracture of the clavicle, which subsequently united satisfactorily; in the other, a congenital thickening of the sternomastoid, which gradually disappeared after delivery. [W.K.]

10.—The patient, 14 days before admittance to the hospital, had fallen in his yard and cut the side of his head. When admitted the wound was edematous; there was stiffness of the neck, inability to open the mouth, and **opisthotonos**. Mr. Barker injected **antitetanus serum** through the trephined opening, 7.5 ccm. being employed at this time, and 20 ccm. in the following 4 days, subcutaneously. In addition, massive doses of chloral were given. A week later the rigidity commenced to diminish, and in the course of three weeks the patient had completely recovered. [J.S.]

11.—A case showing that some women are liable to **abnormalities of gestation** on both sides of the body. The patient first had a 10 months' pregnancy without rupture, the child having apparently died at the end of 9 months. The operation showed a large, full-grown, dead child, which lay in a cyst which was an expanded portion of the left broad ligament. The placenta was attached to its posterior wall and was removed. The edges of the cyst were stitched to the peritoneum, the cavity was drained, and the patient made a good recovery. Some years afterward a second tubal pregnancy occurred on the other side with rupture of the tube, and repeated hemorrhages made a second operation neces-

sary. The pregnancy was in the fimbriated end of the right fallopian tube, or between it and the ovary, and was about the fifth month. The patient again made a good recovery. Such cases seem to point to some abnormality in the formation of the uterine appendages delaying the passage of the ovum, rather than to accidental causes. [W.K.]

12.—A man of 27 was suffering from shortness of breath and precordial pain, together with the physical signs of an aortic heart-lesion. He had never had rheumatism or chorea. On postmortem examination the mediastinum was found to be filled with a new growth which involved the glands at the root of the lung, surrounded the base of the heart and great vessels, and extended into the neck on each side of the trachea. No valvular lesion of the heart was found. [M.B.T.]

New York Medical Journal.

December 1, 1900. [Vol. lxxii, No. 22.]

1. Practical Medicine and Laboratory Research. BEVERLEY ROBINSON.
2. Report of a Case of Empyema of the Antrum of Highmore of 15 Years' Duration, Due to a Foreign Body; Operation; Recovery. ARTHUR B. DUEL.
3. Heroin as an Analgetic. NORMAN P. GEIS.
4. A Case of Multiple Aneurysms. W. J. PETTUS.
5. The Treatment of Various Long-standing Sexual and Urinary Symptoms in the Male. FOLLEN CABOT.
6. A Contribution to the Therapeutics of Phlegmasia Alba Dolens. A. HERZFELD.
7. Revelations of the Proctoscope in Health and Disease. A. B. COOKE.
8. A Dissection of Some Antitoxin Statistics. J. EDWARD HERMAN.
9. Cessation of Respiration During Chloroform Anesthesia, Due to Chewing-gum in the Larynx. E. PAYNE PALMER.

2.—Duel found a small piece of tooth, which had been broken off in the **antrum of Highmore**, 15 years previous to his operation. Several operations had been performed for the relief of the **empyema**, but were unsuccessful, as they did not allow free drainage; in the one he performed, the antrum was trephined over the lower portion of the canine fossa; his reasons for electing this method are, it is easy, it affords anatomically the best point for drainage, it permits an opening large enough to admit the finger for palpation; foreign bodies can be removed easily and it presents an opportunity for inspection if curettage is necessary. Food is less likely to be pushed into the incision which is easily healed. [W.S.N.]

3.—Geis uses $\frac{1}{12}$ grain of **heroin as a somnifacient** in the restlessness of phthisis. He administers the drug 1 hour before bedtime. He uses a combination of $\frac{1}{4}$ grain of heroin and chloral and bromid of sodium to prevent recurrent attacks of epilepsy, and to prevent hysteric manifestations. **As an analgesic** the author uses from $\frac{1}{4}$ to $\frac{1}{12}$ grain in combination with coaltar products or salicylates for neuralgia, inflammatory rheumatism, and for the pain accompanying carcinoma. He reports a case of carcinoma of the rectum in which the patient took 16 grains of heroin each day for 14 days, without nausea, vomiting, or any toxic effect. [J.M.S.]

4.—Pettus reports a case of **multiple aneurysms** occurring in a fireman, a hard drinker and suffering from syphilis. Two were of the right subclavian, and another of the abdominal aorta, fusiform in shape, and extending from the celiac axis to the third lumbar vertebrae; the bodies of the last dorsal, first, second and third lumbar vertebrae were all eroded. Death was caused by the rupture of this one near the celiac axis. [W.S.N.]

5.—Cabot thinks the many poor results in the **treatment of various long-standing sexual and urinary symptoms in the male** are due to the careless way in which these cases are examined, and often a great deal of harm is done by the promiscuous use of instruments. The exact nature of the disease should first be understood, then the treatment begun. He mentions 3 cases to substantiate his statements. [W.S.N.]

6.—Herzfeld reports a case of **femoral phlebitis** which he believes was cured by unguentum Credé. [J.M.S.]

7.—Cooke in his study of the **rectum in both disease and health** finds that most of the instruments fall short of their object, and what is needed most is reflected light, with the patient in the knee-chest posture; this position brings the bowel almost in a straight line while the contents of the pelvis fall out, thus causing the rectum to become inflated with air. Some instruments inflate the rectum forcibly, this appears somewhat hazardous in certain diseases. The introduction of a **proctoscope** should be painless. For examining the first 2 inches the anoscope is employed and the most important observations here are in regard to the muscles. The proctoscope is next used and with a blunt hook probe the valves are studied, they are usually three in number. Instruments longer than 6 inches, the sigmoidoscope and the colonoscope, should be introduced with a great deal of care. Many extrarectal diseases may be diagnosed by this method, and it affords a direct method for making local applications to diseases within the bowel. [W.S.N.]

Medical Record.

December 1, 1900. [Vol. 58, No. 22.]

1. Pernicious Anemia and its Relation to Inheritance. CHARLES L. DANA.
2. Gastropotosis. GEORGE ROE LOCKWOOD.
3. On the Analogy between the Nervous Conductibility and the Electric Conductibility, and their Relation to the Functional Neuroses. A. D. ROCKWELL.
4. The Treatment of Typhoid Fever at the New York Hospital. FREDERICK L. KEAYS.
5. A Few Remarks Relative to Typhoid Feeding. WILLIAM M. BROWN.

1.—Dana describes the case of a man of 47, who presented the characteristic symptoms of **pernicious anemia**, and whose blood showed slow coagulation, numerous macrocytes, microcytes, and poikilocytes, as well as degeneration areas; the red cells were reduced to 1,400,000, and to 958,000 before death, and the hemoglobin was 25%. There was decided polychromatophilia. There were normoblasts and gigantoblasts. The main point in the report is that the patient was the thirteenth of 14 children, all of whom were born dead with one exception beside this patient. The one other child born alive is dead from pneumonia. There was no history of syphilis obtainable in the family, and Dana believes that there was an evidence of a remarkable lack of vitality in the generation to which the patient belonged. He has not found any note of this lack of family vitality in monographs or discussions on pernicious anemia, but believes that it should be looked for, as it may lead to some new knowledge concerning the disease. He believes that pernicious anemia is the result of poor genesis of blood in that the cells produced have insufficient vitality and are readily destroyed. He considers that this explains the disease better than any theory which attributes the disease to a toxin or to any form of hemolysis acting upon properly developed blood. [D.L.E.]

2.—Lockwood concludes: (1) That in the great majority of cases an adequate **cause for the gastropotosis** is not discoverable; (2) gastropotosis does not of itself, in an uncomplicated form, produce symptoms; (3) the displacement of the stomach, however, is a predisposing cause of a variety of gastric neuroses, of sensation, motion, and secretion; (4) these neuroses are usually induced by some definite mental or physical strain; (5) the displacement of the stomach is a strong exciting cause for muscular atony, and atony is the most common cause for the symptoms presented; (6) a complicating atony is associated with a more or less profound neurasthenia, and that a direct relation exists between these two conditions; (7) gastric acidity is increased in direct proportion to the atony, unless counteracted by gastritis; (8) mild degrees of gastritis are apt to occur in stomachs that are displaced, but the symptoms are neither severe nor persistent; (9) gastritis occurring in atonic and displaced stomachs reduces the excessive acidity of these cases and seems to modify the severity of symptoms; (10) atonic dilation without mechanical hindrance is exceedingly rare; (11) dilation, or better, muscular insufficiency, may occur in gastropotosis from duodenal kinking, from arteriomesenteric constriction, or from pyloric spasm; (12) pyloric spasm is

common in displaced atonic stomachs with hyperacidity, and may lead to a temporary dilation; (13) in a large number of cases, inattention to the conditions of atony, of neuroses, and of gastric secretions has led to an unsuitable, insufficient diet which reacts both on general nutrition and on local conditions within the stomach; (14) surgical intervention is applicable only to the cases in which dilation exists. He does not agree with Meinert that 50% of girls at 12 years of age, increasing to 90% in young adult women, are subjects of gastroparesis nor does he find it a frequent complication of chlorosis, and believes it is rare in young people. Stiller's sign was not observed in those suffering from neurasthenia. In the treatment of these cases he found the "Preissnitz umschlag" and internal galvanism valuable in conjunction with physical and mental rest and proper medication. [W.S.N.]

3.—Rockwell's paper is a theoretic presentation of the suggestion that the "nerve current" may be considered to be **analogous to an electric current** when passing through a coherer of iron filings. Branly's theory is that each grain in the coherer is surrounded by a sheath of condensed ether, and that the grains are not in contact with each other. The electric discharge expands the sheaths of ether, and their mutual penetration changes the tubes of filings from a nonconductor to a conductor, while the shock contracts these sheaths and destroys their conductivity. In the same way he considers that the electric discharge may increase and develop the dendrites, and through a greater activity of the neurons tend to produce new protoplasmic growths. Reasoning upon this theory he believes that electricity must do good in many cases of hysteria in various forms, in neurasthenia, and in some mental derangements. [D.L.E.]

4.—The method of **treating fever** at the New York Hospital is, under one visiting chief, to bathe at a temperature of 102.6° in a bath at a temperature of 65°. Others start the bath at 80° and tub when the patient is at 103° or over, diminishing the temperature of the bath afterward to 70°. The 11 o'clock P.M. and 2 o'clock A.M. baths are omitted. A modification of the alcohol sponge which has been found useful is to have one person sprinkle the body of the patient with alcohol by means of a whisk-broom, while another person fans him to hasten evaporation. This method is found to be nearly as efficient as the baths, though less stimulating. It is customary to give small doses of phenacetin or acetanilid if the temperature does not react well to the baths, or if anything interferes with the use of the bath. In treating headache and delirium the chief drug used is sodium bromid. For sleeplessness the same drug, or trional, is usually employed. If ordinary measures fail in controlling nausea and vomiting, gastric lavage is done. In constipation the bowels are kept open in the early days of the disease by calomel and saline purgatives. Cathartics are not given after the first week. Distention is treated by turpentine, either by mouth, by rectum, or in stupes. Stimulation is given only when it seems definitely indicated. In pneumonia, unless there is some definite individual contraindication the tubs are continued. In nephritis the baths are stopped, antipyretics being used, if necessary, to control the temperature. Pulse tension is reduced by nitroglycerin and chloral hydrate, and diuretics are used or the patient is given hot saline enemata or hot irrigations with the Kemp tube. Milk is given in quantities of from 50 to 70 ounces. Other foods are not given unless milk cannot be taken or seems to disagree, but as soon as the temperature reaches normal the patient is given a chop or a boiled egg, and more food is added to the diet constantly as the patient is able to take it. [D.L.E.]

5.—Brown believes that **typhoid fever**, while primarily a specific toxemia, is usually largely due to a secondary toxemia developed after the specific. He would give food that increases the quantity and activity of the digestive secretion and which leaves but little residue as a bacterial culture-medium, *i. e.*, proteids and carbohydrates. He believes that milk is often not well digested, and that when it is not prepared it is practically a solid food and will take as long to digest as a solid food. We should not feed too often in order to give the digestive organs time to recuperate between the feedings. He states that proteids and carbohydrates give a smaller number of heat units while promoting the most effective digestive fluids, and should therefore be given for this reason also. [D.L.E.]

Medical News.

December 1, 1900. [Vol. lxxvii, No. 22.]

1. When Shall we Operate in Appendicitis? FRANK E. BUNTS.
2. A Medical View of the Treatment of the Cecum and Appendix. A. L. BENEDICT.
3. Therapeutic Studies of Heroin Hydrochlorid. BENNO HYAMS.
4. A New Operation for Hemorrhoids. ELLSWORTH ELIOT, JR.
5. A Plea for the Earlier Recognition of Squint in Children by the Family Physician and the Earlier Application of the Methods of Treatment. C. A. VEASEY.
6. The Treatment of Pneumonia with Antipneumococcic Serum. EDWIN ROSENTHAL.

1.—Bunts believes the question, **When shall we operate in cases of appendicitis** and when not? has no definite answer and never will. He divides the cases into 5 classes: 1. Cases recognized as appendicitis at their inception, of moderate severity. In these cases he finds a blood-count of great value, and is more inclined to place reliance upon it than either the pulse or temperature. An increase in the leukocytes is indicative of increasing inflammation, while a stationary leukocytosis shows that inflammation is decreasing. 2. Cases recognized as appendicitis at their inception and characterized by great intensity of symptoms. These call for operation at the earliest possible moment. 3. Cases not recognized as appendicitis until several days have elapsed, symptoms then becoming pronounced. If the blood shows increased white cells, operate; if stationary, delay is under the circumstances permissible. 4. Cases recognized as appendicitis in which the surgeon is not called until symptoms have started to subside. These cases do not require operation and it is safe to postpone until another attack occurs. 5. Cases in which delay has resulted in general peritonitis, etc. These unfortunate cases depend upon the surgeon's willingness to take the risk of censure and give the patient a last chance. [W.S.N.]

2.—Benedict, discussing **appendicitis**, gives the following points in regard to operation. In the very beginning the mortality is practically that of the operation itself; until the third day it still remains low, but after the fourth day probably nothing should be done excepting the evacuation of pus. If all cases in which there is tenderness over McBurney's point are considered appendicitis, it is probable that the mortality from either medical or surgical treatment is the same. After medical treatment relapses are common, and they may even occur after the appendix has been removed. The only unpleasant after-effect of the operation is hernia. Benedict becomes slightly sarcastic regarding the radical operators, and argues that there is as much reason to operate upon every case that presents the initial symptoms of appendicitis, as there is to amputate the leg of every person who sprains his ankle. The important thing is, of course, to differentiate between the **catarrhal and nonpenetrating forms**, and the **septic and gangrenous forms of appendicitis**. He gives the following general rules: A temperature in the beginning of 102°, or a temperature above 100° continuing until the second day, indicates operation. A rapid, feeble pulse, without rise of temperature, suggests a gangrenous or septic process. Leukocytosis of more than 20,000 indicates operation. Among the local symptoms he mentions tenderness, muscular rigidity, etc., and among the general symptoms vomiting with much nausea, and the general appearance of the patient indicates serious disease. He calls attention to the value of an excess of indican in the urine as an indication of intestinal stagnation and putrefaction. He then suggests the following medical treatment for suitable cases. All food should be withheld; moderate purgation with small doses of calomel and salts should be used; then intestinal antiseptics should be administered, such as mercury, silver, resorcin, salicylics, etc., the latter being especially effective; and then, as the patient recovers, careful dieting. If the disease has become chronic, the important factor in the treatment is the diet, which should be nonirritating and consist largely of vegetables. The meals should be given at regular intervals, and gastric digestion should be carefully stimulated. Medical treatment consists of the administration of some protective, preferably bismuth mixed with an oil, such as pure petroleum. Treatment may be continued for several months. [J.S.]

3.—Hyams reports his results of the use of heroin in various conditions of severe cough, such as asthma, chronic bronchitis, acute miliary tuberculosis, acute bronchitis, pulmonary tuberculosis, and whooping-cough. In all these the effects were favorable. It was also used in a case of angina pectoris with good results, and in a case of diabetes mellitus without effect. [J.S.]

4.—Eliot has devised a new operation for hemorrhoids; his idea is to do away with the loss of mucous membrane that occurs after most of them, and avoid contraction of the cicatrix. Opposite the base of the hemorrhoid, parallel with the mucocutaneous junction, a curved incision is made, and is carried upward on the same plane as Whitehead's operation. A second curved incision is made, forming an eclipse at the poles, of which an incision is carried upwards, giving 2 rectangular flaps of mucous membrane; the hemorrhoidal mass is then ligated with catgut and removed, the flaps are then stitched with a small piece of the catgut ligature left protruding to act as a drain. [W.S.N.]

5.—Veasey calls attention to the indifferent way the profession deals with squint in children, and he believes where it exists, the earlier the cause is recognized the better for the patient in after-life. [W.S.N.]

6.—Rosenthal employs antipneumococcic serum in the treatment of pneumonia. In complicated cases he follows this by an injection of antistreptococcic serum. He also uses the ordinary methods of treatment. The results should be apparent in from 24 to 48 hours. [J.S.]

Boston Medical and Surgical Journal.

November 29, 1900. [Vol. cxliii, No. 22.]

1. Acute Hemorrhagic Pancreatitis, its Surgical Treatment, with Report of Six Cases. F. B. LUND.
2. Observations upon the Symptoms and Treatment of Hyperacidity of the Stomach. HENRY F. HEWES.
3. Subperiosteal Fractures. FREDERICK J. COTTON.
4. Irritable Breasts, or Chronic Lobular Mastitis. R. C. CABOT.
5. Cyst of the Vocal Cord. J. PAYSON CLARK.

1.—To be treated editorially.

2.—Hewes has studied 48 cases of uncomplicated hyperchlorhydria. The most constant symptom was distress, the next symptom in order of frequency was desire to belch gas, then heartburn and pyrosis. Vomiting was seen in 17 cases only. In the majority of cases the symptoms were relieved by the ingestion of an alkali. Headache and nervousness were frequently associated with the gastric symptoms. In from $\frac{1}{4}$ to $\frac{3}{8}$ of the cases we can make a diagnosis from the symptoms. In the remaining $\frac{5}{8}$ the symptoms must be assisted by chemic examination of the gastric juice. In certain cases an increased or abnormal susceptibility of the patient to the secreted acid is a causative element in the case and the condition might be termed gastric hyperesthesia. Again the excess of acid irritates and retards the digestive and motor functions of the stomach. Therefore the treatment must be directed towards the reduction of the acidity of the gastric contents and toward the increase of the resistance of the patient to the acid. For these objects alkalies and large amounts of proteid food are useful. Starches should be limited, and sugars or predigested starches should take their place in the diet. [J.M.S.]

3.—Cotton finds that, on closer examination, subperiosteal fractures have little in common with the type known as greenstick fractures with which they are usually classed. He reports 10 cases of this kind, and concludes that such fractures in children, showing no deformity, and with no appreciable mobility, are not uncommon. They might readily be overlooked, since they often need no reduction, having no deformity, and they repair with callus formation quickly. The lack of crepitus and mobility seems to be largely or entirely dependent on the strength of the thick, intact, periosteal layer. There is no deformity, because there are no torn surfaces, no clean-cut crack, nor cross fracture, and no bent or half-broken layer of bone. Cotton has carried out some experiments on the cadavers of children, breaking bones by forcible bending and by direct blows. He finds that blows are less likely than slower-acting strain to produce typical greenstick fractures, and it is obvious that the soft bones of the

newborn may be broken or cracked in a clean-cut approximately transverse fracture-lines by forces moderate enough to leave the periosteum intact. [M.B.T.]

4.—Cabot reports 2 cases of lobular mastitis in unmarried women between 20 and 25. The lump in one case was about the size of a large horse chestnut, in the other a little larger; the chief symptoms were those of general debility. Both have improved under general treatment. One patient was obviously lacking in occupation and when an occupation was secured the symptoms entirely disappeared and the lump nearly so. The writer asks for further information on the pathology of this class of tumors, their usual course, and proper treatment. [W.K.]

5.—Clark reports a case of cyst of the right vocal cord in a man 25 years old who had had hoarseness and difficulty in speaking, beginning 12 years previously. On examination an oval, smooth, grayish-white swelling one-third the length of the cord was seen. This was incised with a concealed laryngeal knife, and a milky-looking fluid escaped. Nine months after the operation the patient has no difficulty in speaking. [M.B.T.]

Journal of the American Medical Association.

December 1, 1900. [Vol. xxxv, No. 22.]

1. Gastric Ulcer; Nonperforating Hemorrhage. WM. L. RODMAN.
2. The Diagnosis and Treatment of Cholelithiasis. W. J. MEANS.
3. Cholecystectomy. W. J. MAYO.
4. The Importance of Early Operation on Gallstones. MAURICE H. RICHARDSON.
5. Modern Empirical Inventions. N. C. MORSE.
6. Bacteriologic Examinations of Otitis Media Purulenta and Suppurative Mastoiditis. TALBOT R. CHAMBERS.
7. Tuberculosis of the Testicle. JOHN B. MURPHY.
8. American Medical Journalism. CHARLES WOOD FASSETT.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1302 and 1269.

2.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1270.

3.—“ “ “ “ “ 1270.

4.—“ “ “ “ “ 1270.

6.—“ “ “ “ “ 1359.

Centralblatt für Gynäkologie.

September 29, 1900. [No. 39.]

1. A Case of Spontaneous, Complete Rupture of the Uterus. Conservative Treatment. Recovery. K. J. F. BAUER.

1.—Bauer reports the case of a secundipara, aged 25, in labor for 24 hours, suffering from unusually severe pains. When he first saw her she was completely exhausted, pulse 160, faint and fluttering; temperature 38.9°C. The pelvis was contracted in all its dimensions, and the fetus was unusually large. The fetal head was perforated and the forceps were used for the delivery of the dead male child. The uterus was found to have sustained an extensive laceration and the placenta had fallen into the abdominal cavity. It was found by means of the cord and with some difficulty delivered from among the intestines. The uterus and vagina were packed with iodoform gauze, the abdomen firmly bandaged and normal salt-solution was injected into both mammae to the amount of 600 ccm. The patient had slight fever, but was discharged cured in 4 weeks. Bauer quotes several other cases in which extensive lacerations, both of the uterus and the bladder, were healed without operative measures. [W.K.]

Teaching Hygiene to Women.—A Society for the Propagation of the Teaching of Hygiene to Women has been founded in France according to a vote of the Second Congress of Women's Work and Institutions. It is under the patronage of the heads of the medical profession and many leading teachers, and aims to make the study of the hygiene of the family and the child a compulsory part of all programs of female instruction and to establish lectures on practical hygiene for women aged 18 and upward in all towns and rural districts by societies and leagues of education.

Original Articles.

A TROPICAL RATION.

By J. R. KEAN, M.D.,

Major and Surgeon U. S. Vols.

Chief Surgeon, Department of Havana and Pinar del Rio, Quemados, Cuba.

"Si la maison importe a l'hygiene des tropiques je n'hesite pas a affirmer que l'alimentation y est comme le fondement même de cette science." (Treille, *Hygiene Coloniale*.)

In this discussion it is purposed to treat the question the importance of which is not overstated above, not from the point of view of the scientist, who deals in tables of relative proportions of proximate principles, and food-values, but from the standpoint of the soldier who eats the ration, and the company officer who does the military housekeeping. It will be assumed that the present United States Army ration provides an abundant and, in the main, satisfactory diet for temperate climates.

Starting thus from familiar ground we will undertake to determine:

I.—WHAT, IN GENERAL TERMS, IS THE PROPER DIETARY FOR THE TROPICS, AND WHAT ARE ITS ESSENTIAL DIFFERENCES FROM THAT OF TEMPERATE CLIMATES?

II.—IN WHAT RESPECTS MUST THE PRESENT RATION BE MODIFIED TO MAKE IT PROVIDE FOR, OR PERMIT OF, A PROPER TROPICAL DIETARY AND SO CONSTITUTE AN IDEAL TROPICAL RATION?

In connection with so rudely practical a machine as an army nothing is ideal which is not absolutely feasible, and so our ideal ration must be made to conform to reasonable limitations, as to cost, possibility of adequate supply, and other administrative considerations.

Before beginning the consideration of the proper tropical dietary it is well to point out the distinction between the ration which is provided and the dietary which is eaten. Food purchased with the company fund, for example, is usually not a part of the ration, but it is a very important part of the dietary.

A few words on the subject of the *flexibility* of the ration and the limitations thereof are also necessary. The word flexibility as applied to the ration will be taken to mean the quality of providing for variety in the diet and to include not only the alternative issues provided by Army Regulations Par. 1253, but also the purchase of increased amounts of articles issued, and of articles not issued, by means of a company fund. The commutation of the ration at \$1.50 a day to an enlisted man traveling alone—from which he may purchase whatever he likes, furnishes an example of the extreme of flexibility. The travel-ration issued to a company traveling by rail approaches the other extreme of inflexibility.

In European services where the service conditions are approximately uniform, and where local markets are always at hand, the system of money commutations is much used for peace conditions. For our service, with its frontier stations, and its widely varying local conditions, and local prices, such a system has been in the past inapplicable, and the flexibility necessary to escape a repellant monotony of diet has been gained by the familiar expedient of a company fund created by the sale of parts of the ration which are not at

the time desired. This, in practice, is equivalent to an optional money commutation of the articles on which a saving is permitted, while the presence of the components of the ration, at hand, if they are desired, secures the soldier against the inconveniences of an ill-supplied or extortionate market.

The articles on which the saving has always been chiefly made are bacon or pork, coffee, and, through the post bakery, flour. From the regularity with which a well-administered company makes a saving on these articles it might be inferred that the ration is in these respects too lavish, but this will be seen not to be true when it is observed that practically no savings are made in these or other components in the field under the conditions of active service.

The American soldier, unlike the European, receives in times of peace and in garrison a ration which is adequate for war conditions also. He is likewise more fortunate in that his pay is not laid under contribution to assist in feeding him.

The special conditions of the naval service make it practicable to employ in the United States Navy a much more extensive use of the system of money commutation than is practicable in the army. The flexibility of the ration has been markedly increased and a valuable addition made to it during the past year in order to meet the new requirements of colonial service, by G. O. 78, A. G. O., 1899, which permits a savings to be made on fresh beef and adds 2 ounces of dried fruit to the ration. Unfortunately certain restrictions are placed on this savings, as the provision that its money value must be taken in ham, or other articles of sale, and its limitation in amount to one-seventh of its issue.

The proposed changes in the ration refer, it must be understood, almost entirely to the dietary of garrison life, which is the normal life of the soldier. The limitations of field service are so narrow and so strict that there is little latitude. Bacon, biscuit and coffee must in the field be the soldier's fare, and the variations of the diet must come chiefly by individual or company purchase, for which he should receive a liberal cash commutation for the parts of the garrison ration which he does not receive.

I.—TROPICAL DIET.

The three proximate principles are classified as:

Fat, the heat food.

Protein, the tissue food.

Carbohydrate, the work food.

Atwater gives the amount of each consumed by the average American, with average work, as: Proteid, 125 grams; fat, 125 grams; carbohydrates, 450 grams.

"Cold increases the oxidation of the nonproteid material in the body, the increase being in a general way proportional to the fall in temperature. Conversely, a rise of temperature causes a diminution of oxygen-consumption and CO² elimination. The proteid material in the body is not affected."—*American Textbook of Physiology*.

As of the nonproteid principles, fat has, compared with carbohydrates, a heat-forming value of 2.2 to 1, the reason for the well-known fact that less fats are needed in hot climates than cold ones is sufficiently clear. There are, in addition, hygienic reasons why the carbohydrates should, to a great extent, be substituted for the fats in accordance with the law of isodynamic equivalents.

The digestion is weakened in hot climates and the

liver is more inclined to torpidity. Fats are more difficult of digestion and absorption normally than carbohydrates, and when freely ingested in the tropics are extremely apt to split up in the stomach into butyric, caproic, lactic and other irritating acids, producing a condition of hyperacidity of the stomach-contents, which the diminished secretion of the torpid liver is unable to neutralize and render alkaline. As the intestinal digestion cannot proceed in the presence of an acid reaction, the condition commonly known as "biliousness" results, with putrefaction of the intes-

amount of proteid taken is derived to a greater extent from the vegetable kingdom, as from the leguminosae. Physiologists and physicians, as a rule, state that less proteid is needed. This is, on the other hand, combated by some who maintain that less meat is eaten by tropical peoples because they are, as a rule, poor populations who cannot afford it, but that they gladly eat meat, when they can get it, in preference to a less stimulating diet.

Some observers, who have seen in Cuba and Puerto Rico the anemic and dropsical victims of ankylostomo-

TABLE I.

PRESENT RATION.			PROPOSED TROPICAL RATION.		
ARTICLES.	Quantities per Ration.		ARTICLES.	Quantities per Ration.	Saving Authorized.
	Ounces.	Gills.		Ounces.	Ounces.
<i>Meat Components :</i>					
Fresh beef	20		Fresh beef	20	8
or fresh mutton when they do not exceed that of beef	20		or fresh mutton	20	8
or pork	12		or fresh fish	20	None.
or bacon	12		or when these cannot be furnished		
or salt beef	22		Bacon	12	12
or when desired			or salt beef	12	12
dried fish	14		or dried fish	14	14
or pickled fish	18		or pickled fish	18	18
or fresh fish	18		or canned salmon	16	16
(Mutton and fish to be issued each twice in ten days.)					
<i>Bread Components :</i>					
Flour	18		Same as present ration.		
or soft bread	18				
or hard bread	16				
or corn meal	20				
Baking powder for troops in the field, when necessary to bake their own bread	$\frac{16}{25}$				
<i>Vegetable Components :</i>					
Beans	$2\frac{2}{5}$		Rice	$2\frac{2}{5}$	None.
or peas	$2\frac{2}{5}$		Frijoles	$2\frac{2}{5}$	None.
or rice	1		or macaroni	3	None.
or hominy	$1\frac{1}{2}$		Fresh vegetables in proper variety (purchased in the vicinity of the post when practicable)	16	None.
Potatoes	16		Ice	32	None.
or potatoes $12\frac{1}{2}$ ounces }	16				
and onions $3\frac{1}{2}$ ounces }					
or potatoes $11\frac{1}{2}$ ounces					
and canned tomatoes $4\frac{1}{2}$ ounces,					
or $4\frac{1}{2}$ ounces of other fresh vegetables not canned, when they can be obtained in the vicinity of the post or transported in a wholesome condition from a distance	16				
Dried fruit	2				
<i>Coffee and Sugar Components :</i>					
Coffee, green	$1\frac{3}{5}$		Same as present ration.		
or coffee roasted	$1\frac{7}{25}$				
or tea, green or black	$2\frac{3}{5}$				
Sugar	2				
or molasses		$\frac{1}{25}$			
or cane syrup		$\frac{1}{25}$			
<i>Seasoning Components :</i>					
Vinegar		$\frac{1}{25}$	Same as present ration.		
Salt	$\frac{1}{25}$				
Pepper, black	$\frac{1}{25}$				
<i>Soap and Candle Components :</i>					
Soap	$\frac{16}{25}$		Same as present ration.		
Candles (when illuminating oil is not furnished by the Quartermaster's Department)	$\frac{16}{25}$				

tinal contents and the product of skatol, indol, and various other poisonous alkaloidal fermentation products. A catarrhal inflammation of the bowel results, with diarrhea. This diarrhea is at first of advantage in eliminating the poisons, but under the irritation of unsuitable diet the inflammatory condition is likely to continue and increase, running into the exhausting and dangerous diarrhea or dysentery which is so familiar to the military surgeon in the tropics.

It is certain that the inhabitants of warm countries eat less meat than those of cold countries, and the

miasis, have jumped to the conclusion that a stimulating meat diet is especially needed in the tropics. It is evident, however, that our English cousins in Jamaica, and other tropical stations, do not suffer from lack of proteid diet, yet their meat rations, both at home and in the tropics, is only $\frac{3}{5}$ of ours, viz., 12 oz. If our meat issue were reduced to this, it is certain that our troops would not suffer in nutrition, but would gain in health.

Treille, after showing that the diet of tropical peoples in Africa, Asia, Malaysia, Central America, and Poly-

nesia, is chiefly vegetable, the meat eaten being mainly fish, says: "In conclusion, the peoples indigenous to tropical countries are, above all, but not exclusively, vegetarians. These habits do not proceed, it should be observed, from a backward civilization. For the great oriental lawgivers, who were true hygienists, took care from the most ancient times to forbid by religious laws the abuse of animal diet. This was because they had cogent reasons for doing so, and these were drawn from experience. They knew that too carnivorous a diet disposes in warm climates to certain diseases, and they had reason to fear that these would result in injury to the development of the race or nation. Hence we find the prohibitions of the Mosaic and Mohammedan law, and likewise of the Vedic, Brahmanic and other religions of India where the Aryan race established so enduring a foothold. Of course the day has passed for imposing hygienic laws on entire peoples in the name of divine revelation, but these instances are quoted to illustrate one of the agencies which have favored in historic times the emigrations which have taken place from temperate and even cold countries towards the tropics. But is it not clear that in adopting traditions lived up to and proved by the results which we have mentioned we have not simple theories but a truly tested rule? The difficulty is to get it adopted by Europeans who in their turn are now invading tropical climates. Civilized man in our day is certainly more refractory than was the barbarian, to all restrictions placed upon his pleasures and tastes. Especially in the matter of diet he is so much the slave of national customs that it costs him much to break away from them."

The diet of the average American at home contains 125 grams of proteid, whereas only 40 to 50 grams are necessary (with abundance of carbohydrates) to preserve the nitrogen-equilibrium and prevent tissue-waste. It seems that such a proteid excess (*luxus consumption*) is less desirable and less harmless in the tropics. That this is true is shown by the fact that in India and other European tropical colonies, as soon as the wealthier natives begin to adopt European modes of life, they at once lose their relative immunity to dysentery, liver-abscess, jaundice, and like intestinal disorders which are the scourges of the European immigrant. It is a matter of common experience that in hot weather a diminished desire for meat on the part of most people is observed, and especially the kinds of meat chiefly eaten by the American soldier—roast (baked) beef with rich gravy, and bacon. At the same time comes a longing for fresh vegetables and fruits.

The appetite is lessened by long-continued heat and is more capricious. It craves *variety*, especially in vegetables and fruits, and a restricted and monotonous diet becomes distasteful and repulsive. Under these circumstances strength once lost is regained slowly, if at all, and convalescents do not entirely recover without a change of scene, which means, among other things, a change of diet. The importance of variety in the ration, and especially in the vegetable component, is, in the tropics, I believe, a matter the great importance of which has been overlooked.

On one point, and only one, I believe, in the whole subject of tropical dietetics are all observers agreed, and that is as to the disastrous effects of alcoholic excess in the tropics, though as regards to what constitutes excess there is not quite so much unanimity. Now alcohol is the instinctive resort of the bored mind, and the dulled appetite, the refuge from monotony of occupation and

monotony of food. The responsibility for much of the drunkenness in the army must be divided between the commanding officer who does not vary his drills and exercises, and the captain who puts every day before his men the never-varying dinner of roast beef and potatoes.

The need of ice in the tropics, both to preserve the perishable constituents of the ration and to furnish the cold drink which has from habit become indispensable to the American palate, is an obvious necessity, and it is equally clear that it should be furnished by the Commissary Department as a part of the ration. The cost in the tropics varies widely, and is often excessive, and it is not just or wise to saddle it upon the company fund, which will in isolated localities, where ice is most expensive, be most heavily taxed to provide the necessary variety in diet.

It may be argued that so far as ice-water is concerned this is an acquired taste and one which can be unlearned, and which is, from a hygienic standpoint, not desirable. Practically I do not concur in this view. Americans all have the ice-water habit, and if the soldier is compelled to drink tepid water, his thirst is not satisfied except with enormous quantities which upset the stomach and produce excessive sweating and loss of strength. There is also value in the fact that where the company is tied down to one source of supply, the company ice-water barrel or cooler, the purity of the supply is more easily safeguarded by the captain than if there is no such supply and the soldier drinks wherever he finds water. In the absence of the ice-water barrel the relative coolness of the surface-well is irresistible.

To sum up, the requirements of a tropical dietary, as compared to one suited to a colder climate, are: (1) Less fats and more carbohydrates; (2) less stimulating proteid in the form of meat; (3) greater *variety* of diet, both of meats and of carbohydrates in the form of fresh vegetable and fruits; (4) a fairly liberal supply of ice. These we will for convenience refer to as requirements 1, 2, 3, and 4.

[To be concluded.]

THE X-RAYS IN THE TREATMENT OF CARCINOMA.

By WALLACE JOHNSON, M.D.,

of Washington, D. C.,

Demonstrator of Pathology, Georgetown University Medical School, and in Charge of the Pathological Department of the Lionel Laboratory at the Central Dispensary and Emergency Hospital,

AND

WALTER H. MERRILL, B.L.,

of Washington, D. C.,

In Charge of the X-Ray and Photographic Department of the Lionel Laboratory at the Central Dispensary and Emergency Hospital, Washington, D. C.

SINCE the announcement, in 1896, of Prof. Röntgen's discovery of a new form of energy to which he gave the name of the unknown or x-ray, rapid improvement has been made in the manner of ascertaining the practical utility of these rays, and medical science especially has profited by new and numerous applications. At first the surgeons took advantage of this force to verify their diagnosis and assist in the proper treatment of fractures and to locate suspected buried foreign bodies. Soon its use extended to diagnosis in internal medicine and later to the therapeutics of certain skin diseases, chiefly lupus, hypertrichosis, and the eczemas. This last use grew out of the discovery that

exposure to the x-rays under certain conditions produces a severe dermatitis. As yet medical literature has contained no reports of the effect of the x-ray as applied to cancerous growths. It is our purpose to draw attention to the possibilities in this line and to cite the results of a few cases in which such application has been made.

There is no disease that physicians like less to encounter than carcinoma in any of its forms, especially when it has progressed to the stage where the probabilities of its complete removal are slight. Few surgeons today doubt that carcinoma can be cured when it is localized and in a location favorable to operation. More often than not, however, cases are concealed until glandular involvement or widespread dissemination has occurred and the hope of a cure from operation is practically gone. This common and dangerous delay is due to the popular dread of the knife. If, then, we have at hand an agent that will effect the cure without the use of the knife or of painful caustics, one of the most frequent causes for neglect of the disease has been removed. We are firmly convinced that, by means of the proper application of this agent under conditions of no practical discomfort to the patient, we can bring about the painless removal of the slow-growing epitheliomas. These growths, especially when they occur on the face, are very disfiguring; if allowed to progress they produce a condition loathsome in the extreme. Treatment of such cases by the x-rays leaves a remaining defect that is incomparably better in cosmetic results than that which must accompany extirpation by knife or caustic. Furthermore, our experiments lead us to believe that even in inoperable cases of carcinoma attacking superficial parts, we may give great relief from pain and can even slightly prolong life. If we can dispense with the use of opiates in this class of cases and free the patients from pain while leaving the intellect clear and digestion undisturbed, we have made a great improvement in the therapeutics of this condition.

To substantiate our statements we offer the following reports of cases already treated. In a later paper we hope to show the results of several cases now under treatment:

CASE 1.—Mr. G. is a professional man, aged 45, with good constitution and a good health record. His father died of cancer of the lower jaw. Eight or ten years ago he noticed on his left cheek a small pimple. Notwithstanding his applications it would not heal. His friends became alarmed and insisted that he see a surgeon. In 1894 the diseased area was removed and the actual cautery applied. A year later the ulcer had returned, larger than before; a second operation was performed with apparent success, but in 3 years the disease had returned in full force and a second center had developed on the right side of the nose. The several surgeons who had had charge of the case pronounced it epithelioma. As far as we could learn no microscopic examination had been made.

Condition on First Application for Treatment.—"There is a discharging ulcer on the left cheek, circular in shape, with a diameter of about 1.5 cm. The margin is slightly raised, is red and indurated. The central portion is concave, though usually filled with a dried secretion. On the right side of the nose is a second center of about the same size and character. This is located one-half on the ala nasi and one-half over the right nasal bone. The nose is considerably depressed at this point and is somewhat deformed."

The above description is taken from observations made at the time the treatment with the x-ray commenced, September 6, 1899. The applications (described later in this paper) continued until October 9. The exposures were made every other day until 15 were given, 10 to the nose and 5 to the

cheek. A marked reduction in the quantity of the discharge was the first result noted. This appeared in about 3 days. Then the scab of dried secretion which formed over these surfaces would form more slowly and remain adherent longer each time.

The last exposure, made with an extremely active tube, set up a severe dermatitis, though the application lasted only 5 minutes. The surfaces became inflamed, the discharge profuse and watery; a typical x-ray burn was produced. Treatment was suspended for 6 weeks. At the end of that time a healthy cicatrix had formed over both areas. When last seen, 6 months after the last exposure, smooth white scars slightly depressed, invisible at a distance from the patient, had replaced the original ulcers.

CASE 2.—Mr. I., a musician, aged 48, whose present physical condition and previous history were both good, applied for treatment February 17, 1900. Five years earlier the tip of his nose was accidentally scratched and, while the place was still raw, it was bitten by a fly. The part immediately became very painful and began to swell. Thinking that he had been poisoned, he consulted a physician at once, with the result that vigorous treatment with chemical caustic continued from that time until the above date. His physicians diagnosed the disease as lupus vulgaris.

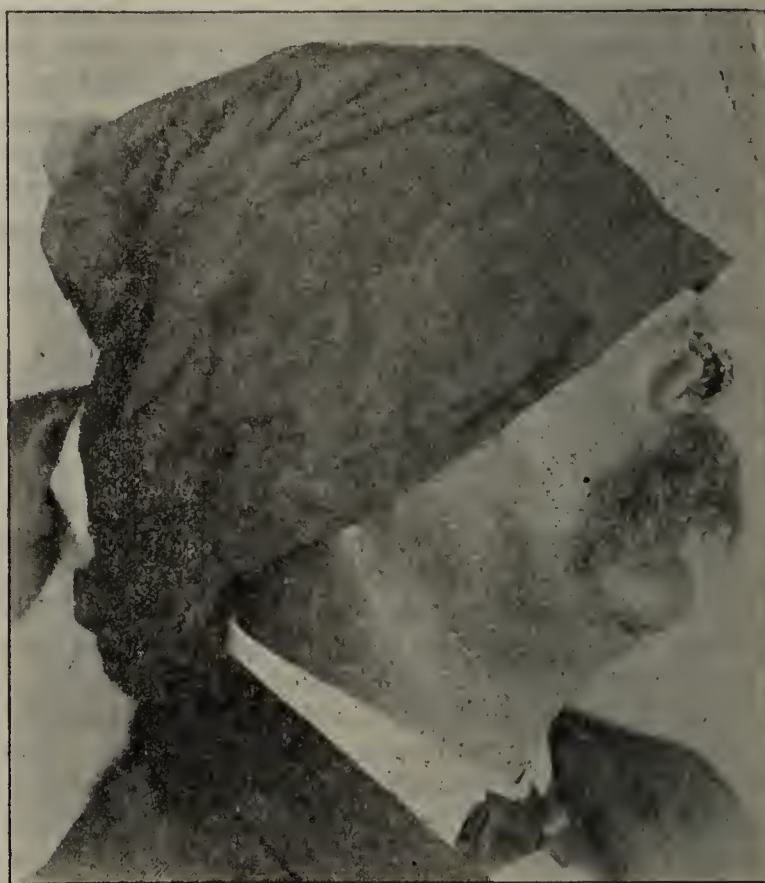


FIG. 1.—Taken of Case No. 2, February 17, 1900.

Our notes on the case were as follows: "An eroded ulcerating surface with a border slightly elevated and indurated occupies the tip of the nose, extending on the right side about 2 cm. from the margin of the nares. The lower part of this area presents a defect where the ala nasi has sloughed away to a distance of nearly 1 cm. Through this defect the same eroding process is seen on the septum where at one place there is a perforation about 3 mm. in diameter. On the left side of the nose is an area of ulceration about equal to that on the right and closely resembling it in appearance, except that the ala nasi is not defective and the mucous membrane seems normal save immediately around the perforation in the septum. Connecting the two sides, a diseased area of 8 mm. in width extends across the bridge of the nose. A small nodule 3 mm. or 4 mm. in diameter about 1.5 cm. away from the upper edge of the ulcerating area on the right side toward the inner canthus of the eye. This nodule has not broken down and does not discharge. The whole surface of the ulcerated area discharges a thin serum which is somewhat offensive.

A small piece of the edge of the ulcer of the right side was removed for a microscopic examination; the result proved the disease to be an epithelial cancer and not lupus. (See microphotograph No. 3)

We began treatment at once, exposing the right side of the nose on every alternate day until it had had 3 exposures of an average length of 6 minutes each. One week later the left side was given 2 treatments. An interruption of 3 weeks followed, during which time a mild inflammation set up in and about the cancerous tissue. On March 31 the

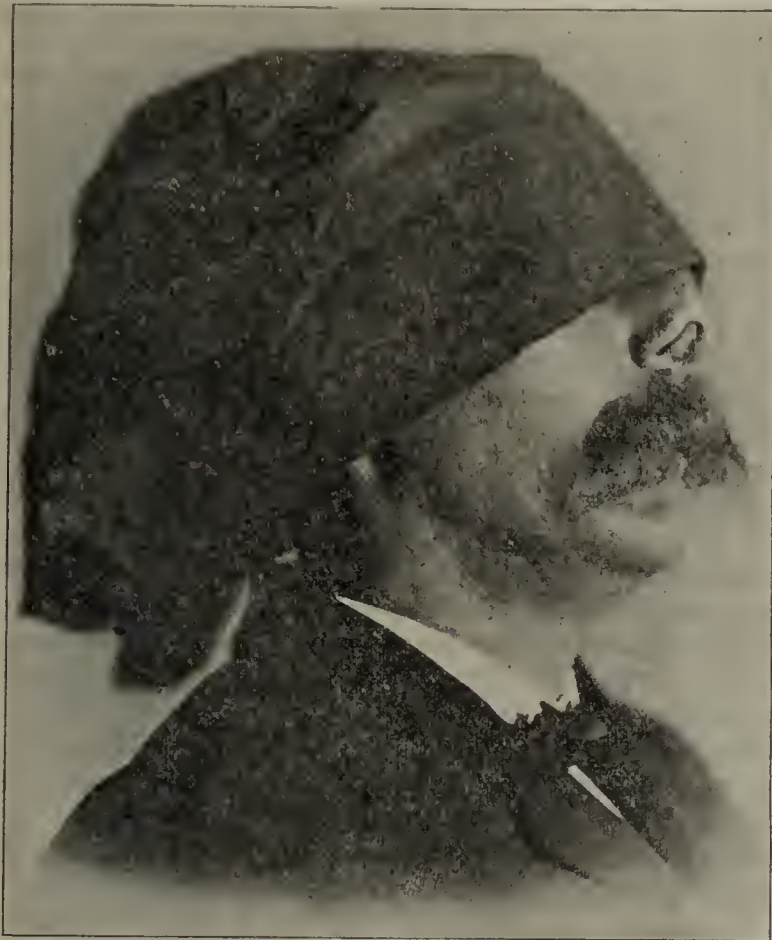


FIG. 2.—Taken of Case No. 2, March 21, 1900.

second photograph here reproduced was taken. As the left side had not completely healed over it was given 3 more exposures. On April 14, the entire external surface was covered with healthy skin. A small diseased center still remained, however, about the perforation in the septum. Treatment at this place commenced May 12. The area is

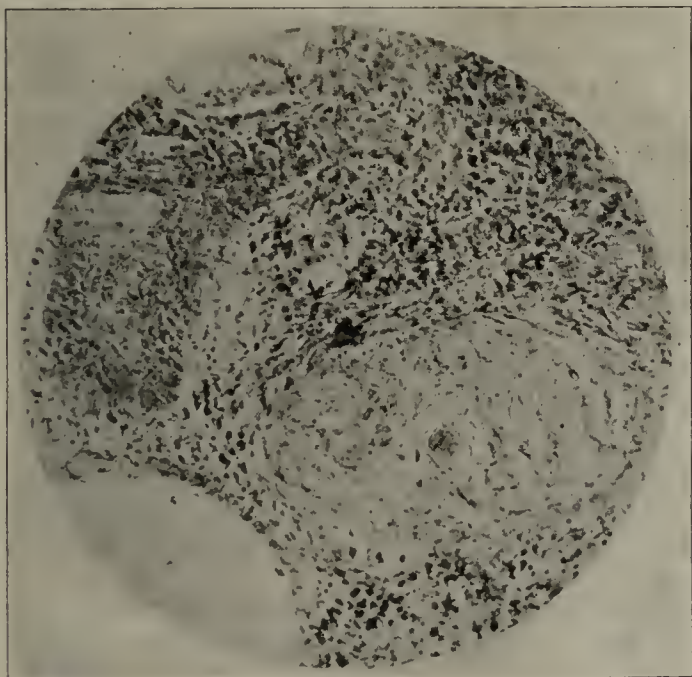


FIG. 3.—From a section of specimen of Case 2.—Leitz obj. No. 3; oc. No. 4.

now progressing rapidly toward healthy tissue, though sufficient time has not yet elapsed to effect a complete cure.

The accompanying photographs, taken February 17 and March 31, indicate better than any description the original condition and the improvement.

[To be concluded.]

PRINCIPLES OF ASEPSIS APPLIED TO OPERATIVE AND OTHER WOUNDS OF THE EYE.¹

By EDWARD JACKSON, A.M., M.D.,

of Denver, Col.

OPERATING gowns, antiseptic solutions, specially prepared dressings, sterilizers, and routine methods of cleansing hands and instruments, are such evident and impressive methods of striving for surgical cleanliness that inevitably they have been given undue prominence in the surgical thought and literature of the years that have followed the discovery of the bacterial causes of suppuration. I would not underrate their importance, but at best they can only reduce to a minimum the virulence and the number of pathogenic organisms to which the injured part is exposed. No antiseptic routine can take the place of the natural barriers to infection that exist within the living body. Any routine that makes us forget and impair those natural barriers is to be condemned.

"The fact remains that under conditions much more favorable than we can hope to obtain by routine practice, the sterilization of even limited areas of the conjunctiva is practically impossible." I quote these words, not of some skeptic ignorant of bacteriology, dogmatically setting forth his guesses and impressions, but from a skilled bacteriologist, Harold Gifford (*Archives of Ophthalmology*, November, 1898), setting forth the net result of a careful experimental study of methods intended to sterilize the conjunctiva. And in his conclusions he is entirely in accord with other investigators in this field.

But because the conjunctiva, the lachrymal passages, and the skin of the lids cannot be rendered germ-free, it does not follow that all the efforts at cleansing them are useless. Every intelligent effort in this direction lessens the number of germs present, lowers their vitality, or washes away the toxins with which they would attack the tissues. Nothing is better established in bacteriology than the fact that when the number and virulence of the organisms is reduced below a certain level they will be unable to overcome the resistance of the tissues and establish an infection. But in any case a certain number of the bacteria will remain alive and capable of development under favorable conditions. Nothing but a sufficient power of resistance on the part of the tissues can prevent the manifestation of their pathogenic influence.

To avoid impairing the resisting power of the tissues is an indication of primary importance. An understanding of it has led to the discarding of the more active germicidal solutions for cleansing the eye. Reliance is to be placed rather on the thorough use of plain sterilized water, physiological salt-solution, boric-acid solutions, etc. In any of these the water is the important element. Judiciously used it accomplishes the mechanical removal of germs, with less disturbance of the tissues than is possible by any other means.

An apparent exception as to the stronger antiseptics is made of those cases in which there are marked evidences of existing infection, of eyes that are to be prepared for some important operation, like cataract extraction. In these cases repeated applications of strong solutions of silver nitrate, argentamin, or protargol are practised at intervals of one or two days. These applications destroy some of the bacteria, and lessen the

¹ Presented at the meeting of the Rocky Mountain Interstate Medical Association, Butte, Montana, August 28, 1900.

virulence of others. But they also provoke the more rapid proliferation of epithelial cells, and so increase the resistance offered by the conjunctiva. To be exact, this use of antiseptics is really the treatment of disease, that would threaten the result of an operation done while it was present. In the immediate preparation of the eye for operation strong chemical antiseptics have no proper place.

The need of avoiding any impairment of the resisting power of the tissues forbids another practice sometimes recommended. It is sometimes advised to test the freedom of the eye from infection by bandaging it for 24 or 48 hours prior to the time for operation. The bandaging of the eye so favors bacterial development that if pathogenic germs be present, it is argued that this bandage will cause the eye to become injected, discharging, and painful, from their increased activity, thus proving the unfitness of the eye for operation. This may all be true; and if, because of symptoms so developed, the operation is postponed and the preparatory treatment properly prolonged, the patient may be the better for it. But if no such decided symptoms are developed, the influence of the bandaging has still been in the direction of increased bacterial growth and activity; and the eye comes to operation in a distinctly less favorable condition than it was before the bandage was placed on it. In the long run, some eyes would be lost because of this impairment of resisting power. If, then, such a test is applied to it, the eye will be given its best chance for a successful result only by deferring operation. We must allow even the eyes which seem to bear the test, to recover their best condition, before proceeding to operate, just as we would have waited had they been rendered manifestly worse by such preliminary testing.

Of the natural guards against infection, one of the most important is bleeding, including the outflow of serum, from cut or injured surfaces. The minute currents flowing outward from every point of the exposed tissue sweep away invading bacteria, as no current or fluid from an extraneous source can. From the bottom of every pocket and cavity comes this flood of antiseptic fluid, washing outward the lodged and invading organisms. Those not swept away are entangled and sealed up in an antiseptic matrix, from which they can only be set free by its decomposition. The blood-clot forms a barrier to infection, second only to the normal epithelial coating.

[To be concluded.]

SUPRARENAL GLAND IN HAY-FEVER.*

By LEWIS S. SOMERS, M.D.,
of Philadelphia, Pa.

FOLLOWING the announcement by Bates¹ that the aqueous extract of the suprarenal gland possessed remarkable power as a local hemostatic and astringent in ophthalmic practice, numerous investigators studied the action of the drug both clinically and experimentally, and found that it possessed marked constricting action upon mucous surfaces and especially upon that of the upper respiratory tract. When applied locally to the normal or inflamed mucous membrane of the nasal interior, the parts become ischemic and contracted and the engorged vessels are relieved by the action of the drug.

When used intravenously, the physiologic action is expressed by an elevation of blood-pressure; the present trend of opinion being that this is a direct action upon the peripheral vessels, corresponding therefore to the results obtained from its local application to mucous surfaces. But two facts of major import must be noted when the gland is used in this manner; the first being that the rise of blood-pressure is rapid and evanescent and as promptly falls again; while in the second place, dangerous cardiac symptoms are also produced, practically prohibiting its use by this method, except for experimental purposes in the lower animals.

From a study of the physiologic action of the adrenal and from the favorable results obtained in a few cases of Addison's disease, it was but a step to the apparent indications for its administration both locally and internally, in the neurovascular complex of hay-fever. S. Solis Cohen² found that the symptoms of hay-fever from which he suffered were controlled by using a 5-grain tablet of suprarenal substance by the mouth, every 2, 3, or 4 hours, according to the results obtained. He also found that the associated coryza or sneezing would cease within 15 minutes after taking the tablet, and that these favorable results were more apparent when the drug was allowed to dissolve on the tongue, than when it was immediately swallowed. Similar reports have been made by Douglas³ and Bates,⁴ the former considering suprarenal extract internally as almost a specific in hay-fever, while Bates states that the disease has been completely relieved by taking the extract at intervals of 2 to 4 hours.

My experience with the internal administration of suprarenal extract in hay-fever comprises the study of 21 patients; 19 males and 2 females; the youngest being 17 and the oldest 56 years. The time during which the patients received the adrenal exclusively varied from 1 to 6 weeks, 10 being obliged to discontinue the tablets after a week's trial on account of disagreeable symptoms, while 7 used them continuously for 6 weeks and in 4 it was administered at irregular intervals, but at least 1 tablet daily from 2 to 3 weeks. The drug may be used either in the form of 5-grain tablets or in a glycerin-solution, the former being the most preferable as it does not produce the same degree of nausea as does the solution. I used the latter at first, but for the reason just given and the unreliability as regards accurate dosage, it soon became apparent that the tablets were superior, so they were thereafter used exclusively. The dosage practically followed that previously mentioned, all patients beginning on one 5-grain tablet every 2 hours and in those in which this produced unpleasant symptoms, it was given in the same amount every 4 hours, from 15 to 75 grains being taken daily, the latter amount being given to 2 patients, without, however, the production of any untoward symptoms or any appreciable benefit to the hay-fever.

Without going into details as regards the history of all the cases, 3 may be taken as types, especially as regards the violence and duration of the affection.

J. S., retired business man, aged 56 years, had suffered from hay-fever for 20 years, the disease usually appearing the first week in June and continuing until the first frost in the fall. For the past 5 years, at night or at any time during the day on the approach of a thunderstorm, asthma has appeared, and during the past 3 years the nocturnal

* Read before the Philadelphia County Medical Society, May 23, 1900.
¹ *New York Medical Journal*, May 16, 1896.

² *PHILADELPHIA MEDICAL JOURNAL*, August 13, 1898.

³ *New York Medical Journal*, September 2, 1899.

⁴ *New York Academy of Medicine, Section of Laryngology*, December 27, 1899.

paroxysms of asthma have become so severe that he is obliged to sit at an open window, grasping the back of a chair, in order to obtain air. There were no gross structural abnormalities of the upper respiratory tract, and the urine was normal. Various measures had been used both to abort the attack and diminish its intensity, but were without effect when I first saw him, 6 weeks after the onset of the affection. He was given 5 grains of the suprarenal gland every 2 hours for 6 weeks, except for a few days at the end of the second week when he refused to take the drug on account of a marked increase in the chest-constriction and an augmentation of the asthma. He was persuaded to use the tablets again, but finally ceased entirely on account of the asthmatic symptoms.

A similar case was that of a bookkeeper, aged 58 years, to whom the adrenal was given in the same way 3 weeks before the expected attack, which was delayed 2 weeks, but then made its appearance as usual. The disease was of 4 years' duration and the asthma from which he suffered had appeared for the first time the previous season. As a result of the use of adrenal, the hay-fever symptoms were in no way changed, the asthma developed earlier than usual, was more severe and its intensity greatly diminished when the suprarenal extract was withdrawn.

A third case occurred in a boy of 17. The condition had existed for 3 years with mild nocturnal asthmatic wheezing from the first attack of hay-fever. The drug was begun a few days before the expected attack, which appeared at the usual time and continued until he went to the seashore, when it entirely disappeared. The effect of the adrenal was to slightly diminish the pruritus of the palate and chin, but was indifferent as regarded the other symptoms, the results obtained not being sufficient to warrant the further use of the drug after 6 weeks' trial.

Without going into the history of the other cases the effects of the drug may be studied as regards its influence upon individual symptoms. The nasal symptoms, as sneezing, rhinorrhea, and obstruction to breathing, were but slightly influenced; the sneezing attacks were apparently more infrequent while the drug was being used, but the attack in itself was as severe as before. The nasal stenosis was somewhat favorably influenced; in about one-half of the cases in which the obstruction was marked, there was diminution in size of the engorged turbinates; the rhinorrhea was uninfluenced in any way. The pruritus of the chin and buccal membrane was diminished in intensity when the tablets were allowed to dissolve in the mouth, but when they were swallowed no changes were observed, the same being the case with the eye symptoms, which in no instance were favorably influenced.

A feature of considerable importance was the effect of the drug upon the asthmatic symptoms in the six patients suffering from this feature of the disease. These, all of whom had had the asthma from 3 to 7 years previous, but in whom it had never appeared but at the height of the hay-fever season, were unfavorably influenced. The fact that the paroxysms were more frequent and of greater intensity when the adrenal was being taken indicated that the gland bore some causal relation. In support of this it was withdrawn for varying periods of time with a corresponding relief, and when again administered, the unpleasant features would become evident. Another aspect of its effect was that in 5 cases in which asthma had at no time previously existed, it appeared while the drug was being used, in all, however, in a mild form, and also disappeared not to return, when the drug was withdrawn. Possibly the appearance of the dyspnea was a coincidence, but both the patients and myself were convinced that it was the direct result of the drug.

The gland was given in two ways, by dissolving a tablet on the tongue, and by immediately swallowing

it; the former being the most satisfactory, as the physiologic action in some cases was to a slight extent produced in this manner, while, when it was swallowed, little or no appreciable results were obtained. The drug is practically inert as regards its effects upon the hay-fever. This, although clinically opposed to its administration in other affections, is supported by experiments in the lower animals, and to a still less extent in man. The majority of experimenters claim that the active physiological effects of the gland are not seen when it is given by the mouth.⁵ Its effect upon the mucosa of the upper respiratory tract is practically nil when swallowed, but when it is allowed to dissolve in the mouth, a slight action is observed, its beneficial action upon the pruritus of the palate being the direct result of its local use and not of its internal administration.

The untoward or disagreeable effects produced were nausea, a sense of chest-constriction, and the development of asthma or the augmentation of the paroxysm when it already existed. The nausea was slight and of little moment, rapidly disappearing within a short time and was not produced by an excessive dosage, as it was as frequent in those taking 5 grains daily as in those taking from 30 to 50 grains daily. The sense of chest-constriction was observed only in those with preexisting asthma or in those who developed it while under observation. It preceded the frank asthmatic attack by from 4 to 7 days, and disappeared within a few hours after the drug was withdrawn.

The favorable results obtained as seen in these cases were not of sufficient magnitude to recommend its use for this purpose, as it must be apparent that when administered by the stomach its effects are practically nil, but some absorption does undoubtedly take place, as shown by the unfavorable symptoms. A portion of each lot of tablets administered was used in aqueous solution to determine its local effects, so that while this report does not agree with the results obtained by the observers previously mentioned, the inutility of the drug was not the result of inert specimens, as its active local effects occurred promptly in all the cases. It was also administered in conjunction with other measures after being used alone, but no special beneficial effects ascribed to the adrenal could be observed.

From the small number of cases here recorded, no sweeping conclusions can be formulated, but, of necessity, an unfavorable conclusion can only be drawn and I would not therefore recommend a long trial of the internal use of the drug in hay-fever.

In conclusion a few words are necessary as to its local value in this disease; here it is of great service, and when applied to the mucosa of the nose and pharynx, we can depend upon restoring the nasal respiration, diminishing secretion and sneezing attacks, and practically making the patient comfortable so long as the applications are continued. Internally, therefore, I consider the suprarenal gland of little or no use in the treatment of hay-fever either with or without conjoined treatment; but locally, in conjunction with measures suited to the individual case, I believe it to be the most satisfactory single remedy that we at present possess.

Obituary.—AMOS BEARDSLEY, of Grange-over-Sands, England, November 20, aged 78.—JOHN COCKLE, of West Molesey, November 14.—GEORGE MACKAY, of Edinburgh, November 20, aged 81.—W. EDWARD RIGGALL, of Elgin-Crescent, November 18, aged 82.—GEORGE CORDWENT, of Milverton, November 12, aged 86

⁵ H. C. Wood, *Merck's Archives*, February, 1899.

SANITARY WORK IN THE CITY OF HAVANA.

BY W. N. BISPHAM, M.D.,

of Havana, Cuba.

Assistant Surgeon, U. S. A.

It is my purpose in this article to show the profession at large what has been accomplished in the line of sanitation in Havana since the beginning of American occupation. There have been a great many reports in the newspapers about this work, but the articles have been written mostly by men who have no knowledge of the subject, and are not capable of judging it correctly. I was connected with that Department for a period of four months in the first six months of this year, and the data I can give are from my own observation. I will first give an account of the condition of affairs under the old regime.

I arrived in Havana in the middle of December, 1898, and the sanitation in the city at that time was truly deplorable. The streets were extremely filthy and ill smelling, and there was really no organized system of street-cleaning. The barrels and boxes of garbage and other refuse were allowed to remain on the sidewalks in front of their respective houses for days at a time, and the stench from them was horrible. There was a contractor who was supposed to remove the refuse of the city, but this was done in a half-hearted manner, and on an average, about seventy (70) cartloads a day were taken away. The filth thus removed was carted to an old city dump, which was very badly located in reference to general sanitation, or was taken to the country and spread over the land as fertilizer.

The houses are extremely poorly built for preserving the health of the inmates, though on account of their thick walls they are cool and pleasant during the hot summer season. The sleeping rooms are mostly on the first floor, and are not provided with windows so placed as to assure a draught of air through the room when required, thus not even allowing the alleviation of the universal dampness.

The closets are usually in the kitchen or next to it, and there being no adequate sewerage system they are connected with privy vaults which are mostly under the kitchen floor, allowing any gases to ascend and contaminate the food being prepared. The flush tank closets were only in the better class houses, and most of them were broken or extremely filthy. In by far the majority of houses the only convenience provided was an ordinary privy seat placed over an opening to the vault. None of these vaults were ventilated, and most of them were of the absorbing variety and were full of fecal matter. During the old regime these pits were cleaned by dipping the contents out in dippers and pouring it into large wine casks, which were removed on ox-carts when full and taken to the outlying truck farms to be used as fertilizer. In a number of instances the charges for the work were so high that the owner of the property closed his old vault without cleaning it and built another alongside. When there was connection with a sewer, odorless traps were seldom used, and the drains were allowed to become filled with refuse.

There were a number of sewers throughout the city, but they were small and square in shape, and when we first took charge of the city, most of them were clogged with refuse matter.

Bakeries and other establishments for the manufacture of foodstuffs were filthy, and the employes in

such places would often sleep on the tables used for the preparation of dough, etc.

Cow stables were to be found in every part of the city, and the cows were kept in them continuously. No attention was ever paid to sanitation in these places, and in a great number, the cattle stood upon the bare earth which was saturated with their discharges. As may be imagined, the odor was very offensive. No milk analysis was practised and the cattle were never carefully examined by the veterinarians.

The city markets were in a deplorable state. They were only cleaned once a day, and the refuse was allowed to be piled in corners or any place most convenient, as no receptacles were furnished for it.

The municipal hospitals were in such a condition of filthiness as to be beyond belief. They lacked medicines, instruments, and medical and surgical supplies of every description. As they were at that time, they rather encouraged death than assisted the recovery of the poor unfortunates sent there for treatment. There was practically no separation made of contagious diseases from other patients in the hospital, and in the military hospitals, yellow fever and smallpox cases were placed in the general wards.

There was no adequate isolation and disinfection of cases of contagious diseases in private houses, and though vaccination was compulsory, the law was never enforced.

All of these grave defects in the city's sanitation have received some attention, and it is my purpose in this article to show how far the work has been carried.

The streets all over the city have been repaired and placed in as good a condition as possible with the material used. No permanent street making could be accomplished until new sewers were laid, so the old streets could only be remacadamized, but this did away with the numerous holes and depressions in their surface which before were receptacles for dirty, stagnant water and refuse of all kinds.

The streets are now cleaned as frequently as in our best-governed cities, most of them being gone over once a day. Their condition under this treatment has improved immensely, and in my opinion they are kept in as good a condition as in any city in the States.

No garbage can at present be placed out in front of the houses until 10 o'clock at night, after which hour it is collected in special carts and taken to the city dump. This dump is not simply a place outside of the city where such material can be thrown, but where the refuse is placed in scows and taken out to sea a distance of two miles. Besides this, there is also a garbage crematory of 4 furnaces for the cremation of such filth as the refuse of slaughter-houses, etc. From 70 cartloads a day, the amount removed has increased to 540, and is still increasing. This method of removal is very thorough, and as good as that of New York or any other large American city.

There has been a decided crusade against the unsanitary plumbing which is found in most of the houses, and a great many changes have been made. Thorough house-to-house inspections have been made, and the condition of each one noted on a blank prepared for the purpose. These reports have been carefully gone over and changes recommended when necessary. Of course, the procedure is necessarily slow, but a great many changes have been made, and the work is constantly receiving the close attention of an army surgeon detailed for that purpose. Where there is sewer con-

nection, modern flush closets have been installed, and where only the vault system is practicable, the owner of the property has been compelled to keep it well cleaned, and in a large number of cases the hopper closet has been put in. In many cases the vaults have been ventilated and covered so that no gas can escape into the house.

The square drains have been replaced in numerous instances by round terra-cotta piping, and the tenant of the property is obliged to see that they are kept clean. Altogether the improvement is remarkable, and will be noticed by any careful observer. The sewerage system, though extremely important, could not receive much attention at first on account of the fight between the city and Dady, who was awarded the contract for new sewers by the Spaniards. The Engineer Department, though, has opened a number of them in the lower sections of the city and thoroughly cleaned them. Some time this fall it is proposed to begin work upon a new system which will be up to the standard in all respects. They will then be laid in every street, and will provide an outlet for the entire waste of the city. In this system no sewage will be allowed to run into the bay, but all of it will be conducted some distance out into the gulf.

This will cause a gradual cleaning of the harbor, which will prevent its being a constant menace to the health of the community.

The owners of bakeries have been obliged to keep their premises clean and in a sanitary condition, and if not found so by the inspectors, they are fined heavily. Once a week all the bakeries, groceries, butchershops and fruit stores are thoroughly inspected by the district inspectors and all foodstuffs found in a bad condition are sent to the garbage wharf, and there condemned and cremated. This work is watched very closely by the medical officers in charge, and there has been a noticeable decrease in the amount condemned, and on personal inspection I find that the goods on sale are of a much better class than formerly.

The cowstables now must be provided with cement floors, good drainage, and must be well ventilated. The animals themselves have to be removed from the city at night, and pastured in the outlying districts. Of course the most desirable thing would be the entire removal of such places from the city limits, but such a move must be gradual, though I hope it will come in time. In the meantime everything is being done to keep the dairies clean and the cows in good health. They are examined frequently by the city veterinarians, and all cases of any disease whatever among them are reported at once to the sanitary office.

The milk now is carefully analyzed at the city laboratory and a heavy fine is imposed upon those persons found selling an impure article. Before our arrival, milk was brought to town in tin bottles in panniers on ponies. A recently passed ordinance prohibits that, and most of the dairies are providing themselves with suitable wagons for its transportation.

The markets have been put in an excellent condition, though constant supervision is necessary to see that proper cleanliness is practised. They are now cleaned three times a day and at night the whole place is washed out. In addition to this, each stall has to be provided with a metal can for the reception of all refuse from that particular place. No one is allowed to accumulate rubbish near his stall, and every stall must be kept clean.

The butchers are not allowed to hang their meat in reach of the public, and after hours, that which has not been sold is placed in an icebox or covered up. In addition to these regulations, the foodstuffs on sale are carefully inspected by men employed for the purpose, and all spoilt or decayed articles are destroyed.

The municipal hospitals were placed under the charge of army surgeons, and a thorough renovation inaugurated. The buildings were cleaned, and the employes were compelled to keep them so. New supplies of all kinds, including bedding, furniture, instruments, etc., were purchased and the hospitals reorganized under the American system. Isolation wards for contagious diseases were opened and thorough reports of all cases were required. One of the most important reforms was the removal of incompetent men, and the filling of their places by men more abreast with the times. At the same time the private hospitals were put under surveillance and constant inspections made of them by medical officers of the army; as a result of this care the hospitals were, when turned over to the city authorities in April, well equipped, and their general condition would compare favorably with a great many excellent institutions of the kind in the States.

A thorough disinfecting department has been organized, and after every case of contagious or infectious disease, the premises occupied by the patient, and all clothing and furniture used is disinfected. According to a new law promulgated in the spring of 1899, all such cases must be reported at once to the Sanitary Department. Those doctors not reporting such cases are liable to a fine of \$50. The patients are at once ordered isolated, and on the recovery or death of the patient, the premises are disinfected as stated above.

This rule is particularly enforced in cases of yellow fever or smallpox. As soon as a case of yellow fever is reported, a man is sent to the house with instructions to place himself as a guard before the room occupied by the patient and allow no ingress or egress except with an order of the Department or the doctor in attendance. All linen, utensils, discharges, etc., are disinfected by him before they can leave the room. He has a tub handy, filled with a solution of mercuric chlorid 1:500, in which such things are immersed for 12 hours. These guards are changed frequently, and are also inspected often night and day to determine whether they are carrying out their orders or not.

On the recovery or the death of the patient, this man at once notifies the Department and a disinfecting squad is sent up at once to disinfect the premises. The walls, ceiling and floor of the room are washed out with a solution of mercuric chlorid 1:1000, and then the room is sealed and completely filled with formaldehyd gas under pressure, using the gas from one liter of the fluid 40% formaldehyd for 2,000 cubic feet of space. This I think without a doubt will kill all infection that may be present. After this has been done, the room is kept sealed for 48 hours and then opened by an agent of the Department. The same procedure is followed in cases of smallpox, with the exception that if possible the patient is sent to the smallpox hospital at once.

In the beginning of 1899, the law in regard to vaccination was rigidly enforced, and a number of physicians were employed to vaccinate all those that had not been before. In a few weeks work among the lower classes, 50,000 persons were vaccinated, and at present wherever a case develops all the people in the vicinity receive a protective vaccination whether they have

already been vaccinated or not. Now what has been the result of these different moves towards a more perfect sanitary condition? This of course is shown more readily in the mortality statistics, particularly as such records were well kept under the Spanish regime. In the following table the number of deaths monthly for 1894, 1899, and 1900 are shown, which is decided proof that the sanitary condition of the city must have improved wonderfully.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1894	505	483	518	506	576	595	736	736	583	545	597	697	7107
1899	1260	842	810	648	635	638	680	620	496	497	493	534	8153
1900	498	491	605	482	473	521	518	559	519				

After perusal of this article I sincerely hope that no one will retain the opinion that the sanitary condition of Havana has not been improved, as some correspondents may wish them to believe.

NASOPHARYNGEAL MYCOSIS, WITH REPORT OF A CASE.¹

By P. S. DONNELLAN, M.D.,
of Philadelphia.

Laryngologist to St. Agnes' Hospital.

THE patient under consideration presented himself at my clinic at St. Agnes' Hospital on February 1, 1900, with the following history: He is 42 years of age and always enjoyed good health except for the minor ailments of infancy and childhood. He never had any symptoms of throat trouble until three weeks previously, when he began to complain of difficulty in swallowing and constant desire to clear his throat of some obstruction. These symptoms were unaccompanied by any constitutional disturbance, his pulse and temperature being normal and his urine free from albumin. He denied specific infection and stated that his wife and 5 children were perfectly healthy. On examination of his mouth his teeth were found in unusually good condition as regards freedom from tartar and absence of decay except the two upper central incisors. A general hyperemia of his fauces and postpharyngeal wall was observed, while the faucial tonsils on both sides, part of the postpharyngeal wall and both surfaces of the uvula were covered with a grayish-white membrane, somewhat elevated from the mucosa, but closely adherent to it—leaving a bleeding surface when removed by the forceps.

Clinically the case resembled one of nasopharyngeal diphtheria rather than that of follicular tonsillitis, but the absence of albumin from the urine and of the Klebs-Löffler bacillus from cultures made from the membrane excluded the former disease. Microscopic examination of a portion of the membrane showed the presence of the mycelial rods or threads of *Bacillus leptothrix* arranged in parallel rows surrounded by masses of granular material. A diagnosis of nasopharyngeal mycosis was made and the patient was given a mouth-wash of potassium chlorate, one dram, and potassium bicarbonate one-half dram, to be added to a pint of warm water and used every three hours. He was also encouraged to smoke tobacco freely, drawing the smoke well back into his pharynx and allowing it to remain in contact with the membrane-covered area as long as possible. At each visit to the clinic, portions of the membrane were removed by Grunwald's punch-forceps and the underlying mucosa mopped with full strength hydrogen dioxide. Under this plan of treatment the patient improved and the membrane gradually disappeared, except a small portion upon the surface of each faucial tonsil.

Nasopharyngeal mycosis, while a comparatively rare

disease, is of considerable interest to the practitioner because of the importance of recognizing its true nature and of avoiding a mistaken diagnosis. This is particularly true regarding diphtheria, with which it is most frequently confounded. In our city, the compulsory notification of contagious diseases to the Bureau of Health and the resulting hardship caused by placarding and quarantining the house in which the patient resides, render it imperative on the attending physician to make an accurate diagnosis in a suspected case, so as to avoid, if possible, serious financial loss and great inconvenience to the patient. Pharyngeal mycosis resembles diphtheria in the following particulars: A history of throat trouble of recent development; the presence in the pharynx of a membrane grayish-white in color, slightly elevated from the mucosa but closely adherent to it, and when removed by the forceps, leaving a bleeding surface beneath. Unlike diphtheria, however, there is no constitutional disturbance, albuminuria is not present and the Klebs-Löffler bacillus is not found in cultures taken from the throat. Microscopically, the membrane from a case of mycosis shows the parallel thread or hairs of *Bacillus leptothrix*—one of the Schizomycetes—imbedded in granular masses which contain the spores of the fungus.

This affection is absolutely noncontagious and usually pursues a prolonged course, though it may subside spontaneously and abruptly. It is very frequently associated with carious teeth and disordered digestion which seem to favor the growth of *Bacillus leptothrix*.

The treatment is first directed toward putting the teeth and digestion in good order. The use of alkaline mouth-washes has many advocates, though upon this point Jonathan Wright says: "If the morphology is carefully studied and properly understood, it would be impossible for any one in their proper senses to believe that topical applications will eradicate this mouth weed. It would be quite as sensible for a farmer to sprinkle his garden weeds with paris green instead of digging them up."² The effect of tobacco has been beneficial in many instances. Newcomb³ reported a case before the Section on Laryngology and Rhinology of the New York Academy of Medicine in which the patient, a young Swedish woman, obtained no relief from the usual remedies until she had smoked cigarets for some days. Of radical measures, the application of the galvanocautery or the removal of small portions of the growth at repeated sittings, give the best results. This latter plan of treatment I have followed out in this case and I am quite encouraged with the progress the patient made toward recovery.

Malaria in West Africa.—According to the *Lancet*, Dr. H. E. Annett, of the Liverpool School of Tropical Medicine, returned to Liverpool recently after a tour of investigation in West Africa, extending over 8 months. Dr. Annett studied the conditions of tropical diseases over an area embracing 1,000 miles of the coast, extending his researches to Lokoja on the river Niger. He has accumulated a mass of observations on the relations between malaria and the situation, the geographical peculiarities, and the temperature. In the main these data bear out the theory already established by the inquiries of Major R. Ross, late I.M.S., and Dr. R. Fielding-Ould, that malaria is disseminated by the anopheles mosquito.

¹ Read before the Section of Laryngology and Otology, College of Physicians of Philadelphia, February 21, 1900.

² *The Laryngoscope*, vol. iv, page 222.

³ *Ibid.*, page 246.

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The medical martyr is far from an unknown or rare figure in the history of the world. His most recent exemplification is to be found in the case of Mr. Alexander Stewart Brown, an English physician, who, while on a journey of recuperation from a traumatic injury, waded up to his neck to rescue a man who had fallen into the water, and at once proceeded with artificial respiration until the man was resuscitated. He continued on his journey, but was a few days later seized with pneumonia, from which he died. Certainly peace hath her victories no less renowned than those of war, and medical men have contributed their full quota.

The influence of alcohol in the causation of insanity is not as fully appreciated by physicians generally, and especially not by the laity, as by alienists, upon whose notice the unpleasant yet important truth has forced itself with the conclusiveness of demonstration. The evidence is both clinical and pathologic. It has been repeatedly shown that alcohol causes degenerative changes in the tissues of the nervous system. In a discussion of the duty of the State in the care of the insane Kraepelin (*American Journal of Insanity*, Vol. lvii, No. 2) states that of the patients in hospitals for the insane in the German Empire 10% have been committed on account of mental diseases due to alcohol. In some institutions the percentage is as high as 30, not including numerous cases in which alcohol has been an exciting but not the primary cause of the trouble—in cases of mania, epilepsy, and paresis. Experience has shown that about one-third of the living children of alcoholic parents are epileptic and that more than one-half of the idiots in the world are the offspring of alcoholic parents. Kraepelin goes so far as to consider intoxication a mental disturbance fraught with great danger to society. He points out also the frequency with which alcoholism is responsible for crime of various kind and degree. There is no escape from the fact that alcohol is a poison, especially to the nervous system, and whose effects naturally will vary with the amounts in and the frequency with which it is used and the stability of the structures upon which its influence is exerted. There is, thus, but one attitude for the conscientious physician to assume in this connection, namely, to look upon alcohol as he does upon other therapeutic agents, as, for instance, ether, chloroform, opium, as having a distinct and definite

field of usefulness, but not to be employed indiscriminately and habitually and in the absence of physiologic indications.

To Prevent Degradation and Crime.—Not to commend or criticise, but to arouse intelligent study of one of the greatest, if not actually the most important problem of civilization, we call attention to a noteworthy book by Dr. W. Duncan McKim, entitled: "Heredity and Human Progress." In view of the increase of certain criminal and defective classes, and of the necessity of preventing their existence rather than allowing their free multiplication, Dr. McKim advises "the gentle removal from this life of such idiotic, imbecile, and otherwise grossly defective persons as are now dependent for maintenance upon the State, and of such criminals as commit the most heinous crimes, etc."

Prescriptions in Newspapers.—From a Philadelphia newspaper we quote the following letter written by Dr. Guy Hinsdale concerning "Hoff's Phthisis Prescription :"—

Sir: The prescription published in the daily papers of November 28 would speedily poison any one who might be led to try it. It calls for $\frac{1}{10}$ of a gram of arsenic to $3\frac{1}{2}$ grams of the mixture, which is $1\frac{1}{2}$ grains of arsenic to less than 1 teaspoonful. This is thirty times as much arsenic as would be safe to give in one dose, and no one could take the amount with impunity. A few doses would certainly produce death. Permit me to say that medical prescriptions should not be published in the columns of newspapers. Mistakes are liable to happen, and harm result to the unfortunate who might try to use them without medical advice. Arsenic and cinnamic acid have never cured anybody of consumption, and the despatches from Europe to the Associated Press relating to medical matters are exceedingly unreliable and ought not to be given the prominence which they receive.

The danger from this practice may be better estimated when one thinks that the many papers of the *Associated Press* probably copied the prescription. In a paper in the *Bulletin of the American Academy of Medicine*, Dr. W. L. Pyle, among other absurdities of newspaper medicine, mentioned a special article entitled "Sleep cure for nervous diseases." This cure consists of the administration of "8 grams of bromin every 2 hours in a glass half full of water," and its discovery is attributed to a Dr. Macleod, of China. Of course some form of bromid medication is meant, but never once is this indicated; and the word bromin is repeated

over a dozen times in the article, this noxious drug being enthusiastically recommended in ignorance of its poisonous and caustic properties.

The Purposed Reorganization of the Medical Department of the Army.—In arranging for the military establishment necessary in the situation of the country, which requires neither explanation nor comment, the House of Representatives, following the lead of the Secretary of War, has provided, or more truly has not provided, for the Medical Department of the Army in a way that attracts attention and should receive correction. As is well known, for convenience of administration the medical officers in the permanent establishment are divided into graded groups commencing with lieutenants and ascending in rank with decreasing numbers until they culminate in one brigadier-general, the surgeon-general. These are the same subdivisions that obtain in other staff-corps and also in the line, except that the junior medical officers are first, not second, lieutenants as in the line and the engineers. Experience has clearly shown that such a system is the most convenient for administration, and that it affords a working basis upon which pay may be established. It is, as we have just said, the same in kind as obtains throughout the staff. It is not, however, the same in degree. The existing law, not the inchoate bill, provides under the surgeon-general 6 colonels, 10 lieutenant-colonels, 50 majors, and 125 officers who are captains after having served 5 years, and first-lieutenants previously. Of these 191 officers 1 in 30 is a colonel, and, therefore, the average number to be eliminated for each newly-admitted medical officer before he can reach a colonelcy is 30. He ascends through the whole column, but the 6 at the top may be regarded as making way for him practically simultaneously. In the Ordnance, which most closely resembles the medical in being a scientific corps with the first lieutenancy as the junior grade, it is $16\frac{1}{2}$, and in the engineers, excluding their second-lieutenants, it is 17. The House bill provides, below the surgeon-general, 8 colonels, 12 lieutenant-colonels, or an increase of 2 in each of these higher grades, 60 majors or 10 more, and 240 captains and lieutenants, or 115 in addition. This is a total of 320 officers, or 1 colonel to every 40 juniors. That is an increase of one-third in the intervening numbers to be outlived before acquiring the topmost position open to promotion by seniority. While actually and properly increasing the aggregate number of medical officers, the proportion at the top is materially decreased, and experience has shown that, with that ratio, theoretically no one can attain the colonelcy before being overtaken with compulsory retirement at the age of 64. Practically, of course, there will be some colonels; there will always be 8 officers holding that grade out of the 320, but the probabilities will always be against any particular newly-appointed officer becoming one of the 8.

Now the medical officers say that is unjust. We think it is. They say that even after they become majors, and during the last 25 years it has required between 18 and 19 years' service to reach that place, they will have 9 files as it is called, 9 officers to outlive for every colonelcy gained; while, for example, the subsistence officers who supply food, the quartermasters who provide shelter and transportation, the pay officers who disburse, have only $4\frac{1}{2}$ seniors per man who block the way. Rank carries with it consideration and emoluments, and the medical officers insist, and we cordially agree with them, that they deserve fully as well of the country as those first described. This is so obvious on its face that it seems a plain duty for physicians of influence to point out to individual senators, and particularly to the committee on military affairs, this defect and to urge its relief. The medical officers themselves have no direct influence and no opportunity for concerted action. They are scattered not merely over the country but over half the world, with no local interests and in no case in connection with those in legislative power. They affect public politics no more than the leonids sway the solar system. It is more than charity, it is duty, to help those who cannot help themselves.

Besides the disadvantages to the medical corps, and therefore to the army, that flow from this condition, it reacts injuriously upon the profession at large. By implication it places those highly trained and very faithful men on a lower plane of desert than others whose duties relate, we may say, more to the dollar than to the man, and by so much it depresses medicine below trade, or commerce if one will. But beyond this sentimental view it cuts off from the youth of the profession prospects to which those who are capable and have the taste have the moral right to aspire. Our medical colleges may well complain not only if their ultimate goals are barred to their better alumni, but if the way is made so narrow and so arduous that they find it useless to enter upon the path. We appeal to the colleges actively to complain. The congress should see without argument and without persuasion the effect upon the army itself. It is poor economy not to obtain and adequately reward the talent best fitted for any particular object. However, that there may be no lack of light, we commend the subject to our readers and urge that at once they present the matter, temperately but firmly, individually to senators and collectively to their State delegations, insisting that mischief and injustice will be done if there is not an increase in the higher grades of the medical corps commensurate to that given other staff corps and proportionate to the number of the junior officers.

Scientific Work in Hospitals for the Insane.—Kraepelin, in a recent paper in the *American Journal of Insanity* (translated by Dr. Stewart Paton), gives voice

to the spirit of unrest which is now agitating some of the innermost circles of psychiatry. The demand is for more scientific work in the asylums, and for more opportunity outside of the asylums for trained observers to advance this specialty to an equal rank with the other branches of medicine. Kraepelin is very outspoken in his views, and for a German professor is not a little militant against the established order of things in the Fatherland. He claims that one of the greatest obstacles to scientific psychiatry in Germany lies in the fact that the chairs of mental diseases in the universities are held by asylum physicians, who, he says, show not the slightest evidence that they are equal to the scientific and pedagogic duties of their position. He despairs of having another Gudden, or Hagen, or Damerow, who, in their time could both manage an institution and do scientific work. There is no progress possible in the future, he thinks, unless the clinic is entirely separated from the asylum. Chairs in psychiatry must be held by men who have had experience in teaching, and who have done something to advance our psychiatric knowledge. To this end small psychiatric hospitals should be established in conjunction with the clinics, and these should be utilized for such cases alone as are valuable for clinical purposes. In this way the asylums could and should continue to take charge of the large mass of chronic cases which are not of such great value for teaching purposes.

The tone of Kraepelin's paper is rather pessimistic, and this will probably surprise some American readers who are accustomed to think of Germany as an ideal country for all medical affairs. It seems that many of the same defects exist there that are now raising such a strong protest in our own country.

Kraepelin's paper suggests to us one or two thoughts which may have practical bearing on this subject of asylum work in the United States. If boards of trustees could be educated to see the importance of spending more money on scientific equipments and less on merely enlarging their limits for new patients, a distinct step in advance would be made. The goal of a successful hospital or asylum should not be merely an increase of numbers. In some hospitals if the trustees could see the necessity of not providing for more than 100 to 125 patients, and of increasing the medical staff, paying better salaries, equipping laboratories, and subscribing to the world's neurologic literature, they would possibly come nearer to having a model hospital and one which could with advantage and reputation supplement the work of some active neighboring clinic.

The Modern Specialist and His Education.—The growing tendency of medical men to specialize has been commented upon favorably and unfavorably from many sides. This tendency seems to be growing more rapidly than ever at present, and the temptations to

physicians to take up specialties are certainly very great. It diminishes the responsibility of the individual, makes his work easier, more agreeable and lucrative. But it has an undoubted tendency, on the other hand, to narrowness, and the growing craze for specialists is fraught with grave danger to the public. In a recent inaugural address on surgery as a science and art, delivered at the opening of the winter session at Queen's College, Cork, Ireland, Yelverton Pearson (*Lancet*, November 3, 1900), professor of surgery at the college, gives some valuable suggestions as to the education of the surgeon, which have their bearing on the education of all specialists, and he calls attention to the dangers to which we have alluded. Pearson believes that the good surgeon should be acquainted with biology, natural philosophy, chemistry, anatomy, physiology, histology, pathology, and bacteriology. He lays special stress on the importance of anatomy learned by careful dissection and an adequate knowledge of pathology. In order that we may become scientific surgeons we must study closely the circumstances presented by the disease in both the living and the dead body. We must understand the nature of diseased processes, the means for the resistance to invasion of disease, the provisions for natural recovery, and the phenomena of natural and acquired immunity. It is in the possession of such knowledge that the truly scholarly and scientific surgeon or physician excels his more empirical brother, by watching and guiding natural processes of recovery, rather than in interfering with them by the indiscriminate use of drugs. He believes that besides this thorough scientific knowledge the art of surgery should be carefully studied. The ability to accomplish delicate manipulations is acquired by work in biologic and pathologic laboratories, by careful and continued use of knife and forceps in the dissecting room, and by practice in the application of bandages, dressings and splints in hospital wards. The greatest work that has been done in the history of surgery has been accomplished by men who have not specialized in the ordinary sense, but who have extended their work over wider fields. The names of Lord Lister, Jonathan Hutchinson, and Kocher, of Bern, are mentioned among others who have had such a training. The most successful specialists, such as Spencer Wells, and Lawson Tait, were men possessed of a broad and comprehensive knowledge of medical science as a whole.

This outline of the educational needs of the specialist in so broad a field as general surgery might well be applied to any of the specialties. At the present time we have among us too many so-called specialists whose only claim to special knowledge is a course of from three months to a year at the clinics of one or more of our large cities. Men who tire of the arduous duties of general practice and who have successfully treated one or two of the more common diseases which might

come under the treatment of a specialist, believe that they have discovered a special aptitude for such work, and after the most inadequate preparation set themselves up as practitioners of a specialty. The same broad general training which has been outlined by Pearson is absolutely essential to all who hope to accomplish the best work. In addition to this, practice in acquiring the art of the specialty is necessary. This cannot be accomplished in a short course of a few months' duration. It means years of expensive study, the drudgery of serving as an assistant to some master of the desired specialty for a goodly number of years, and settling in the vicinity of some large medical center and living without income while taking advantage of the material of established hospitals and clinics.

Acute hemorrhagic pancreatitis is a subject which has attracted considerable attention during the past 10 years. Fortunately the disease is a relatively rare one, and a report of experience in considerable series of cases is unusual. Lund (*Boston Medical and Surgical Journal*, November 29, 1900) reports his observations in 6 cases of this kind, an experience which has been equalled by few observers. In 5 of these cases operative treatment was undertaken, and in 1 case which was operated upon by Dr. John C. Monro, recovery resulted. As but 4 previous recoveries after operation have been recorded this case is of peculiar interest. A woman, 36 years of age, who had had three attacks of epigastric pain two years previously, was taken with severe pain in the epigastrium and left hypochondrium, accompanied by vomiting and moderate fever. On physical examination there was general abdominal tenderness, muscle-spasm, and an indefinite tumor was made out. A diagnosis of probable rupture of a gall-duct with retroperitoneal abscess was made, though the possibility of pancreatitis and of abscess of the pancreas or tumor of the kidney was considered. An incision was made in a median line. The omentum was adherent to the abdominal wall, and on freeing it the pancreas was found enlarged, hard, and nodular. A finger was pushed into the tumor in various directions with the hope of finding pus, causing moderate bleeding. An opening was then made in the left lumbar region for drainage, and the abdominal wound was closed. Through the lumbar opening a nodule was removed, together with some omentum and fat necrosis. The wound was packed with iodoform gauze and a glass drainage-tube inserted. Immediate improvement followed, but a second operation was necessary for drainage of pus pockets through the lumbar incision 5 weeks later. There was free discharge of pus which ceased in about 10 days. An uneventful recovery resulted. Since then, over a year ago, the patient has been in excellent health.

Of the 6 cases, 5 were women, and all were between 30 and 50 years of age. Four of the patients had gall-

stones. In no case was a definite diagnosis made, but a diagnosis was approximated 3 times. Besides the recovery mentioned, 1 other patient recovered from the operation, but died 2 months later because of inadequate drainage. There were 2 deaths from shock, and in one case operation was declined because of the poor condition of the patient.

Lund discusses the differential diagnosis of this condition from perforating gastric ulcer and acute appendicitis. The pain is not so sharp nor the tenderness so acute as in perforating gastric ulcer. There is moderate tenderness on deep pressure; in all the cases there was a sensation of fulness, as of a tumor in the epigastrium overlaid by the stomach. Muscle-spasm was not so marked as in perforating ulcer or acute appendicitis. An absolute diagnosis is generally impossible, but in most cases the symptoms point to an acute peritonitis originating in the epigastrium, which, from whatever cause, demands exploration of the abdomen. Milder cases of this affection may recover with or without operative intervention. Severe cases require operation, which should be performed early, because the primary hemorrhage leads to necrosis of the gland-tissue. The hemorrhage may be stopped and further necrosis prevented by gauze packing and adequate drainage. The patient is in better condition to withstand an operation earlier than later when weakened by suppuration. As the diagnosis is usually tentative, exploratory incision should be made in a median line above the umbilicus. In severe cases this may be done under local anesthesia. On account of the weakened condition of most patients, rapidity in operating is essential. The great omentum must be traversed, masses of blood-clot and necrotic fat should be rapidly evacuated, and further hemorrhage stopped by gauze packing. It is generally impracticable to search for bleeding points. When the mass of blood-clot or the diseased cavity has extended into the left lumbar region, adequate drainage must be provided by a lumbar incision made on the finger passed into the cavity. This dependent lumbar drainage Lund considers probably the most important step of the operation, since in most cases it will be impossible to drain successfully through a median incision. In case there are symptoms pointing to the left pleural cavity at the base, the subphrenic space should be drained by resecting the tenth or eleventh rib in a posterior axillary line in order to prevent perforation of the diaphragm by an abscess. So few cases of acute hemorrhagic pancreatitis with operation have been reported that every contribution to this subject has special interest. No doubt the possibility of finding this affection is too often overlooked by surgeons making a differential diagnosis in abdominal cases. Lund's suggestion as to lumbar drainage seems to be judicious and may lead to better results in the treatment of cases in the future.

Reviews.

Encyclopædia Medica. Under the general Editorship of CHALMERS WATSON, M.B., M.R.C.P.E. Vol. II—Bronchial Plexus to Digestion; Vol. III—Diphtheria to Food; Vol. IV—Foot to Hernia. New York: Longmans, Green & Co., 1900.

We wish to repeat and reemphasize what we said in regard to the general plan of this work in our review of Vol. I, published January 20, 1900. One of the greatest difficulties encountered by the editor of a large composite book is to see that all the details are included, and that overlapping does not occur. It is only after extended use of a many-volumed book that one can decide as to this; but we think, as regards this, that there is little to criticise and much to praise in the presentation of Mr. Watson and his collaborators. Another less difficult and more criticisable defect of which we feel compelled to speak is the neglect of cross-references. Concerning the deplorable omission of all therapeutic agents we spoke in a previous review. One cannot be sure that in an unfinished work the failure of cross references indicates a failure to treat the subject, and injustice to a work of such excellent and serious purpose as this would be inexcusable. Even if somewhere the following subjects are adequately set forth, it makes all the more noteworthy the failure to insert the cross-references. Surely the student and practitioner should be helped by mention of the following noticed in part of one volume: Bubo, Bubonic Plague, Cartilage, Carbuncle, Castration, Catamenia, Cathartics, Caustics, Chalazion, Chancre, Chancroid, Charbon, Chill, Chloasma, Chorion, Clonus, Collapse, Colostrum, Coma, Coma-Vigil, Confinement, Consumption, Convalescence, Counterirritation, Cramp, Cupping, Cyanosis, etc. The list could be indefinitely extended.

As to the articles themselves, they are almost always of a high order of merit. They are thoroughly "up to date," and yet conservative and trustworthy.

The mystery of the Englishman's spelling is, of course, illustrated. We do not find *aether*, as we had expected, and not even *gangræne*; and *choroid* is also given instead of *chorioid*; but, of course, *hæmorrhage*, *anæsthesia*, etc., are clung to, we suppose from *etymological* reasons, and we see we shall have to wait until the volumes reach the letter O, before we can learn anything about the Esophagus.

Atlas and Epitome of Special Pathologic Histology. By Docent Dr. HERMANN DÜRCK, Assistant in the Pathologic Institute; Prosector to the Municipal Hospital L. I. in Munich. Authorized Translation from the German. Edited by LUDVIG HEKTOEN, M.D., Professor of Pathology in Rush Medical College, Chicago. With 62 colored plates. Philadelphia: W. B. Saunders, 1900. Price, \$3 00.

This beautiful little book, the first of a series of three on special and general pathologic histology, treats of the "circulatory organs, respiratory organs, gastrointestinal tract." The plan of presentation consists in a short description of the normal histologic structure of each organ, followed by brief accounts of the respective tissue changes induced by the different morbid processes of diseased states, illustrated by admirable lithographic plates, each containing two or three figures, with explanatory text giving among other data the magnification and the specific stain or special technic used. The fidelity of these plates, in drawing and coloring, is well-nigh absolute. In the preface Dr. Dürk says that the drawings were made from his own preparations, and though their beauty must be evident even to the unfamiliar eye, yet the excellence of the originals and the accuracy of the pictorial reproductions can be fully appreciated only by those who use the microscope and are acquainted with modern histologic methods. The author warns the student that "it is impossible to master pathologic histology without direct microscopic study," and to perceive, as well as to see, these exquisite illustrations the visual image must be interpreted by the eye of the intellect.

The editorial additions are well chosen and instructive. The translation is agreeable and gives the impression of being faithful, none the less that occasionally verbs are in the wrong tense—page 8 or 19, for instance.

The letter-press is artistic. If punctuation is a matter of taste and not judgment, then irrelevant commas and aggressively superfluous semicolons are matters of curiosity and not criticism. However, every part of the work is obviously conscientious, and it has been a pleasure to review this book, in which there is so little to overlook and so much to praise without stint.

A Text-Book of the Practice of Medicine. By J. M. ANDERS, M.D., Ph.D., LL.D. Illustrated. Fourth edition, thoroughly revised. Philadelphia: W. B. Saunders & Co., 1900. Price, cloth, \$5 50; sheep, \$6.50.

One finds much to admire in this new addition of Anders' Practice of Medicine, especially its practical features.

The author evidently prefers conservatism to things which are only seemingly within the border lines of proof. In typhoid, for instance, he clings quite closely to the pathology of the disease as generally recognized, namely, the lesions found in the bowels, and dismisses the septicemic form with only a few words. This is doubtless the safest plan. Due credit is given most writers for their work in the different diseases, but it might possibly have been better to have mentioned the name of Vaughan and his coworkers in their great work in typhoid during the recent Spanish-American war, who, in their masterly paper (*American Medical Association*, June 5-8, 1900), proved that the specific germ may be carried by flies, and may be inhaled in the dust by troops on the march.

As in another recent work, the bacillus of Shiga is not mentioned as being one of the causative agents in the production of dysentery.

In malarial fever the name of Ronald Ross, who was first to prove that the mosquito acts as the intermediate host for the malarial parasite, has been probably unintentionally omitted.

The writer regards the Bacillus of Sanarelli as the specific organism of yellow fever.

In speaking of appendicitis, the author confesses that it is a surgical affection, and in its treatment the physician should at once also request the services of a surgeon, and failing in this, "the physician falls short of his duty."

The charts inserted on pages 150, 151, and 296, showing the morbid anatomy of lobar pneumonia and acute pneumonic phthisis, as well as the chart on page 296, are very commendable. There is no more reason why a student should not keep before the mind's eye the morbid anatomy of these diseases than that they should always remember the temperature chart.

All told, the work will be found a safe guide for the student and practitioner.

Modern Surgery—General and Operative. By JOHN CHALMERS DACOSTA, M.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia; Surgeon to the Philadelphia Hospital and to St. Joseph's Hospital, Philadelphia. With 493 illustrations. Third edition, revised and enlarged. London and Philadelphia: W. B. Saunders & Co. Bound in cloth, \$5.00; in half-morocco, \$6 00.

We notice with pleasure the appearance of the third edition of Dr. DaCosta's Modern Surgery, because we feel that a useful book, written by an able man, finds a place of utility on even the crowded shelves of medical literature. It scarcely seems necessary to go over in detail that which has given former editions a wide sale and general acknowledgment of superior merit, and we will notice, therefore, more particularly those parts which make this edition an improvement on the former ones. The third edition in number of pages, shows an increase of 200. The general arrangement of the book is much the same, a few chapters being somewhat differently headed, and the titles at the top of the pages being much more specialized, so that the reader may more readily find the particular detail for which he is look-

ing. The greater part of the first half of the book deals with general surgery and differs little from the former editions, covering in an able way bacteriology, asepsis, the various forms of inflammation, and pathology, and the treatment of wounds, and general surgical infections. The latter part of the book is devoted to special surgery, and in this part we find the greatest change, especially in the insertion of new operations. The addition to this part of the volume seems to make the book absolutely up-to-date, especially in regard to operative surgery. Among some of the improvements which the advance in surgery has made necessary, may briefly be mentioned, Bier's method of amputating through the lower leg; the younger Senn's incision for removal of carcinoma of the breast; Harris' instrument for obtaining unmixed urine from each ureter; Bryant's method of colopexy; Halsted's method of suturing the bile-ducts; Laplace's intestinal anastomosis forceps; Braun's method of gastroenterostomy, and Fell O'Dwyer's apparatus for inflating the lungs in cases of pneumothorax. Two new complete articles have been inserted, one on the examination of the rectum, and another on the hot-air treatment of the joints.

When we remember the style with which the former editions were written, the apparent care taken in the elimination of useless theories and methods, the clear English which enabled easy comprehension of the substance under discussion, and the many other features, which have given this book a popularity sufficient to warrant the appearance of a third edition; we feel that we can conscientiously recommend this, the third edition of DaCosta's "Modern Surgery," first to the student who is initiating himself to the science and wonders of surgery, and secondly to the general practitioner who desires a cursory knowledge of those surgical diseases and conditions which an every-day experience makes it necessary for him to deal with.

Stringtown on the Pike. A Tale of Northernmost Kentucky. By JOHN URI LLOYD, author of *Etidorhpa*. Illustrated. Published by Dodd, Mead & Co. Price, \$1.50.

This has been called one of the literary successes of the year by critics who have become familiar with the story through its serial publication in *The Bookman*. For those who have reserved their reading until its completion, a greater enjoyment and truer appreciation of motives and methods is reserved. The volume has a vivid interest for the profession not only in that it is the production of a member of their own guild, but in the interesting medico-legal questions with which it deals. The matter of expert testimony is one of perennial interest, and the book presents an exceedingly able argument against the conclusiveness with which such testimony is usually regarded. One also wonders whether Professor Lloyd has only imagined the existence of a drug that would produce gradual death in the manner in which young Drew made his expiation, or whether he has accurate knowledge from which to draw his minute descriptions. There is much of the occult negro wisdom in prophecy fulfilled, given without effort at explanation, even the trite one of coincidence, and invested with an apparent realism that leads to at least a passing wonder as to the reasons for the coincidences which so increase the natural tendency of many minds toward mysticism. The book is scholarly and of sustained interest, mystic in many parts, but never fantastic, and well worthy attentive perusal. The volume is a credit to the art of bookmaking, and is artistically illustrated.

A Treatise on Appendicitis. By JOHN B. DEEVER, M.D., Surgeon-in-Chief to the German Hospital, Philadelphia. Second edition. Thoroughly revised and considerably enlarged. Illustrated with 22 full-page plates. 8vo. Philadelphia: P. Blakiston's Son & Co. Price, \$3.50, net.

The second edition of this well-known book has been considerably enlarged and carefully revised. A number of cuts have been added together with a new chapter on the pathology of appendicitis. The history, anatomy, etiology, pathology, symptomatology, diagnosis, prognosis, treatment, and complications and sequels are treated in a thorough manner

and at considerable length. The author's views with regard to the treatment of appendicitis are well known. He states that increasing observation and experience have confirmed him in the opinion that the most appropriate course to pursue in order that the best results may be obtained is to remove the diseased appendix as soon as the diagnosis of appendicitis has been made, provided the diagnosis has been made early and there are no complications that render immediate operation unjustifiable. The use of opium is strongly condemned, as it masks the symptoms, favors the retention of excrementitious material, decreases the activity of the elimination when it may be most important, causes distention of the bowels which may favor the spread of peritonitis, increases nausea and often induces a false hope of recovery without operation until it is too late. Operation is considered contraindicated in cases of diffuse peritonitis in which the abdomen is distended, the temperature high, the pulse rapid and of high tension and the patient's expression anxious and indicative of serious intraabdominal trouble, the bowels constipated and unable to cause the expulsion of flatus and in which vomiting is continuous and tenderness is diffused over the entire abdomen. Regurgitant vomiting is indicative of approaching dissolution and is a well-recognized contraindication to operation. The appendix should be removed at the primary operation in all but exceptional cases. The after-treatment of appendicitis is discussed at some length and very many valuable suggestions are given. An extensive bibliography is appended which will be of much value to those who are specially interested in this subject. This book has come to be generally recognized as the most satisfactory monograph on the subject of appendicitis which has thus far appeared. And there is much in the new edition which will help it to retain this enviable reputation. Original drawings of specimens in the author's extensive practice and many unusual and interesting cases are mentioned. The subject is one of great interest to both physicians and surgeons and all who are specially interested in it will desire to own the new edition of this valuable monograph.

Essentials of Histology. By LOUIS LEROY, B.S., M.D., of Nashville, Tenn. With 72 illustrations. Saunders Question-Compends No. 25. Philadelphia: W. B. Saunders & Co., 1900. Price, \$1.00.

This compend of histology will be found useful to one who has not the time to consult larger works on this subject. Leroy describes three types of muscles, namely: Voluntary, smooth, and heart-muscle. As the work will be largely employed by students it might seem questionable whether it is best to describe the "giant cell" with the other cells found in bone marrow. As to the technic of staining after imbedding in paraffin the author states that after the paraffin is dissolved off by xylol, turpentine, etc., it is then transferred to absolute alcohol and stained. It might be best to wash out the alcohol in water before staining in aqueous solutions, but this is doubtless what the author meant. The writer has adopted the latest method in spelling words. Most of the drawings are original, and there are few inaccuracies noted such as are frequently found, thus showing a careful review by both writer and publishers.

Diseases of Women. By HENRY J. GARRIGUES, A.M., M.D., Gynecologist to St. Mark's Hospital and to the German Dispensary, New York City, etc. Third edition, with 367 illustrations. Philadelphia: W. B. Saunders & Co. Cloth, \$4.50 net; sheep or half-morocco, \$5.50 net.

This popular textbook has been thoroughly revised and all material of lesser importance has been omitted. Numerous additions are noted which brings the work up to date. The illustrations are clear cut and ably serve their purpose in elucidating the text. The work, embodying as it does the great clinical experience of the distinguished author, commends itself, not alone to the student and practitioner, but to the specialist as well, because it epitomizes the best gynecologic literature of the day. In reading over the work one cannot but be impressed by the clearness displayed in describing the various operative procedures, and the therapeutic knowledge imparted. The systematic manner in which the chapters are arranged, renders the book valuable to those who turn to its pages for a hurried consultation.

Correspondence.

A NEW MEDICAL TERM—CEPHALOPLEGIA.

By H. C. WOOD, M.D.,
of Philadelphia.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

THE terms paraplegia, monoplegia, hemiplegia, are among the oldest in medicine. There is, however, a paralytic condition which is just as characteristic as is either of the paralyzes mentioned, and for which there is no good medical term in use. This condition is the congery of palsies which is often spoken of as bulbar palsy, pseudobulbar palsy, cerebral bulbar palsy, etc., which may be produced by disease of the medulla oblongata, or may have other cause. For this form of paralysis I would venture to suggest the name cephaloplegia; so that we would have the terms hemiplegia, paralysis of one side of the body; cephaloplegia, paralysis of the muscles about the head and face; paraplegia, paralysis of the lower half of the body; monoplegia, paralysis of one extremity or part. The present nomenclature is an absurdity, speaking of a "cerebral bulbar palsy" being the same as saying a "cerebral paralysis of the medulla oblongata."

NEW WORD-COINAGE.

By G. ALDER BLUMER, M.D.,
of Providence, R. I.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IS YOUR correspondent not in error in alleging that we have in our language no equivalent for the word "Verschlimmerung?" "Worsen" is a strong English verb, both transitive and intransitive, and "worsening," though unusual, is an equally good participial analog of the rugged "Verschlimmerung." There was never any warrant *quoad* necessity for the word "ameliorate," so long as we already had "better" and "improve" with their corresponding nouns. Therefore let us not cumber our Anglo-Saxon speech with its congener "apejorate." Similarly with "belittle," to make small, and "lessen," to reduce in bulk, number, degree, state, or quality, why "parvify"? One would have less fear of the taking on of these new words, at the behest of your correspondent, but for the feeling that what the PHILADELPHIA MEDICAL JOURNAL sanctions, even tacitly, usually goes. An Edinburgh professor used to say that almost anything could be stated in terms of Anglo-Saxon if the effort was intelligently made, and to him, worthy soul, impenetrability of matter was not less but more obviously a fact in physics when he preferred to speak of it as the "unthoroughfaresomeness of stuff."

STERILIZING THE CLINICAL THERMOMETER.

By WILLIAM H. DYER, M.D.,
of Dover, N. H.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

TO THE busy practitioner, it takes too much time to mix antiseptic solutions in which to sterilize his thermometer, and generally washing it in water, wiping with a towel, and return to the oft-times already infected case, is the routine practice of, I may say, most physicians.

The antiseptic and germicidal power of formaldehyd gas is now well known. A few drops of a 40% solution of formaldehyd on the cotton in the bottom of the thermometer case, furnishes the most effective and easy method of sterilizing the thermometer that I know of. The gas is readily liberated from the solution of formaldehyd, and the thermometer case being nearly air-tight, the escape of the gas and evaporation of the liquid is almost nil. In this way the thermometer when in the case is constantly subjected to the germicidal action of the gas. Before placing it in a patient's mouth it is well to rinse it in water and wipe dry, as gas or solution of this strength is very irritating to the mucous membrane.

A HAT-PIN SIX INCHES LONG EXTRACTED FROM THE MALE URETHRA.

By THOMAS M. PAUL, M.D.,
of Hazleton Pa.

Assistant Surgeon State Hospital.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

E. A., aged 21 years. Family history negative. Had an attack of gonorrhea about 3 months ago, which is now cured. Came to dispensary October 21, 1900, and stated that about one half-hour before I saw him, he thought he would test himself for stricture. In order to do this, he introduced a long hat-pin with a round, black head into his urethra, and while drawing it backward and forward carelessly, it slipped out of his fingers. On examination, the pin could be readily felt in the urethra through the corpus spongiosum. The head was palpable in the perineum and the point a short distance behind the external meatus.

I endeavored to force the pin forward by fixing its head, pushing the penis back on its shaft and then grasping the pin near its point and drawing it forward with the portion of the penis that had been pushed back, at the same time releasing the pin's head. Despite the fact that this manipulation was conducted with very great gentleness, I only succeeded in forcing the point of the foreign body into the urethral walls. An attempt to grasp the pin's point with forceps introduced through the meatus signally failed. I noticed that at one point in particular the point of the pin had nearly penetrated the urethral floor, and thinking that it would increase the danger of infection but slightly if the skin was pierced, I decided upon, and carried out the following procedure: Fixing the head of the pin behind the scrotum with the fingers of one hand, and bending the penis upward on the abdomen and forcing it backward on the pin's point with the other hand, I caused the shaft to protrude. Seizing this I drew it outward until nothing but the pin's head was left in the urinary canal. The shaft of the pin was then laid back against the scrotum and the head forced forward through the external meatus. Grasping the pin's head in this situation it was easy to draw it through the puncture in the floor of the urethra.

The patient was advised to go home, go to bed, and was given lead water and laudanum to apply externally, and salol to take internally. He reported on the following day; there were no inflammatory symptoms, and the puncture was scarcely discernible. Since then I have seen the patient twice, and he is now perfectly well. The hat-pin was precisely six inches in length.

Agnew, in his textbook, accurately described the power of deglutition exhibited by the urethra when bodies are introduced from without, but states that foreign bodies are carried in the direction of the urinary current when they enter it from within. The above, as well as several other standard textbooks which I consulted, recorded no similar case, and no method was described by which a pin as large as the above could be extracted. For this reason the case appealed to me as being unusual.

A NEW PRINCIPLE IN HEART PHYSICS.

By D. T. SMITH, M.D.,

of Louisville, Ky.

Lecturer on Medical Jurisprudence, University of Louisville.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IN the article on "Moot Points in Obstetrics" contributed by me to THE PHILADELPHIA MEDICAL JOURNAL, in the Prize Essay Contest of 1899, an effort was made to justify, on physical principles, the evolution of the contracting ring of Bandl in the uterine muscle. The principle has been still more extensively elaborated in the essay on the "Functions of the Fluid Wedge" in the writer's recently published "Philosophy of Memory, and other Essays."

The first application of the principle to the heart-musculature and function was made by Dr. Ewing Marshall, of Louisville, in a thoughtful paper read at the meeting of the Kentucky State Medical Association in 1892.

In the paper referred to, Dr. Marshall, while insisting that the ventricle elongates during systole, contended that this elongation is due to the contraction of the band of muscle that encircles the ventricles, especially the left, acting with predominant force on the fluid content of the heart-cavity on the principle of the "fluid wedge."

In this paper I propose to produce a reason for the fact that the heart-muscle is thin at the extremities, thicker at intermediate points, and thickest at the middle of the left ventricle.

The assumption by soap bubbles, toy balloons and the like, of the spheric form, has been claimed to be due to the fact that the sphere is the form in which the greatest possible content is embraced within a given extent of surface. This is the statement of an undisputed fact, but it is very far from affording an ultimate solution. It is true that in no direction can the form of a spheric capsule be changed without diminishing its content, provided the extent of surface remains the same.

The principle in the raindrop is the same, except that the fluid wedges of the soap-bubble are controlled by external pressure and those of the raindrop are drawn by the force of gravitation to the center.

Without going more extensively into an analysis of the intricate physical principles here involved, it may perhaps be enough to say that it requires less force to clamp about the middle of an elastic bottle, or the uterus, or the heart, and expel its contents than to accomplish this by pressing over the whole surface of such receptacle.

And just here it is pertinent to note a certain difference between the hydraulic and hydrostatic action of fluids.

In the so-called hydrostatic paradox we are taught that in stable fluids each particle presses equally in every direction.

This, though in my opinion not a paradox at all, but an instance of a general uniform law, is at least a fact. But it applies only to fluids in equilibrium and not to such as are in motion. In stable fluids, no matter what the shape or size of the containing vessel, the pressure on its walls is everywhere the same at the same level. But let a measure of expanding force be released at any point in the fluid contained in the vessel, and it will spread or radiate just as light does, with an intensity inversely as the square of the distance it extends, or, as commonly stated, inversely as the square of the radius. That is to say, if at any point within fluid contained in a vessel, a cartridge were exploded with just force enough to rupture the vessel-wall at a single point, the rupture would take place in the part of the wall nearest to

the point of explosion, provided, of course, the wall was everywhere of uniform resisting power.

The bearing of this principle on heart physics presents itself in two important aspects for consideration. One is the economy attained in diminishing the capacity of the cavity of the heart and thereby lessening its content by changing the form of the organ from that of the spheroid to that of the cylinder. The other is the evolution of the greater thickness of the muscle by which this object is effected, at those points where the greatest stress is imposed by this character of contraction; or, in other words, at the points where the walls approach nearest to the center of the heart-cavity in contraction.

The requirements which would seem to guide evolution would obviously be met by the production of such a structure of the heart as that the thick belt of muscle about the ventricles would be able in contracting exactly to counterbalance the action of the thinner muscles at the extremities, and there should be therefore neither shortening nor lengthening in a strictly normal heart during contraction. The empty heart in contracting will invariably shorten; while the muscular bands might in the case of full ventricles, as pointed out by Dr. Marshall in the paper already referred to, by means of the fluid-wedge action of the contained blood, drive out the thinned extremities and thus bring about more or less lengthening.

The uterus, in which great force is to be exerted for a similar purpose, namely, the emptying of its cavity, has a corresponding provision in the contraction ring of Bandl.

No similar feature has as yet been pointed out in the structure of the other hollow organs of the body, such as the urinary and gallbladders, the vesiculæ seminales, and the ampullary enlargements of the vas deferens. But I venture the prediction that a rudimentary development of a muscular band about these organs will be revealed on closer inspection, and especially in instances of hypertrophy.

In the urinary bladder, the conditions are such as to admit of the evolution of only the slightest trace of such a structure. In the first place, a notable development of such a structure would be dangerous to the integrity of the bladder-walls as they now exist, and would require a corresponding thickening. In the second place, had strong muscular walls been developed in the bladder along with its acrid, irritating contents, exposed as these are to a still more irritating fermentation, inflammation once set up would be continuous and in most cases eventually fatal. Even as it is, the spasmodic action of the musculature of the neck of the bladder is the predominant factor in perpetuating inflammation, as its prohibition is probably the greatest aid in effecting cure of such a condition.

Albuminuric Retinitis.—Rogers (*Transactions of the Rhode Island Medical Society*, vol. vi, Part i, 1899) attempts, by collection of statistics and by his own experience, to estimate the expectancy of life in those suffering from chronic Bright's disease, after the discovery of albuminuric retinitis. In his computation he excluded the cases of albuminuric retinitis due to the uremia of pregnancy, diabetes, scarlet fever, etc., considering only such cases as are due to chronic Bright's disease. He quotes the figures collected by Belt, showing a total of 419 cases, 72% of whom died within 1 year, and 90% within 2 years, only 9% living over 2 years. The author's 18 cases ran a very similar course, from all of which he concludes that about 7 patients out of every 10 who develop albuminuric retinitis during the course of either of the 3 forms of chronic nephritis will die within 1 year and 9 out of 10 within 2 years. [A.B.C.]

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Calendar of Meetings of Philadelphia Medical Societies for the week ended December 22, 1900:

Tuesday, December 18—College of Physicians, Section on Ophthalmology.

Wednesday, December 19—College of Physicians, Section on Otology.

Thursday, December 20—College of Physicians, Section on Gynecology.

Contagious Diseases.—Camden has adopted a resolution that policemen shall notify the Board of Health of any case of contagious disease found without an attendant physician.

Faith-Curists.—Sollenberger and Sheets, faith-curists who conducted the Beulah Orphanage or Fire Baptized Holiness Mission, Philadelphia, pleaded guilty to the charge of involuntary manslaughter, and were each sentenced to serve 3 months in the county prison. The charge preferred against them arose from the death of a 7-months-old child, an inmate of the institution, who was ill and for whom no medical attention was provided—reliance being placed on the faith-cure.

Charged with Illegal Practice.—The case against Dr. Louis H. Freedman preferred by a member of the Erie County Medical Society came up for hearing recently. A proposition was made in the name of the society to withdraw the case, provided the healer would pay the costs and leave Erie within 24 hours. He accepted the proposition. The case was for failure to comply with the State statutes relative to itinerant practitioners, whereby they are required to pay a license fee of \$10 per day.

Harrisburg Academy of Medicine.—At a recent meeting, DR. C. L. KEENE read a notable paper upon **Diarrheal diseases of infants and their treatment.** Both in the paper and the discussion emphasis was placed upon the importance of clean and pure milk rather than upon artificial aids to digestion and aseptic food. A municipal farm to provide pure milk was suggested, and it was thought that boards of health could cooperate with physicians and parents looking towards this or some other method whereby pure milk might be always available for infant feeding.

An instructive lecture was given by PROF. J. M. T. FINNEY, of Johns Hopkins University, upon **The treatment of perforating gastric ulcer.** A resume of the literature upon the subject showed the comparative infrequency of the condition in the United States. The importance of an early diagnosis was dwelt upon. Wier, in 1891, was the first United States surgeon to operate. Out of 268 reported operations up to 1900, there were 139 recoveries and 129 deaths, a mortality of 41%. Of recent operations, the mortality was 38%. Of 35 gastric ulcers in the wards of Johns Hopkins Hospital there was perforation in but one case. The technic of recent operations for aortic and other large aneurysms was the subject of some additional remarks.

The Samuel D. Gross Prize of \$1,000.—No essay which the trustees deemed worthy of the prize having been received on January 1, 1900, they hereby announce that the prize will be awarded on October 1, 1901. The conditions annexed by the testator are that the prize "Shall be awarded every 5 years to the writer of the best original essay, not exceeding 150 printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens." It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title-page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery. The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of

the College of Physicians, 219 S. 13th Street, Philadelphia," on or before October 1, 1901. Each essay must be distinguished by a motto, and accompanied by a sealed envelop bearing the same motto, and containing the name and address of the writer. No envelop will be opened except that which accompanies the successful essay. The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within 1 year. The committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

Vital statistics of Philadelphia for the week ended, December 8, 1900:

Total mortality	CASES.	DEATHS.
Inflammation of appendix 2, brain 9, bronchi 7, kidneys 13, lungs 50, pericardium 1, peritoneum 4, pleura 1, stomach and bowels 13		376
Lungs—tuberculosis of 57, congestion of 1, edema of 1, abscess of 21		100
Heart—diseases of 35, neuralgia of 3		80
Marasmus 8, inanition 15, debility 4		38
Diphtheria	135	27
Carcinoma of breast 1, face 1, liver 4, stomach 5, uterus 4, tumor of liver 1		21
Uremia 11, Bright's disease 5		16
Apoplexy 11, paralysis 5		16
Puerperal convulsions		10
Cerebrospinal meningitis		9
Old age		9
Typhoid fever	69	7
Brain—hemorrhage of 1, softening of 4		5
Croup 1, membranous 3		4
Alcoholism		3
Cirrhosis of liver		3
Obstruction of bowels		3
Dropsy		3
Whooping-cough		3
Scarlet fever	50	1
Abortion 2, anemia 1, burns and scalds 1, cyanosis 2, hip disease 1, dropsy 2, dysentery 1, epilepsy 1, remittent fever 1, hernia 2, influenza 2, surgical shock 1, septicemia 1, suicide—hanging 1, shooting 1, tabes mesenterica 1, teething 1, ulceration of stomach 1		

The Philadelphia Association of Medical Inspectors of Schools effected permanent organization recently by the adoption of a constitution and by-laws. The officers of the association are: President, Dr. J. H. McKee; secretary and treasurer, Dr. Frank C. Hammond. As at present constituted the executive committee consists of Dr. Charles A. E. Codman, chairman, and Drs. Charles A. Ayers, Truman Augé, George W. Bowen, William E. Robertson, and Howard B. Martin. Meetings of the association will be held at least once a month, at which papers will be read and topics discussed having relation to school hygiene, with the object of placing the work in this city on a solid foundation. So far the work of the inspectors has been entirely voluntary. They were appointed by the Board of Education last January. The corps consists of about 230 physicians, most of whom are well established practitioners, and very many of them are actively affiliated with the city's hospitals, dispensaries, and medical colleges. Women physicians are represented in the body by about 15 members. The Board of Education has requested Councils to appropriate \$25,000 for salaries of medical inspectors next year, and it is said that many Councilmen have expressed themselves as being in favor of the movement. The Chicago school authorities claim that fully 60% of the decrease of contagious diseases among school children in that city since the establishment of medical inspection there is undoubtedly due to the good work of the medical inspectors. The Bureau of Health statistics for this city show, it is said, that there has been a marked decrease in contagious diseases and of deaths from such causes among Philadelphia school children this year, and much of this health improvement is attributable to the voluntary services of the medical inspectors.

NEW YORK.

Memorial Hospital.—It is proposed to buy by popular subscription the Gauntt house in Burlington, N. J., and equip it as a hospital, commemorative of the faithful services of the late Dr. Franklin Gauntt.

The Syracuse Academy of Medicine proposes the appointment of 12 physicians for the county house hospital; 6 of them to be members of the Academy of Medicine, 3 from other towns within the county, and 3 homeopaths.

New York Hospital.—New buildings for this hospital were opened recently, consisting of a private patients' building, a dormitory building for employes, ambulance departments, governors' building, and out-patient department, all so arranged as to have abundant light.

The Buffalo Academy of Medicine, section of medicine, met December 11, 1900. The following papers were read: "Cyclic or Periodic Vomiting in Childhood," by Dr. Charles G. Stockton; and "The Treatment of Disease Locally by Hot Air," by Dr. Prescott LeBreton.

Adulterated Molasses.—As a result of an agitation now going on in New Orleans in favor of pure molasses the New York City Board of Health has taken action to learn if glucose syrup flavored with molasses is being sold in that city for the pure article, and samples have been gathered for analysis.

Typhoid in Sing Sing Prison.—There are now 17 cases in the prison hospital and additional cases are developing daily. It has been decided to fit up a wing in the new State building, as an emergency hospital. The water comes from the Croton reservoir and is boiled before it is consumed in the prison.

Suit Against Physicians.—Suit was recently brought against Dr. Rosenberg and Dr. Manges, of New York City, for \$60,000 damages. The jury failed to agree, the division being 9 to 3 in favor of the physicians. The suit arose from a simple curettage to stop severe hemorrhage in a woman with large uterine fibroids.

Tenement-House Problem.—The report of the tenement-house commission just issued deals with housing conditions in the 27 largest American cities and concludes that the tenement-house, as known in New York, is practically unknown in other cities of the country. In regard to provision for light and air, the members of the committee state that the laws of Buffalo, Philadelphia and Washington may well serve as models for New York.

German Hospital.—The first anniversary of this hospital in Brooklyn was celebrated on December 1, 1900, with appropriate ceremonies. The hospital now has room for 110 patients in the main building, and for 10 in the building for contagious diseases. A district covering a large territory, has been asked for by the hospital for its ambulance service. The house staff now consists of Dr. George H. Reichers, Dr. Lester L. Roos, Dr. Albert J. Toering, and John A. Ferguson.

Foreign Insane.—Goodwin Brown, connected prominently with the hospitals for the insane of New York State, in a recent appearance before the Industrial Commission urged that vigorous legislation should be made to protect the country from an influx of insane emigrants. He was not prepared to say that there was a concerted effort on the part of foreign countries to impose their insane upon the United States, but 50% of the patients in the hospitals for the insane in New York State are foreign-born, and the foreign insane are costing that State \$1,000,000 a year.

Rating of Physician Candidates.—The New York State Civil Service Commission has made an important change in the method of rating the standing of physicians who apply for positions in state institutions. It has decided to accept in lieu of the examination heretofore required the examinations for license to practise medicine in this State conducted under the authority of the University of the State of New York, and to enter accepted applicants for such positions upon the eligible list in accordance with the ratings obtained by them in the examination for license to practise. In conformity with this determination an eligible list will be prepared on December 15, containing the names of persons whose applications have been accepted prior to that date, and new lists will be made up from time to time in the same manner whenever required. The positions are open to men and women. The salary in most cases is \$600 a year and maintenance.

Widal Examinations at Quarantine.—Dr. Alvah H. Doty, health officer of the port of New York, announces that the Widal test for typhoid fever will be made free of charge in the laboratory of the quarantine station at the request of any physician in New York State. The material and full directions for securing and forwarding the blood or serum to the department for examination will be sent on application, and the result of the examination will be promptly communicated to the sender. These examinations are intended to put this important diagnostic aid within the reach of physicians in the country and in small towns where no bacteriologic laboratories exist.—[*Medical Record.*]

New York Academy of Medicine.—At a meeting of the Section on Orthopedic Surgery, held October 19, Dr. H. GIBNEY read a paper on the **Diagnosis of Pott's disease**, which was illustrated by the exhibition of photographs and the presentation of patients. He said a grunting noise with each expiration is almost always characteristic of caries of the dorsal region, and an early diagnosis is greatly assisted by the occurrence of gastralgia and the appearance of a careful gait and a peculiar apprehensive attitude, and an instinctive desire to avoid disturbance of the diseased vertebrae. The first sign of a kyphos is seen in a slight angle breaking the long natural curve of the spinous process observed in profile as the patient lies prone.

State Hospital for Tuberculosis.—The Board of Trustees appointed in May report that after 5 months' inspection of 26 sites in the Adirondack country, in which due consideration was given to water-supply, quality of soil, elevation, temperature, protection from wind by forest or hills, accessibility to railroad, etc., a suitable site has been selected in Franklin County at the west end of Lake Clare, which it is hoped may be purchased at from \$10,000 to \$12,000. By the terms of the act incorporating the institution such site is subject to the approval of the State Board of Health and the Forest Preserve Board from whom no decision has been rendered. The opinion is given that the hospital cannot be built and equipped at a cost less than \$200,000.

The New York Obstetrical Society held its regular meeting, November 13. Dr. E. B. CRAGIN presented a patient upon whom operation has been performed for full-term **ectopic gestation**, the child being alive, in perfect condition, and presented with the mother to the Society. As a result of 48 hours of spurious labor, the ectopic sac was found ruptured and the intestines covered with fresh fibrin stained with meconium. The point of rupture was quickly dilated with the finger and the living child extracted. The placenta was chiefly attached to the left broad ligament, and it was found that the maternal vessels supplying the area could be ligated. The uterus was so incorporated with the sac that it was decided to remove it, the sac and placenta en masse. Dr. Cragin, in closing, said that the best time to operate was 2 weeks before full term, so as to get ahead of the spurious labor, and in this way get a living child.

Dr. A. BROTHERS presented a specimen of **malignant chorion epithelioma**, or so-called **deciduoma malignum**, removed by vaginal hysterectomy performed under intraspinal anesthesia. Recovery was uninterrupted.

Dr. J. E. JANVRIN presented a specimen of a **multilocular fibroma of the uterus** weighing 8 pounds, removed by abdominal hysterectomy. He also presented a specimen of **cancer of the uterus**, abdominal hysterectomy being complicated by ovarian tumor, an interesting case from the fact that this operation was preceded 5 years before by trachelorrhaphy and this was the first case in his experience where cancer of the cervix had developed after trachelorrhaphy had been done.

The paper of the evening on "**My failures and successes with spinal anesthesia**" was read by Dr. SIMON MARX. He said the causes of failure might be inert cocaine or the use of too small a quantity of it, but the largest number was due to nonentrance into the canal either from faulty technic or too short a needle. The author then described the correct technic.

New York Neurological Society.—At the regular meeting, November 6, 1900, Dr. M. G. SCHLAPP presented a case of **paralysis agitans without tremor**; the chief

features were rigidity of the muscles, the expressionless face, and the position of the arms, body, and hands. He also presented a case of **paralysis of the Duchenne-Erb type** in a man who had fallen from a bicycle, striking his shoulder; it was interesting because the anterior pectoral muscles were affected.

DR. J. FRAENKEL presented a case for diagnosis in a man, 40 years of age, a tailor by occupation, who claimed to have been well up to within 1½ years ago. About 18 months ago the man had been pushed roughly off a street car. On awakening the next morning at home he had been absolutely helpless, being unable to move his upper or lower extremities. After 6 months he had been admitted to the Lebanon Hospital, but had left there, according to the history, unimproved. On coming under the speaker's observation, there had been noted at once the presence of an extensive eczema. On a second examination the shoulder-joints had been found partially ankylosed, and the muscles surrounding them had appeared atrophic. There was also atrophy of the supraspinatus and infraspinatus, and slight atrophy of the serratus muscle. The electrical reactions were not changed. A thorough examination of his nervous system had proved absolutely negative. There was a peculiar atrophic condition of the skin and a condition of cyanosis on the peripheral parts. There was slight valvular disease of the heart. The diagnosis seemed to rest between rheumatism, a general trophoneurosis, and general syphilis. DR. B. SACHS said that he had been led to think of symmetrical muscular atrophies as such as occur after arthritic processes. It was not usual, however, to have them quite so symmetrical. He had had a suspicion that the case might be one of leprosy. DR. M. ALLEN STARR said that when traveling in Norway some years ago, he had seen a number of lepers, and had had his attention called to the existence of muscular atrophies in them. The peculiar appearance of the man's face had led him to think of leprosy without knowing Dr. Sachs' views on the case.

Acute Ataxia. DR. C. L. DANA read this paper, classifying acute ataxia as: (1) The acute bulbar and cerebellar ataxia; (2) acute spinal ataxia; and (3) acute peripheral ataxia due to multiple neuritis of the sensory type. He said up to recent times there had been no definite description of acute ataxia of spinal origin not due to tabes, and called special attention to 5 cases of nontabetic spinal ataxia reported in the paper.

NEW ENGLAND.

Yale Medical School.—Plans are being actively pushed to transfer this institution to Cedar Street, opposite the New Haven Hospital. The dispensary will first be transferred to Cedar Street.

Death Certificates.—A bill has been prepared by the Health Officers and the State Funeral Directors' Association of Connecticut to be submitted to the general assembly, providing that death certificates certifying only to the cause of death and the duration of the disease shall be returned by physicians within 36 hours after death.

CHICAGO AND WESTERN STATES.

Eye Disease.—A new infectious eye disease somewhat similar to "pink eye," noticed about a month ago in Chicago, is reported as epidemic there. It is attributed to the clouds of dust that have prevailed.

Illinois Epileptic Colony.—It has been decided to locate this State institution at Notch Cliff, near Elsau, in Jersey county. There are between 4,000 or 5,000 epileptics in Illinois. This will be one of the largest institutions in the State.

The Medical Society of City Hospital Alumni, St. Louis, Mo., held a meeting December 6, 1900. The following papers were read: Two unusual cases of denudation of the cranium with skin transplantation, by Dr. H. L. Nietert. 1. The female perineum. 2. Hernia, by Dr. F. Reder; Demonstration of fetal monstrosity, by Dr. H. S. Crossen; Some fracture cases, by Dr. N. W. Sharpe; Some cases of cardiac and arterial disease, by Dr. Elsworth Smith.

Military Surgery.—Dr. Nicholas Senn has been engaged by the University of Chicago to give a series of lectures upon Military Surgery. The series will begin next fall. This plan has been adopted since the Rush Medical College became affiliated with the university.

Prevention of Tuberculosis.—In Michigan, where methods of tuberculosis prevention have been pursued since 1891, the death-rate from tuberculosis has steadily diminished, and it can be ascribed to nothing but the efforts of the health authorities in this direction.

The Denver and Arapahoe Medical Society met November 27. An address on **Points in the diagnosis of iritis and glaucoma** was made by DR. EDWARD JACKSON. DR. JOHN S. MILLER read a paper on the **Present status of the subarachnoid injection of cocaine for anesthesia (Corning-Bier method)**. Cases were reported by DR. E. P. HERSHEY.

Donation to Rush Medical College.—A collection of books which represents the German surgical literature of the last 50 years has been donated to the library of this institution by Dr. Christian Fenger. This collection includes several thousand inaugural dissertations collected by Thiersch, the library of Professor Luecke, of Strasburg, and many rare books, such as Lebert's Atlas.

Against the Spitting Nuisance in St. Paul.—According to the *Medical Record* an ordinance was recently passed by both branches of the St. Paul city council and signed by the mayor, forbidding expectoration on the sidewalk under penalty of a fine of from \$1 to \$50, or imprisonment from 1 to 60 days. The duty of enforcing the law and arresting offenders against it devolves upon the police. The throwing of fruit skins and cigar stubs on the sidewalk is also forbidden. The ordinance was passed at the suggestion of the health commissioner.

A bill against quacks and holders of diplomas from bogus medical colleges is in preparation by Dr. W. B. Swan, the secretary of the Kansas State Board of Health. It is intended to submit it to the legislative committees of the medical societies in the State, and to the approval of the reputable physicians before introducing it into the legislature. It will provide for the examination and registration of physicians. All physicians now in the State will be obliged to register, and all those not holding diplomas from colleges of good repute will be obliged to take an examination.

Practises Medicine from his Cell.—Dr. O. R. Lacey is the only prisoner in Lake City jail in Colorado. He is serving a sentence for involuntary manslaughter, and while there is reported to have built up a good practice, as he is the only physician in the town. He eats and sleeps in the jail, and the county is obliged to pay all the expenses of his maintenance. He refused to give up part of the money he makes in his practice to the county, and a petition has been circulated asking the State Board of Pardons to release him. Dr. Lacey refuses to sign the petition, saying he is perfectly satisfied where he is.

The Lucy S. Ingals Prize Scholarship of Northwestern University Woman's Medical School, Chicago, Ill., has been awarded to Mrs. Emma B. Tucker and Miss Susan B. Tallman, for the session of 1900-1901. This scholarship, which was established by Dr. E. Fletcher Ingals, is conferred for excellent original work, or may be awarded as 2 half scholarships to a member of the second and a member of the third-year classes respectively, who shall attain the highest average in medical studies for that year. This prize is conferred only upon students possessing the degree of Bachelor of Science or Bachelor of Arts, or a degree of equal rank from a first-class university or college.

Municipal Lodging-House.—According to the *Medical News* the Commissioner of Health of Chicago announces that his forthcoming estimates will contain an item of \$20,000 for a municipal lodging-house, to be established in some rented building and to contain perhaps 300 beds. Such an institution might be designed, after the example of British cities, to serve the purpose of the ordinary common lodging-house which is run for profit, but evidently the proposal contemplates one which shall be of that specialized sort designed

to serve as an agency in dealing with the question of vagrancy. There is to be a medical sanitary inspector included in the staff and other officers with salaries to look after the health conditions of the enterprise.

The State Board of Health of Illinois will make in its forthcoming biennial report some important recommendations for legislation. Among them will be that a State sanatorium for tuberculous individuals be established after the plan that has been successfully followed in other States. The State Board of Charities will also be joined in its recommendation for provisions for the care of epileptics. Additional powers for township boards of health will also be asked. Under the present law these boards have no power to punish those who disobey the rules and regulations tending to check the spread of contagious diseases. The board will ask that a penalty be provided, and will further recommend that some provision be made for boards of health in counties not under township organization.

The College of Physicians and Surgeons of Oakland, Cal., has completed its reorganization, the incorporation papers have been filed, and the faculty selected. Sufficient funds have been subscribed to operate the school for the first year, and it is expected that it will be opened in time for the fall term. The following officers were elected: President, Dr. Frank L. Adams; secretary, Dr. Carl R. Krone; president of the faculty, Dr. J. S. Eastman. The faculty has been selected as follows: Dr. D. D. Crowley, professor of principles and practice of surgery and clinical surgery; Dr. F. L. Adams, clinical surgery; Dr. J. S. Eastman, professor of the principles and practice of medicine; Dr. Carl R. Krone, pathology; Dr. Hayward G. Thomas, ophthalmology and otology; Dr. S. H. Buteau, gynecology; Dr. W. F. B. Wakefield, clinical gynecology; Dr. R. T. Stratton, nervous diseases and cerebral surgery; Dr. Edward N. Ewer, obstetrics; Dr. W. S. Porter, surgical anatomy; Dr. J. L. Milton, anatomy; Dr. Oliver D. Hamlin, visceral anatomy.

Chicago Pathological Society.—At the regular meeting November 12, 1900, DR. D. N. EISENDRATH demonstrated the following specimens: (1) **Adenoma of the liver.** The sections revealed a tumor sharply demarcated from the surrounding liver tissue, having a wavy outline with a yellowish outer and a whitish more fibrous inner portion. It was at first regarded as a carcinoma, but microscopically the structure was seen to be that of an adenoma. It was clearly revealed where the tumor tissue began and the normal parenchyma ended. There were many columns of new liver cells not arranged in the form of acini, separated from each other by trabeculas of connective tissue which seemed continuous with that of Glisson's capsule. The large size of the cells and the drops of fat contained in them were the most striking features. It is an open question whether to call this tumor an adenoma or a nodular hyperplasia. Orth thinks that if such a condition be called an adenoma it would be better to add hyperplastic to distinguish it from the tubular variety in which there are columns of cells, many having a distinct lumen. Both of these varieties may easily change into a carcinoma. (2) Specimens showing **relation of diseases of the gallbladder and intestines to infective cholangitis.** DR. HEKTOEN showed 2 rare cardiac anomalies: (1) **Congenital aorticopulmonary communication;** (2) **Communication between aorta and left ventricle** under the anterior aortic valve which was attached at both ends.

DR. MAXIMILIAN HERZOG read a paper of DR. GEORGE A. BOYE, of Baldwin, Kans., on **Sarcoma of the pancreas, with report of a new case.** In this and other cases cited in the discussion there was entire absence of glycosuria. Dr. Herzog said he believed that the pancreas furnishes a ferment which splits the sugar and forms from it alcohol and CO₂.

DR. LEO LOEB demonstrated specimens as follows: (1) **Carcinoma of sebaceous glands of a rat;** (2) **A Case of lymphosarcomatosis** in a sheep; (3) **Mitosis and cell divisions in different stages in eggs of guineapigs' ovaries;** (4) **Specimen of a 16-pound tumor of the horn of the uterus of a sow.**

SOUTHERN STATES.

St. Vincent's Hospital, of Birmingham, Ala., with a capacity for 200 patients, was opened November 29.

Delaware Hospital for the Insane has had a bequest of \$1,000 from Elzy Wade, of Wilmington, lately deceased. He had been night watchman in the institution for a number of years.

The Galveston Storm.—The bodies of victims of this storm of 3 months ago are daily found under the debris and in swamps on the island and mainland. Last week the number amounted to 45.

Impure Milk.—The discovery that the milk furnished to the Charity Hospital of New Orleans was diluted led to the conviction and punishment of the dairyman, a daily analysis of the milk-supply and a strict inspection of the dairy and cows.

Tuscaloosa Hospital for the Insane is reported in a very overcrowded condition, with 1,500 inmates contained in a space intended for 1,000. Bills for an appropriation of \$25,000 to relieve this have been introduced into the State Senate and House of Representatives.

Suit for Damages.—Dr. George H. Noble, of Atlanta, Ga., has been sued by a patient upon whom he operated for \$10,000 damages. A piece of surgical gauze was left in her body and caused much pain until it was removed. The jury rendered a verdict for the defendant.

A negro hospital is to be erected in Winton-Salem, N. C. The building is to cost \$10,000, of which sum R. J. Reynolds, a white citizen, contributed \$5,000, while the negroes of the community raised the remainder. The Hospital will be operated in connection with the Slater Industrial School.

Georgia State Board of Health.—A bill has been introduced into the House of Representatives of Georgia which provides that the State Medical Society shall choose from its members 4 physicians and the governor shall appoint 5 other persons, one of whom shall be a sanitary engineer, to constitute the Board of Health of the State of Georgia.

Typhoid in Washington.—The Medical Association of the District of Columbia recently submitted to the Senate the report of a committee on the best plan for filtering Potomac water. Typhoid fever is reported to exist to an alarming extent in the Capital. The wells of the District have been closed, but the death-rate has increased rather than diminished.

Unsuitable Marriages.—At a meeting of the Tri-State Medical Society of Tennessee, Alabama, and Georgia, held recently in Chattanooga, measures were taken to obtain medical legislation in these three States to regulate or prevent the marriage of habitual criminals and drunkards, persons afflicted with incurable disease, and those addicted to the use of harmful drugs.

Richmond (Va.) News.—The city council is much agitated over the fact that there is no law restricting or forbidding the sale of spoiled meats, poultry or vegetables, and legislation looking to this end and the appointment of an inspector of milk may be expected. The city Board of Health has long and earnestly advocated these measures, but up to the present without effect.

The Cocain Habit.—The New Orleans police force has received an order from the Superintendent to use strict diligence in enforcing the ordinance relating to the use of cocain, as the constant increase in its use has become so serious as to menace the public health.

The physicians of Birmingham, Alabama, are the instigators of a bill about to be introduced in the legislature, especially directed against cocain, but prohibiting the indiscriminate sale of deadly drugs.

Maryland Public Health Association.—At a recent meeting the subject of how to combat tuberculosis was discussed. Dr. Joseph E. Gichner, of Baltimore, who has for years made a study of this subject, read an interesting paper. He believes that there are 10,000 cases of the disease in Baltimore. During the last 6 years the deaths from the disease in that city have ranged from 974 to 1141 annually.

He also showed that public institutions in and about Baltimore have a capacity for receiving and treating 86 patients. **The Perils of Culture** was the title of a paper read by Dr. A. K. Bond, of Baltimore.

The Orleans Parish Medical Society held a meeting November 24. DR. S. P. DELAUP read a paper on **Ligation of the innominate artery for aneurysm**. (This will be published in a future number of the JOURNAL.) DR. A. W. DEROLDES demonstrated the use of a **chair, devised by Dr. French, of Brooklyn, for operations in the sitting posture**. DR. GORDON KING read a paper on the **Asch operation for correction of deviated nasal septum**, reporting a series of successful cases.

Plan to Care for Indigent Sick.—The Board of Supervisors of Charities in Baltimore at a recent meeting announced the perfection of a plan for the care of the city's indigent sick, which will tend to simplify the work and reduce it to a system. This plan means the selection of certain general hospitals and dispensaries, to which will be intrusted the care and attention of the helpless sick. The hospitals selected are the Baltimore City Hospital, University of Maryland, Maryland General, St. Joseph's, and the Maryland Homeopathic Hospital. The dispensaries chosen are the Baltimore General, Southern, Northeastern, Eastern, Woman's Medical College Dispensary, Southern Homeopathic Medical College and Hospital, and the Baltimore Eye, Ear, and Throat Charity Hospital. Tuberculous patients or incipient nervous cases will be sent for special treatment to St. Agnes' Hospital, or tuberculous individuals to the Hospital for Consumptives of Maryland. Deformed children may be sent to the special Hospital for Crippled and Deformed Children.

The Johns Hopkins Hospital Medical Society.—At a meeting held November 19, 1900, DR. MARSHALL exhibited the following pathologic specimens: (1) **Ulcerative endocarditis**, (2) **Cystic kidney and liver**. The heart specimen exhibited was obtained from a patient admitted to the hospital September 6, in whose case the clinical diagnosis of acute endocarditis with adherent pericardium and evidences of former heart lesions was made. It demonstrated these lesions accurately. Old patches of thickening on the mitral valve and its chordae tendinae were found. In addition to the valvular lesions there was a general hypertrophy of the entire heart and the pericardium was closely adherent to its whole surface. Dr. Marshall believed that it was impossible to determine that any particular organism would always produce a certain lesion, sometimes the supposedly milder bacteria produced very severe lesions and vice versa. Recent writers state that *Staphylococcus aureus* is likely to produce the ulcerative form of endocarditis, while the streptococcus and pneumococcus are more likely to result in the production of widespread vegetations. The kidney and liver specimens were obtained at an autopsy upon a Bay View patient whose history was not well known. He had been admitted to the hospital suffering principally from a severe diarrhea. At the autopsy it was found that the terminal affection had been an enteritis and with this an endocarditis. The patient, however, proved to be a veritable pathologic museum in himself, for in addition to the troubles above mentioned he presented evidences of an arthritis, a healed fracture of the humerus, tuberculosis, bronchial pneumonia, cholelithiasis, a carcinoma at the fundus of the gallbladder, with metastases in the liver, and a congenital cystic kidney on one side.

The mechanism of a new hemoglobinometer was demonstrated by DR. DARE, of Philadelphia. See PHILADELPHIA MEDICAL JOURNAL, September 22, 1900, p. 55.

DR. RUSK exhibited **Congenital absence of the pectoralis major and minor**. The patient had been admitted to the gynecologic service for operation and in the course of a physical examination this anatomic abnormality, which had not given rise to any trouble, was discovered. No evidence of either pectoral muscle could be obtained either by palpation or electric stimulation.

CANADA.

The Insane of Ontario.—The Ontario government has recently been receiving some severe criticism for failing

to provide proper and full accommodation for the lunatics who are confined in the common gaols of the province. Toronto especially is taking active steps to have this abuse immediately removed. In the gaol of that city not less than 49 insane people are confined like other criminals, awaiting transference to government asylums, but as there is no accommodation for them, they continue on in their present quarters. The medical health officer, Dr. Sheard, and Dr. Richardson, the gaol surgeon, have been appointed a committee to lay this matter before the provincial secretary, seeking to have the wrong remedied. The government claims that it is hurrying on the work at the old Victoria College at Cobourg, which, when completed, will accommodate 200 patients.—[*Journal American Medical Association*.]

MISCELLANY.

Dr. Ramiro Diaz, a graduate of Nashville, Tennessee, has been appointed to the medical corps of the Mexican army and navy with the rank of captain. He is also a graduate of a special military medical school in Mexico.

Obituary.—EDGAR MARTIN VARY, of Kingston, N. Y., December 5.—GEORGE B. BANKS, of Huntingdon, L. I., December 4.—ROBERT R. WASHBURN, of Waldron, Ind., November 11.—C. F. HARTE, of Akron, Ind., November 19.—FREDERICK W. PLEIBEL, of Philadelphia, December 6, aged 66.—SARAH E. SHERMAN, of Salem, Mass., December 6, aged 55.—WALKER R. STEPHEN, of Reading, November 27, aged 49.—CLARENCE E. FOSTER, of Honesdale, Pa., November 26, aged 43.—FRANK S. HARKER, of Richmond, Va., December 7.—EDWARD A. SMITH, of New York, December 10, aged 71.—E. A. MERRIFIELD, of St. Louis, December 6, aged 75.—JOSEPH T. SHOEMAKER, of Philadelphia, December 6, aged 62.

Emergency Ration Test.—The final test of the emergency rations was completed recently by the experimental board of the War Department, and the troopers have returned to Fort Reno. The march was made into the Caddo and Wichita Indian reservations, and, as before, 50 troopers were in command of Cpts. Fountain and Foster. The last ration tested was prepared by these 2 officers, under the instructions of the War Department, and the board has come to the conclusion that its own rations are the best. Two tests demonstrated that the ration will sustain the soldier in good health and strength for a period of 5 days, and that, instead of its becoming unpalatable on the last day, it becomes more appetizing. The ration compounded by 2 packing companies has a nauseating effect.

An Unnamed Hero.—The Board of Medical Officers which has been studying yellow fever in Cuba has not thought it worth while to mention in its report the name of a young American civilian who allowed himself to be infected with yellow fever by means of a mosquito bite and died from the effect. Two physicians who made the same heroic experiment also contracted the disease. One died and the other recovered. The former was Dr. Jesse W. Lazear, the latter Dr. James Carroll. Their names are given, and very properly so, but the name of the heroic comrade should be preserved also. All three were engaged in one of science's forlorn hopes, and their courage was of a kind that cannot be excelled on the battlefield. Their fame should be handed down to posterity.—[*Philadelphia Ledger*.]

The Röntgen Society of America held its first regular meeting at the Grand Central Palace, New York, December 13 and 14, 1900. Papers were read bearing directly on the application of skiagraphy to surgical, medical, and dental practice, and an exhibition was given of apparatus and skiagraphic plates and lantern slides. The president of the society is Dr. Heber Roberts, of St. Louis, editor of the *X-Ray Journal*, to whose efforts the organization chiefly owes its existence, and the other officers are:—Vice-presidents, Dr. J. P. Girdwood, of Montreal, and Dr. H. P. Bender, of Brooklyn; secretary and treasurer, Dr. J. Rudis-Jicinsky, of Cedar Rapids, Iowa, assisted by Dr. Carl Beck, of New York. The sectional work of the society is delegated to committees whose chairmen are:—Dr. Mihran K. Kassabian, Philadelphia, publication; Dr. Wm. H. King, New York, necrology; Dr. Richard H. Cunningham, New York, conduct; Dr. Carl Beck, New York, revision of the constitution.

Health of Troops in the Philippines.—Surgeon-General George M. Sternberg, U. S. Army, has received the following letter from Major L. B. Grandy, surgeon of the 35th Infantry, stationed at Bailinag, P. I.: "The health of our troops continues good in spite of irresponsible reports to the American newspapers to the contrary. This at least is a very healthful portion of the island of Luzon, and barring certain skin lesions incident to a soldier's life in this climate, I don't think the sickness among the troops has exceeded that among the volunteers in the States 2 years ago. Including the killed in action, there have been fewer deaths in the 35th Infantry in a year's service than in the regiment that I was connected with 2 years ago in 8 months. I think it likely that this is substantially true of other commands over here, excepting perhaps the killed in action."—[*Army and Navy Register.*]

Typhoid Fever in the Army.—Surgeon-General Sternberg has made public a report upon the origin and spread of typhoid fever in the United States military camps during the Spanish war of 1898, and calls attention to the vast amount of work the medical corps had to perform owing to the tremendous increase of the army in the field and the prevalence of typhoid, 20,000 cases of this disease having appeared among the troops encamped within the limits of the United States, from May until September, 1898. Many commands during the war were unwisely located, the space allotted to regiments was, in some instances, entirely inadequate, and many regiments were allowed to remain on one site too long. This and the lack of proper facilities for disposing of the excretions of the human body were no doubt in a large measure responsible for the prevalence of the fevers in camps. Infected water was found to be an unimportant factor in the spread of typhoid in the national encampments of 1898. The part played by flies in the dissemination of germs of the disease, however, was plainly evident.

Hypnotism.—Solicited articles written by 37 men, including representatives of the faculties of Harvard, Yale, Princeton, Pennsylvania, and Berlin, were published by the New York State Publishing Company, of Rochester, N. Y., in the form of a book with the title "Hypnotism and Hypnotic Suggestions." The authors were surprised and indignant to learn almost as soon as they had received copies of the book that these articles had been applied to another use. Incorporated with others they formed a second volume prepared for free distribution by the American College of Science, an institution of Philadelphia which advertises to teach hypnotism to any ordinarily intelligent person, and in proof of its ability, and to afford evidence of its reality and of its dignity as a science invokes the authorities of the great universities who would not sanction an imaginary science nor endorse misstatements. The president of the American College of Science asserts that he purchased the right to use the papers from the New York State Publishing Company, and the grievance cannot be charged against his institution.

Smallpox still exists in many parts of the United States. At Manchester, N. H., 8 new cases have been reported. The city pest house is overcrowded and the health officers are undecided as to what to do with future cases. There are 400 cases in Winona, Minn., and to prevent its spread the Board of Health has closed 2 public schools and ordered the street car company to stop its cars at the boundary of the infected district. The disease is still epidemic at Decatur and other small towns near the Omaha Indian Reservation. Many deaths and 250 cases are reported. The disease has spread to Iowa, where the power of the State Board of Health has been invoked, and the Nebraska State Board will establish quarantine. At Perugue, Mo., several cases are reported. The place has been quarantined, the schools closed and no trains stop at this point. Numerous cases are reported along the Yukon in Alaska from Dawson to the lakes. The U. S. Quarantine officers believe that the disease will be epidemic in Alaska for many months. At Whitesboro, Texas, 30 cases have been reported, with no deaths. At Erin, Tenn., 12 cases are reported among the negroes; a pest-house will soon be built. A mild form of the disease is reported among the Kiowa, Comanche and Wichita Indians in the Indian Territory. In Central and Southern Texas the disease is epidemic.

In Travis County many thousands of dollars have been expended in maintaining pest camps and enforcing quarantine measures. The disease is confined principally to negroes. In Ashland, Wis., there are 22 cases. No deaths are reported. Kansas City physicians fear a serious outbreak this winter. New cases are reported daily. Last winter the epidemic cost the city nearly \$70,000. In the boroughs of Manhattan and the Bronx, New York, 46 cases have been reported recently. There are 24 smallpox patients in the Willard Parker Hospital, New York City. Vaccination measures are being enforced. The Council of Yukon, Alaska, has passed an ordinance requiring all persons in Yukon Territory to be vaccinated. This order affects 15,000 persons.

The Pan-American Medical Congress.—The next meeting of this Congress, to be held at Havana from February 5 to 9, 1901, promises to be a successful one, and a large attendance is expected. The general officers are: President, Dr. William Pepper; treasurer, Dr. A. Van Der Veer; secretary, Dr. C. A. L. Reed; chairman committee on transportation, Dr. H. L. E. Johnson; associate secretary, Dr. Ramon Guitéras. It is sincerely hoped that the United States will be well represented, and that the program of the Section on Medicine will be a creditable one. The titles of papers intended for this section, together with the name and address of the author, should be sent as soon as possible to the secretary of the Congress, Dr. Tomas V. Coronado, Prado 105, Havana, Cuba, and it is especially desired that a short abstract of the paper should also be prepared and mailed at the same time. For further particulars, address Dr. Judson Daland, 307 South Eighteenth Street, Philadelphia, secretary of the Section on Medicine. Communications relative to the Section on Gynecology and Abdominal Surgery should be addressed to the section secretary, Dr. Henry P. Newman, 100 Washington street, Chicago.

The following is the program of the different sections:

PROGRAM OF SECTIONS.

1. GENERAL MEDICINE.—President, Dr. Carlos Finaly; secretaries, Dr. Damaso Laine, Dr. Federico Grande Rossi, Dr. Antonio Diaz Albertini, Dr. Judson Daland, 317 S. 18th St., Philadelphia.
2. GENERAL SURGERY.—President, Dr. Tomas Plasencia; secretaries, Dr. Jose Varela Zequeira, Dr. Gustavo Duplessis, Dr. Julio Ortiz y Cano, Dr. Francisco Dominguez, Dr. W. P. Nicholson, Prudential Building, Atlanta, Ga.; Dr. John Ridlon, 103 State St., Chicago, Ill.; Dr. Duncan Eve, 700 Church St., Nashville, Tenn.
3. MILITARY MEDICINE AND SURGERY.—President, Dr. Eugene Sancho Agramonte; secretaries, Dr. Nicholas Alverti, Dr. Matias Duque, Dr. Jose R. Anciano, Major Jefferson Kean, surgeon, U. S. A., Quemados, Cuba.
4. OBSTETRICS.—President, Dr. Eusebio Hernandez; secretaries, Dr. Ernesto Aragon, Dr. Rafael Weis, Dr. Jorge Le Roy, Dr. Gustave Zink, 13 Garfield Pl., Cincinnati, O.
5. GYNECOLOGY AND ABDOMINAL SURGERY.—President, Dr. Gabriel Casuso; secretaries, Dr. Ramon Palacios, Dr. Pedro Suarez del Solar, Dr. Fernandez Mendez Capot, Dr. Enrique Fortun, Dr. Enrique Nunez, Dr. H. P. Newman, 103 State St., Chicago, Ill.
6. THERAPEUTICS.—President, Dr. Raimundo Castro; secretaries, Dr. A. Perez Miro, Dr. Gonzales O'Brien, Dr. Francisco Portela, Dr. Hobart A. Hare, 222 S. 15th St., Philadelphia.
7. ANATOMY.—President, Dr. Federico Horsman; secretaries, Dr. Jose A. Presno, Dr. Cecilio Reol, Dr. Gabriel Landa, Dr. A. D. Bevan, 100 State St., Chicago, Ill.
8. PHYSIOLOGY.—President, Dr. M. Sanchez Toledo; secretaries, Dr. Jose de Carlos y Ferrall, Dr. Jaun B. Fuentes, Dr. Manuel Altuma, Dr. A. P. Brubaker, 105 W. 34th St., Philadelphia.
9. PEDIATRICS.—President, Dr. Joaquin L. Duenas, secretaries, Dr. Gonzalo Arostegui, Dr. Ernesto Edelman, Dr. Alejandro Neyra, Dr. I. N. Love, 49 W. 44th St., New York City.
10. OPHTHALMOLOGY.—President, Dr. Enrique Lopez, secretaries, Dr. Jorge L. Dehogues, Dr. Carlos Finley (hijo), Dr. Manuel Masferrol, Dr. John E. Weeks, 40 E. 57th St., New York City.
11. LARYNGOLOGY, RHINOLOGY AND OTOTOLOGY.—President, Dr. Carlos Desvernine; secretaries, Dr. Emilio Martinez, Dr. G. Hudson Makuen, 1419 Walnut St., Philadelphia, Pa.; Dr. James F. McKernon, 62 W. 52d St., New York City.
12. DERMATOLOGY AND SYPHILOGRAPHY.—President, Dr. Henry Robelin; secretary, Dr. A. Ravogli, 5 Garfield Place, Cincinnati, O.
13. GENERAL HYGIENE AND DEMOGRAPHY.—President, Dr. Vincente de la Guardia; secretaries, Dr. Enrique B. Barnet, Dr. Santiago Sitjar, Dr. Eugenio Cuesta, Dr. Jose Antonio Lopez, Dr. Felipe Canizares, Dr. Alvah H. Doty, Quarantine Station, Staten Island, New York City.
14. MARINE HYGIENE AND QUARANTINE.—President, Dr. Luis Cowley; secretaries, Dr. R. O. Marcour, Dr. Federic Torralbas, Dr. R. M. Woodward, surgeon, M. H. S., Washington D. C.

15. MEDICAL PEDAGOGY.—President, Dr. Manuel Delfin; secretaries, Dr. Francisco Vildowola, Dr. Aristides Agramonte, Dr. Otis K. Newell, 13 Central Park, West, New York City.

16. MENTAL AND NERVOUS DISEASES.—President, Dr. Gustavo Lopez; secretaries, Dr. Jose A. Malverti, Dr. Aristides Mestro, Dr. Rafael Perez Vento, Dr. Chas. P. Hughes, 3857 Olive St., St. Louis, Mo.

17. DENTAL SURGERY.—President, Dr. Erastus Wilson; secretaries, Dr. Adolfo Betancourt, Dr. J. R. Madan, Dr. Eugene S. Talbot, Columbus Memorial Building, Chicago, Ill.

18. BACTERIOLOGY.—President, Dr. Juan N. Davalos; secretary, Dr. G. Garcia Rijo.

19. MEDICAL JURISPRUDENCE.—President, Dr. Jose M. Cespedes; secretaries, Dr. Juan Gomez de la Naza, Dr. Ernesto Sarra, Dr. Alvarez Ortiz.

Health-Reports.—The following cases of smallpox, yellow fever, and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, for the week ended December 8, 1900.

SMALLPOX—UNITED STATES.			
DISTRICT OF		CASES.	DEATHS.
COLUMBIA:	Washington . . . Nov. 12-24 . . .	3	
KANSAS:	Wichita . . . Nov. 17-Dec. 1 . .	10	
KENTUCKY:	Lexington . . . Nov. 17-Dec. 1 . .	3	
ILLINOIS:	Cairo . . . Nov. 27 . . .	1	
MINNESOTA:	Duluth . . . Nov. 8-22 . . .	54	
"	Minneapolis . . Nov. 24-Dec. 1 . .	1	
"	St. Paul . . . Nov. 8-22 . . .	2	
"	Winona . . . Nov. 24-Dec. 1 . .	60	
"	Carlton Co. . . Nov. 8-22 . . .	73	
"	Hennepin Co. . . Nov. 8-22 . . .		
"	Kandiyohi Co. . Nov. 8-22 . . .		
"	Le Sueur Co. . . Nov. 8-22 . . .		
"	Lyon Co. . . Nov. 8-22 . . .		
"	Meeker Co. . . Nov. 8-22 . . .		
"	Pine Co. . . Nov. 8-22 . . .		
"	Ramsey Co. . . Nov. 8-22 . . .	73	
"	Wright Co. . . Nov. 8-22 . . .		
MISSOURI:	St. Louis . . . Nov. 23-Dec. 3 . .	3	
NEW YORK:	. . . Nov. 24-Dec. 1 . .	34	
OHIO:	Ashtabula . . . Nov. 24-Dec. 1 . .	7	
"	Cleveland . . . Nov. 24-Dec. 1 . .	34	1
PENNSYLVANIA:	Allegheny . . . Nov. 24-Dec. 1 . .	1	
S. CAROLINA:	Greenville . . . Nov. 24-Dec. 1 . .	3	
TENNESSEE:	Nashville . . . Nov. 24-Dec. 1 . .	1	
TEXAS:	Blue Springs . . Nov. 22 . . .	Present.	
"	Sublime . . . Nov. 22 . . .	14	
"	Vashti . . . Nov. 22 . . .	Present.	
VIRGINIA:	Alexandria Co. . Dec. 5 . . .	1	
W. VIRGINIA:	Harrison Co. . . Nov. 28 . . .	18	
"	Wheeling . . . Nov. 24-Dec. 1 . .	2	

SMALLPOX—FOREIGN.			
AUSTRIA:	Prague . . . Nov. 10-17 . . .	29	
ECUADOR:	Guayaquil . . . Oct. 6-Nov. 17 . .	40	
EGYPT:	Cairo . . . Nov. 3-11 . . .	1	
FRANCE:	Paris . . . Nov. 10-17 . . .	15	
GIBRALTAR:	. . . Nov. 3-11 . . .	1	
GREECE:	Athens . . . Nov. 10-17 . . .	2	1
MEXICO:	Tampico . . . Nov. 11-18 . . .	4	
"	Vera Cruz . . . Nov. 17-24 . . .	1	
RUSSIA:	Moscow . . . Nov. 3-10 . . .	2	
"	Odessa . . . Nov. 10-17 . . .	14	7
"	St. Petersburg . Nov. 3-10 . . .	2	2
SCOTLAND:	Glasgow . . . Nov. 17-23 . . .	24	2
SPAIN:	Barcelona . . . Oct. 27-Nov. 3 . .	48	

YELLOW FEVER.—UNITED STATES.			
LOUISIANA:	40 miles south of Natchez, Miss. . . Nov. 27 . . .	5	
MISSISSIPPI:	Natchez . . . Nov. 27 . . .	1	
"	Osyka . . . Dec. 4 . . .	Possibly 1 fatal.	

YELLOW FEVER.—FOREIGN AND INSULAR.			
CUBA:	Havana . . . Nov. 17-24 . . .	14	
DOMINICAN REPUBLIC:	Puerto Plata . . Nov. 3-17 . . .	3	
MEXICO:	Vera Cruz . . . Nov. 17-24 . . .	3	

PLAGUE.—INSULAR.			
PHILIPPINE ISLANDS:	Manila . . . Sept. 29-Oct. 6 . .	2	

PLAGUE.—FOREIGN.			
AFRICA:	Cape William-Town, vicinity . . Nov. 17 . . .	8	4
CHINA:	Hongkong . . . Oct. 13-27 . . .		6
JAPAN:	Kobe . . . Oct. 15-27 . . .	3	

Changes in the Medical Corps of the U. S. Army, for the week ended December 8, 1900:

WILSON, COMPTON, acting assistant surgeon, is relieved from duty at Aibonito, P. R. and will proceed to Washington Barracks and

report by letter to the Surgeon-General of the Army for further orders.

EBERLE, H. A., acting assistant surgeon, is relieved from duty at the subpost of Aguadilla, P. R., and will take station at the subpost of Aibonito, P. R., for duty.

CUTLIFFE, WILLIAM O., acting assistant surgeon, will be relieved from duty at Mayaguez, P. R., and will proceed to the United States and report by letter to the Surgeon General of the Army.

HAVARD, Major VALERY, surgeon, now on leave of absence at Bridgeport, Conn., will proceed to Washington, D. C., and report to the Surgeon-General of the Army for consultation on business pertaining to the medical department in Cuba, and upon the completion thereof will return to Bridgeport, Conn.

HYSELL, Major JAMES H., surgeon, is honorably discharged from the service, to take effect December 19, his services being no longer required.

FISCHER, CHARLES H., acting assistant surgeon, is relieved from duty at Fort Apache, and will proceed to Washington, D. C., and report to the Surgeon-General of the Army for annulment of contract.

THORP, CHARLES W., acting assistant surgeon, will proceed from Denver, Colo., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to the Philippine Islands, and upon arrival at Manila will report to the commanding general, division of the Philippines, for assignment to duty.

WHITE, J. SAMUEL, acting assistant surgeon, will proceed from Mannheim, Pa., to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to the Philippine Islands, and upon arrival at Manila will report to the commanding general, division of the Philippines, for assignment to duty.

LYSTER, First Lieutenant THEODORE C., assistant surgeon, leave of absence granted November 3, is extended 10 days.

HAVARD, Major VALERY, surgeon, leave of absence granted November 12 is extended 14 days.

COONEY, DANIEL C., acting assistant surgeon, orders relating to, of November 10, are revoked.

COONEY, DANIEL C., acting assistant surgeon, is granted leave of absence for 1 month.

GERAHTY, ROBERT F., hospital steward, Army General Hospital, Presidio, is relieved from further duty in the division of the Philippines and will be sent to San Diego Barracks for duty, to relieve Hospital Steward Herbert Thompson.

THOMPSON, HERBERT, hospital steward, will be sent to Manila, P. I., for assignment to duty.

Changes in the U. S. Marine-Hospital Service, for the week ended December 6, 1900:

COFER, L. E., assistant surgeon, commissioned as passed assistant surgeon. November 23.

CARTER, H. R., surgeon, granted extension of leave of absence for 15 days from December 1, on account of sickness. November 30.

PECKHAM, C. T., surgeon, granted leave of absence for 2 months from December 17. November 30.

BROOKS, S. D., surgeon, granted leave of absence for 5 days from December 11. December 6.

McINTOSH, W. P., surgeon, to proceed to Perry, Ga., for special temporary duty. December 1.

YOUNG, G. B., passed assistant surgeon, granted leave of absence for 3 days. November 30.

WICKES, H. W., passed assistant surgeon, granted extension of leave of absence for 10 days. December 3.

COFER, L. E., passed assistant surgeon, upon being relieved from duty at Los Angeles, Cal., to proceed to Honolulu, H. I., and report to Surgeon D. A. Carmichael for duty. December 1.

HASTINGS, HILL, assistant surgeon, relieved from duty at the Columbia River Quarantine, Astoria, Oreg., and directed to proceed to Los Angeles, Cal., and assume command of the service, relieving Passed Assistant Surgeon Cofer. December 1.

PARKER, H. B., assistant surgeon, to proceed to Magnolia and Fayette, Miss., and St. Joseph, La., for special temporary duty. December 1.

VOGEL, C. W., assistant surgeon, upon being relieved from duty at the San Francisco Quarantine, to proceed to San Francisco, Cal., and report to medical officer in command for duty and assignment to quarters. December 1.

Changes in the Medical Corps of the U. S. Navy, for the week ended December 8, 1900.

BLAKEMAN, R. S., passed assistant surgeon, ordered to be examined December 10, at Washington, D. C., for retirement, and thence home to wait orders.

DUNBAR, A. W., passed assistant surgeon, ordered to the "Vermont" for duty with the crew of the "Wisconsin" revoked; ordered to duty at Naval Hospital, Mare Island, December 14.

GARTON, W. M., assistant surgeon, ordered to the Washington Navy Yard, December 5.

BIDDLE, C., surgeon, ordered to the Naval Hospital, Norfolk, Va., for temporary duty.

GROW, E. J., assistant surgeon, detached from the "Monadnock" and ordered to the "Culgoa."

COWAN, J., pharmacist, detached from the "Monadnock" and ordered to the "Culgoa," and to additional duty at the Cavite Naval Station.

Foreign News and Notes.

GREAT BRITAIN.

The Office of Apothecary to the Union has been abolished by the Local Government Board of Ireland and a qualified assistant medical officer substituted, whose duties shall include the compounding of the medicines.

The Lewis Epileptic Colony.—Nearly £100,000 have been given by the David Lewis trustees for the establishment of an epileptic colony in Cheshire, and 400 acres have been purchased at Warford for the purpose. The patients will live in detached buildings accommodating 20 or 24 inmates and healthy occupation will be provided on the farm.

The Staff of the Irish Hospital.—Sir William Thomson and other members of the staff lately returned from South Africa were welcomed with a banquet on November 24 by the President and Fellows at the Royal College of Surgeons in Ireland. Sir William Thomson in a speech alluded to the great difficulties of transport and emphasized the fact that the Irish Hospital was the only civil hospital in South Africa that was able to move independently.

Cancer in London.—According to the *Medical News*, London medical science is being directed toward the elucidation of the problem of the causation of cancer. A cancer research laboratory has just been opened at the Middlesex Hospital, to be entirely devoted to the systematic investigation of cancer. The Middlesex Hospital is alone among the great London hospitals in admitting inoperable cases of disease, where the only hope is that death may come without much more pain. Some 60 of these hopeless cases will be now under close scientific scrutiny.

An Inquiry Concerning Sanity.—A case requiring investigation recently laid before the Royal Courts of Justice, is that of a widow lady of independent means who was kept at Wyke House Private Asylum, Isleworth, from January, 1899, to September last. She herself dates her recovery of reason from 7 months after admission. On March 20, 1900, in accordance with her instructions, her solicitor refused to pay for her maintenance at the asylum in order that a legal inquiry into her mental condition might be brought up. After a patient trial the jury found that she was capable of managing herself and her own affairs.

Antiplague Serum.—A member of the Royal College of Physicians, whose name is not given, warns the public against giving credence to reports of the efficacy of antiplague (Pasteur) serum and quotes from this year's official report on the plague in Bombay: "So far as information is obtainable of M. Yersin's results and those of other doctors, French and Russian, who have tried it, it has failed to influence favorably the mortality among those attacked." Favorable results were reported from Oporto where it was tried, but the writer asserts that he was present and no scientific value whatever attaches to them.

The British Congress of Tuberculosis is announced to open July 22, 1901. Invitations will be issued to foreign governments and universities, as well as to municipalities, to nominate delegates. The Congress will transact its business in 4 sections—medicine, pathology, veterinary medicine, and State medicine, which, as at present arranged, will meet on the mornings of July 23, 24, 25 and 26. It is proposed that there should be in the afternoons general meetings of the whole Congress, to be addressed by distinguished representatives of pathology, medicine, and veterinary medicine. The fee of £1 for all members of the Congress will entitle them to attend all the meetings, and to a copy of the *Transactions*. Particulars can be obtained from the General Secretary, Malcolm Morris, 20 Hanover Square, London, W.

Röntgen Rays Cause Burn.—The coroner of Hastings has made inquiry into the cause of death of a woman who fell last March and fractured the neck of the femur. At the suggestion of the physician called and with the consent of the patient a local photographer was engaged to make a skiagram of the injury. The apparatus was not of the latest

pattern and a long exposure was necessary. The first exposure of 2 hours was not satisfactory, and after 20 days a second exposure of 2 hours and 10 minutes was followed by inflammation and, as far as can be made out, by ulceration of the abdominal wall. The jury returned a verdict to the effect that death was due to shock and exhaustion following the accident and the effects of the x-rays on a weakened system, and no blame attached either to the medical man or the photographer.

Arsenical Beer.—The *Lancet*, in discussing the beer-poisoning cases in Manchester and other places, says: "We are pleased to learn that definite steps are being taken to stop the sale of arsenical beer. We have examined a specimen of invert sugar (a variety of sugar consisting of a mixture of dextrose and levulose, found naturally in fruits and produced artificially by the inversion of cane sugar) used in brewing, and found that it contained 3 grains of arsenious acid per pound. Hence a glass of beer might contain one-fifth of a grain of arsenic. A careful examination of the form in which arsenic existed in this sugar shows that it was mostly arsenious acid in small quantities. Arsenic acid was also detected." It appeals to the Government to define beer as a liquid brewed exclusively from barley, malt and hops, so that beer made from substitutes of these ingredients will have to be called by another name. A report made by the authorities in France in 1878 said that glucose used in brewing contained arsenic. The use of substitutes for the regular ingredients is prohibited absolutely in Germany.

The Pasteur Institute in London, for which Lord Iveagh gave £250,000, has not advanced the diagnosis and prophylaxis of hydrophobia according to a letter addressed by Dr. Howell Rees, of Glan Garnant, Wales. The idea was that when a dog suspected of rabies was killed its head should be sent to the Board of Agriculture in order that it might undergo expert examination, and no case of rabies should be enrolled except on the report of the expert. Dr. Rees complains that when, in the discharge of his duty in September last, he sent the head of a dog which had bitten 2 persons the day before, and waiting 2 weeks for a report, he had been obliged to send the patients to the Paris Institute. He wrote again to the Board of Agriculture and received a reply to the effect that "from the description of the case of suspected rabies furnished to the Board by their inspectors (who had never seen the dog) the chief veterinary officer of the Board recommended that it should be accepted as a case of rabies, and it, therefore, became unnecessary to carry out the inoculation experiment."

Defensive Measures Against Plague.—Professor Calmette, of the Pasteur Institute at Lille, has been lecturing in London before the members of the Royal Colleges of Physicians and Surgeons, upon defensive measures against the plague. He said that although it was now impossible to deny that the use of antiplague serum was an excellent means for preventing the propagation of the disease in an infected center, the short duration of the immunity it bestowed, together with the material difficulty of procuring it in sufficient quantity to vaccinate and revaccinate a large number of individuals, rendered it necessary to seek a practical means for giving to men an active immunity by means of the plague virus itself. While acknowledging the great value of Dr. Haffkine's plague cultures, he said that his method was open to some grave objections. Thus during the period of immunization with the heated cultures, animals were extremely susceptible to very minute doses of plague virus; hence if any one were to undergo the Haffkine inoculation during the incubating period of a slight attack of plague, the attack would be greatly aggravated, and would probably be fatal. Moreover, no good method existed for comparing different vaccines prepared according to Haffkine's process. During the past year, he said he had been carrying on experiments with a view to obviating the principal objections, and he described a process by which he obtained dried plague bacilli free from every trace of toxin, the injection of which produced no grave local reaction. When he wished to vaccinate animals he took a quantity of these microbes, apportioned by weight according to the kind of animal, suspended in a fixed quantity of sterilized salt water, and injected it under the skin or into the veins. If these dried germs, diluted with salt water, were mixed with

the proper amount of antiplague serum, the injection conferred at one and the same time an immediate passive immunity and an active immunity which took longer to set up, but prolonged the period of resistance to the infection. The superiority of this method consisted in the precision of its experimental effects and the facility with which it could be anywhere used and controled. He said that great care ought to be taken to prevent the escape of even a single rat from a suspected ship, and declared that all ships communicating with plague-infected ports ought to be supplied with antiplague serum to be used whenever a case shall appear on board.

CONTINENTAL EUROPE.

Iced Chloroform.—It is stated that this anesthetic has been used in 14,000 cases in Würzburg, Bavaria, without any ill results. Rapidity of action, comparative freedom from danger, and absence of nausea and depression are the advantages claimed for this preparation.

The Use of Absinthe.—The constant increase in the consumption of absinthe in France, which is now estimated at 10,000,000 liters annually, called forth a resolution, moved by M. Vaillant in the Chamber of Deputies, Paris, December 10, prohibiting the manufacture and sale of all alcoholic liquors pronounced dangerous by the Academy of Medicine. It was unanimously passed.

Foot and Mouth Disease.—The American Consul at Bordeaux has informed the State Department that this disease prevails among the cattle in Charente and neighboring departments in France, and that the introduction of cattle, sheep, hogs, and goats from the infected departments into the Gironde is forbidden. There is no exportation of these animals themselves from Bordeaux to the United States, says the Consul, but their hides come to this country in considerable quantities.

Housing the poor in Berlin has become a serious problem owing to the absence of suitable dwellings for the constantly increasing population. The distress of those crowded out is so great that the authorities propose to build rooms for the express purpose of storing the goods of these unfortunates who earn money and have furniture, though they are unable to find a roof. The building trade prefers to erect huge edifices, the rents of which are beyond persons of small means, and yet the Berlin municipality spends yearly about 4,000,000 sterling for the poor and homeless.

Women Physicians in Austria.—According to a decree of the Austrian Minister of Public Instruction, women who have successfully passed an examination of maturity will henceforth be admitted to the study of medicine and the obtention of a doctor's degree in Austrian universities. Heretofore they were obliged to make their studies and obtain a degree in foreign universities, which was recognized by any Austrian university. Where certain professors object to the admission of female hearers to their lectures, exceptions were granted by the competent authorities to enable applicants to accomplish their purpose. A second decree permits women to conduct a pharmacy, with the sanction of the ministry in each special case.

Measures Against Tuberculosis.—The German Department of the Interior has issued a set of instructions conveying compulsory precautions to be taken against the spread of tuberculosis in the empire, a copy of which has been sent to the Department of State by United States Consul Monaghan at Chemnitz. The instructions consist of 7 articles, providing that doctors, under all circumstances where their patients have lung or larynx tuberculosis, must give written notice to the police as soon as the case in question has been diagnosed; that immediately after the death of a person from this form of the disease the room he used and his effects must be thoroughly disinfected; that professional women who lay out the dead must report at once in writing to the police authorities whether the disease was of the lungs or larynx; and that keepers of hotels, lodging-houses, asylums, or other public institutions, shall report immediately the appearance of the disease in the establishment under their control. Non-compliance with these

regulations is subject to a fine of \$35.70 or 6 weeks' imprisonment.—[*N. Y. Evening Post.*]

Typhoid in Paris.—The recent increase in the number of typhoid cases in Paris has directed attention to the quality of the water in that city. The subject has been the cause of a lively discussion in the Council of Hygiene. It is reported that polluted Seine water had been mixed with the drinking water, and official investigation proves this to be true. The Charonne reservoir, from which the Paris drinking water is derived, is divided into two parts, one of them containing ordinary Seine water, and the other water from the filtering beds at Ivry. These filtering beds, constructed in opposition to the opinions of the committees of hygiene, are composed of successive layers of gravel gradually becoming finer, and act merely as strainers. They do not really purify the water, which after passing through them retains from 60 to 70% of its organic matter, and about 5% of its microbes. The intake of this water at Ivry is near factories, and the outlets of sewers. The water, therefore, as it comes from the filters, cannot be regarded as fit for drinking, and it is this water which, after arriving at the Charonne reservoir, has been conveyed to the reservoir at Ménilmontant, and mixed with the wholesome water of the Dhuys. This proceeding went on for 4 months. It was at that period that typhoid fever attained its maximum in Paris. When the matter was discovered the engineers discontinued mixing the water and typhoid fever immediately declined, for in 12 days the mortality fell from 18 to 7 deaths per week.

Charged with Physiologic Vivisection.—According to the *British Medical Journal* Professor Pflüger, of Bonn, has made against the eminent Berlin surgeon, Professor Israel, and against Professor Immanuel Munk, the physiologist, the accusation that they have "undertaken physiologic vivisection on a human being." The indictment is as follows: In the year 1889 a girl suffering from elephantiasis of the left leg was an inmate of the Berlin Jewish Hospital, of which Professor Israel is Director and Chief Surgeon. On her leg was an opening from which lymph flowed continuously. It seemed of interest to Professor Munk and to Dr. A. Rosenstein to examine the influence of different kinds of food on the composition of the lymph. "Thus, Professor Israel," writes Pflüger, "abandoned the poor girl to Messrs I. Munk and Rosenstein for purposes of research." And he details his charges as follows: "Although the patient could be laid in such a position that the discharge and loss of fluid ceased, or was greatly diminished, chyle was drawn off from her by the liter, and blood taken, after she had been induced either to swallow disgusting chemical preparations, or else to fast for some length of time." Professor Israel recently published his answer to Pflüger's charge. He says: I repudiate with the fullest energy Professor Pflüger's characterization of the examinations as "vivisection," and his unheard of accusation, that the patient had been abused "like a dog for physiologic purposes." Pflüger's charges bear on 4 points: (1) Drawing off chyle by the liter; (2) exhibition of disgusting chemical preparations; (3) the long fasts; (4) drawing off blood for analysis. As regards charge 1, the truth is, that no chyle at all was drawn off, but during the period of the researches the chyle that usually flowed into the bandages was collected. It was necessary to allow the patient to get up and take exercise, and the lymph that flowed during these periods was used for purposes of analysis. The patient was exceptionally well nourished and very robust, and suffered so little from the loss of fluid that she looked healthier during the period of exercise with flowing fistula than while kept in bed and the fistula dry. The preparations given the patient were chiefly medicaments, for instance, lipanine and similar oils and fats, charcoal, etc. With regard to the third charge, the fasts for experimental purposes, it is true that during the period of research the patient twice fasted 9 hours, once 18 hours, and once a whole day, the effects being counteracted by exceptionally nourishing food. The "drawing off" of blood consisted in 4 applications of a cupping glass at intervals. Professor Israel winds up with the words: "Without expressing an opinion on the repeated abstinence from food, and applications of the cupping glass, which occurred without my knowledge, I can only testify that they did not in any way affect the patient's health, but that, on the contrary, she was afterwards dismissed from the hospital in florid health, with the fistula cured."

MISCELLANY.

Typhoid.—The German losses in China from typhoid and climatic diseases generally continue large, despite official denials. The official dispatches themselves are proof of the inroads of the fever, as they daily increase the number of deaths. Consequently volunteers for China reserves are becoming more and more scarce.

Famine in China.—The Shanghai correspondent of the *Standard* says that a terrible famine prevails in the Province of Shensi, China. The government reserve granaries are nearly empty. The people in the Sinan Fu prefecture are eating grass, leaves and roots. It is said that there have been cases of cannibalism in the mountains.

London Mission Hospital, Chung-King.—The report for 1899 has been received. The hospital has been rebuilt, with a special ward for Europeans, and accommodates 80 patients. Excepting the surgeon in charge, the whole staff is Chinese and there are 6 native students. The London Missionary Society requires all its Chinese hospitals to be self-supporting.

Obituary.—RICHARD NEALE, of London, November 22, aged 71.—GEORGE MACKAY, of Edinburgh, November 20, aged 80.—REUBEN BOLTON, of Bangor, Ireland, November 20, aged 66.—J. MORTIMER GRANVILLE, of London, November 23, aged 67.—ROGER EDWARDS, of Colwyn Bay, Wales.—November 21, aged 50.—HUGO BERGEAT, of Munich.—GEORGE STETTER, of Königsberg, aged 52.—F. ACCONCI, of Genoa.

The Pasteur Institute.—It is reported that since the Pasteur Institute was opened at Kasauli under the direction of Major Semple, 75 patients have sought admission, 62 of whom completed the course. Of these 44 are Europeans and the rest natives. In no case has the treatment ended in failure, though several of the patients had been bitten on the face by dogs and jackals. The institute continues to supply a pressing need.

Passing of the Fiji Islanders.—Dr. Morgan I. Fiuncane, medical inspector of the colony, is authority for the statement that the black tribe of Fiji Islanders is dying out. This is due not to a small birth-rate, but to an enormous infant mortality, caused by sanitary neglect, filthy houses, and the absence of skilled physicians. It is not expected that much can be done in the way of improving the conditions while the native character remains as it is.—[*Boston Medical and Surgical Journal*.]

Röntgen Rays for Baldness.—The *London Standard* reports that at a meeting of the Vienna Society of Physicians, Dr. Kienböck introduced a man 26 years of age, whose hair had been partially restored by the application of the Röntgen-rays. He had been bald for some years. A round patch on the scalp was subjected 6 times to the influence of the rays for 15 minutes, and during the 2 months the treatment lasted, the man regained his hair on the parts exposed to the action. The parts not yet treated remain as before. During the discussion which followed several members expressed doubts as to whether Dr. Kienböck has really found a remedy for baldness, but he was encouraged to continue his experiments, and invited to report on them to the society at a later date.

Leontiasis Ossea.—Stephenson (*Medical Chronicle*, September, 1900) reports a case of leontiasis ossea occurring in a man of 27. At the age of 13 the patient first noticed a hard, painless swelling on the left side of the lower jaw. This has gradually increased since that time. About 18 months ago a similar swelling appeared on the right side of the lower jaw, and during the past 12 months the bones of the nose have gradually increased in size, the left nostril being almost occluded. Lately there has been some neuralgic pain in the lower jaw. His family history is good. The superior maxillae are slightly enlarged, and there is considerable bulging over the frontal sinus. The cause of leontiasis ossea is not known. It was first described by Virchow and later by Sir James Paget. No treatment appears to be more than palliative. [A.B.C.]

The Latest Literature.

British Medical Journal.

November 24, 1900. [No. 2082.]

1. Presidential Address on Physiology and the Healing Art. W. H. THOMPSON.
2. An Address on Some of the Sequels of Cranial Injuries. ERNEST TREDINNICK.
3. A Case of Neuritis of Posterior Roots; Preataxic Stage of Tabes Dorsalis? W. B. RANSOM.
4. An Epidemic of Peripheral Neuritis Amongst Beer Drinkers in Manchester and District. ERNEST S. REYNOLDS.
5. An Outbreak of Typhoid Fever Attributed to the Infection of a Well by a Convalescent Soldier from South Africa. THOMAS J. WALKER.
6. Erythematous Rash Due to Boric Acid. HENRY HANDFORD.
7. A Case of Acute (Traumatic) Tetanus Successfully Treated with Antitetanus Serum. SYDNEY H. LONG.
8. Puerperal Eclampsia and its Treatment by Morphin. G. E. FITZGERALD.
9. Syphilis in the Royal Navy. SURGEON J. P. H. GREENHALGH.
10. Note on a Case of Protracted Stupor or Trance. DAVID DRUMMOND.
11. Poisoning by Lysol. WILLIAM HARTIGAN.
12. Aortic Aneurysm Treated by Hypodermic Injections of Gelatin. ARTHUR CUTFIELD.
13. Case of Intussusception of the Bowel in a Child Aged 3 Months; Operation; Recovery. P. MURRAY KERR.

2.—Tredinnick has collected some interesting sequelae of cranial injuries, and most of them have been under his own observation in private practice. The first series contained 6 cases of moral perversion: 1 a young married woman where the injury was followed by nymphomania, lasting several months; 2 a boy, 3 a girl, both were good children before the injury, but idle, untrustworthy, and bad afterwards; 4 a boy where injury was followed by epilepsy and a propensity for stealing; 5 and 6 were men, and after injury became maniacal and destructive. The psychic area was no doubt involved in all of these cases, as the blow was over the frontal bone. The second series contained 8 cases of traumatic dementia; 8 and 9 committed murder; 10 attempted suicide; 7, 11, and 12 became maniacal; 13 insane; and 14 suffered from mania, but recovered after some of the parietal bone exfoliated and was removed. In a third series he collected 10 cases where diabetes followed, and the location of the injuries was basal, parietal, occipital, at the vertex, and frontal. It was found at several necropsies on these cases that the floor of the fourth ventricle had a ground-glass appearance, such as seen in cases of general paralysis. He divides traumatic diabetes into 2 forms, permanent and transient; the latter usually appears soon after the accident, while the former some time afterwards, even as late as 3 years, but not likely after that time. The fourth series contains 45 cases of epilepsy ranging in age from 6 months to 45 years. The injury in 33 of these cases was occipital, parietal, frontal, and at the mastoid and vertex. The duration of unconsciousness after injury varied from a few minutes to 4, to 7, and even 32 days, while the period between the accident and the development of epilepsy varied from 2 to 17 years. The results of trephining in these cases are interesting. In 24 where the injury was parietal, 1 no result, 1 fits returned, 1 partial recovery, 3 died, and the rest recovered. In 9 cases injured over the same region with no operation 5 died, 1 was cured, and in 3 fits continued. Seven cases of injury to the frontal bone were trephined, 4 recovered, 2 died, and 1, treated with potassium bromid, died; 1 injured over the same region, but not operated upon, died. In the cases injured in the mastoid region 1 improved with operation, and 1 without. The 2 vertex cases were both trephined and recovered, while the 1 occipital case recovered without operation. [W.S.N.]

3.—Ransom reports the case of a man aged 44 years who suffered from attacks of intense darting pain in the left hypochondrium. The patient had come into the hospital at

his own request with the view of being relieved by operation. The attacks of pain recurred with great frequency, often several times a day, and the patient would sometimes have repeated spasms of pain and twitching, each of some seconds' duration, for 12 hours together. The patient insisted on operation, and laminectomy was performed and the cord exposed at the level of the sixth, seventh, and eighth thoracic roots. Nothing abnormal was seen on the cord or its membranes, but the eighth left posterior root was distinctly thicker than the others. Pieces were cut out of the seventh and eighth roots on both sides, those from the eighth root being placed in osmic acid for microscopic examination. The result of the operation was not satisfactory, as, in spite of antiseptic precautions, pus formed in the wound, fever set in, and 6 days later the patient died. At the necropsy the spinal cord showed no definite tracts of sclerosis, but there were diffuse patches of softening, especially near the site of operation. There was no tumor or meningeal thickening, except fresh granulations at the wound, and the remaining nerve roots looked healthy to the naked eye. On opening the skull, the dura was found to be tough and rather thick, and the pia-arachnoid was thickened and opaque in patches. Microscopic examination of the removed posterior roots showed excess of fibrous tissue and a great reduction in the number of nerve-fibers in the left root, while in the right there was a very slight decrease of the normal fibers. The pathologic process was closely akin to that of **tabes dorsalis**; but instead of degeneration of a large number of posterior roots only a very few were picked out, one especially, the left eighth thoracic, undergoing degeneration of nerve-fibers with formation of fibrous tissue, the growth of which caused the intense pains, reflexly, contractions of the rectus abdominis muscle. [J.M.S.]

4.—Reynolds noticed in his practice an unusual number of patients who were suffering from **peripheral neuritis**. Women were affected more frequently than men, and all the patients were beer or porter drinkers. In many of the cases the skin of the armpits, the nipples, and the genitals was deeply pigmented as in Addison's disease. The neuritis affected either sensory, vasomotor, or motor nerves, or all 3 combined, and was associated with running of the eyes and nose. The author found a considerable amount of arsenic in certain beer used in this district, and Dixon Mann also found arsenic in a different sample of beer. So that it is fair to presume that the arsenic was the cause of the neuritis. [J.M.S.]

5.—In 2 houses taking their water-supply from the same well, the inmates and their friends are known to have been, for at least 12 months, drinking water that was highly contaminated with sewage. No one suffered in consequence until after the arrival of a trooper invalided home from South Africa, convalescent from **enteric fever**. Immediately after his arrival the well became infected with the typhoid bacillus, as proved by the fact that between September 4 (17 days after the arrival of the trooper) and September 17, 12 individuals were laid up with typhoid fever, the only link between these 12 individuals being that each one of them had partaken of water from the polluted well. The water from other wells in the same village has been analyzed and found to contain sewage, but no case of typhoid fever has resulted from the use of the water from these wells. Walker believes the bacilli contaminated the well-water from the patient's urine. It has been shown that in about 25% of cases of typhoid fever the bacillus may be detected in the urine. The author believes that every convalescent soldier should be given a course of urotropin, which will almost certainly clear the bladder of bacilli. [J.M.S.]

6.—Hanford reports the case of a man, aged 47, who was suffering from a nonmalignant stricture of the pylorus, after washing out the stomach for about 1 week with a 1 to 60 **boric-acid** solution, an **erythematous rash** appeared upon the patient's face and back. Plain water was substituted for the boric-acid solution and the rash disappeared in 2 days. Later, 1 to 200 boric-acid solution was used, and the erythema returned. The use of boric-acid was again stopped and the rash entirely disappeared. After pyloroplasty the stricture was completely relieved and the patient recovered. [J.M.S.]

7.—Long reports the case of a lad, aged 13 years, who received 3 punctured nail wounds on the plantar surface of the big toe. This accident was followed by pain in the limbs

and the patient complained that his legs became stiff so that he fell to the ground. Doses of 10 cc. of **antitetanus serum** were injected hypodermically uninterruptedly every 4 hours for 13 doses. After this the injections were continued 4 hourly for 6 more days by rectum. They were then given 8 hourly for 3 days longer. In all 13 injections were given hypodermically, and 55 per rectum, making a total of 680 cc. of serum used. The patient recovered. [J.M.S.]

8.—Fitzgerald reports 5 cases of **puerperal eclampsia**, the history of which suggests the conclusion that to induce labor, however severe the fits, is a great mistake, the 2 cases so treated terminating fatally; whereas those in which no operative procedure was carried on with a view to remove a cause of the convulsions, recovered perfectly. In both cases in which morphin was used, the fits were checked almost at once by its administration and did not return so long as the patient was under its influence. Another advantage is that morphin is free from the depressing effect upon the heart exerted by chloroform or chloral. The old idea that it exercised a bad effect in cases of renal trouble would appear to have no foundation in fact. [W.K.]

10.—Drummond reports the case of a man, aged 26 years, who was in a state usually described as **lethargy, trance, or stupor**. He had always been more or less melancholic and reserved, and religious to the verge of fanaticism. A neurotic family history was elicited. During his stay in the hospital the patient lay like a nonsentient being, moving neither arms nor legs, and apparently cut off entirely from the outer world. The pulse was about 100; the temperature varied from 97° to 98° F.; and he was conscious. During his treatment a dry cough developed, accompanied by a rise of temperature to 103° F. The left lung was dull on percussion all over and tuberculous disease was suspected. But the condition was relieved by turning the patient on his side, and it is probable that some of the food entered the trachea and blocked the left bronchus. On another occasion a large abscess developed in the tonsil. During the latter attack the urine contained a large quantity of albumin with blood and casts. At the end of 7 months the patient began to improve, and he was convalescing slowly at the time of writing. [J.M.S.]

11.—Hartigan reports the case of a boy, aged 14 years, who had been suffering from **dysentery**. At 1 P.M. he had taken an injection of rather less than 1½ ounces of **lysol** in about a pint of water. At 1 30 P.M. he was found in bed quite unconscious. When first seen he was in a state of complete collapse, and he died in about 5 hours. No postmortem examination was made. [J.M.S.]

12.—Cutfield reports a case of **aortic aneurysm**, which was decidedly improved by injections of a 2% solution of gelatin into the subcutaneous tissue of the abdominal wall. He began with 3 ounces and increased to 4 every second day for 3 weeks; then the injections were every third, then every fourth day until 20 had been given. With the above treatment 5 grains of potassium iodid was given with his meals, but the patient was not confined to bed. [W.S.N.]

Lancet.

November 24, 1900. [No. 4030.]

1. Mental Disorders Dependent on Toxemia. SIR DYCE DUCKWORTH.
2. Mouth-Breathing and its Relation to Diseases of the Throat, Ear, Nose, and Accessory Cavities. MAYO COLLIER.
3. On Diphtheric Paralysis. E. F. TREVELYAN.
4. The Diagnosis of Plague. W. C. HOSSACK.
5. Landry's Paralysis. RHYS GRIFFITHS.
6. Ichthyol and its Uses in some Skin Diseases. ALEXANDER BROWNIE.
7. Fourteen and a Half Hours' Artificial Respiration in a Child one Week old; Recovery. GEORGE E. KEITH.
8. Clinical Notes on the Results of a Pure Proteid Food in 55 Cases (various Diseases). R. E. WILLIAMSON.
9. Estimation of Iron in Animal Organs. PERCY A. E. RICHARDS.
10. A Case of Perforating Gastric Ulcer. T. MOORE.
11. A Case of Traumatic Rupture of the Gallbladder, Peritonitis, Laparotomy; Recovery. T. LAFFAN.
12. Six Cases Illustrating the Operative Treatment of Some Forms of Hip-Joint Disease. ERNEST F. NEVE.

1.—Duckworth calls attention to the various **medical conditions that produce mental disturbances**, particularly those types that can be ascribed to autointoxication, or the impregnation of the tissues with organic poison, as a result of certain habits such as alcoholism, cocaine, chloral, etc. He mentions particularly in the first class the mental disturbances of Bright's disease, of diabetes, pneumonia, and other fevers, and in addition, puerperal insanity, gout, chorea, rheumatism, etc. In addition, he speaks of acute psychoses occurring in influenza, and mentions general paralysis as probably belonging to the same category. Among the organic poisons he mentions lead (?) and alcohol, and in conclusion he speaks of the mental aberrations due to morphin, chloral, ether, cocaine, etc. He thinks that the average patient nowadays is singularly intolerant of pain. [J.S.]

3.—Trevelyan describes some interesting cases of **diphtheric paralysis**. The first, a girl of 10 years, developed the symptoms 3 weeks after recovering from a doubtful throat infection. There was unsteadiness in walking, loss of the knee-jerks, considerable albuminuria, and ultimately death. The second case, a boy of 8 years, had a typical attack of paralysis of the palate. Immediately after the acute symptoms had subsided there was some disturbance of the ocular muscles, slowing of the pulse, and pains in the legs. There was analgesia, loss of knee-jerks, and loss of power to stand or walk. Respiration became feeble, rales appeared in the lungs, but recovery ensued. The third patient, a boy of 4, had difficulty in walking when he got out of bed. There was albuminuria, loss of the knee-jerks, and complete paralysis of the eye-muscles. The fourth patient, a boy of 5, about 5 weeks after a severe attack of diphtheria, had regurgitation through the nose, internal squint, and dilation of the right pupil. The knee-jerks were absent on the right side. The fifth case, a man of 34, had had a severe attack of diphtheria in June; he subsequently returned to work, but was obliged to give it up on account of unsteadiness and weakness in the limbs. There was Romberg's symptom, ataxia of the lower limbs and loss of knee-jerks. He subsequently improved. The sixth case, a boy of 7, 6 weeks after his attack had unsteadiness in his gait; Romberg's symptom, and loss of knee-jerks. Fluids regurgitated through the nose. Trevelyan gives a very thorough account of the symptomatology of these conditions. Albuminuria is very common in paralytic cases of diphtheria. It was present in all of those whose urine was examined in the present series. Vomiting occurs occasionally in diphtheric paralysis, and is apparently associated with cardiac failure; it is possible that it may be the result of the renal condition. Ataxia is quite common, and was present in 3 of the 6 cases. Diagnosis is usually easy unless the diphtheria has been overlooked on account of its occurrence in some unusual situation. The prognosis is good for complete recovery, unless the patient dies of respiratory failure, or from renal insufficiency. Even when respiratory paralysis seems imminent the patient may recover. The treatment consists essentially of rest combined with frequent and regular stimulation such as hypodermic administration of strychnia or spartein. Electricity may be used to stimulate respiration. [J.S.]

4.—Hossack, in discussing the **diagnosis of plague**, recognizes 6 types: (1) The bubonic; (2) the pneumonic; (3) the septic; (4) the intestinal; (5) the meningeal; (6) the carbuncular. The disease commences suddenly, and there are the following characteristic symptoms: The dorsum of the tongue is coated, but the edges, the tip, and often the median raphe remain clean or dry. The pulse-rate is invariably out of proportion to the general condition of the patient; the pulse itself is quick, feeble, compressible, and even running. Muscular incoordination is common; there is blurring of the speech; the expression is anxious, and there is considerable mental confusion and stupidity, deepening into stupor and coma, often with muttering delirium. Hossack, however, mentions a number of cases in which the intelligence was unimpaired until a few moments before death. Speaking of the different types, the *bubonic* is usually readily recognized; the inguinal glands are usually enlarged, but any others in the body may be affected. In 193 cases, 149 were bubonic. The *pneumonic* type may be either primary or secondary to some other forms. Respiration in this form is not abnormal or hurried, the characteristic signs being those of consolidation at the apices. Microorganisms

may be obtained from the sputum. The *septic* type can be diagnosed only by elimination. The *intestinal* type can be distinguished from cholera by the high fever and the blood in the evacuations. The *cerebral* type is characterized by the symptoms of meningitis, none of the characteristic symptoms of which are found at the autopsy. The *carbuncular* type is exceedingly rare; the carbuncles have a marginal, rather than a deep induration, and do not cause pronounced excavations. Plague may sometimes be confounded with puerperal fever, septicemia, pyemia, smallpox, and other infectious diseases. [J.S.]

5.—Griffiths reports a case of **Landry's paralysis**. There was much general malaise, then severe pains in the legs, complete paralysis of the lower extremities gradually involving the abdomen and chest, impairment of sensation, and finally death 3 days after the onset of paralysis. As influenza was epidemic, Griffiths regards it as possible that this was the cause. [J.S.]

6.—Brownlie is convinced that **ichthyol** is the most valuable drug in the **treatment** of eczema, acne, and other **superficial inflammatory conditions**. In acute cases he employs application varying from 2% to 5% in strength; in the chronic cases, from 5% to 10%, and in acne vulgaris, from 10% to 25%. At the same time he administers the drug internally. It is not valuable for the relief of itching. [J.S.]

7.—Keith reports the case of an infant which, because of obstructed urination, underwent circumcision when 1 week old. The child did not breathe well under chloroform and lost more blood than usual. The physician when called to the child during the night after the operation, found it to all appearances dead though its heart was still beating. He at once resorted to **artificial respiration**, which was continued for **14½ hours** with slight interruptions, and the child ultimately recovered. One of the astonishing facts about the case was that the amount of brandy which the child required was for its age enormous. A smaller amount than 20 drops every hour was tried and the same quantity at longer intervals, but the result under both conditions was the same—it at once seemed to lose ground. The brandy was never at any time thrown off by the lungs; at least it was never noticeable in the breath, so that it is probable that the child used it all up in the struggle for its life. It is also wonderful that this small child, only a week old, was able to stand the manipulation, which did not seem to have injured it in any way. It was simply marvellous to see how quickly the marks resulting from the prolonged movements disappeared from its chest, abdomen and arms. This long cessation from natural breathing was probably caused by the combination of the chloroform, the shock, the hemorrhage and the disordered stomach, but what part each played in the pathologic condition it is difficult to determine. [W.K.]

8.—Williamson has employed **plasmon** in 55 cases of various diseases such as acute gastritis, chronic gastrointestinal catarrh, anemia, various infectious conditions, tuberculous diarrhea, carcinoma and cardiac disease. It always acted well, even when the patient had been suffering from nausea and vomiting, it improves nutrition rapidly and therefore is of great benefit in profound anemias. His personal experience has been that on hunting trips it enables him to stand much more fatigue than any other article of diet. It is best administered in milk, barley broths, etc. [J.S.]

9.—Richards suggests the following method for the **estimation of iron in animal organs**. Fifty or 100 grams of the moist organ are weighed in a platinum dish, then dried and charred, and the mass remaining moistened with strong nitric acid. It is then incinerated gently, treated a second time with the acid, again incinerated, and treated with pure hydrochloric acid for 5 minutes. It is then warmed and transferred to a beaker, and after the addition of a few drops of strong nitric acid, carefully boiled. The solution is then diluted, filtered, and the filtrate brought up to 50 or 100 ccm.; 20 ccm. is taken and transferred to a Nessler glass and treated with 1 ccm. of potassium ferrocyanid, when the mixture is made up to 50 ccm.; if the color is too intense a smaller quantity should be taken. This color is compared with one given by a standard iron solution, the most convenient being 0.1 gram of pure iron, dissolved in hydrochloric and nitric acid and diluted with distilled water to one liter. At the same time small portions of the viscera should be dried to a constant weight in order to

estimate the amount of moisture in it and the percentage of iron calculated on the dried viscera. [J.S.]

10.—The following case is reported as one of probable **perforating gastric ulcer**, the diagnosis being based on the presence of a large quantity of free gas within the peritoneal cavity, though perforation was not found. A woman of 22 who had never suffered from pain after taking food was suddenly seized with violent abdominal pain which continued during the night. She vomited once, but the following morning as the pain had abated she took a little breakfast. The pain immediately recurred with great severity, and she again vomited. On admission to the hospital she was suffering severely. The pulse was 146, respirations 52, temperature 103. There was constant retching but not vomiting. The abdomen was greatly distended, tympanitic, and tender everywhere, especially in the region of the ensiform. The abdomen was opened between the ensiform and the umbilicus and gas escaped freely. The anterior surface of the stomach was covered by a thick layer of lymph. At one place this coating was as thick as the palm of the hand. On partially removing it 3 elevated dusky spots were seen. No evidence of perforation was found though because of firm adhesions the under surface of the stomach not examined. The abdominal cavity was flushed with boric-acid solution and closed without drainage. No vomiting followed the operation. Nutrient enemata were given for the first 3 days. Convalescence was complicated by stitch-abscess necessitating opening part of the wound. Since her recovery the patient is strong and well. [M.B.T.]

11.—A woman, 50 years old, was trodden on by a cow while milking. She felt something give way inside and after suffering for some time from acute abdominal symptoms was admitted to the hospital almost moribund. She was deeply jaundiced and all the symptoms of peritonitis were present. Celiotomy was performed, and a large quantity of bile, pus and some fecal matter was evacuated. The abdomen was flushed with an antiseptic solution and a drainage tube was inserted. The patient was so weak and the parts were so matted together that further intervention was not considered justifiable at the time. The patient made a perfect recovery, however, a further operation not being necessary. The case is reported as one of **traumatic rupture of the gallbladder**, though the precise seat of rupture was not determined. [M.B.T.]

12.—Neve believes that the results obtained by a late incision or drainage in the treatment of **hip-joint disease** compare very unfavorably with those obtained by **early exploration**, arthrectomy or sequestrectomy. Exploratory operation reveals the exact nature of the disease, the condition of the synovial membranes and bones, and the presence of sequestra. It is more successful if performed early, before pus has escaped from the joint-cavity and burrowed in the planes of the fascia. In progressive hip-joint disease, specially where tension and pain are on the increase, early operation is strongly indicated. When asepsis is secured and the operative treatment is judicious and adequate, the immediate results may be ideal. The conception and permanence of the cure depend upon the maintenance of rest for a sufficiently prolonged period until the tissues of the joint area are sufficiently consolidated to bear the weight and strain of the body without injury. An anterior incision is considered preferable. Six cases of early operation for hip-joint disease are reported in which the results were very satisfactory. [M.B.T.]

New York Medical Journal.

December 8, 1900. [Vol. lxxii, No. 23.]

1. The Operation for Hypospadias, with the Demonstration of Three Cases Successfully Treated by the Forward Dislocation of the Urethra. CARL BECK.
2. The Present Status of the Treatment of Prostatic Hypertrophy in the United States. RAMON GUITÉRAS.
3. Notes on the Hospital Scarlet Fever Service in New York City from 1893 to 1899, Inclusive. WILLIAM L. SOMERSET.
4. A Plea for General Anesthesia in the Treatment of Mammary Abscess. FRANK H. FIELD.
5. Mastoid Abscess. RUFFIN A. WRIGHT.
6. What is Normal Menstruation? GEORGE J. ENGELMANN.

1.—Beck in his study of hypospadiac cases, collected over 100 in which marriage proved fruitless, and he believes it to be more common than usually credited. In the French army it occurs once in every 300 recruits. The neglect of these cases in childhood he thinks is criminal. Beck's method for making a normal urethra is a simple procedure when the **hypospadias** is not severe, and his results have been surprisingly favorable. The preponderance of elastic tissue in the urethra allows it to be stretched with very little difficulty after it has been dissected free from its bed and after a channel has been made through the glans it is simply pulled into position and stitched with iodoform silk sutures, then the wound is closed below. After these cases heal there is not the slightest bowing during erection. In one severe case after a phagedenic ulcer where there had been considerable loss of tissue this method failed, but he was able to restore the urethra by inverting the skin and then covering it with a flap from the scrotum. When operating on infants great care must be used in the dissection of the urethra. His youngest case was only 5 months. [W.S.N.]

2.—Guitéras, in reviewing the **present state of treatment of hypertrophied prostates in the United States**, divides the course into the conservative and the radical methods. The former consists in preventing the growth of the gland by proper medication, and care with the bladder in regard to drawing off the retained urine after each urination. When the case needs frequent use of the catheter, the best method is for the patient to carry a number of them with him wrapped in a sterile towel, and to sterilize them before using again. The radical method consists of operation; although many have been devised, they have all been discarded, except Bottini's and prostatectomy, both of which have strong advocates; he, however, believes the condition of the case should decide the operation, and 3 things should be considered: (1) The age of the patient; (2) the size and shape of the prostate; (3) the condition of the kidneys and bladder. If the condition of the patient is poor, Bottini's method is the best, although many contend it is not good surgery. Of the prostatectomies Alexander's, Syme's, and Fuller's are usually performed, but he prefers a method devised by himself, which he calls the rectovesical method. A suprapubic cystotomy is performed, then 2 fingers of the left hand are inserted into the rectum, while the point of a pair of scissors is pressed into the prostate through the opening in the bladder; when the point is through the gland, and can be felt through the rectum, the gland is then cut, the finger of the right hand is inserted into the cut, and the substance shelled out. Bleeding is then controlled by hot water. After this an opening is made in the perineum for drainage, through which a gauze drain is introduced, while a catheter is placed in the suprapubic opening. [W.S.N.]

3.—Somerset has found that in the very earliest cases of **scarlet fever** the eruption is frequently present on the anterior axillary fold. Projectile vomiting is a very common early symptom. In favorable cases the maximum temperature is about 103°. The erythema following injection of diphtheria antitoxin frequently simulates the rash of scarlet fever. The patient should be kept in bed and on fluid or semifluid diet for 3 weeks in order that treatment may produce the best results. [J.M.S.]

4.—Field, in a **plea for general anesthesia in the treatment of mammary abscess**, states that when a local anesthetic is used one is not apt to open it as thoroughly as he would otherwise, and the abscess is likely to extend more deeply and widely than might be foretold by examination before operating. [W.S.N.]

5.—Wright supports the views of Harrigan in regard to early operation in cases of **mastoid abscess** (see PHILADELPHIA MEDICAL JOURNAL, Vol. VI, p. 940), and by this means to lessen the number of complications. [W.S.N.]

6.—Engelmann has studied the **normal menstrual function** in 5,000 girls between the ages of 15 and 26 years. In 31% the function recurred every 28 days; in 45% it was retarded, and in 24% it occurred oftener than once in 28 days. The irregularities increase as the duties of the patient become more stringent or as mental or physical exertion become more intense. The average duration of the flow was 4.6 days. Suffering averages 67%; from 11 to 18% suffer severely, and, as a rule, there is an increase of 10% with increased mental strain. The period is characterized by an intensification of all vital energies, followed by a depression

that appears with the flow. It is a period of heightened susceptibility, and is so sensitive as to record any variation from the normal quickly. The functional condition of the girl in good health, under modern conditions of life, is by no means the ideal one, and, in fact, the functional health of the American girl, the coming mother of American men, is far from what it should be by right of inheritance and surroundings. [J.M.S.]

Medical Record.

December 8, 1900. [Vol. 58, No. 23.]

1. Tuberculosis of the Eye; Its Differential Diagnosis, Pathology, and Treatment. CHARLES STEDMAN BULL.
2. The Treatment of Tumors by Electrolysis. WILLIAM B. NEFTL.
3. Infant Feeding. LOUIS FISCHER.
4. A Mistake in Therapeutics. EDWARD P. BUFFET.

1.—Bull regards **tuberculosis of the eye** as rare and its **diagnosis** as difficult, as in many cases the bacilli and the giant cell are the only determining factors. Tuberculous ulcers of the conjunctiva and lids usually occur through the infection of some abrasion, and when they do the lymphatic glands around the ear are also involved. When the process is primary the **prognosis** is favorable. The sclera and cornea are not often invaded and show great resistance. The uveal tract is usually secondary to pulmonary or other process. The iris and ciliary body are sometimes invaded by the disease in the primary form; if so, it generally results in phthisis bulbi. When the retina or optic nerve is involved it is usually an extension from the meninges. No cases of primary tuberculosis of the orbit have ever been reported. [W.S.N.]

2.—Neftel believes that **electrolysis in the treatment of tumors** is a safer and more reliable method than the use of the knife. He derives this opinion from over 30 years of study and experiment. This method was used before the days of antisepsis, and its application was never followed by such complications as hospital gangrene, pyemia, etc., the reason for this being that ozone and hydrogen peroxid are both produced by the interchange of radicals around the anode and cathode when an electric current is passed through the tissue; while this is going on at the same time there is a destruction of tissue, which is followed by necrosis. This destruction of tissue can be modified by the direction of the current and the number of diaphragms, and the different densities of the tissue between the poles. Besides this there is a diffusion of the swelling which favors absorption. He does not believe that the electrolytic action is increased by the injection of metallic salt (as zinc); when this action alone is not beneficial it cannot be improved by the cataphoresis of metallic salts. Around the anodal needle a dark layer is formed due to mummified tissue, which then undergoes a necrobiosis and a soft eschar follows. Considerable care must be employed in introducing the needle, but he has introduced it into the liver, spleen, and joints for a few seconds to even a minute without unpleasant effects. This, however, could not be done with the anode, as in this case the necrotic destruction is produced en masse; although he has introduced a carefully insulated needle into an aneurysm, in malignant growths this necrosis en masse is desired. Electrolysis has yielded good results in treating enlarged prostates and its action here is the same as in treating uterine fibromyomata. He introduces a well-insulated cathode into the gland, per rectum, and the anode is placed over the abdominal wall, then a weak constant current is allowed to pass through for a few minutes. [W.S.N.]

3.—Fischer objects to the use of **boiled, sterilized, or pasteurized milk**. Raw milk should be used, and the milk should be obtained in such a manner that there is no opportunity for its infection. Heating the milk causes changes in the albuminate of iron, in the phosphorous compounds, and perhaps in the fluorin compounds which make the iron and fluorin compounds unabsorbable and the phosphorus unassimilable. Each infant should be fed by its own special law. Rules cannot be made for all children. If a food is chosen for an infant it is necessary to see that the child appears satisfied, that there is no vomiting and no colic, that the bowels move without artificial aid and the stool is yellowish white and soft. The infant should sleep for

from 4 to 8 hours at one time during the night, the weight should be taken regularly, and there should be an increase of from 6 to 8 ounces per week; if the weight does not increase the food should be changed and every factor in the child's life should be investigated. Fischer has found that the children fed on laboratory milk have been backward in movement for a long time; it seems to produce constipation, and later gastric and intestinal atony, poor appetite, delayed dentition, and rickets. The children are usually anemic. When milk disagrees Fischer finds almond milk useful. This he prepares by scalding or blanching the almonds, then beating up an ounce of blanched almonds in an ounce of water, rubbing the mixture and expressing it through cheese cloth; one ounce of almonds thus yielding one ounce of almond milk. Dextrinization of foods is useful in case the digestion is subnormal. It should never be used except during illness, however, as if there is no demand upon the glands for their ferments they will become atrophied. The hydrochloric acid is practically always reduced in young children during gastrointestinal disturbance, hence hydrochloric acid may rationally be given. The two drugs which he finds most useful are nux vomica and malt. [D.L.E.]

Medical News.

December 8, 1900. [Vol. lxxvii, No. 23.]

1. An Improved Technic in Amputation of Large Rectal Prolapse. GEORGE RYERSON FOWLER.
2. A Modification of the Mosquito Theory. CHARLES R. GRANDY.
3. Heat-Stroke as a Postoperative Complication. C. L. GIBSON.
4. Chloralamid. S. V. CLEVINGER.
5. State Sanatoria for Consumptives in Michigan. HERBERT MAXON KING.
6. A Study of Drainage. A. M. POND.

1.—Fowler **amputated a large rectal prolapse** under spinal cocainization and has to some extent **improved the technic** of the operation. The mass protruded about 5 inches and was of about 5 years' duration. The patient was placed in a combined lithotomy and Trendelenburg position. The advantage of this position is that the small bowel is not so liable to be injured. The prolapse is then caught, where the skin and mucous membrane join, by a pair of fenestrated forceps, and about a $\frac{1}{2}$ inch in front an incision is made and extended around and only through the mucous membrane; the proximal end is dissected back for about a $\frac{1}{2}$ inch; 2 clamps are placed on either side just where the outer cylinder returns to become the inner one; after the cylinders have been recognized the incision is deepened to a $\frac{1}{2}$ inch and a suture of catgut is placed so it will include both cylinders, then they are cut and another suture is placed, afterwards cut again, and so on around the whole bowel. Care must be taken so as not to cut in excess of the suture, and during the last part of the operation a steady stream of borosalicylic solution is played over the field of operation. [W.S.N.]

2.—Grandy believes that the **mosquito theory** explains the prevalence of **malaria** in those months when mosquitos abound, and the reason that malaria does not occur in those parts of the world where only the culex is found, as in northern Michigan. He objects to it because it apparently claims that malaria can only be propagated by the direct transmission from one human being to another through the mosquito, because in districts which have been depopulated as a result of the prevalence of the disease, the disease reappears as soon as human beings return to them. It seems certain that malaria is not transmitted by the water-supply, and Grandy therefore suggests that possibly there are other intermediate hosts besides man, or it may be that the parasites are capable of living in damp places where the mosquitos feed, and can in this condition infect the mosquitos even if not human beings. It is true that the plasmodium has never been cultivated artificially, but this is true of all other parasitic protozoa. [J.S.]

3.—Gibson believes if it is possible to postpone **severe operations in hot weather** it should be done, as the complication of **heatstroke** in postoperative cases is to be dreaded; and if it does not give rise to any severe trouble it is apt to produce considerable worry on the part of the oper-

American Journal of the Medical Sciences.

July, 1900. [Vol. cxx, No. 1.]

1. Carbolic Gangrene. FRANCIS B. HARRINGTON.
2. Report of the Committee of the American Surgical Association on the Medico-Legal Relations of the X-Rays.
3. Report of a Case of Acute Ascending Paralysis, Showing Hematoporphyrinuria. CHARLES G. STOCKTON.
4. A Case of Brown-Séquard Paralysis. RICHARD F. WOODS.
5. Excision of the Lachrymal Sac and Gland. C. A. VEASEY.
6. Clinical Study of the Ocular Symptoms Found in So-called Posterior Spinal Sclerosis. CHARLES A. OLIVER.
7. Notes on Diabetes. JAMES B. HERRICK.
8. Pneumonic Complications in Pulmonary Phthisis. W. OPHÜLS.
9. A Case of Dermoid Cyst of the Mediastinum. F. S. MANDLEBAUM.
10. A Critical Summary of the Literature on the Serum Diagnosis of Tuberculosis. DAVID L. EDSALL.

1.—Harrington has seen 18 cases in which the application of dilute solution of **carbolic acid** to the extremities for a number of hours produced **gangrene**. The result is not due to compression, but is caused by the carbolic acid itself. The gangrenous process may be so slight that only the skin is destroyed, or it may cause complete disorganization of the affected part. The action of carbolic acid is insidious and its use as a moist dressing should be entirely abandoned, as a large part of the benefit conferred by it can be derived from a moist dressing obtained by the use of boiled water on clean compresses. The article is provided with a number of excellent illustrations, one of them of a microscopic section, and a long bibliography is appended. [D.R.]

2.—A committee was appointed by the American Surgical Association to report on the **medicolegal relations of the x-ray**, since skiagraphs are destined to figure largely in suits for damages after accidents and in cases of malpractice. A circular letter was sent to every member of the Association by J. William White, the Chairman of the Committee, and from the answers received the following conclusions were drawn: 1. The routine employment of the x-ray in cases of fracture is not at present of sufficient definite advantage to justify the teaching that it should be used in every case. If the surgeon is in doubt as to his diagnosis, he should make use of this, as of every other available means, to add to his knowledge of the case; but even then he should not forget the grave possibilities of misinterpretation. There is evidence that in competent hands plates may be made that will fail to reveal the presence of existing fractures, or that will appear to show a fracture that does not exist. 2. In the region of the base of the skull, the spine, the pelvis, and the hips, the x-ray results have not as yet been thoroughly satisfactory, although good skiagraphs have been made of lesions in the last three localities. On account of the rarity of such skiagraphs of these parts, special caution should be observed when they are affected, in basing upon x-ray testimony any important diagnosis or line of treatment. 3. As to questions of deformity, skiagraphs alone, without expert surgical interpretation, are generally useless and frequently misleading. The appearance of deformity may be produced in any normal bone, and existing deformity may be grossly exaggerated. 4. It is not possible to distinguish after recent fractures between cases in which perfectly satisfactory callus has formed and cases which will go on to nonunion. Neither can fibrous union be distinguished from union by callus in which lime salts have not yet been deposited. There is abundant evidence to show that the use of the x-ray in these cases should be regarded as merely the adjunct to other surgical methods, and that its testimony is especially fallible. 5. The evidence as to x-ray burns seems to show that in the majority of cases they are easily and certainly preventable. The essential cause is still a matter of dispute. It seems not unlikely when the strange susceptibilities due to idiosyncrasy are remembered that in a small number of cases it may make a given individual especially liable to this form of injury. 6. In the recognition of foreign bodies the skiagraph is of the very greatest value; in their localization it has occasionally failed. The mistakes recorded in the former case should easily have been avoided; in the latter they are becoming less and less frequent, and by the employ-

ment of accurate mathematical methods can probably in time be eliminated. In the meanwhile, however, the surgeon who bases an important operation on the localization of a foreign body buried in the tissues should remember the possibility of error that still exists. 7. It has not seemed worth while to attempt a review of the situation from a strictly legal standpoint. It would vary in different states and with different judges to interpret the law. The evidence shows, however, that in many places and under many different circumstances the skiagraph will undoubtedly be a factor in medicolegal cases. 8. The technicalities of its production, the manipulation of the apparatus, etc., are already in the hands of specialists, and with that subject also it has not seemed worth while to deal. But it is earnestly recommended that the surgeon should so familiarize himself with the appearance of skiagraphs, with their distortions, with the relative values of their shadows and outlines, as to be himself the judge of their teachings, and not to depend upon the interpretation of others who may lack the wide experience with surgical injury and disease necessary for the correct reading of these pictures. [D.R.]

3.—In a woman of 27 years, who presented symptoms of **acute ascending paralysis**, the urine had a claret color, was acid, contained a trace of albumin and indican, but no sugar, and had a specific gravity of 1.020. A chemic examination showed the presence of **hematoporphyrin**. The patient had received trional and sulfonal. The latter has been known to produce hematoporphyrinuria, but there was a history of the passage of dark-colored urine before either was administered; and, moreover, the hematoporphyrinuria continued for 14 days after the administration of only 1 gram of each of the two drugs. [D.R.]

4.—The **Brown-Séquard paralysis** in Wood's patient was due to a stab-wound in the neck. Immediately after the injury the left arm and left leg were paralyzed. Two months later the man could use his left arm slightly, and could walk, but with an uncertain manner. A year later there was a fine tremor of the left leg and, to a lesser degree, of the left arm. There was diminution of power in the left arm, and atrophy of both left arm and left leg. On the paralyzed side the tactile sensibility was increased, while on the nonparalyzed (the right) side tactile sensibility was greatly diminished. There was hyperesthesia to painful impressions in the paralyzed limb; analgesia in the other. Muscular sense was lessened in the paralyzed, unaltered in the nonparalyzed, members. Temperature-sense was increased in the paralyzed and lost in the nonparalyzed limb. There was then on the side of the lesion a paralysis of voluntary movement, of muscular sense, and probably a vasomotor paralysis, the paralyzed leg being much warmer than the nonparalyzed. There was also hyperesthesia of the trunk and limbs, increase of reflexes, and ankle-clonus, while in the nonparalyzed side there was anesthesia. [D.R.]

5.—In a woman of 58 years who had had several attacks of **dacryocystitis** of the right side, Veasey excised the lacrimal gland and sac. On the eighth day after the operation the patient began to have pain in the eye, and by the following day a severe **membranous conjunctivitis** of both eyes had developed. The cornea of the right eye, which was not anesthetic, was slightly abraded near the center and considerably roughened. Bacteriologic examination showed only the diplococcus of Fraenkel. The disease increased and the cornea became marked with fine lines, giving the appearance of a **lattice-work**. The cornea also became partially anesthetic; the membrane disappeared entirely from the left eye, but continued to form on the right. Thyroid extract was administered; and whether as a coincidence or as a result, the eye began to improve. The lattice-like appearance continued for some time; but of the corneal capacity, only a slight haziness in the lower, inner quadrant remained. The author believes that the corneal condition was probably the result of injury to some portion of the trigeminus. He does not think that the mechanical theory advanced in explanation of so-called trophic keratitis can satisfactorily explain this case, since anesthesia did not present itself until some time after the corneal disease had been established. Moreover, protection of the cornea, instead of securing improvement, made the condition worse. He is inclined to the belief that the affection was produced by some **disturbance** of the **trophic nerves** of the cornea. Whether there is a special set of

trophic nerves or whether it is a part of the function of the trigeminus to exercise trophic influence over the cornea remains undetermined. [D.R.]

6.—Oliver has made a careful study of the **eye-symptoms in posterior spinal sclerosis**, a disease which he divides into an optic and a spinal type. The former occurs in from 10 to 15% of all cases, and is characterized at first by fair or normal vision. Later, visual paresthesias and contractions of the fields manifest themselves. There may be spastic movements of the extraocular muscles and slight swelling of the optic disc. Gradually, if the disease is not arrested, atrophic processes develop in the optic nerve, which may eventuate into complete blindness. In the spinal type there may be, despite objective changes in the disc, normal vision, with irregular and slightly indented color fields. The pupils are myotic and in advanced stages the iris remains absolutely fixed to the strongest light stimulus. [D.R.]

7.—A small amount of albumin and a few casts are not uncommon in the urine of any cases of **diabetes mellitus**, but during or just preceding **diabetic coma casts** may appear suddenly in extraordinary numbers. The sediment obtained by the centrifuge or by sedimentation may consist almost entirely of light-colored, finely granular casts. When recovery takes place the casts may entirely disappear. This presence of casts in diabetic coma, to which Kulz and Aldehoff first called attention, Herrick has observed in three cases. The author has also seen several instances of **low specific gravity of diabetic urine**. This may be because of the development of interstitial nephritis. In such cases the sugar may be gradually reduced to a minimum or disappear entirely. He has seen sugar present with a specific gravity of 1.004 in a case of diabetes. A number of instances of specific gravity below 1.010 with the presence of sugar in the urine have been reported. The lowest recorded is a specific gravity of 1.002. [D.R.]

8.—Ophüls has made a careful study of the **pneumonic complications of tuberculosis**. The material bringing about these complications is usually derived from cavities, and the question arises, What bacteria are the responsible agents? The author examined 26 cavities in 13 cases, and found *Streptococcus pyogenes* in 1, the *pseudodiphtheria bacillus* in 5, the *pneumococcus* in 6, the *pneumococcus* and *pseudodiphtheria bacillus* in 4, the *staphylococcus* and *streptococcus* in 2, the *pneumococcus* and *staphylococcus* in 1. The infectious material is carried to other parts of the lung by aspiration or by gravitation. In those cases in which the cavities are not surrounded by a continuous membrane of granulation and scar tissue, the pathogenic organisms may enter adjoining healthy portions of the lung directly through the cavities, without traveling first through the bronchial tubes. Among 56 phthisical patients examined with regard to pneumonic complications, the latter were found in 25. Some were produced by the tubercle bacillus acting alone, and in this form the histologic lesions differed from the bronchopneumonia due to mixed infection. Different types of this true tuberculous pneumonia are recognizable. One may be termed the acute, of which there were 9; one, the chronic, characterized by the presence of tuberculous granulation tissue; besides which there is a still more advanced form, characterized by calcification. The acuteness of the process seems to depend to a certain extent upon the number of tubercle present in the diseased spot. The condition of the patient also appears to exercise an influence. The area of tuberculous pneumonia may become the seat of a secondary infection, by way of the bronchial tubes. Such an infection favors the disintegration of the caseous material and the formation of cavities, but it is not essential to this end. The outcome of tuberculous pneumonias is usually unfavorable. There is a rapid caseation and disintegration of pulmonary tissue. In the more chronic cases there may be a tendency to fibrous tissue formation. In other forms of pneumonia there is a mixed infection from the beginning. Among 16 of such cases there were 9 cases of bronchopneumonia without caseation, 4 with apparently very rapid and extensive caseation, and 4 with calcification. The bacteria found, together with the tubercle bacillus, were the following: *Pneumococcus*, 10 cases; *streptococcus*, 1; *pseudodiphtheria bacillus*, 1; *pseudodiphtheria bacillus* and *streptococcus*, 1; *pneumococcus* and *streptococcus*, 1; cocci of an unknown nature, 1. It is very likely that the acute pneumonic process set up by a mixed infection can heal. Clinic-

ally the recovery may be, and often is complete; but the presence of tubercle bacilli in the lesions makes it very probable that anatomically the process will not heal completely, but with a remaining more or less extensive simple, tuberculous lesion. Ordinary lobular and lobar pneumonias may occur in the course of phthisis, but they do not seem to be frequent, and the author found only two cases of bronchopneumonia and one of lobar pneumonia in which no tubercle bacilli could be discovered in the exudate. It has been asserted that such simple pneumonic complications could be secondarily infected with tubercle bacilli, but the author does not think that anatomic proof has been brought of such an assertion. [We are quite sure that such secondary infection is possible, and only recently we saw a case in which a typical lobar pneumonia, coming on after anesthesia, failed to resolve and passed into tuberculous caseation.] The pneumonic complications are frequently accompanied by generalized infections through the bacteria that are associated with the tubercle bacilli in causing them. Regarding the **diagnosis** of mixed infection, the author does not think that an examination of the sputum by Kitasato's method of repeated washings of the sputum in sterilized water is of much value, since various pathogenic bacteria may be found in cavities without their necessarily causing mixed infection. [D.R.]

9.—In a woman, 30 years of age, a tumor the size of an orange was found opposite the third rib on the right side of the chest anteriorly, the skin being freely movable over it. At operation the tumor was found to be a **multilocular cyst** with a thick, brownish fluid, containing small particles of gritty matter. The patient failed slowly and died of exhaustion. At the postmortem examination a cavity 6 by 8 cm. in size, was found, bounded by the pleura on the inner surface of the right lung and by the pericardium. The wall was more or less covered by fatty, granular detritus, in which some light-colored hairs were seen. A number of polypoid excrescences sprang from the cyst wall. The tumor was firmly united to the pericardium, pleura, and diaphragm. Microscopically it presented the feature of **dermoid cyst** with squamous epithelium and sebaceous glands; there was also some cartilage. Together with the author's case, there are now on record 37 examples of **dermoid cyst of the mediastinum**. After discussing the embryology and etiology, the following classification is suggested: 1. True dermoids, containing only ectodermal structures. 2. Teratomata, or dermoids with the addition of structures from the endoderm and mesoderm. 3. True dermoids, or terotomata with the addition of tumor formation. [D.R.]

10.—The difficulties attending the extension of the **Widal serum reaction to tuberculosis** have been the facts that the tubercle bacilli in ordinary culture-media are not homogeneously distributed and that they are not motile. It has been shown, however, that in some cultures the bacilli exhibit an active movement, whether corpuscular or voluntary, is not known, and that by frequent agitation of liquid cultures a fairly homogeneous distribution of the bacilli through the medium can be secured. An attenuated bacillus grown in glycerin-peptone bouillon should be used, and the culture should be from 8 to 10 days old. Only the upper portion of the culture should be taken. The blood from the patient is drawn into small tubes, and the serum obtained by allowing the clot to retract spontaneously or by centrifugation. The reaction does not occur with normal serum in a dilution of 1:5, and in a tuberculous subject it rarely occurs in dilutions greater than 1:20. Serum and culture should be mixed in small tubes in the proportion of 1:5, 1:10, and 1:20. The tubes should be kept inclined at an angle of 45° and examined after 2, 10, and 24 hours. If reaction occurs the mixture becomes clarified and deposits small flakes along the lower edge of the tube, and microscopically the bacilli are found to have formed clumps and to be no longer motile. Of 186 persons, 128 gave a positive reaction. Of these, 96 were known to be tuberculous or proved to be so. Ten of the negative cases were also definitely known to have tuberculosis. These were all advanced cases. Twenty apparently healthy persons were examined and 6 gave the reaction; but there was no opportunity for determining whether these 6 subsequently showed tuberculosis or not. Experiments demonstrated that poorly marked reactions or none are seen in those who are suffering from a very severe or virulent tuberculous infection, and perhaps in those who are exces-

sively susceptible. Agglutination takes place more readily when the bacilli used in the test are homologous with those causing the infection. Edsall feels hopeful that the method may be of value. At any rate, the importance of the subject suggests further investigation. [D.R.]

Wiener klinische Wochenschrift.

August 30, 1900. [13. Jahrg., No. 35.]

1. The Pathology of Icterus. BROWIEZ.
2. Experiences with C. L. Schleich's Marble-dust Soap. ERNST FUCHSIG.

1.—The author's conclusions regarding the **production of jaundice** are: 1. The basis of jaundice is an increased function of normal liver-cells, which, excited by different stimuli, produce more bile or bile-pigment. 2. Only a normal liver-cell which can take up and elaborate an excess of nutriment and thus can produce an increased quantity of bile, can eliminate this excess of bile into the intercellular bile-passages, whence part of the bile passes into the blood; in part directly through the walls of the blood-capillaries. 3. The mechanic factor has only an indirect influence, in that it disturbs the intravenous circulation in the blood-capillaries. 4. The bile reaches the general circulation through the **blood-capillaries of the hepatic veins** and only to a slight extent through the lymphatics of the larger bile-channels. 5. All forms of icterus can be explained in the way designated, viz.: on an increased functional activity of the liver-cells, which means an overproduction of bile or bile-pigment. [D.R.]

2.—With the gradual loss of confidence in the value of chemical disinfectants for the **sterilization of the hands** there has been increased importance placed upon the value of mechanical disinfection. Schleich has gone so far as to discard chemical disinfectants entirely, and uses a soap containing marble-dust as a mechanical disinfectant. Fuchsig has tested this method of sterilizing the hands in Professor Albert's clinic at Vienna for 6 months and has carried out a series of bacteriologic experiments to determine the value of the method. After sterilizing the hands according to this method the fingers were placed on sterile agar plates. Out of 33 different tests the plates remained sterile in only 4 cases. In spite of these unfavorable results from a bacteriologic standpoint, Fuchsig finds that practically the results are very good, and he considers this method of pure mechanical disinfection an advance in the methods for sterilizing the hands. Among other advantages he mentions that there is never eczema nor irritation of the skin following the use of the marble-dust soap. [M.B.T.]

September 6, 1900. [13. Jahrg., No. 36.]

1. Assimilation Disturbances Among Infants with Stomach and Intestinal Diseases. MEINHARD PFAUNDLER.
2. Honthin, an Intestinal Astringent, and its Therapeutic Application in the Diseases of Children. JOSEF REICHEL.

1.—Pfaundler subjects the theories of Czerny's school at Breslau to criticism, basing his strictures on his own researches and those of others. Czerny and his pupils maintain that the principal disturbance in the **chronic intestinal diseases of children** consists in an **acid intoxication**, the evidence of which is found in an increase in the elimination of **ammonia** in the urine, while the normal share of NH_3 in the newborn is 7.8—96% of the total urinary nitrogen. Keller found it in infants with gastroenteritis from 20 to 50%. Keller believed that the fats in the food were especially productive of acids. The ammonia, according to older views, is formed in the system for the purpose of combining with and neutralizing abnormal acids. Pfaundler examined the urine of 40 children, 30 being under 6 months of age. Some were healthy as regards the alimentary tract (magendarmgesund), others had various gastrointestinal affections (magendarmkrank). He found very little difference in the quantity of ammonia eliminated. The coefficient seemed to depend more on the general health than on the state of the bowels. Gastrointestinal diseases, it seems, influence the coefficient only indirectly, i. e., to the extent to which they impair the func-

tions of respiration, circulation, and metabolism. No marked difference was found in the **toleration of fats** between healthy children and those ill of gastroenteritis—the coefficient of NH_3 increased nearly equally in both with equal increase in the quantity of fat administered. The NH_3 coefficient, in Pfaundler's opinion, is largely, though not exclusively, under the sway of the food, particularly the fats. The fat of human milk does not seem to increase the NH_3 to the same extent as that of cow's milk. Thus, there is in every artificially fed infant a certain degree of hyperacidity, but this cannot be called an acid intoxication, since the circulating acids, as long as they are neutralized by NH_3 , do not do any serious damage. Pfaundler also believes that disturbances in the liver are of influence on the proportional distribution of the urinary nitrogen. In examining the oxidative properties of liver-tissue from the cadavers of infants with healthy and from those with diseased livers, he found that diseased liver had far less power to oxidize salicylaldehyd into salicylic acid than healthy liver. Comparative studies of the urine and subsequently of the oxidizing property of the liver showed that whenever the NH_3 was increased above the mean, the production of salicylic acid from aldehyd was reduced below the mean. These facts indicate that the **oxidative energy of the liver** has an important influence on the **nitrogen-distribution** in the urine of infants; when the energy is diminished, as in cases of anatomic changes in the liver, the NH_3 in the urine is increased at the expense of the urea. The existence of an acid intoxication in infants with gastroenteritis can only be proved by the discovery of diminished alkalinity and CO_2 contents of the blood, a proof not hitherto brought forward. [D.R.]

2.—**Honthin**—named after the discoverer's town—is a tasteless, nonhygroscopic powder; chemically it is a tannin preparation in which the albumin tannate has been keratinized. It is insoluble in water, partly soluble in alcohol. In doses of 0.25—0.38 (4-5 grains) for infants, and 0.3—0.5 (5-7½ grains) for older children, four times a day; it is a safe and reliable intestinal astringent. [D.R.]

September 13, 1900. [13. Jahrg., No. 37.]

1. The Significance of Acoustic Speech-Centers as Inhibition (?) Organ of Speech Mechanism. A. PICK.
2. The Present Position of Radiotherapy. E. SCHIFF and L. FREUND.
3. Therapeutic Application of Frictional Electricity in Medical Practice. BREITUNG.

1.—A lesion in the left auditory speech-center is accompanied by a peculiar disturbance of speech—a condition termed **paraphasia**. The patients present a condition suggestive of a **lack of inhibition** and react in an exaggerated degree, and usually in a constant manner, to all forms of stimuli, but particularly to that through the auditory channels. The speech appears as if it were produced reflexly, involuntarily, or automatically. The words roll from the mouth in a constant, disordered stream of incoherent sentences. In other cases there is a typical **logorrhea**, apparently excited by all kinds of external stimuli, but particularly by those of an auditory nature. This logorrhea is quickly exhausted, but renewed with successive stimuli. Pick believes with Collins and others that these phenomena are due to the failure of action of the **normally acting inhibitory mechanism**, which has its seat in the **temporal lobe** and coincides, perhaps only in part, however, with the acoustic speech-center. Against the theory that logorrhea and paraphasia are due to irritation of Broca's region may be cited the fact that such phenomena are never observed in exclusive lesions of this region—not even in cases such as tumors which preeminently give rise to irritative symptoms. The **paraphasia** must be looked upon as a **temporal-lobe symptom**, and it does not occur when Broca's region is also involved in the morbid process. Against the irritative theory is also the fact that in exclusive lesions of the temporal lobe there was never any evidence justifying the assumption that this lesion exerted any irritative action on Broca's convolutions. On the contrary, the speech phenomenon is best marked when the distant effects are reduced to a minimum, and when the functions of the temporal lobe are alone disturbed. The lesion in the tem-

poral lobe is not one of irritation, as in such cases hallucinations of hearing and perhaps of smell and taste occur; paraphasia, sometimes appearing in a modified form as echolalia, is produced only when the lesion no longer causes irritation, but paralysis of the temporal lobe. In favor of the inhibition theory is, in addition to what has already been mentioned, the fact that the phenomenon of paraphasia occurs especially in softening, in which effects at a distance are minimal; while in the case of apoplectic foci the symptom is not apt to occur, on account of the marked distance effects of such a lesion; and also the curious fact that in injuries of the skull involving this region the paraphasia may occur suddenly after the lifting of the compression bone fragments. The paraphasic logorrhea sometimes observed in petit mal may be explained on the ground that there is a local disturbance of the temporal lobe, as the result of which there is a reflex logorrhea; in other words, that an automatic function takes the place of the voluntary. Echolalia in its more marked forms is also a speech reflex, developing under conditions similar to those giving rise to paraphasic logorrhea; that is, when the function of the left auditory speech center or its immediate neighborhood is eliminated or greatly disturbed. Whether the inhibitory function coincides with the real function of the acoustic speech center, or whether there is only a spatial and partial coincidence, cannot be determined at present. [D.R.]

2.—The chief indications of radiotherapy are skin affections, particularly those produced by parasites and those in which removal of hair is a prerequisite for cure. The special indications are: (a) Lupus vulgaris and mycoses of the skin; (b) hypertrichosis, sycosis, favus, folliculitis, furunculosis, acne, etc.; (c) lupus erythematosus. Sycosis and favus require only a few weeks; hypertrichosis, a year and a half. The changes produced by the rays are ascribable to an influence on the vessels of the skin. Freund has studied physiologic action of the silent discharges and of the invisible rays. He comes to the conclusions that: 1. The direct discharges may bring about falling of the hair. 2. The direct discharges are capable of inhibiting the growth of or killing bacterial cultures. 3. This effect is also produced if thin layers of wood, paper, aluminum, stanniol, or human skin, intervene. 4. It also manifests itself on bacteria suspended in liquid media. 5. The physiologic action of the negative discharges is more intense than that of the positive; but it is, on the other hand, more limited in extent. 6. By a special apparatus it was found that the silent discharges are a modification of the visible discharges, differing from the latter somewhat in intensity, but also having less undesirable after-effects, as for instance pain. Their scope of use is greater than that of the direct spark, and their mode of action qualitatively the same. 7. Röntgen-rays, according to these observations, have no physiologic properties. 8. Becquerel and phosphorescence rays have likewise no physiologic action. 9. The pathologic changes produced in the skin by the direct sparks consist in hemorrhages, inflammations, and vacuolization. Regarding the treatment of lupus, the authors believe that for small areas extirpation with subsequent transplantation of skin is the ideal method. Röntgen therapy should be applied only to large, deeply ulcerating processes, and to cases in which objection is made to operation. Röntgen therapy is preferable to Finsen's method on account of its simplicity. The authors assert their claim to priority in the use of the Röntgen-ray in dermatology. [D.R.]

3.—Breitung is a believer in the value of high tension currents in insomnia, hysteroepilepsy, tinnitus aurium, and has had constructed a special apparatus for their application. In cases of partial deafness the method may momentarily produce an increase of deafness, but this passes off. It should, however, be remembered and the patient informed of it in advance. [D.R.]

Berliner klinische Wochenschrift.

September 3, 1900. [37. Jahrg., No. 36.]

1. Injuries to the Eyes by Calcium. H. SCHMIDT-RIMPLER.
2. Treatment of Leprosy. W. DÖNITZ.
3. Concerning Angina Pectoris. MAX SALOMON.

4. Malignant Epithelial Tumors of the Upper Nasal Cavity. J. HERTZFELD.

5. Bacteria in the Intestinal Wall. G. POSER AND J. COHN.

1.—Schmidt-Rimpler states that there have been 56 injuries of the eye from calcium or some of its combinations during the past 10 years in the Göttingen Clinic. These injuries are the most common burns or injuries of the eye by corrosive substances. Most of the patients were masons or laborers who handled calcium or some of its derivatives. In 10 cases both eyes were injured. In 20 of the patients blindness resulted. Hence the importance of immediate careful treatment can be readily seen. The eye is usually firmly contracted. By some means it should be opened so that every particle of the calcium can be carefully removed from the cornea and conjunctival sac. Removal is best accomplished by the use of oil. A bit of cotton can be saturated and used to wipe out the particles. It is especially important to evert the upper lids, as particles are prone to become embedded in them. To relieve the pain holocain is recommended and the eye should be thoroughly flushed out with oil. If no oil can be found, water may be used, for as a rule, the calcium has been dissolved and water causes no rise of temperature. The prevention of these accidents is highly important, and the use of protective spectacles by workers in calcium is recommended. [M.B.T.]

2.—Dönitz discusses the value of chaulmoogra oil in the treatment of leprosy. The oil is obtained from the seeds of the *Gynocardia odorata*, and has for many years been used internally. When given subcutaneously it produces a local and general reaction. The latter consists in a rise in temperature, persisting for several days; the former, in a reddening of the effected portions, and particularly a pericyclic congestion of both eyes. The injections in the author's cases were repeated only after the ocular phenomenon had subsided. After a few injections the infiltration in one of the cases diminished, and in about 4 months had entirely disappeared. In addition to the chaulmoogra oil the patient had received sulfur baths. As it was doubtful which had been the efficient agent, when a second case presented itself only the chaulmoogra oil in the form of hypodermic injections was employed. The injections were followed by a local and general reaction, and a gradual reduction in the size of the nodules. The most striking effects were seen in the eyes. There had been marked pannus, and one eye was practically blind. At the end of the treatment the pupil was so far clear that light could enter. The injections are given at intervals of from 10 to 14 days, and in such small doses that the temperature rises only about 0.5°C. From .1 to .2 grams (1½ to 3 grains) are sufficient. There is some analogy between the local and general reactions produced by chaulmoogra oil and those produced by tuberculin, but the former, of course, has no specific influence, and probably more nearly resembles cantharidin in its action than tuberculin. It is likely that it also has an influence upon other affections, particularly those of syphilitic and perhaps those of tuberculous origin. [D.R.]

3.—Five cases of angina pectoris presenting no special features are briefly described. Arteriosclerosis of the coronary arteries plays the most important part in the disease, but there are other causes. In the treatment the iodids enjoy the greatest reputation, but in Salomon's opinion they are of value only in those cases that are dependent upon coronary sclerosis. Whether in a given case there is such a sclerosis is often not determinable. The palpable vessels frequently show no change, and the heart presents nothing noteworthy. The history may, under these circumstances, be of value, particularly when it reveals the existence of syphilis or alcoholism. There is an angina pectoris of neurasthenic origin which differs from the arteriosclerotic form in no way except in the prognosis. The treatment in general consists in the use of the iodids and in the dietetic and hygienic regimen. [D.R.]

5.—Posner and Lewin in 1894 and 1895 showed that after occlusion of the rectum intestinal bacteria invaded the blood and organs in from 24 to 48 hours. These results were attacked by Markus, who claimed that in the occlusion of the rectum some injury was produced which allowed the entrance of the bacteria by way of the lymph paths. As an answer to this objection, Posner and Cohn have made a series of experiments on rabbits, in which they closed the anus

with collodion and found that after a certain length of time *Bacterium coli* could be found in various organs. In one animal they injected the *Micrococcus prodigeus* into the rectum and then closed the anus with collodion, cotton, cambric, and plaster of paris. Two days later the animal was killed, and the prodigeus was found in the urine, kidney, peritoneum, liver, spleen, and blood of the heart, as well as in the intestinal contents. Regarding the portal of entry into the organs, the authors believe that it is by way of the blood, since in previous experiments the kidney was sterile if the renal artery was ligated. There is, then, no doubt that under certain conditions the **intestinal wall is penetrable by bacteria**, but it is probable that the perfectly normal bowel opposes their passage. The conditions favoring the entrance of bacteria into the general system are either mechanic or the action of pathogenic bacteria. In their own experiments the disturbance did not bring about any gross lesion in the continuity of the bowel. Hyperemia and hemorrhages were present, but nowhere were there any tears in the mucous membrane; but of course the vitality of the bowel suffered in the experiment. The experimental conditions are somewhat analogous to those obtaining in fecal impaction and in blood stasis; as, for instance, in the death agony and in incarcerated hernia. The experiments, although of a severity but rarely duplicated in man, suggest that certain infections of the urinary tract not produced by instrumentation may be due to intestinal bacteria. [D.R.]

Münchener medicinische Wochenschrift.

September 11, 1900. [47. Jahrg., No. 37.]

1. The Prevention of Puerperal Fever. M. HOFMEIER.
2. A New Method for the Observation of Injuries to the Living Cells and Organisms. MAX NEISSER and FRIEDRICH WECHSBERG.
3. Method of Showing the Capsule of Bacteria in Solid Culture Media. ICILIO BONI.
4. The Clinical Diagnosis of Typhus Abdominalis. ALFRED BERLINER and MARTIN COHN.
5. Cavernous Angioma of the Cerebrum. THEODOR STRUPPLER.
6. A Journey in Switzerland during an Epileptic Trance-State, and the Transitory Disturbance of Consciousness before the Judge in a Criminal Court. GEORG BURGL.
7. New Instruction to Bavarian Midwives Concerning the Prevention of Eye-suppuration in the Newborn. SIGMUND NEUBURGER.

1.—Hofmeier reviews the statistics of 5,000 obstetric cases, there being no deaths from **puerperal sepsis** in the last 1,000 cases. He also reviews much literature on the advantages and disadvantages of aseptic and antiseptic measures in diagnosing obstetric cases as well as in operative obstetrics, and finds little which tends to oppose his opinion or change his conviction that it is in the interest of the patient, and also practicable, in obstetric operations, especially in intrauterine operations, thoroughly to cleanse and disinfect, not only the external genitalia, but also the vagina, before examination or operation. The practical difficulties can be overcome if desired and the results warrant the most careful carrying out of these fundamental principles. [W.K.]

2.—Living cells, particularly leukocytes, have the **power of reducing methylene-blue** and decolorizing its solutions. If leukocytes are suspended in physiologic salt-solution in a narrow test-tube, and a drop of dilute methylene-blue solution is added, the mixture overlaid with liquid paraffin, and the tube placed in a thermostat, complete decolorization of the methylene-blue occurs in a short time. If the leukocytes are killed by leukocidin, by heating, or by quinin, the solution remains blue. The sediments present the same difference in color. The authors suggest this method for determining whether cells are living. It is applicable to spermatozoa, as well as to immobile cells like those of the kidney or pancreas. It may also be employed for bacteria to test the influence of bactericidal substances. Various enzymes and ferments tested gave no reduction. The method can also be used for determining roughly the bactericidal content of milk. The absolute sterility it does not determine. No dye gives as clear results as methylene-blue. [D.R.]

3.—The **formation of capsules by bacteria** can be demonstrated when the bacteria comes from bouillon and other fluid culture-mediums, but hitherto it has not been found in bacteria grown on solid mediums. Boni found the reason that the capsules were visible in the former case to be that the dye stained the bouillon or other liquid medium. Cultures from solid mediums are usually mixed with distilled water, and as the latter does not fix the dye, there is no contrast produced between the pale capsule and the surrounding substance. It occurred to the author to use a fluid that would stain, and thus by contrast show the capsule. He uses a mixture of the white of 1 egg, 50 grams of glycerin, and 2 drops of formalin. This is shaken and then filtered. A drop of the filtrate is placed on a coverglass or slide and a trace of bacterial culture stirred in it. It is then heated until the formation of steam no longer occurs. The staining is done with undiluted Ziehl's solution. In this way he was able to demonstrate the capsule in the diplococcus when grown on agar and also capsules in certain other bacteria. Of particular importance was the discovery of a capsule about *Bacillus coli* and the absence of such a capsule in the typhoid bacillus. [D.R.]

4.—A careful **clinical study** of 45 cases of **typhoid fever**, from which the authors conclude that the Widal test is of great value. In addition to the microscopic method, they employ a microscopic reaction obtained in a shallow watch glass. After 30 minutes at room temperature a precipitate settles in the form of a star-shaped figure. Prognostically the Widal test has no value. The existence of complications, such as pneumonia, do not interfere with the Widal reaction. In 3 cases renal hemorrhage occurred. They recovered, as do most cases complicated with affections of the kidney. In some of the cases they found small ulcers in the mouth, which they consider was due to the typhoid bacillus. [D.R.]

5.—In a patient, a woman of 48, who without previous symptoms of any moment developed signs of Jacksonian epilepsy, beginning in the right arm and leg, the author diagnosed a **brain tumor**. There was no optic neuritis. At the autopsy a tumor the size of a small hazelnut was found at the upper end of the sulcus of Rolando and situated in the anterior central convolution. There was also hypoplasia of both occipital lobes, and beginning granular atrophy of the kidneys. Microscopically the tumor proved to be **cavernous angioma**. The bloodvessels in the tissues surrounding the tumor were degenerated. Struppler believes that the growth belongs to the **erectile tumors** and that the sudden development of grave cerebral symptoms, despite the smallness of the tumor, was probably due to a hyperemic swelling of the growth. [D.R.]

6.—The patient whose interesting history Burgl details was a cabinetmaker, married, of neurotic ancestry. One day he suddenly disappeared and turned up in Switzerland at the home of his parents, in his working clothes and with his tools. He was brought back and remembered dimly his escapade. Before he left he had been much disturbed by the illness of his wife, and yet, although he was homesick for his parents, nothing had been further from his mind than to desert his family at that time, but an uncontrollable impulse overpowered him. No one had ever seen him in a typical epileptic attack, but in infancy he had had spasms, and later in life he had on several occasions at night shown a twitching of the lips, had bitten his tongue, and had risen in the morning with a headache. On two occasions he had been guilty of self-exposure. He was also subject to somnambulism, had frequently done absurd acts, was at times melancholy, and harbored ideas of suicide. Sometimes he was almost maniacally excited, and then would have complete or partial amnesia afterwards. Not rarely he had vertiginous seizures, transitory losses of consciousness, and causeless attacks of profuse perspiration. Several times since his marriage he had wet the bed at night. When a boy he had received a severe box on the ear, which was followed by partial deafness. In consequence of the second attempt at exhibitionism, he was brought before the court, and his case was entrusted to the author for expert judgment. Burgl looked upon the case as one of epileptic **dämmerzustand**, that is, an **epileptic trance state**. It has been held by many that there is always amnesia for acts committed in such a trance, but this statement does not hold good. Usually the patient is not unconscious, but the consciousness is pecu-

liarly modified, and he remembers to a certain extent what happened in the altered state. The epileptic attacks in which unconsciousness occurs are the typical major epilepsy, petit mal, and epileptic vertigo. In the trance condition consciousness is usually preserved for at least part of the seizure. Such cases are generally associated with attacks of vertigo. The fact that an individual remembers an act does not disprove the epileptic nature of the state in question, nor is complete amnesia a sure sign that, during the attack, consciousness was totally lost. There may be a transitory recollection of the attack and of what happened in it, which may subsequently vanish. When is a transitory disturbance of consciousness to be considered epileptic in nature? After all other diseases producing epileptiform attacks are excluded, **the existence of epileptic psychosis may be predicated**, first, if typical convulsive seizures have been demonstrated; secondly, if several well-marked states of trance have been observed; thirdly, if there have been transitory attacks of vertigo, with pallor of the face, or a feeling of sinking and falling and a necessity for seizing the nearest object, and fleeting attacks of unconsciousness (petit mal). If anyone of these is present, the epileptic nature of a disturbance of consciousness is not in doubt, but it is permissible to assume the epileptic nature of a condition also when each disturbance of consciousness is preceded by the same so-called epileptoid phenomena. The latter are night-terrors, intermittent bed-wetting, causeless profuse perspiration, certain neuralgic pains, unreasonable attacks of fear, paroxysms of moroseness, irritability, or a destructive tendency, uncontrollable temper, brief periods of profound depression, absurd hypochondriac notions, etc. All these are nothing more than motor, secretory, sensory, or psychic equivalents. These signs have an additional value when there is an hereditary taint and when the individual has sustained some injury to the head. It may be very difficult to convince the judge or jury of the epileptic nature of an act. When it can be demonstrated that there is complete amnesia, acquittal usually follows, as the absence of all recollection has been considered as proof of the absence of consciousness during the performance of the particular act; but if it is shown that an individual may remember, a judge not familiar with psychiatric subjects will usually condemn the accused. However, it will generally be possible to convince the court that while the patient may remember more or less what he did during the performance of the crime, his mentality was disturbed in such a way that free exercise of the will was impossible. Simulation is common in nonepileptic individuals, as well as in epileptics who knowingly commit a crime, and they often feign amnesia of all acts that might incriminate them. The statement of complete forgetfulness should always arouse suspicion. Three other cases are cited of criminal acts committed during attacks of transitory disturbances of consciousness of epileptic origin. The first patient obtained goods under false pretenses. He had a neurotic family history. At the age of 11 he had received a stab wound in the brain in the frontal region. He was subject to frequent epileptic attacks. The second patient was guilty of exhibitionism. His father and father's brother were paranoiacs. He had never had epileptic seizures, but often had headache and vertigo; was forgetful, intensely irritable, could not tolerate alcohol, and at times was confused and did absurd things. The third, a mail carrier who at the age of 7 had suffered a fracture of the skull requiring trephining, had suddenly destroyed a bundle of letters. He had not had epilepsy, but had attacks during which he became deathly pale, stopped suddenly in his work or conversation, staggered a little, and held on for a moment until consciousness returned. All 3 patients were acquitted. [D.R.]

7.—Neuburger says that the frequency of **ophthalmia neonatorum** and its dangers should not be underestimated; that in Nürnberg from 150 to 165 cases are treated yearly, and that in 4 years, 5 children became blind in both eyes and 17 in one eye, from this disease, often the result of lack of care on the part of nurses or midwives. As a means of prevention he thinks such persons should be taught that immediately after the care of the navel cord, all sebaceous matter, blood, etc., should be removed from the eyelids. When the child is bathed, the eyes should be bathed, not in the same water, but in other clean water. Then when the child is laid on the table to be clothed, open each eye a little

with 2 fingers and bring a very small glass tube near the cornea and let fall tiny drops of a 2% solution of silver nitrate. Further treatment of the eyes is usually unnecessary, and if a slight redness or swelling of the lids and mucous secretion continue, the drops must not be repeated in the next 24 or 36 hours. The statistics of Stockholm show a decrease of ophthalmia from 1.2% to .24% of the newborn; and Neuburger thinks we ought not to be satisfied until ophthalmia neonatorum has decreased in all civilized countries and blindness from this cause is no longer known. [W.K.]

September 18, 1900. [47. Jahrg., No. 38.]

1. The Appearance and Diagnosis of Gout. A. STRÜMPPELL.
2. Gallbladder Inflammation and Consequent Stomach and Intestine Disturbances. W. FLEINER.
3. Acute Leukemia. A. DENNIG.
4. The Indications and Technic in Operation for Myoma. A. MARTIN.
5. Phlegmonous Gangrene. G. MUSCATELLO.
6. The Treatment of Abscesses of Joints with Glass Speculum Drainage and Pure Carbolic Acid, with a Report of 70 Cases. A. M. PHELPS.

1.—Strümpell believes that **gout** is much more common, particularly in Bavaria, than is usually supposed. It is always important to obtain an accurate history of every case that might possibly be one of gout. The characteristic features of joint-gout are: 1. The wellknown **podagra** attack, but the disease may also appear first in the ankle, the knee, or elsewhere. 2. If several attacks occur, the **lower extremities** will be found more frequently involved than the upper; in both cases the distal portions are the preferential seat. 3. The disease is usually **monoarticular**, or at least oligoarticular. 4. An important feature is the **multiplicity of attacks**, the patients being seized much more frequently than in acute articular rheumatism. 5. The **duration** of each attack is generally shorter than in rheumatism. 6. Regarding the symptoms of the attack itself, they are wellknown. Strümpell believes, however, that the digestive disturbances emphasized by Sydenham are not common nor important. The elimination of uric acid is not of much diagnostic value. There are also forms of **larval gout**, the recognition of which is difficult. The most important of these are the following: A **chronic arthritis**, often mistaken for rheumatoid arthritis. The presence of tophi and the history of previous acute attacks aid in the diagnosis. 2. Different forms of "**algias**," such as tarsalgia, achillodynia, atypical sciatica, and pains in the soles of the feet, are not rarely gouty. 3. The **gouty kidney**. In these cases the acute attack of gout may have preceded the kidney lesion by years. The possibility of **lead poisoning** should also be investigated. If there is a tendency to the formation of uric-acid concretions, the diagnosis is easier. 4. The gouty manifestations in the **heart and arteries** are not always easily determined. Gouty persons often show marked arteriosclerosis at a comparatively early period of life. As alcoholism frequently coexists, it is hard to know which has the larger share. At times the gout and the cardiovascular changes are coordinate phenomena due to the same cause. 6. **Anomalies in metabolism** have a certain relation to gout, particularly **diabetes** and **obesity**. Obesity, gout, and diabetes, or any two of these, may occur in the same individual. 6. Larval gout may appear in the form of **chronic skin and mucous membrane affections**. Regarding the etiology of gout, the causes are external and endogenous. The external causes are particularly alcohol and lead; the endogenous cause is heredity. [D.R.]

2.—Two forms of **gallstone colic** may be distinguished: The simple, spasmodic or labor-pain-like colics, and the colicky pains which are produced by inflammation of the gallbladder and the stretching of the gallbladder wall by exudates. The simple gallstone colic is usually produced by mechanic irritation of the gallbladder wall, causing it to contract spasmodically in an effort to expel the stones. To illustrate the mechanic origin of the gallstone colic, Fleiner cites the case of a woman who was examined in the clinic by a number of students. The insensitive gallbladder was freely manipulated, and the crepitation of the stones could be felt. Suddenly the gallbladder became tense and hard, and the

woman had pain, so that she had to be taken home immediately. Some days later she returned in great joy and brought with her 120 gallstones which had been passed on the day after the clinical examination. Nevertheless, Fleiner does not consider such manipulation is without danger. The other form which is also called gallstone colic is usually connected with inflammatory processes in the gallbladder and its environment, with **cholecystitis** and **pericholecystitis**; that is, localized peritonitis. These inflammations, as a rule, do not begin so suddenly as the simple gallstone colic. Calculous cholecystitis and cholangitis are usually of an infectious nature. Cholecystitis calculosa is at times unattended by severe pains, and the diagnosis is then very difficult. Jaundice may be absent. Fever, usually of an intermittent character, is generally present. Passage of the stones occurs in about half the cases. The mechanism of the evacuation is that the tension of the exudate forces out the stone. The exudate may also flow past the stone into the intestine and be evacuated. In rare instances it is absorbed. Necrotic and ulcerative processes are often induced in the wall of the gallbladder by the overdistention and favor the perforation by gallstones. **Jaundice** is by no means a constant symptom of gallstones; it is usually absent when the disease process is confined to the gallbladder and cystic duct, but it may be present, and is then connected with functional disturbances in the liver cells. **Tumor** is one of the most important diagnostic signs. It may take on the form of the dilated and distended gallbladder. At other times the exudate may cause adhesion of the gallbladder and neighboring organs, and produce complicated masses that are often mistaken for malignant growths. In cases of acute pericholecystitis in which the symptoms set in violently, perforation by gallstones into the abdominal cavity should be suspected. Immediate operation is often, but not always necessary, since some of the cases heal spontaneously. Stomach and intestines are frequently involved in diseases of the gallbladder. There are gastric and intestinal colic, vomiting and diarrhea, hematemesis and melena, symptoms of ulcers and actual ulcers, tumors, stenosis of the pylorus, duodenum and colon, hypersecretion, and gastric tetany. The pains originating in the gallbladder are often referred to the stomach and considered gastralgic. Examination of the gastric juice may be necessary to determine to what extent the stomach is involved. If there is hyperchlorhydria, an ulcer should be suspected. The absence of hydrochloric acid is against ulcer, and suggests that the pains are due to gallstones, without, however, proving this. Ulcers in the stomach and duodenum, and even in the large intestine, are not rare in gallstone disease. The ulceration, however, usually occurs from without inward. It is probable that some of the **gastric and intestinal hemorrhages in gallstone disease** are due to such ulceration. Several interesting cases are cited in illustration. In one of these, a woman of 56, who had had a history of pains in the stomach, was suddenly seized with fainting and had tar-colored stools. A year later she again began to have pains in the stomach region, with heartburn, pain in the back, and frequent vomiting of sour fluid. Fear of pain caused her to eat very sparingly and she emaciated rapidly. On examination a tumor the size of a fist was found in the pyloric region. It was considered malignant. Examination of the stomach-contents showed the presence of food even in the fasting stomach, and considerable hydrochloric acid. At operation the tumor was found to be composed of an enormous amount of **scar tissue** passing from the gallbladder to the pylorus. The gallbladder no longer contained stones. Another case was that of a man of 46, who complained of pains in the stomach and back after eating, and of pyrosis. He had had biliary colic without jaundice and without the passage of stones. A large amount of free hydrochloric acid was present, even in the fasting stomach. There was pain in the region of the gallbladder, at the point where the mammary line and the costal border intersect. Fleiner suspected an ulcer either in the stomach or just beyond the pylorus. Examination revealed an indistinct resistance in the region of the gallbladder, passing toward the stomach and the hepatic flexure of the colon. A diagnosis of adhesion of the pylorus and colon to the gallbladder, with coexisting gastric ulcer, was made, and the condition attributed to gallstones and pericholecystitis. The patient refused operation. In another case that came to autopsy,

the pylorus, duodenum, and hepatic flexure of the colon, were all drawn in a radiating manner toward the point where the gallbladder should have been, and fastened there by strong adhesions. The colon communicated, through a perforation into the remains of the gallbladder, with the duodenum and the stomach. After careful discussion the gallbladder was found to be atrophied and to consist of 2 little sacs, one containing stones. Stones were also found in a sac at the junction of the duodenum and pylorus. A case is also related in which an inflamed and dilated gallbladder produced functional motor insufficiency of the stomach. Regarding the **diagnosis** of these interesting conditions involving the gallbladder region, the author points out the importance of a careful history, and of attention to the subjective sensations of the patient. The pains usually radiate toward the back and the right hypochondrium. The attacks of colic are frequently preceded by a sensation of drawing and chilliness along the back. A valuable diagnostic sign is a **tender point at the intersection of the right mammary line with the costal border**. In all complicated or obscure diseases of the abdominal cavity it is well to think of the gallbladder and the appendix. In the **treatment** of gallstone diseases the question of operation is an important one, but general rules can hardly be given. When the stones are forced out by a cholecystitic attack operation is unnecessary; when, however, after a colic convalescence does not occur, stones are not discharged, and fever persists, and there is a tumor, or when the attacks occur so frequently as to incapacitate the individual, an operation is indicated. Internal treatment is of value, and consists in diet, alkaline mineral waters, lavage, and oil infusions into the bowel. [D.R.]

3.—In connection with a case of **acute leukemia** in a woman of 22, the author details the principal symptoms of the disease. The distinction between acute and chronic leukemia, which some base upon the duration, the author, with Fraenkel, would base upon the character of the onset, which in the acute form is always sudden, with symptoms that while present in chronic leukemia, develop only late in that form. The first symptoms are weakness and prostration, headache, pains in the limbs, sometimes difficulty in swallowing, hemorrhages into the skin and from the mucous membranes, and sometimes hemorrhages into the brain. An important early symptom is **stomatitis**, which was present in the author's case. Pain in the left side, probably connected with the spleen is common. The spleen need not be enlarged. This is also true of the lymph-glands. The liver is usually enlarged. The pulse, as a rule, is accelerated, and is faster than would be expected from the temperature. The bones are at times sensitive to pressure. The blood picture is characteristic and showed a marked **increase of mononuclear leukocytes**. Nucleated red corpuscles are rare. The lesion is probably in the bone marrow, rather than in the lymph-glands. Walz designates this form of leukemia as lymphocyte-leukemia, while Löwit, on account of the increase of one type of lymphocytic elements, gives it the name of homoiocyte leukemia. In Dennig's case the lymph-glands were not much enlarged. There were ulcers in the intestine, resembling typhoidal ulcers, but there was no Widal reaction. The author draws the conclusion that it is important in every case of stomatitis without known cause, especially when associated with hemorrhagic diathesis, to make a blood-examination. [D.R.]

4.—In Martin's opinion, **operation for myoma** is indicated when it interferes with the patient's activity and usefulness, shows evidence of undermining the general health, and causes severe pain or discomfort which increases in spite of therapeutic measures. The vaginal operation is preferable so long as the uterus is readily accessible through the vagina and the tumor can be removed with little or no injury to the pelvic floor. It is suitable for an isolated myoma; for one involving only a small part of the uterus so that there will be a reconstruction of the uterus after enucleation; or in case of a pedunculated, subserous tumor. If the growth is very large; if it involves the greater part of the uterus; or there are extensive adhesions, these are indications for an abdominal operation, either supravaginal amputation or total extirpation. To control hemorrhage he uses the angiotribe with the addition of ligatures. The mortality in his last 2 years' experience has been, for vaginal enucleation, 2%; for vaginal total extirpation, 3.5%; abdominal enucleation, 4%; and abdominal total extirpation, 8%. [W.K.]

5.—Muscatello and Gangitano in this their third article on that form of **gangrene** which is **accompanied by the formation of gas**, treat the subject from a clinical standpoint. As a result of their work they arrive at the following conclusions: That the gangrene which is accompanied by the production of gas can be caused by several forms of microorganisms. *Bacillus aerogenes capsulatus* is one of the most important bacteria, but it should not be considered as the specific, exciting cause. It is simply a gas-producing bacteria which locates itself and grows wherever there is a saprophytic decomposition taking place and where there is disturbances in the vitality of the deeper tissues. *Bacillus coli communis* may cause the development of the gas-producing gangrene, but is usually accompanied by other microorganisms. Clinically, there are 2 forms of this variety of gangrene; one which is due to the action of *Bacillus aerogenes capsulatus* alone and is not accompanied by inflammatory appearances. There is little tendency for the condition to spread until the system is used up and can no more resist the invasion of the germ, and then the disease progresses most rapidly. The other form develops as the result of a mixed infection and is accompanied by marked inflammation and assumes from the start a most progressive nature. Although this gas-producing gangrene is a very severe infectious disease, the prognosis is today not necessarily an unfavorable one, as was the case not many years ago. The treatment should consist in the opening of all suppurating foci, in the early removal of all necrosed tissue even to amputation when called for, and thorough disinfection of the neighboring tissues. If this plan is strictly carried out, recovery should be obtained in the majority of cases. [G.B.W.]

6.—See PHILADELPHIA MEDICAL JOURNAL, September 8, 1900, page 443.

Deutsche medicinische Wochenschrift.

September 6, 1900. [26. Jahrg., No. 36.]

1. Diagnosis of Stenosis of the Esophagus. G. HOLZKNECHT.
2. Hematologic Examination. ERNEST BECKER.
3. The Means Whereby the Organism Poisons Itself. ALEXANDER ELLINGER.
4. A Chair Sieve. I. BOAS.
5. Appropriate Examination of the Chest with the X-rays and Some Results. LEVY-DORN.

1.—Holzknecht says that it is impossible to obtain satisfactory **radiographs of bodies in the esophagus** when the transillumination is strictly anteroposterior. If, however, the patient and apparatus are so arranged that the light is transmitted obliquely, *i.e.*, from the left behind towards the right in front, the shadow cast by the spine falls to one side of the line of the esophagus, so that foreign bodies in the latter are projected against a clear field. He makes use of this fact to diagnose strictures of the esophagus in the 3 following ways: 1. The patient swallows a mixture of 2 gm. of bismuth subnitrate in 100 gm. of water. If there exists a tight stricture the water is stopped at the seat of constriction and the bismuth settles against the walls of the esophagus where by the above method it is readily demonstrated by the x-rays. 2. When the stricture is not enough stenosed to give positive results by the first method, the patient may be made to swallow 1 gm. of bismuth in the form of a wafer while the surgeon is watching the chest with the fluoroscope. If the result is positive, a number of dark spots will be seen either stopped and remaining in the same position for some length of time or else moving slowly downwards through the stenosed esophagus. 3. When both of the above methods fail because of the larger caliber of the stricture, the patient should swallow a bolus of food, something which the patient knows from experience will lodge, and then swallow on top of this the bismuth mixture as suggested in the first method, and the use of the x-rays will complete the diagnosis. [G.B.W.]

—Two cases of very mild typhoid showed **leukopenia** up to the beginning of convalescence, when the normal relations immediately began to establish themselves. A third very severe case, which ended fatally, also showed marked leukopenia followed by leukocytosis of high degree upon the occurrence of nephritis and bronchopneumonia. Eosinophile cells appeared only a few days before the fatal nephritis came on, hence the presence of eosinophiles is not

a very important prognostic sign. The examination of the blood is of much importance in the diagnosis between typhoid pneumonia in some cases. A case exemplifying the importance in diagnosis between sepsis and typhoid is detailed also. In **syphilis** a moderate **leukocytosis** chiefly consisting in an increase of lymphocytes was found in 2 cases, while in a third case the lymph glands were not distinctly affected. In 1 case of pernicious anemia, postmortem showed the presence of 2 *Taeniae saginatae*. Becker considers it rather probable that the taeniae stood in direct causal relation with the anemia, probably through the ultimate production of intestinal putrefaction. In 1 case of pernicious anemia the red cells were reduced to 284,000 before death. In a case of severe secondary anemia which simulated pernicious anemia the red cells were reduced as low as 680,000, and megaloblasts appeared in the blood. The necropsy showed a widespread tuberculosis of the mesenteric glands, intestines, and suprarenal bodies. The chief cause of the severe anemia was considered to have been involvement of the mesenteric glands, which hindered the flow of the chyle in the larger lymph-vessels. This case is considered unique. In a case of post-hemorrhagic anemia shortly after hemorrhage, all the elements of the bone-marrow, even eosinophile myelocytes were seen. Nucleated red cells were seen in large numbers, but soon vanished. In lead-poisoning Becker has found the granulations described by Orawitz. There was, however, a decided reduction in the reds. Polymorphonuclear leukocytes were much increased, due, he thinks, to the irritation of the bone-marrow by the anemia. The lymphocytes were normal. In a new attack of colic, a patient that had presented this appearance but whose blood had become normal, returned to the hospital with a leukocytosis of 21,000, 90% of the leukocytes being polymorphonuclear. In a number of cases which had previously had lead colic but were admitted for other complaints, no changes in blood could be found. [D.L.E.]

3.—Ellinger gives a useful review of the chemic methods of freeing the organism from poison. He first discusses the oxidation of acids to harmless products in acid **intoxication**; acid production exists normally, but becomes pathologic only when oxidation fails. Reduction processes are not common; they are, however, more frequent when combined with synthesis. As examples of the occurrence of synthesis, one may mention the production of hippuric acid when benzoic acid is given; there are other instances where more poisonous substances are transformed into nonpoisonous bodies by uniting with glycoli. Another very common synthetic process, and one which is frequently discussed, is the synthesis of phenolindol and statol, after oxidation, with sulfuric acid, subsequent to which they are eliminated in the urine as the ethereal sulfates. The pairing of glycuronic acid is also probably an antidoting process. The production of urea from ammonium carbonate is another important example, the process in this case taking place chiefly or entirely in the liver. Long has shown that hydrocyanic acid may be completely neutralized by the injection of sodium thiosulfate—a further example of synthesis in the body. A very important clinical example is the use of alkalies in diabetic coma. [D.L.E.]

4.—Boas describes the instrument which he has made for the separation of mucus, food particles, etc., in the feces. [D.L.E.]

5.—Levy-Dorn considers that, in **examining the lungs**, the best results are obtained during deep inspiration, except in the examination of the apices, when, on deep inspiration, the clavicles are so elevated that they interfere with the examination of the apices. Moderate inspiration is best in this case. [D.L.E.]

September 13, 1900. [26. Jahrg., No. 37.]

1. Prophylactic and Curative Effect of Urtropin. ZAUDY.
2. Pathogenesis of *Staphylococcus Quadregeminus* Czajewski. GEHR. KIESERIEZKY.
3. Death Through Psychic Injury, with Observations Concerning Operation Psychosis. PAGENSTECHER.
4. First Aid Through the Laity in Lime or Plaster Injury to the Eye. H. G. STUTZER.
5. Healed Tuberculosis of the Peritoneum in Children. CASSEL.

1.—Zaudy describes a case of paraplegia in which there

was prostatic abscess and in which the urethra was infected and the perineum had become largely infiltrated with pus. A catheter was used frequently from necessity, and yet in spite of every opportunity being given for infection of the bladder and higher urinary tract the postmortem showed only slight redness of the mucous membrane of the bladder, and above this point no changes except slight hemorrhage. He attributes the lack of infection to the use of **urotropin**. [D.L.E.]

2.—The author describes a case in which without any definite history excepting smallpox and dysentery, the latter being followed by chronic intestinal catarrh, an abscess of a cervical gland developed. This was opened, and the pus showed a staphylococcus which in all its characteristics was identical with **Staphylococcus quadrigeminus** of Czaplowski. [D.L.E.]

3.—Pagenstecher reports a case of **mental delusion following a slight accident** and which ended in the death of the patient. A perfectly healthy and strong man inflicted a slight wound on the finger with a pen and believed that he had poisoned himself with the ink. So sure was he that he poison his blood that he could feel the pain ascending up his arm and begged the attending physician to amputate his arm at once. He had fainting spells and spent a most wretched night and in the morning following the injury he was delirious and raving, but had a good pulse and no fever. The patient could be roused by questioning and generally gave sensible answers, but continually referred to his coming death and to his, to be bereaved, family. After some persuasion he became quiet and had a short sleep, but soon, 20 hours after the accident, he broke into a profuse sweat, just as though the crisis to the disease had been reached and he seemed greatly benefited thereby. From this on there was little change in his condition until he died, 32 hours after he pricked his finger with the pen. The postmortem gave absolutely no light as to the cause of death, and all examinations for the signs of any infection were negative. Pagenstecher also reports 2 more cases of delusions following injuries, but which fortunately resulted in recovery in a day or so. [G.B.W.]

4.—Stutzer says that when an **eye has been injured by lime** the best method of treating the condition is to immediately cleanse the eyes with copious washings of clean water which should be kept up for a considerable length of time. This is really a "first aid to the injured" method, as it can be readily carried out by the patient's fellow workers. It can easily be done by one man holding the injured eye open while another with a clean glass and clean water washes the eye until no particles of mortar can be seen therein. [G.B.W.]

5.—Cassel reports 3 cases of **tuberculous peritonitis** in children, which are of especial interest in that the cases demonstrate absolutely the possibility of curing this disease through operative interference. Two of the cases after 4 years and one after 3 years were perfectly well and had the patients developed in a normal manner. In all the cases a piece of the diseased peritoneum had been excised at the time of the operation and the tuberculous nature of the malady proved by microscopic examination. Cassel also goes over the subject of tuberculous peritonitis in children in a rather thorough manner, basing his remarks on the results obtained in 18 cases coming under his own care and on the theories and ideas of his contemporaries. [G.B.W.]

September 20, 1900. [26. Jahrg., No. 38.]

1. The Neuron in Anatomy and Physiology. MAX VERWORN.
2. The Theory of Infection. HUGO MARX.
3. A Case of Disseminated Actinomycosis with Localization in the Brain. W. NIKITIN.
4. The Reduction of an Anterior Dislocation of the Shoulder According to Riedel. GRAEF.
5. Improved Urine Separator for the Collection of Separated Urine from Both Kidneys in Women. ALFRED EGON NEUMANN.

1.—Verworn gives a somewhat extensive review of the **neuron theory**, and the work which has recently been done in favor of it and against it. He ends by stating that recent work has not served to upset this theory. He considers the different arguments against it to touch only the

unimportant points of the theory, the essential element of the theory being in the acceptance of the ganglion-cell body with its processes and dendrites as a cellular unity. He considers it a secondary question as to whether the neurons merely come in contact with each other or are at times actually united by cellular bridges. Even in case the latter were true it would not upset the neuron theory. The only testimony that would do this would be the demonstration that what we have considered neurons are really several cells. He considers, however, that the neurons vary greatly in various places according to their functions. [D.L.E.]

2.—Marx refers to the fact that he and Woithe have previously stated that they consider the **Babes-Ernst bodies in bacteria** a condensation of the enchromatic substances of the bodies of the bacteria. They are found in greatest number in bacteria derived from animal bodies or secretions. The further the bacteria are by culture removed from this degeneration the fewer of these bodies do they contain. Their frequency increases when the microorganisms are again carried through animal inoculation. These bodies are closely related to the division processes of bacteria. The conclusion to which Marx comes after reconsidering these statements is that in the number of the Babes-Ernst bodies, one has the measure of the virulence of the bacteria. As an example of this he states that in the sputum under normal conditions one finds streptococci which contain these bodies only occasionally, but in cases of erysipelas arising in the mucous membrane of the mouth or throat these bodies at once increase largely in number and are seen in almost every streptococcus. [D.L.E.]

3.—In this case of **actinomycosis**, the first symptom was an irritating cough, which was supposed to be due to chronic pharyngitis. The cough was very variable, sometimes disappearing altogether, sometimes severe with more or less expectoration. Finally, the patient developed a circumscribed bronchopneumonia, but this in turn partially disappeared. Some 6 weeks later the patient came back with symptoms of a cold abscess in the region of the second rib on the left side. This was opened and a fair amount of pus was obtained. The wound granulated but would not heal and later abscesses in various parts of the body developed. The majority of these, however, contained only bloody serum and no true pus. In this fluid the clusters of the actinomyces were found, making the diagnosis easy. The patient improved in many ways but developed signs of cerebral involvement. These were manifested first by spells of dizziness, which gradually grew very marked and more frequent. Finally, these attacks were accompanied by most intense headache, which was generally located in the left half of the head and lasted for a few hours. This pain was accompanied by tetanic convulsions of the left side of the face. Finally paralysis of the face, then of the arm, and lastly of the leg developed, ending in the death of the patient. [G.B.W.]

4.—Graef reports a case of **dislocation of the shoulder joint**, in which after various methods had been tried and had failed to reduce the dislocated joint, the reduction was finally accomplished with ease by the Riedel method. The patient was a young man who had suffered from dislocation of the shoulder several times, and at each time the reduction was only accomplished with great difficulty. At the present time the luxation was anterior and involving as usual the left shoulder joint. The patient was chloroformed, and after much energy had been wasted, the dislocation was still unreduced. Riedel's method was then tried. The surgeon stood on the right side of the patient, and seized the left arm above the wrist,—a short strong pull in the direction of the right side of the pelvis was done, and the head of the bone promptly slipped back into the glenoid cavity. [G.B.W.]

5.—Neuman describes a modified form of the **urine separator** first introduced by him in an article already published. (*Deutsche medicinische Wochenschrift*, No. 43, 1897.) The instrument in its present form consists of two parts, a vaginal portion and a urethral-bladder portion. The part introduced into the vagina presses upon the posterior wall of the bladder, forming a ridge which separates the viscus into a right and left portion, each of which receives the urine from the ureter opening into it. A small tube is introduced into each sulcus, and the urine thus collected is carried off separately into test-tubes, thus enabling the physician to examine the urine from each kidney. [W.K.]

Practical Therapeutics.

Under the charge of

A. A. STEVENS, A.M., M.D.

Large Doses of Olive Oil in Stenosis of the Pylorus.—Cohnheim (*British Medical Journal*, November 3, 1900), at the recent meeting of the International Congress of Medicine, presented a report on the therapeutic action of olive oil in cases of organic and spastic stenosis of the pylorus and duodenum, and, in consequence of these conditions, gastrectasia. From his observations and experiments he drew the following conclusions: Cases of gastrectasia that do not depend on an organic obstacle but on spasm of the pylorus, following an ulcer or fissure at the orifice of the stomach, are cured or markedly improved in a short time by the introduction of large doses of oil (100 to 250 grs. daily). In the same way cases of pyloric or duodenal stenosis of cicatricial character, accompanied by secondary gastrectasia, are cured in a relative sense by the systematic employment of large doses of oil, that is to say, the patients feel no discomfort provided they avoid all excess. In such cases the resistance caused by the friction is diminished by the mechanical effect of the oil. Cases of relative stenosis of the pylorus and duodenum, which are characterized by continuous secretion and pyloric spasm after the principal meals, are improved or completely cured by the oil. It is well that the oil should be taken or administered through a tube during a more or less considerable period of time, thrice a day in doses of 50 ccm., an hour before meals. If for other reasons this plan is impracticable a dose of oil (100 to 150 ccm.) at the temperature of the body should be given once a day. The use of the oil meets three indications: It causes relaxation of the spasm, it diminishes the friction, and improves the nutrition, since the oil, even in very pronounced stenosis, reaches the intestine and is absorbed. In cases of ulceration the oil acts on the spasm as a narcotic. If it be pure it has no unpleasant secondary effect, it causes neither eructation nor diarrhea; patients take it willingly. In cases of cramp of the stomach of purely nervous character the author has been unable to obtain favorable results with the oil. This fact supplies a means of differential diagnosis between nervous and organic spasm. By means of the oil cure it is possible to relieve a number of cases of pyloric stenosis with consecutive gastrectasia to such an extent that surgical intervention becomes superfluous. Cohnheim therefore thinks it is desirable to try this method of treatment in cases of stenosis of the pylorus before having recourse to operation.

Enlarged Prostate.—Miller (*Scottish Medical Journal*, August, 1900) believes that much can be accomplished in the *early stage* of prostatic hypertrophy by establishing the habit of emptying the bladder regularly and *thoroughly*. He concludes that residual urine is due at first to neglect to empty the bladder, and accumulation is due to this becoming a habit. The practical application is that men advanced in years who are beginning to have prostatic symptoms should make a point of emptying the bladder thoroughly. His advice is: After passing water in the usual way, wait a minute or two and then try again. Practise this as frequently as possible, till only a very small quantity can be squeezed out (3j). When that point has been reached, twice or thrice daily may suffice. This procedure acts in two ways: First, the small residuum of urine that may result from a careless act of micturition is got rid of. In the second place, the bladder tone is improved, and its function restored. Moreover, the habit of completely emptying the bladder is acquired. A still more important result is that the residual urine being diminished cannot possibly increase. The author states that he does not bring this forward as a cure or as a method of preventing residual urine from forming in every case of enlarged prostate. He merely suggests a safe and simple procedure, which has apparently checked the increase of residual urine in several cases, and which may in some others at least postpone the almost inevitable catheter.

Urotropin.—Suppan (*Wiener Med. Blätter*, July 12, 1900) states that urotropin should be employed in every case of urosepsis of the aged with prostatic hypertrophy, in all the nonacute and septic bladder and pelvic catarrhs which are

the consequences of this growth, as also in inflammatory conditions dependent upon atrophy of the prostate, neoplasms, diverticulæ of the bladder, and stricture. The author speaks highly of the value of urotropin in cystitis. He has had excellent results from its use in 17 cases of cystitis, which were gonorrheal, or associated with a pure bacteriuria. He has also seen rapid and permanent effects from the drug in 7 cases of obstinate phosphaturia appearing after long-continued diarrhea.

Snake-bite.—McFarland (*International Medical Magazine*, September, 1900) summarizes the treatment of snake-bite as follows: Stop immediately the circulation in the bitten member or part of body, so as to prevent absorption of the poison. Incise and enlarge the fang wound freely and suck forcibly to extract the poison—the suction may be accomplished with a cupping-glass or with the mouth, the poison being harmless when swallowed. Inject hypodermically 3 to 6 drops of a fresh 10% aqueous solution of calcium chlorid into about a dozen areas around the wound. Gold chlorid is just as effective, but it is too expensive. Potassium permanganate is of little value. Give strychnin hypodermically to stimulate the respiratory center. Whisky should not be given at all, or only in very small doses, because an excess of alcohol still further depresses the heart already depressed by the venom. *Immediately* inject 10 to 20 cc. (2½ to 5 drams) of antivenomous serum and repeat these injections frequently. People living or going into regions where there is danger of snake-bites should carry a bottle of antivenomous serum with them.

Transfusion.—Annandale (*Scottish Medical and Surgical Journal*, September, 1900) draws the following conclusions in regard to transfusion: That it may be a valuable aid in saving life in the case of patients suffering from serious loss of blood, provided they show no signs of reaction after the ordinary means have been carefully tried. That the best form of transfusion for ordinary use is the injection of human blood mixed with a solution of sodium phosphate, and kept at a proper temperature, so as to prevent clotting. That if the former method cannot be properly carried out, the injection into a vein of saline solution (sodium chlorid) is the next best procedure. That intraperitoneal injections of warm water, or warm saline solutions, are most likely to be useful in cases in which the abdomen has already been opened, for without an opening there is always a risk of injuring the intestines or other internal organs with trocar and canula. That injections of warm water, or of warm saline solutions into the rectum, or into the cellular tissues, is a safe and simple procedure, which may be usefully employed in any sudden emergency.

Organotherapy in Gynecological Therapeutics.—Jack (*International Journal of Surgery*, October, 1900) draws the following conclusions from his experiments and the study of the literature: Thyroid extract is one of our most reliable vasoconstrictors, and as far as its gynecological application is concerned, should be limited to hemorrhages, and those especially in which the epithelial elements of the endometrium are concerned. Mammary extract controls the hemorrhages from fibromas, reduces the size of the tumors, and in some cases causes their disappearance, and should be preferred to the thyroid extract, which does the same thing, in treating fibromas. Parotid extract is the best remedy yet brought out in the treatment of dysmenorrhea, relieving as it does the aches and pains of ovaritis and improving nutrition. Pelvic exudates soften and are often absorbed. Menstruation becomes regular and less in amount when excessive and shorter in duration. The headaches and nervousness so often accompanying these cases are as a rule cured, health and spirits revive, and, indeed, its action here can be denominated nothing less than specific. Ovarian extract is indicated in all cases of menopausal nervous symptoms, or when for any reason it is desirable to increase the flow from the uterus. It is now known almost beyond doubt that the ovary has, besides its function of ovulation, another almost as important, that of internal secretion, and that, like the thyroid, it secretes an active oxidizing agent, spermin, that aids in the metabolism of the blood. Marked decrease in the elimination of phosphates has been observed after ovariectomy.

Cacodylate of Iron.—In the Section of Therapeutics at the recent International Congress of Medicine P. Lereboullet (*British Medical Journal*, October 13, 1900) said that cacodylic medication in the form of cacodylate of soda having proved useless as a remedy for chlorosis and chloranemia, Gilbert and he had used cacodylate of iron in the treatment of these affections. They injected under the skin ferric cacodylate, a very soluble and only slightly toxic salt, in a solution dosed at 3 cg. per ccm., they also gave it by the mouth in the form of drops to be taken before meals. The daily doses varied from 3 to 10 cg. hypodermically, and from 5 to 30 cg. by the mouth. Both methods of administration proved to be alike free from inconvenience. In no case have they observed local or general disturbances; in particular there have been none of the renal complications which are so frequent after injection of other iron salts. Cacodylate of iron is indicated in affections when one has at the same time to counteract the diminution in number of the red corpuscles, and the fall in the amount of hemoglobin (chlorosis, chloranemia, lymphadenia, leukemia). Tuberculous chloranemia, provided the pulmonary lesions are not too far advanced, seems to be specially benefited by this treatment, which has never caused congestive phenomena or hemoptysis. Albuminuria, which is frequent in such patients, is not a contraindication, but rather the contrary. In 5 cases the kidney lesions underwent marked improvement after the injections.

Injection of Formalin Successfully Employed in the Treatment of a Sarcoma of the Nasopharynx.—Thompson (*The Laryngoscope*, September, 1900) reports a case of a man, aged 50, suffering from a sarcoma of the posterior wall of the nasopharynx, in which injections of formalin proved remarkably successful. The diagnosis was confirmed by microscopic examination. The patient's general condition forbidding operation, 25 minims of a $\frac{1}{2}\%$ solution of formalin was injected into the tumor twice a week. The blood-supply of the tumor being cut off by the injections, removal by the forceps soon became possible. After 14 months there had been no recurrence.

Antidotes for Iodism.—Montgomery (*Medical Age*, October 25, 1900), states that belladonna is far the best drug to relieve the coryza-like effects of potassium iodid, and that he generally gives 5 drops of the tincture with each dose of the iodid. Any other preparation of the drug, such as atropin, may be used. It may also control some other forms of iodism. Fowler's solution is undoubtedly the best associate drug to use when potassium iodid causes indigestion. It is best given in 1 or 2 drop doses, just as one would prescribe it for indigestion. Besnier advises giving it in the proportion of 1 drop to each 15 grains of the iodid, but it is doubtful if such a rule has any real value. It would appear that Fowler's solution at times does more than merely correct the indigestion, for Sillock (*British Medical Journal*, October 24, 1895) has reported a case in which it prevented iodic purpura.

Hay Fever.—

R.—Acetic acid.....4 minims.
Resorcin 3 grains.
Sodium chlorid 8 grains.
Water.....2 ounces.

Use as a wash for the nasal passage.—[*Merck's Archives*.]

The Treatment of Gonorrhea in the Female.—Gardner (*Montreal Medical Journal*, April, 1900), writes as follows concerning the treatment of gonorrhea in the female: In the acute stages the patient must be kept in bed. The diet should be unstimulating, the bowels regulated by saline purgatives, and warm hip-baths and frequent soothing irrigation of the genitals employed. The use of linseed tea by irrigation and douche is very grateful to the patient. The acute stage having passed, germicidal douches of permanganate of potash 1:5000, bichlorid of mercury 1:5000 to 1:2000, or formaldehyd 1:4000 to 1:2000, may be employed. The toxic sublimate must be cautiously used. For the best results the vaginal douche must be administered in the dorsal position on the bedpan. If the patient lie still for a time afterwards, there is in many women a tendency for a pool of the solution to remain in the vagina, from which it may be absorbed. The sublimate douche should therefore be followed by a small quantity of warm water. But the

vaginal douche must be considered as merely accessory to the thorough application to the whole of the affected surfaces of the most effectual of all remedial agents, silver-nitrate solution in strength of from 20 to 60 grains to the ounce of water. This cannot be done thoroughly in any other way than with the patient in the Sims position, through the Sims speculum. The surface to be thus treated must be wiped clean and dry, and the solution thoroughly applied by the swab with pressure till every part is whitened. If protargol and argonin be equally efficacious, they will be valuable acquisitions. They may be used in strength of from 1 to 3%. The urethra, and especially the Skene's tubules, the ducts of the Bartholin glands, and the cervix must be treated by applications of the same remedies. The urethra and cervical canal may be best treated by instillation of the solutions, Skene's tubules, and Bartholin ducts, with a small, slender-nozzled syringe. For all the accessible areas affected by the disease the use of a 5 to 10% solution of ichthyol glycerin is advocated by Bumm. This remedy may be used on pledgets of gauze or tampons left *in situ* in the intervals of the applications of the silver salts. In the treatment of the uterine cavity, in all but the most advanced chronic stage, local treatment by curetting, douches, etc., must be avoided. In the early stage, instrumentation of the cavity of any kind is very apt to lead to extension to the tubes and ovaries.

Therapeutic Use of Thymus.—In the Section of Therapeutics, at the recent International Congress of Medicine, Blondel (*British Medical Journal*, October 13, 1900) read a paper on this subject. He said, it was generally admitted that chlorosis depended on an autointoxication, in the production of which the absence, or at least the insufficiency, of the internal secretion of the ovary played an important part. Hence was derived the idea of administering preparations of ovary as a remedy for that affection. Previous researches having satisfied Dr. Blondel that there was an almost absolute functional analogy between the thymus and the genital glands, he conceived the idea of employing preparations of thymus instead of ovary in the treatment of chlorosis. In 15 patients treated in that manner, he had seen marked amelioration of the general condition take place within a few weeks, whilst at the same time appetite and sleep returned, the color was restored, the number of red corpuscles was notably increased, palpitations and jugular *bruit* disappeared. In addition to this, Dr. Blondel followed up the researches of Owen on the administration of thymus in Graves' disease. He had treated in this manner 4 patients with very satisfactory results. In a few weeks, the circumference of the neck diminished by several centimeters, the pulse fell from 120 or 130 to 80, tremor became less, etc. Lastly, in 10 nurslings, in whom development was slow and imperfect—in some owing to premature birth, in others to congenital debility—the administration of thymus caused a regular rise in the weight curve which till then had been stationary, or even on the down grade. In all these cases, he used lamb's pancreas, which is much cheaper than that of the calf. In order to prevent any feeling of disgust, he first peptonized the thymus. He gave his patients from 1 to 2 grams of thymus-peptone daily. A peptone of ordinary meat given to the same patients in equivalent doses produced no appreciable effect.

Potassium Permanganate in Opium and Morphin Poisoning.—Moor (*The Permanganate Treatment of Opium and Morphin Poisoning*, 1899) in this monograph reviews the reported cases of opium poisoning treated with potassium permanganate, and emphasizes the following points in the treatment: One grain of the antidote in 1 ounce of water *per os* for each grain of morphin. One grain of potassium permanganate in 1 ounce of water for each 10 grains of opium. One grain of the antidote in 1 ounce of water for each dram of laudanum. If the quantity of poison injected cannot be ascertained, 8 or 10 grains of the antidote dissolved in an ordinary glassful of water should be given at once, and this dose repeated once or twice at intervals of 30 minutes. A weak permanganate solution, about 1 grain to a tumblerful or half a tumblerful of water, should be administered every 30 minutes during the entire stage of opium narcosis, and even for some time afterwards at intervals of 1 hour. One grain of permanganate dissolved in 1 teaspoonful of water should be injected hypodermically every 30 minutes, with simultaneous gentle massage near the site of injection.

Original Articles.

FOREIGN BODIES IN THE AIR-PASSAGES.

By FRANCIS T. STEWART, M.D.,

Surgeon to Out-Patient Department, Pennsylvania Hospital; Associate Professor Surgery, Philadelphia Polyclinic.

AVOIDABLE death, especially when so imminent as from foreign bodies in the air-passages, is well calculated to excite acute sympathy and energetic action in him who has by careful forethought and training prepared for it, and to appall and stupefy one who knows not how to avert it. Robert Liston's "Learn to look boldly on the open mouths of arteries" may have its correlative in "Learn to look boldly on impending death from asphyxia." That every physician should be able to cope with an extraneous substance in the respiratory tract is irrefutable from the importunate nature of the accident. The following cases occurring in the Pennsylvania Hospital are reported with a belief that all such records are of value to the profession.

CASE 1.—T. C., aged 46 years, was admitted August 15, 1872. During a fit of mania the patient pushed a haircomb down her throat. Intense dyspnea followed. The smooth portion had been introduced first so that the teeth caught in the fauces when extraction was attempted. After some difficulty one side of the comb was seized with strong forceps, version accomplished, and delivery effected. The comb measured $5\frac{1}{2}$ by 7 cm.

CASE 2.—C. G., aged 18 years, was admitted February 26, 1888, having been ill 4 weeks with symptoms of pneumonia. Soon after admission the expectoration became profuse, dark in color, and very offensive. Hemoptysis was frequent. He died on the eighty-fourth day of disease, after a copious hemorrhage. On postmortem examination the right lower lung was found to be solid and densely adherent. At its base posteriorly there was a cavity the size of a walnut, full of recent clots in which were found 4 small pieces of evergreen. A sprig of evergreen $\frac{3}{4}$ of an inch long projected from one of the bronchioles into the cavity.

CASE 3.—E. R., aged 16 years, was admitted December 26, 1888, during a convulsion. A history of epilepsy dating back 6 years was obtained. On recovering from the fit the breathing was limited and stridulous with prolonged inspiration. Asthmatic treatment was instituted. During the night he was awakened by violent cough and dyspnea, which resulted at the end of 15 minutes in the expectoration of a piece of raw apple, giving instant relief.

CASE 4.—J. L., aged 65 years, was admitted January 1, 1891, suffering distressing respiratory embarrassment subsequent to the inspiration of a morsel of meat. Manipulations for examining the larynx caused severe coughing, during which the offender was expelled.

CASE 5.—L. M., aged 2 years, was admitted April 25, 1891, after accidentally lodging a jackstone in the larynx. It was removed from above by long forceps.

CASE 6.—S. H., aged 3 years, was admitted September 2, 1892. His mother had found him in the back yard bleeding from the mouth, and unconscious. A low tracheotomy was immediately performed. The patient died the next day. The postmortem revealed a portion of glass bottle wedged in the larynx so tightly that the vocal cords were torn in its removal. The condition of the lungs is not mentioned in the notes, but one would infer that the blood, which must have trickled into the bronchi from the wounded larynx, contributed largely to the fatal issue.

CASE 7.—On July 24, 1895, a tramp, 42 years of age, was brought to the hospital from a railroad depot by the ambulance. He would say nothing more than that he had been ill 2 days after a wetting, and that he had spat a little blood. Objectively there were fever, cough, dyspnea, cyanosis, rapid pulse, patches of impaired percussion-note over the chest with numerous small, bubbling rales. He died 2 days later. At the postmortem both lungs were found congested, with many areas of collapse and consolidation. Just above the

bifurcation of the trachea were several small ulcers. In the right bronchus, near the tracheal opening, were 3 pieces of coke, weighing $19\frac{1}{2}$ grains. At a point corresponding to the position of these stones were four gangrenous ulcers. Two stones had been arrested in the left bronchus. Dr. F. A. Packard, who exhibited the specimen before the Philadelphia Pathological Society, theorizes that the patient, while riding on the truck of a freight train, had fallen asleep with the mouth open, when a shower of coke from the roadbed flew into the dilated glottis. The fragments must have entered almost simultaneously, as spasm would have otherwise precluded the inhaling of more than the first piece. It is scarcely possible that the accident happened 5 distinct times. This case emphasizes the necessity for a systematic splitting of the trachea and bronchi in all autopsies. A careless pathologist would have been content on seeing the bronchopneumonia, and would not have found the real cause of trouble.

CASE 8.—B. H., aged 15 months, was hurried to the hospital May 26, 1898, with absolute apnea. Immediate tracheotomy and artificial respiration proved futile. After death a collar-button, its shoulder resting on the vocal bands, was discovered blocking the rima glottidis.

CASE 9.—P. M., aged 6 years, was admitted November 27, 1898. One week before, he had inhaled a grain of corn, barely escaping suffocation at the time. Since then there had been repeated paroxysms of cough and dyspnea. He had been treated with emetics and by succussion without success. The patient pointed to a spot corresponding to the beginning of the right bronchus as the seat of trouble. A few moist rales could be heard over the right lung where the resonance was impaired and the breath-sounds feeble. While in the Receiving Ward he suddenly coughed and became asphyxiated. The windpipe was immediately opened, but respiration could not be induced by artificial means. A finger passed into the trachea as far down as the bifurcation did not meet with the foreign body and it could not be felt above. The boy was grasped by the heels, the head pendant, and violently shaken without bringing the corn to light. An autopsy was forbidden.

CASE 10.—During the year 1899 a man who had suddenly fallen to the floor unconscious while eating his evening meal was admitted to the hospital. In the pharynx and upper part of the larynx was lodged a large piece of meat. He could not be resuscitated.

CASE 11.—During the same year a valuable spaniel was brought to the hospital to be examined by the x-ray, the owner fearing he had swallowed a needle about one week before. There had been frequent attacks of cough and dyspnea. The fluoroscope revealed the needle just below the cricoid cartilage situated transversely to the long axis of the neck. An incision was carried down to the trachea from which projected a threaded needle. It was extracted and the dog promptly recovered.

CASE 12.—A. P., aged 64 years, was admitted May 10, 1900. He had become unconscious while eating lunch. The bystanders supposed he had a "stroke." He was dead when he reached the hospital. The upper part of the larynx was filled with meat weighing 6 drams.

Anything small enough to enter may find its way into the air-passages. In the above may be found: a comb, sprigs of evergreen, a piece of raw apple, morsels of meat, jackstone, portion of glass bottle, fragments of coke, collar button, grain of corn, and a threaded needle. It is unusual to have more than one foreign body in the air-passages. In 2 of our cases (2 and 7) there were 5 fragments. In 1000 cases collected by Weist² the most frequent substance was a grain of corn, 177 cases, followed by watermelon seed, 109 cases; bean, 90 cases, and grain of coffee, 59 cases.

Congenital defects or destruction of the epiglottis by ulceration, certain diseases like bulbar paralysis, and unconsciousness from any cause, would predispose to the intromission of extraneous substances. Agnew³ relieved symptoms of suffocation in one of his patients by dislodging a displaced epiglottis from the top of the larynx. The danger of holding tacks and similar articles in the mouth, and the danger of blowing "spit

balls" and "putty balls," indulged in by some children, may be here mentioned.

Foreign bodies may be introduced through the glottis or through an artificial opening in the trachea. They may penetrate from without as a bullet, needle or other sharp body. Gross⁴ quotes the following case: A small boy, while amusing himself cracking a whip, was seized with respiratory difficulty. The first surgeon who saw him examined the throat, and finding nothing abnormal, resorted to a full bleeding. When De la Martiniere was called he perceived a small, red, indurated spot just below the cricoid cartilage. On making an incision a small brass pin, which, as was afterwards ascertained, had been attached to the end of the lash, was found penetrating the trachea. Gross characteristically remarks, "One such case is enough to immortalize a surgeon." They may ulcerate into the respiratory tree from the esophagus, mediastinum, or one of the subphrenic organs, stomach, colon, liver or spleen. Edwards⁵ records a remarkable case of suffocation from impaction in the rima glottidis of a bronchial gland which had ulcerated into the respiratory tree. Duroziez⁶ reports the discharge of an echinococcus of spleen through the bronchi. They may be admitted through the chest-wall, and they may be formed in the lung itself, the so-called lung stones. There is on record the case of a soldier who 4 months after a gunshot wound of the chest coughed up a fragment of one of his own ribs. In Case 11, the needle was probably partially swallowed and afterwards penetrated the trachea.

If the substance is not arrested in the larynx either between the cords or in one of the ventricles it usually descends into the right bronchus, unless it be of such a nature as to catch in the walls of the trachea. The order of the frequency of lodgment is, right bronchus, larynx, trachea, and left bronchus. The right bronchus is more propitious for the entrance of anything dropping into the windpipe because of its greater diameter and because the bronchial septum is situated to the left of the median line. In our cases there were 6 in the larynx, 2 of which, Cases 10 and 12, were partially in the pharynx; 2 fell into the right bronchus, Cases 2 and 9; 1 was lodged in pharynx; in Case 7 both bronchial tubes were blocked by coke; and in 1, Case 3, the exact site cannot be determined. They may be expelled by mouth or through an artificial opening; they may be coughed into the pharynx and swallowed; and they may gain exit by ulceration through the chest-wall. Expulsion was accomplished in Cases 3 and 4 only. They may be expelled instantly or after months or even years. Bartlett⁴ reports a case in which a piece of bone was ejected after 66 years. Case 2 must have retained the evergreen at least 84 days. Inflammation usually follows retention (Cases 2, 7, and 9), either destroying the patient or walling in the offending material. Vegetable substances may swell and sometimes sprout.

Death is due to asphyxia from complete blocking of the respiratory channel by the exotic mass or violent spasm of the glottis; or is the result of the subsequent inflammation. Rarely hemorrhage may cause a fatal issue. Rokitansky³ contributes a case in which the point of an inhaled dart pierced the innominate artery. Five of our deaths were due to asphyxia, three of which were instantaneous; and two were due to inflammation. In 1674 cases collected by Weist,² Gross,⁴ and Durham⁶ the mortality was 27.53%.

The morbid anatomy is that of the resulting inflammation and is often associated with atelectasis.

If the foreign body is large enough to completely block the air-channel death occurs instantly; if smaller there is great dyspnea, violent cough, lividity of the countenance, writhing of the patient, and partial insensibility. Asphyxia in these cases is due to spasm of the glottis. Unless the extraneous matter be expelled there ensues a variable lull, followed by a recurrence of the symptoms which is usually repeated until the alien be gotten rid of or descends into the lung. Although the symptoms are characteristic, the diagnosis is often hard to make, especially if the patient be unconscious or be a child from whom no history can be obtained. They may be mistaken for asthma (Case 3), pertussis, epilepsy, diphtheria, cardiac disease, spasmodic croup, laryngismus stridulus, edema, and ulceration of the larynx, for the laryngeal crisis of locomotor ataxia, and for the omnipotent "worms." After expulsion the symptoms persisting, owing to irritation, may give rise to doubt.

The diagnosis is usually made from the history given by the patient or the patient's friends. In children a foreign body should always be thought of if there be respiratory difficulty, especially if there has been previous absolutely perfect health with a sudden onset of symptoms. If there be an obstruction the breathing will be slow compared with that of disease, inspiration will be difficult and prolonged with retraction of the lower chest, the respiratory murmur will be diminished or absent on the corresponding side if there be impaction in a bronchus, the pulmonary resonance, however, being normal. Sometimes the foreign body may be heard in the trachea rising and falling with each respiration. There will be absence of fever and the symptoms intermittent, the child appearing happy in the interim. A laryngoscopic examination should be made, and as blocking of the esophagus may cause suffocative symptoms, a probang may clear up the uncertainty. It may be necessary to administer a general anesthetic to accomplish this. In the unconscious, if there is doubt as to its nature and especially if it occur during a meal, a finger may be passed into the throat and the larynx and the trachea may be inspected directly with an autoscope. In Cases 10 and 12 the patient became unconscious while eating in a public restaurant, the cause of trouble was not suspected by the bystanders in either case.

When the infective sequels from irritation of the irrelevant material have become established, without a guiding history the diagnosis may well nigh be impossible. Cases 2 and 7 are examples.

The chronic cases would have to be differentiated from inflammatory diseases from other causes, and from any other etiologic factor either extrinsic or intrinsic in a chronic laryngeal, tracheal, or bronchial stenosis. As extrinsic causes may be mentioned cicatricial contractions, localized emphysema, enlarged thyroid and thymus, extensive pericardial exudate, dilation of the left auricle, disease of the clavicle, sternum and vertebrae; and cervical or mediastinal cyst, abscess, neoplasm, aneurysm, and enlarged lymphatic glands. Intrinsic causes are malformation, neoplasm, inflammatory thickening, intussusception of the trachea, paralysis of the posterior cricoarytenoids, longitudinal involution of the trachea after tracheotomy; adhesions of the epiglottis, between vocal bands, between the arytenoids; cicatrices, syphilitic, tuberculous, traumatic; and cica-

trices following certain diseases as scarlatina, diphtheria, variola, rubeola, and enteric fever.

The characteristic inspiratory dyspnea is sufficient to establish the diagnosis of stenosis. If the voice is altered with pain and rhoncus in a larynx which rises and falls with each respiration, the lesion is probably in the larynx. Examination with reflected light would confirm the diagnosis. Dysphagia has been observed in some cases and according to Gerhardt⁷ the head is apt to be held backward in laryngeal constriction, and slightly depressed, with extended neck, in tracheal constriction. The respiratory murmur would be diminished over both lungs in any constriction above the tracheal bifurcation, which constriction, even though below the larynx, may also weaken the voice, owing to the lessened column of air impinging on the vocal bands. Fixed pain and rhoncus together with visual examination through the mouth would locate the stricture in the trachea. Cohen⁷ has recognized stenosis due to aneurysm of the arch of the aorta laryngoscopically. The sound has been abandoned. Narrowing of a bronchus would be recognized by physical examination of the chest, although Killian⁸ was able to directly inspect the larger bronchi through a long speculum introduced through the mouth. Diminished inspiratory dilation of one lung as evinced by inspection, palpation, and mensuration, with diminished vesicular murmur and vocal fremitus, and retention of resonance could only be caused by narrowing of the bronchus or pneumothorax. A whirring rhoncus of the same character and intensity, and occupying the same place on different examinations, together with fixed pain and palpable thrill over the spot corresponding to a bronchus, would definitely settle the point of constriction.

To determine the nature of the lesion the history and laryngo-tracheoscopic examination are all-important. The diagnosis of foreign body would be made by excluding the other causes of obstruction. Copious offensive expectoration is manifestly not characteristic of foreign body, as some have held. An x-ray plate might facilitate the differentiation, especially if the foreign body be metal.

In the treatment of extraneous substances in the air-passages, emetics, sternutatories, inhalations, liniments, ointments, and titillation of the larynx should have no place. In a great emergency a knife may be thrust through the cricothyroid membrane, if more time, a low and rapid tracheotomy should be performed, if seen during the quiescent period a careful examination should be made. When above the vocal bands the body may be removed with finger or forceps, when below this point and irregular or jagged, permanent injury may be done the vocal bands by forcibly dragging it out. Killian⁹ removed a fragment of bone from the right bronchus through the mouth, after locating it with a bronchoscope. If impossible or injudicious to extract it from above, preparations should be made for tracheotomy and the patient inverted and succussed with a pillow. This may be successful, especially when the alien is small, round, and heavy. Inversion without adequate means for immediately opening the trachea is dangerous because of the possibility of death from impaction in or spasm of the glottis, the foreign body suddenly striking the larynx from below. Case 9 perished from glottis spasm. If inversion fail the trachea should be opened low down and efforts made to find and remove the offending material even though the symptoms be not urgent. Delay is perilous because of

the imminent jeopardy of death from impaction or convulsive closure of the glottis, or from destructive inflammation. Cases 2 and 4 died as a result of lung inflammation.

Weist² believes that tracheotomy should not be performed if there are no dangerous symptoms. He has collected 1,000 cases, which have been carefully and exhaustively analyzed. Of these, in 599 in which no operation was performed, 23.21% died. In 338 which were treated by operation, 27.52% died. Sixty-three cases were excluded. In 93 deaths after tracheotomy the foreign body was not removed in 73, or 78.30%, thus leading to the conclusion that the wound adds greatly to the danger when the bodies are impacted in the bronchi, or are inaccessible. Durham⁵ tabulates 554 cases. Of 271 not operated on, 42.5% died, and of 283 undergoing operation, 24.8% died. (This includes 3 cases of extraction from above and 12 cases of inversion without tracheotomy). Of 167 tracheotomies, 37, or 22.15%, died, the author stating that most of the fatalities were not due to the operation, but to delay in its performance or to some deficiency in the subsequent treatment. Of the cases collected by Gross⁴ in which the particulars are given, 102 (including 4 cases of inversion) were subjected to operation, with a mortality of 14.11%; of 81 not operated upon, 35.91% died; of 723 subjected to operation, 24.48% died. Combining the statistics of Gross, Durham and Weist, there are 1674 cases; in 951 not operated upon, 29.75% died. The statistics of Weist favor the expectant treatment, those of Gross and Durham the operative treatment, the combined statistics slightly favor the operative treatment. There is no evading the accuracy of these figures, but they are unjust. It would be fair to presume that most of the cases tracheotomized in which death ensued would have succumbed by the expectant treatment; ours (Cases 6, 8, and 9) certainly would have. Many are operated upon in the death struggle, and many when grave inflammation is already under way. Recovery is not assured unless the substance be gotten rid of. Years may elapse before a fatal termination.

We are confident that the mortality would be much lower if as soon as inversion fail, tracheotomy were performed. There are a few cases, however, in which no operation would be of service (Case 2 and probably Case 7).

The body is frequently expelled as soon as the trachea is opened; it may be facilitated by turning the patient face downwards or by inversion and succussion. These measures failing, careful search should be made and removal effected with finger, forceps, scoop, hook, probe, or wire. Voltolini⁷ has suggested the use of a powerful magnet to attract bodies like needles and tacks. With a Bigelow evacuator we have been able experimentally to aspirate shot, small fragments of meat, sponge, and similar substances. Gerster¹⁰ removed a bean through a low tracheotomy wound by sucking it into a drainage-tube. Coolidge¹¹ introduced a urethroscope into the trachea through a previously existing tracheotomy wound and by reflected light was enabled to seize a rubber tracheotomy-tube which had lodged in the right bronchus one-half inch below the bifurcation. If efforts are unavailing put sutures or hooks in the wound to keep it open and try again the next day. A tracheotomy-tube would hinder expulsion of the foreign body.

Laryngotomy, because of the danger of injuring the vocal bands, should be performed only when the foreign body is certainly in the larynx and cannot be removed

in any other manner. Pharyngotomy⁷ has been employed to remove a needle from the larynx in one case and a ring in another case. The indications for such procedures must be very rare indeed.

Bryant,¹² in 1895, proposed posterior thoracotomy for foreign bodies in the bronchi. Curtis,¹³ in 1896, put this suggestion into practice. Failing to remove a seed vessel transfixed by a pin from the right bronchus after tracheotomy, he proceeded to attack the bronchus directly through the posterior chest-wall. Portions of the fourth, fifth, and sixth ribs about 3 inches in length were resected subperiosteally, from the tuberosities outward. The periosteum and intercostal muscles were then carefully divided so as not to injure the pleura which was widely detached to give access to the root of the lung, thus making the operation extrapleural. The bronchus was not opened until the succeeding day because of the serious condition of the patient. Forceps introduced into the opening failed to recognize the foreign body which was afterward palpated through the lung tissue. An incision was made through the lung down to the pin which eluded, however, the grasp of the forceps. The operation was discontinued owing to grave symptoms, the patient dying 48 hours later of a previously existing pneumonia. On dissection the pin lay in one of the secondary bronchi, through the wall of which it projected.

If a pulmonary abscess can be accurately localized it may be opened and drained and the irritating body removed or later discharged.

When introduced from without, as a bullet, it should be left alone unless it can be easily extracted or unless it give trouble, when it may be removed if its situation be definitely known.

REFERENCES.

- ¹ Dr. Morton has previously reported this case—Surgery in Pennsylvania Hospital, Lippincott & Co., Philadelphia, 1880.
- ² Transactions of American Surgical Association, vol. 1, 1883.
- ³ Agnew's System of Surgery.
- ⁴ Treatise on Foreign Bodies in Air-Passages. S. D. Gross. Blanchard & Lea, 1854.
- ⁵ Holmes System of Surgery.
- ⁶ Gazette des Hôp., 97, Août, 1870.
- ⁷ International Encyclopedia of Surgery, vol. 5, p. 280.
- ⁸ Münch. med. Woch., July 5, 1898.
- ⁹ Deutsche med. Woch., March 8, 1900.
- ¹⁰ Annals of Surgery, vol. 28, p. 658.
- ¹¹ New York Medical Journal, September 30, 1899.
- ¹² Transactions of American Surgical Association, vol. 13, 1895.
- ¹³ Annals of Surgery, vol. 28, p. 605.

A TROPICAL RATION.

By J. R. KEAN, M.D.,

Major and Surgeon, U. S. Vols.

Chief Surgeon, Department of Havana and Pinar del Rio, Quemados, Cuba.

[Concluded from page 1089.]

II.—CHANGES IN THE PRESENT RATION TO PROVIDE FOR THE ABOVE DIFFERENCES.

The ration as at present constituted is given in Table I, side by side with the proposed tropical ration.

For a proper study of the ration it seemed essential to find out as far as possible what the soldier in the tropics actually eats, and the Tables II and III, appended, give the results of this inquiry at Columbia Barracks, Cuba, with a garrison of about 1,900 men, and embracing the period from July 1 to December 31, 1899.

We will now take up the components under the headings given in the table and see how far they meet our requirements.

MEAT COMPONENTS.

Requirement 1: Excess of Fats.—The uninitiated, in reading over the ration table in A. R. 1253, would say at once that no excess of fats is *mandatory* therein. But existing orders require the issue of salt meat (which means in practice bacon and pork) 3 days in 10. This is undoubtedly excessive for the tropics. Paragraph II, of G. O. 65 of 1898, would seem to put it in the hands of post commanders to correct this, but practically they do not do it. There seems to be a curious uncertainty in the army as to who shall decide whether the soldier shall get one or another of the alternative issues offered him in the ration table. There are thus many alternatives in the meat components given in A. R. 1253, but the choice of them does not seem to lie with the soldier or his captain.

TABLE II.

Savings made by 18 organizations at Columbia Barracks, Cuba, July 1 to December 31, 1899.

SUBSISTENCE STORES.

	ISSUED.	SAVED.	PRICE, CT.	AMOUNT OF SAVINGS.
Fresh beef, lbs.	282,435	13,943	13.24	\$1,846 05
Mackerel, lbs.	7,298	. . .	6.4	
Ham, lbs.	1,690	. . .	13.	
Bacon, lbs.	71,550	13,640	7½	1,040 05
Salmon (canned), lbs.	2,579	. . .	13.75	
Corned beef (canned), lbs.	6,091	. . .		
Fresh fish, lbs.	2,579	. . .		
Flour, lbs.	398,595	94,562	2.08	1,966 89
Corn meal, lbs.	. . .	. . .	1.24	
Beans, lbs.	26,238	1,475	3.23	47 64
Peas, lbs.	1,057	. . .	2.37	
Rice, lbs.	17,256	2,967	3.77	111 86
Hominy, lbs.	. . .	. . .	2.	
Potatoes, lbs.	199,660	. . .	3.61	
Onions, lbs.	39,763	. . .	2.91	
Canned tomatoes, lbs.	43,175	. . .	2.17	
Coffee, lbs.	35,430	9,220	12.	1,106 40
Sugar, lbs.	53,146	524	3.90	20 44
Dried fruit, lbs.	44,879	. . .		
Total				\$6,139 33

Average strength of garrison 1,900 men.

It will be observed that the savings per capita per diem amount to only 1½ cents, including the savings of fresh beef, which cannot be expended outside of the commissary.

An examination of the articles in Table II, which compose the great bulk of the soldiers' fare, will show that there is much truth in the remark made by a medical officer in a recent article on the ration¹ that "the variety stated on paper is very delusive." In 185 consecutive days at Columbia Barracks, Cuba, beef was issued 124 days and bacon 47 days. The variety is, in truth, much like that at the boarding-school where there was always a choice of four meats, "Ram, lamb, sheep, or mutton," only in the army it is never mutton. Bacon is issued 3 days in every 10, and the company commander cannot take anything else in its place. He must use it, or sell it, and in the latter case can sell it only to the commissary,² which will give him for it only 7½ cents a pound, less than one-third of the value of the beef-ration. If he sells it there is a loss to the company fund, as compared with the value of the fresh beef-ration, of \$103.23 a month—the strength of the company being 100 men. This is more than the average amount of the monthly savings per company.

There is thus a pecuniary compulsion to eat the bacon, which would not be suspected in the most care-

¹ The U. S. and Foreign rations compared—Charles E. Woodruff, Medical Department, U. S. A., in *Medical Record*, May 20, 1899.

² G. O. 16, Division of Cuba, 1899.

ful perusal of the regulations concerning the ration. And practically it is eaten, as is shown in Table II, only 19% of it being sold. It would seem, then, that to meet Requirement 1 there should not be compulsory issues of bacon or (salt) pork except for field service. The low commutation value of bacon and pork will insure their not being too often drawn.

The restriction of the use of bacon and pork refers, of course, to normal garrison life and the garrison issues. In the field they are indispensable. A certain amount of fat is needed also for frying and other cooking purposes, but this can be purchased in the form of either bacon, pork, or lard, from the commissary out of the savings of the beef ration.

It is recognized that bacon, on account of its keeping qualities, the ease with which it is cooked, and its high value in calories, is a valuable if not indispensable emergency-ration, and that a certain amount must be kept on hand in commissaries to meet the exigencies of field-service. Nor will bacon keep indefinitely, and this supply must be, from time to time, renewed. But in these days of telegraphs and fast steamers this supply need not be large, and A.R. 1236 seems to provide a remedy against loss from deterioration, preferable from a hygienic standpoint to forcing it down the throats of soldiers, namely selling it.

Requirement 2 will be met to a large extent by permitting company commanders to make a liberal saving of fresh beef. The restrictions which now surround this privilege rob it of much of its value, the savings being limited to 1 day's issue in 10, and not being paid in cash, but taken out in trade as it were. The price of fresh beef is so high that the temptation to make savings of it would, if these restrictions were removed, insure to a considerable extent against an excessive consumption. But to guard against the well-known conservatism of the company-cook it would be better to issue only the English allowance of 12 ounces of fresh meat, the balance being commuted in cash.

Fresh fish is abundant and cheap in almost all parts of our new tropical possessions, and it is somewhat surprising that the recent authority for the issue of this cheap, excellent, and wholesome variation of the meat ration is not more taken advantage of.

I am informed that the men eat it gladly when issued. Conservatism, which is so characteristic of the military service and, in matters of food, of the Anglo-Saxon race, together with slight administrative difficulties which with practice would disappear, seem to be the causes of its comparatively limited use at Columbia Barracks. It has, however, been more regularly used at other posts in this department.

Routine is dear alike to the commissary-sergeant and company-cook, and these two important persons have more influence than is generally recognized in deciding what shall go into the company kitchen. When the greater trouble and labor to the latter in preparing and cooking fish is considered, as well as the fact that the fish-ration is less than that of meat, the absence of fish from the bill of fare, where its use is optional with company authorities, is largely explained. Being a less satisfying food than beef, and the waste—heads, tails, entrails, etc., being greater than the proportion of bone in beef—being sometimes as much as 35%, no reason is known why the ration should be less than that of beef, viz., 20 ounces.

Fish is largely eaten by all tropical races near the sources of supply and is undoubtedly less stimulating

and more easily digested than butcher's meats. For this cause, and to secure variety, fresh fish, where obtainable, should be issued twice a week, no savings being permitted.

Mutton is authorized in place of beef where the cost does not exceed that of the latter, but in the ration as issued this provision seems to be a dead letter. I have not in 15 years of service known of its issue that number of times, and the contract for Cuba does not, I am informed, make mention of it. In the rare instances when issued it has been at the request of the contractor and for his own convenience.

There is an impression among army cooks that mutton contains more bone and less meat to the ration than beef and so does not go so far. If this were true we could well afford in the tropics to sacrifice some little from our luxury consumption of meat to gain in variety. Mutton being a drier meat than beef stands refrigerating even better and improves, as is well known, by refrigeration. For the sake of variety the Commissary Department should issue it at least 1 day in 10, or better once a week, as in the English service, and the limitation as to relative cost should be removed.

The issue of the meat components at Columbia Barracks, Cuba, for 185 consecutive days has been as follows:

Fresh beef	124 days
Mutton	None
Bacon	47 days
Fresh fish	1 day
Other issues	13 days

Which shows well the monotony of the issue, the only important variant being the undesirable bacon.

A certainly more desirable issue, and one apparently permissible according to the paper-ration, would have been, for example, somewhat as follows:

Fresh beef	100 days
Fresh mutton	37 days
Fresh fish	38 day
Other issues	10 days

A saving of $\frac{2}{3}$ of the fresh meat being authorized.

As fresh fish is quite cheap at Havana the difference in cost would have been immaterial.

VEGETABLE COMPONENTS.

The same failure to provide the greatest variety possible under the regulations which we observed in the meat component is found in a far greater degree when we come to the fresh vegetable supply.

Potatoes and onions are the only fresh vegetables habitually issued to the soldier, and the provision of "4½ ounces of other fresh vegetables, not canned, when they can be obtained in the vicinity of the post or transported in a wholesome condition from a distance," in which one catches the promise of occasional cabbages and beets, turnips and sweet potatoes, squashes and string beans, corn and fresh tomatoes, is practically a dead letter. Of course it is not to be expected that a variety of vegetables can be furnished the soldier in the field; there, if he gets potatoes and onions, he is lucky. But in garrison, with abundant markets near at hand, it is practicable for the post or regimental commissary to make his purchases of fresh vegetables in large variety, and it is not necessary or right that the vegetable issue should be limited to an eternal round of potatoes and onions. It should not be left to the company-fund to provide this variety. An

examination of Table III shows that the company fund is entirely inadequate.

TABLE III.

Amounts of fresh vegetables purchased from company funds of 18 organizations at Columbia Barracks, Cuba, during the period from July 1 to December 31, 1899:

Cabbage	3,464 heads.
Sauerkraut	22 barrels.
Potatoes	225 "
Sweet potatoes	34 "
Turnips	15 "
Beets	11 "

Other fresh vegetables, string beans, pumpkins, lettuce, radishes, squash, fruits, etc., to the value of \$522.75.

The total expenditure was approximately \$2,800, or $\frac{1}{10}$ of a cent per capita per diem.

In addition, canned vegetables in considerable amounts were purchased from the commissary.

The income from the savings is there shown to be only $1\frac{8}{10}$ cents a day per capita and of this not quite one-half is spent for fresh vegetables.

If the Subsistence Department will not furnish this variety the company fund should be increased by authorizing a liberal meat-saving and perhaps also by a money commutation for this purpose. But if in the United States it is to be regretted that the issue of fresh vegetables is in practice limited to potatoes and onions; in the tropics, where for seven months in each year a really good potato cannot be had, it is simply folly. The most important members of the vegetable ration, aside from the bread furnishing the main supply of carbohydrates, are rice and potatoes. In the ration rice is an occasional and commutable issue, taking its turn with beans and peas, while the potato is a daily issue, furnishing the great bulk of the fresh vegetable allowance.

Since 1892 I have been continuously stationed, with the exception of one year, in Florida and Cuba, and the conviction has constantly grown upon me that for hot climates these two should in relative importance be reversed. In our own country in traveling south, as soon as one reaches the Cotton States, one finds that the potato, which in New England and the Northwest dominates the table at every meal, has retired to the secondary and humble position of an occasional visitor at dinner, while rice, which was in the North an occasional and glutinous mess, is perfectly cooked and always in evidence. Advancing still further south we find when we reach the tropics that rice becomes the mainstay in the support of whole populations, while the potato has retired into relative insignificance—taking a stand well to the rear of the sweet potato, yam, and banana.

The reasons are not far to seek. The home of the potato is in relatively high latitudes or altitudes, and though it will grow in the tropics, it is there an unhealthy exotic which will not keep, nor will potatoes brought from the United States keep in the Antilles during the spring and summer, during the three weeks or more necessary to get them from the hands of the dealer in New York into the hands of the company-cook in Cuba. In the Philippines this difficulty is, of course, vastly increased. At Key West so heavy was the loss of potatoes shipped from New York by water during the 7 months between March 1 and October 1, and so constant the complaints, that the Commissary Department at length, at the request, I believe, of the contractor, had the potatoes inspected at the dock in New York. These potatoes would spoil so rapidly in the hot hold of the vessel, that though excellent when inspected, when issued to troops at Key West a 10 days' issue would frequently yield only enough for two or three meals.

The loss of starch from these changes will be in those which are not rotten very considerable, a loss which can be but ill afforded by a vegetable which at best contains only 21% of starch. Of course the antiscorbutic value of the vegetable salts, chiefly citrates, in the potato has more than any other quality given it its unique value among the carbohydrate producers of the temperate zone, but this is of small importance in the home of the citrus fruits, and where we have in the sweet potato and banana antiscorbutics of equal value.

As a food, rice contains four times as much proteid and four times as much starch as potato. To get the 600 grams of carbohydrates which are needed with a reduced fat allowance from potatoes alone, it would be necessary to consume 6.25 pounds, costing 16.35 cents, while with rice it would be supplied by 1.73 pounds, costing 7.04 cents. Yet such is the conservatism of the American soldier, and such the obstinacy of the company-cook, that we find companies selling part of their rice and buying more potatoes to make up the loss from decay.

It is to be borne in mind, however, that rice is a dry vegetable, and although the allowance of it should be increased in the tropics, it should not be at the expense of the pound of fresh vegetables. That should be issued in full and in vegetables which are really fresh and good, and in all possible variety. Fresh vegetables can be had in all tropical countries, and it is a mistake to attempt to supply them from a distance of from 1,000 to 8,000 miles. Instead of being limited to potatoes therefore, the fresh vegetable components should be of fresh vegetables in all possible variety.

The following is a list of the common vegetables, several of which can be obtained in abundance in Cuba at almost any season of the year, while during the winter most of them are abundant, and, with proper care to get competitive prices, reasonably cheap:

Sweet potato,
White potato (in winter),
Cabbage,
Onions,
Kershaw (pumpkin squash),
Beets,
Turnips,
Yams,
Plantains,
Bananas.

The value of the native sweet potato as a substitute in the tropics for the exotic white potato has been so far curiously overlooked. It is always to be had and is always good.

The vegetable components of the tropical ration should then be:

Dried vegetables: Rice, $2\frac{1}{2}$ oz.; frijoles, $2\frac{1}{2}$ oz.; or macaroni, 2 oz.; fresh vegetables in proper variety, 16 oz. (Purchased, if practicable, in the vicinity of the post or command.)

Rice, it should be observed, is a daily, not an alternative, issue.

Dried fruits are a recent and most valuable addition to the ration. In the field when fresh vegetables cannot be supplied, canned tomatoes and other canned vegetables may be issued in lieu of them, or a money-commutation of 5 cents should be paid in lieu of the fresh vegetable component, so as to permit of company or individual purchases. The commanding officer should be authorized in the field to increase the dried-fruit component to 3 ounces when deemed necessary.

The changes proposed are not radical or expensive,

yet they will make the dietary conform alike to the rules of physiology and experience, and they cannot but have a vast influence for good on the health of the soldier. The great perils of the tropics, aside from infectious diseases, come from disorders of the digestive apparatus, and even the infectious diseases cannot be wholly excluded, as it is well known that intestinal disorders quickly break down the resistant force of the organism and render it an easy prey to infections. Diseases of the digestive organs constituted at Columbia Barracks 44% of all admissions for diseases during the last 6 months of the past year. If the various infections,—malarial, typhoid, etc.,—which find in the subjects of gastrointestinal disease conditions favorable to invasion of the system, could be added to these, the sum would be, I believe, a surprisingly large proportion of all cases of disease.

If, in the tropics, alimentation is in truth the foundation of the temple of hygiene, and if the health and efficiency of an army will depend upon its rations, it is clear that the Sanitary Corps must have a voice in the selection of that ration, and considerations of convenience of supply and relative cost, which have so far been of controlling importance, must be weighed against hygienic considerations with which our efficient subsistence department is of course unfamiliar.

Hence the necessity for a mixed jury and a scientific and unbiased verdict.

PRINCIPLES OF ASEPSIS APPLIED TO OPERATIVE AND OTHER WOUNDS OF THE EYE.¹

By EDWARD JACKSON, A.M., M.D.,

of Denver, Col.

[Concluded from page 1092.]

ON this account hemorrhage, and particularly long and general capillary oozing, is to be favored. And while blood-clot should be so watched and removed as to prevent its serving for a nidus for germ development, it must be properly respected as a normal bar to infection. Its disintegration and washing away by watery solutions must, at times, prove harmful. The power of cocain to prevent hemorrhage is a two-edged weapon that may readily be pressed so far as to do harm by aiding infection that will more than balance the increased ease of operating without hemorrhage. The yet more powerful styptic, adrenal extract, must also be watched lest it prove harmful in this same way. I believe that deficient hemorrhage is an important factor in permitting the infection of the eyeball by penetrating wounds, with or without the lodgment of a foreign body; and that I have done good by operative interference when it accomplished little more than the production of free hemorrhage into the tract of injured tissue.

The failure of hemorrhage to accomplish the removal of all foreign matter, and complete the disinfection of a wound, causes the need for drainage. This is the same process prolonged and more or less modified. If not interfered with, it may in the end be entirely effectual. The older surgeons, whose early cleansing of wounds was less efficient, were compelled to recognize the importance of free drainage. It is too often forgotten in the ophthalmic surgery of today. In the following instances I am sure more general importance should be attached to it.

There has grown up in the profession a feeling that it is somewhat dangerous to enucleate an eye during panophthalmitis, on account of liability to subsequent meningitis and death. Statistics of large numbers of cases indicate that the risk must be comparatively slight, while reported cases show that the fatal meningitis may arise when the eyeball has not been enucleated. Probably whatever risk may have attended enucleation in these cases has been due to the common practice of subsequently packing the orbit with sponge, lint, or absorbent cotton-pads to check hemorrhage, and then leaving these in position, under a pressure-bandage, for 12 or 24 hours, or even longer. That this practice has not been more frequently attended with disastrous results seems to prove the efficiency of the natural processes for wound-cleansing, and the value of the resistance of living tissues to infection. In many of these cases, a proper grasp of sound, surgical principles regarding sepsis will lead to encouraging the hemorrhage rather than attempting to cut it short, and when it ought to be checked, this can be done so quickly and cleanly with hot water, that I never have seen any excuse for packing the orbit.

The wounds which give rise to sympathetic ophthalmia are wounds penetrating the nonvascular media of the eye, and so not likely to be thoroughly cleansed by hemorrhage. They are also liable to be but imperfectly drained on account of the early closure of the wound in the ocular coats. Then, as has been pointed out by Randolph (*New York Medical Journal*, February 23, 1895), the wounds of the ciliary region, long known as especially dangerous in this connection, are particularly likely to have drainage prevented by closure by swollen lens matter, or by the entanglement of parts of the ciliary processes. The enlargement of such wounds and the careful removal of all obstructions to free drainage will surely come to be recognized as an important duty of the surgeon who undertakes their care.

Probably the most important legacy left to us by the writer on ophthalmology, Van Millingen, who recently died at Constantinople, was his history of 3 cases (*Centralblatt für praktische Augenheilkunde*, June, 1899) in which he plunged the galvanocautery into the depths of infected wounds of the eyeball that had been doing badly, and thus brought about their early and satisfactory healing. The full appreciation of the importance of thorough cleansing will certainly lead to more general and more radical interference in cases of penetrating wounds of the eyeball. Up to the present time the history of the great majority of cases of "successful" extraction of bits of iron from the vitreous chamber, with the electromagnet, has ended in at least the functional loss of the eye. This seems the natural result where the foreign body is removed without any attempt to take with it, or to disinfect, all infected tissue. In the two cases of magnet extraction from the vitreous in which I have secured the permanent retention of good vision, both the foreign body and all tissue immediately surrounding it were removed through openings large enough to ensure free drainage. We probably have much to learn about how it is best to interfere in injuries of this kind, but that there must be intelligent and thorough surgical intervention to secure the complete cleanliness of all deep wounds of the eyeball seems certain. The requirements of modern aseptic surgery cannot otherwise be complied with.

¹ Presented at the meeting of the Rocky Mountain Interstate Medical Association, Butte, Montana, August 28, 1900.

In his recent Alvarenza prize essay on Regeneration of the Crystalline Lens, R. L. Randolph, in discussing the frequency of infection in the eyes of animals experimented on, because of the impossibility of such after-treatment as can be given the human eye, uses these words: "Let me say again that neatness and accuracy of technic at the operation will go a long way towards compensating for the lack of after-treatment." This is not the utterance of an old-school operator, but of a skilled bacteriologist. It sets forth a truth formerly better appreciated than it is now; but which has not been at all superseded by the discoveries of the laboratory or the routine of the antiseptic operating theater. Simplicity and good judgment in the planning of an operation, and neatness, accuracy, and rapidity in its execution are absolutely essential to the ideal asepsis. No routine of chemical antiseptics can compensate for torn, bruised, or otherwise injured tissue in the lips of an operative wound. In cataract extraction it is probable that the highest success is missed more frequently through working with a dull knife, or one of unsuitable shape, or through applying force to it in the wrong direction, than through having it imperfectly "sterilized." It needs to be more generally taught and remembered, that no routine can make bungling surgery aseptic.

Briefly to recapitulate: There is danger that these principles may be lost sight of in the common routine of operations and wound treatment.

External antiseptics cannot replace the natural barriers to infection, and must not be suffered to impair them.

Hemorrhage is of great importance in securing asepsis, and its management should be undertaken with this purpose well in view.

Free drainage is still essential for most penetrating wounds of the eye; and the complete cleansing of ocular wounds should be secured, if possible, even at the cost of considerable operative interference.

Perfect mechanical results, to be secured by perfect operative technic, are essential to perfect asepsis.

THE X-RAYS IN THE TREATMENT OF CARCINOMA.

By WALLACE JOHNSON, M.D.,

of Washington, D. C.,

Demonstrator of Pathology, Georgetown University Medical School, and in Charge of the Pathological Department of the Lionel Laboratory at the Central Dispensary and Emergency Hospital,

AND

WALTER H. MERRILL, B.L.,

of Washington, D. C.,

In Charge of the X-Ray and Photographic Department of the Lionel Laboratory at the Central Dispensary and Emergency Hospital, Washington, D. C.

[Concluded from page 1091.]

CASE 3.—B. C., an Irish stonecutter, aged 60, poorly developed and poorly nourished. Some time in the latter part of the summer of 1899, he noticed a small abrasion about the middle of the lower lip at the junction of the skin and mucous membrane. This became painful and spread steadily until the patient applied for treatment February 21, 1900.

The original condition was as follows: "At the middle of edge of the lower lip is a small tumor, almost spherical in shape, 2.5 cm. in diameter, extending about equally over the mucous and skin surfaces. Where the surface is not covered with a crust, it discharges a bloody, foul-smelling serum. The patient complains of constant pain in the diseased part."

A small piece removed for microscopic examination proved it to be epithelioma, as is shown by the accompanying photomicrographs. (See plates Nos. 4 and 5)

Treatment was instituted at once. The growth was ex-

posed to the action of the focus tube on every second day for 4 exposures. There followed an intermission of 18 days to determine the severity of the dermatitis produced. March 20 treatment was renewed and three additional exposures were given.

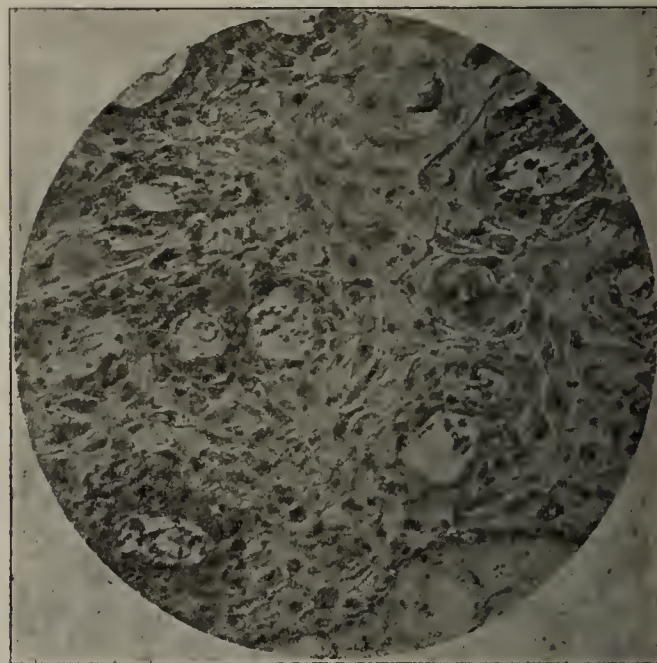


FIG. 4.—From a section of specimen of Case 3.—Leitz obj. N. 3; oc. No. 4.

The results noted are, first a disappearance of pain in the lip which followed the first treatment and remained permanent; second, the quantity of the discharge was lessened and the discharge itself lost its offensive character; third, very little dermatitis was produced and the tumor did not diminish in size. The patient did not return for treatment after March 23. Improvement in this case consisted in the relief from pain and from the offensive discharge.

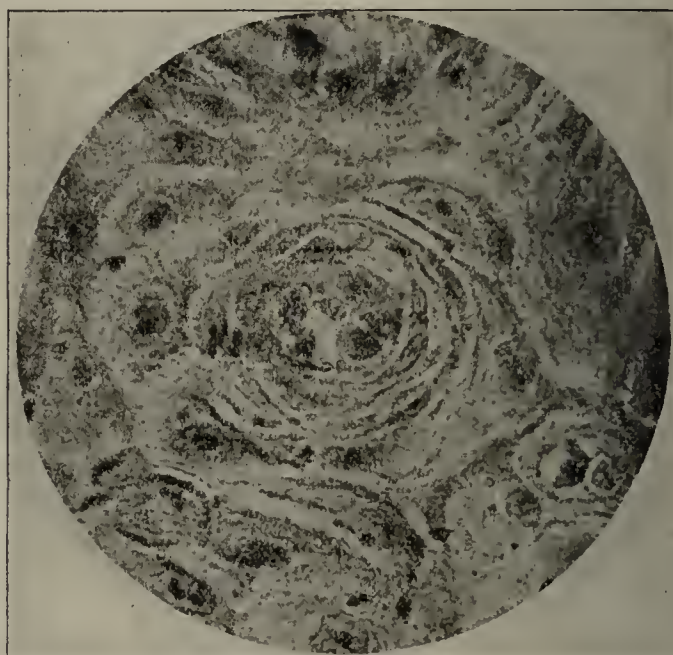


FIG. 5.—Same as Plate IV with higher magnification.—Leitz obj. No. 7; oc. No. 1.

CASE 4.—Mrs. S., aged 33, has a good family history and has always been well and strong until the present trouble commenced. After her third child had been weaned she noticed a tumor in the right breast which rapidly increased in size. Her physician advised removal and excised the entire breast in the early part of the year 1899. A few months later the tumor returned and a second operation was necessary. This also was unsuccessful. Removal by paste was then undertaken, and these applications continued until the patient came to us in April, 1900.

The following observations were then made: "The patient is weak and anemic, has no appetite, and complains

of much pain in and about the scar of the first operation. This extends from the axilla to the sternum, which, with the surrounding skin, is bound tightly down to the ribs beneath. Above this scar at the axillary end there is a small nodule which may be due either to a diseased gland or to the puckering of the tissue in the contraction to form the scar. This had escaped the patient's notice and was not observed until we called her attention to it. A little

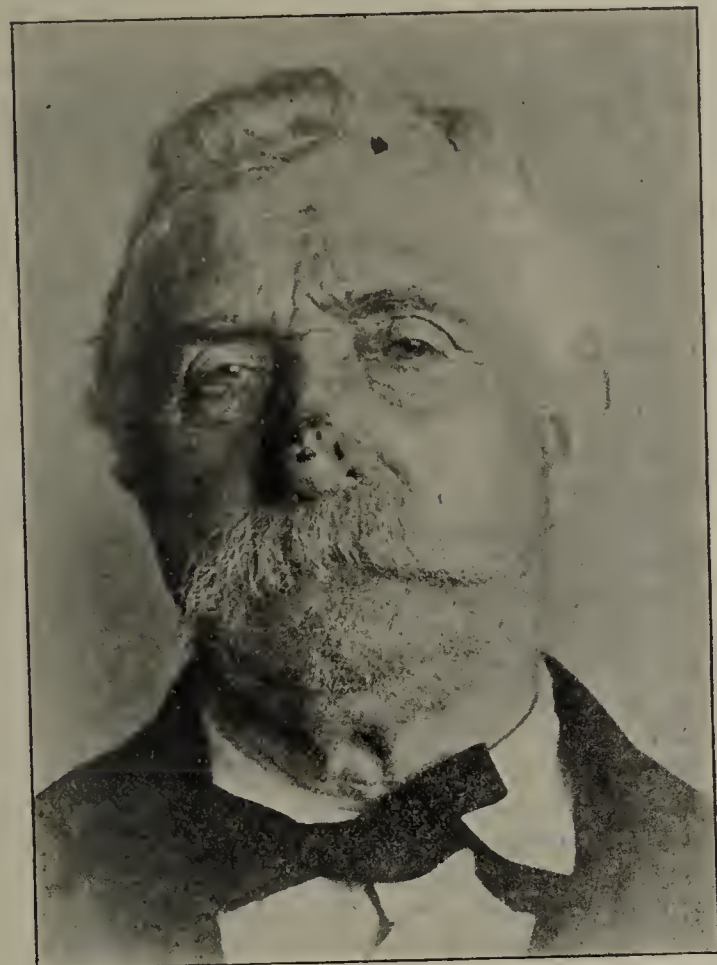


FIG. 6.

internal to the mammary line above the scar is a tumor, about 5 cm. in diameter. This mass, like the scar-tissue, is tightly bound to the ribs, and while not painful to the touch is a center from which at intervals shooting pains radiate. This tumor has sharp, well-defined margins. Below the scar, on the sternum, is an open ulcer from which a tumor is said to have been removed by paste only a week previous. This application had been made 3 times here without effecting a cure. There is, however, a scar slightly external to this place, from which a tumor is said to have been successfully removed by this process."

Treatment began over this open place first, then over the large subcutaneous tumor, and lastly over the nodule at the anterior border of the axilla. The time during which the patient has been under treatment extended from April 9 to the time of writing, May 21.

During this interval the patient has experienced absolute relief from pain, has increased in weight and has improved in general appearance. The open discharging ulcer has been changed to a cicatrix, over the center of which a dry scab one centimeter in diameter has remained for twelve days. The original opening was 4 cm. in diameter. The margin of the large tumor has softened, and its diameter has reduced one centimeter. The tumor also seems to be less prominent. No change has yet been observed in the nodule owing to the shortness of the time it has been under treatment. The entire relief from pain and the generally improved condition of the patient would seem to justify the treatment, though the report at this time is necessarily incomplete. Treatment will continue for the present.

CASE 5.—Mr. P. C., aged 72 years. Has always enjoyed good health. Family history good. No syphilitic,

tuberculous or cancerous taint. He says his present trouble dates from a razor cut, of the external nasal septum, inflicted several years ago. This would not heal, for he kept continually scratching and rubbing it, on account of its intense itching. His nose before the onset of the disease was thin, sharp and straight, but it has gradually taken on the bulbous, knot like appearance, shown in the accompanying photograph (Fig. 6.) The septum is now very much broadened and thickened. Clots of blood form within the nose. Inspection shows a few very small raw surfaces on the anterior internal surface very near the margin of the external opening. The external surface of nose appears slightly reddened and presents five ulcerating surfaces, which are only slightly depressed. They discharge a considerable quantity of purulent serum having a disagreeable odor. A section taken from the nose for microscopic examination proved it to be a typical epithelioma. Patient complains of great itching in nose.

Treatment began at once, July 1, 1900, with an exposure of the whole end of the nose for seven minutes to the most intense burning ray we could produce. Although a decided dermatitis appeared by the end of the week, treatments of twenty minutes each were given on July 7, 9, 12 and 16. The whole surface exposed soon developed into one large discharging ulcer which did not commence to granulate over for three weeks. By the end of August the nose had become entirely covered over by new skin and very much diminished in size. The second photograph (Fig. 7) was taken November 2, just four months after Fig. 6, and shows an apparently complete return to the normal.

CASE 6.—Mr. M., aged 55, presented himself for treatment August 3, 1900. He had a small superficial ulcer 4 to 5 mm. in diameter on the tip of his nose. This presented a slightly depressed, easily bleeding surface from which exuded a small amount of serum. He said that for two years this had been treated by dermatologists and others without any beneficial result. In fact the place became progressively larger and worse. It never discharged more than enough to keep it covered with scales, or later a scab. A portion for microscopic examination was not obtainable,

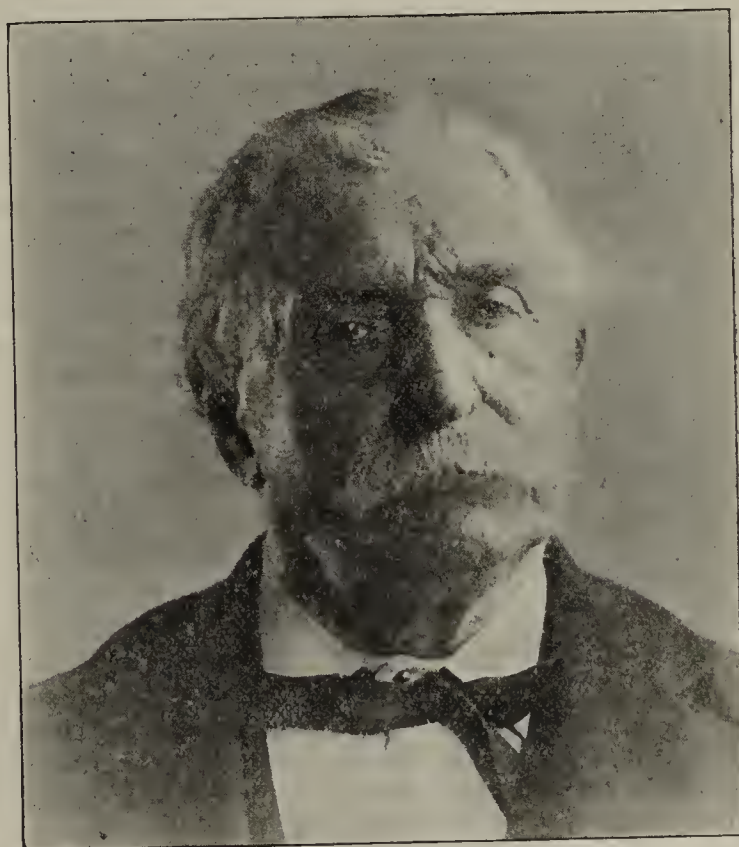


FIG. 7.

but the symptoms, history and appearance all warrant the diagnosis of epithelioma.

Treatment was commenced August 3, with an exposure of seven minutes. This was followed by seven-minute exposures on each of the following dates, August 8, 11, and 13. The part of the nose treated reacted promptly, but the inflammation produced was not severe enough to cause profuse discharge or slough. The surface promptly healed

over and two weeks later no remnant of the disease was apparent. There has been no sign of recurrence up to the present time, November 23, 1900.

APPARATUS.—The apparatus needed for the work is that used to produce the x-rays; it should be borne in mind, however, as the object is to set up a dermatitis, the so-called x-ray burn, the static machine and smaller coils are not applicable. Experiments have shown that next in importance to the exciting apparatus comes the kind of tube used to give rise to this dermatitis. Professor Röntgen in one of his papers alluded to the difference in the nature of the x-rays produced by the "soft" or low vacuum tube, and the "hard" or high vacuum tube. The former takes a greater quantity of current, heats more quickly and emits x-rays which do not penetrate objects as readily as those from the latter. Yet these rays have a more intense action on a photographic plate. They spend their energy on the first object they meet. Operators have found that these "soft" tubes are most likely to produce that peculiar series of local symptoms called variously the "x-ray burn," "white gangrene," "focus tube dermatitis," etc.

For our purpose, then, we select a soft tube, but before using it on a patient its burning time is determined. This is very important, for we have found that of two equally soft tubes operated on the same current, one may produce a burn in 3 minutes, while with the other an exposure of 30 minutes may be necessary to effect the same result.

We expose to this action not only the area evidently diseased, but also surrounding tissue for a little distance. The healthy skin beyond is protected by tinfoil of moderate thickness. It is our object to produce a mild inflammation and pigmentation in and about the diseased tissue, gradually increasing its severity until we have a burn of such depth that it will require 6 weeks to heal on the normal skin. The treatment is then suspended for a month and if a complete cure is not in prospect at the end of this time, the process is continued over those parts which still resist.

At the time of exposure the patient experiences no uncomfortable sense of heat; in fact, there are no sensations whatever. The time required for the treatment is not burdensome in view of the palliative results which occur almost immediately, and the permanent benefit obtained in a few weeks. The photographs of Case 2 were taken only 6 weeks apart. The relief from pain followed the first treatment in three cases; this is really surprising when one considers the persistent character of the pain in these cancerous growths. Cases 1 and 3 show far better cosmetic results than could have followed radical surgical interference, and subsequent plastic surgery has a smaller defect to remedy.

We fully realize that the number of our cases is far too small for any generalization, and yet they lead us to hope that when others report cases similarly treated and when our own list is longer, the medical profession will be ready to admit that the x-rays are a valuable addition to the therapy of this dread disease.

Treatment of Plague.—The annual report of the Secretary of the Agricultural Department states that the work of preparing serum for treating hog cholera and swine plague and experiments in treatment with it are continued. The results do not justify definite conclusions, but are encouraging enough to warrant further experiments, some of which will be on entirely new lines.

SOME REMARKS ON THE HYGIENE OF THE EAR.*

By EMIL AMBERG, M.D.,

of Detroit, Mich.

As knowledge of diseases of the ear increases, the importance of prophylactic measures in this branch of medicine is better understood. This paper deals with the hygiene of the ear: First, in connection with the proper care of the nose and throat; second, with general diseases; and, third, in general daily life.

The close connection of the nose and the throat with the ear through the eustachian tube, which, especially in children, forms a comparatively short and wide communication between the nasopharynx and the middle ear, readily explains why diseases of the first affect the latter. These affections are brought about in two ways. A certain amount of air must constantly be in the tympanic cavity, and all of us are acquainted with the consequences of an abnormally diminished air-supply. As the air is absorbed it must be renewed. The constancy of the air-supply is guaranteed by a permeable eustachian tube; therefore one can readily understand why, for example, adenoid growths may cause changes in the middle ear, which permit us to speak of an adenoid ear. Again and again, this fact has been brought to the attention of the general practitioners, of educators, of the laity, and, in spite of all, it seems to be neglected. Whenever we see a child breathing with open mouth, and we learn that it snores at night, if it has a characteristic nasal pronunciation, sometimes also a stupid expression, we should always examine for adenoids, and, when they are found, we should remove them. There scarcely seems to be a more satisfactory operation at our disposal, and the advisability of examination for adenoids should be suggested to parents. Whenever the proper ventilation of the nose and of the nasopharynx is interfered with, secondary pathologic changes may easily take place and the middle ear may be infected through the eustachian tube or if pathologic material is blown into the ear. Adenoid children frequently suffer from nasal catarrh. In cleaning the nose, as a rule both nostrils are closed, and it is not surprising that, in this way, microbes are thrown into the middle ear, where they find a favorable soil to grow. A case in point came under my care July 5, 1900:

Mr. E. M., aged 20 years, says that he never had trouble with his ears until last January. At that time he blew his nose in the usual improper way, and felt immediately "as if the left side of the head was plugged up." About one week later he noticed a discharge from the left ear. Last April he used some salt water as snuff, closed both nostrils and, as he expressed himself, accidentally "washed a little in the other (right) ear." Since that time he has had continuously a "funny" feeling, as he says, in the right ear. Upon examination: Right ear, drum membrane injected in upper half, especially in posterior part, somewhat bulging, no pain. Left ear, perforation in anterior lower quadrant, ear apparently dry. Hearing diminished in both ears for voice and watch. Weber on right. Spur of nasal septum on left. General health not good the past year, and still under treatment for pulmonary trouble.

If we further consider that sometimes, in order to influence a nasal catarrh, the proper source of which is not found, a nasal syringe is used instead of instruments like Fraenkel's or Birmingham's nasal douche, it does not surprise us that harm is done when good is

* Read before the Section on Surgery and Ophthalmology, at the annual meeting of the Michigan State Medical Society, held at Mackinac Island, July, 1900.

intended. Especially in children the nasal syringe should be abandoned, on account of the short and wide eustachian tube.

Professor Guye¹ (Amsterdam) comes to the conclusion: "First, no syringing should take place in the nose, but only instillations should be employed, unless the physician has proved to satisfaction the permeability of the nose. In the first years of life, the nasal cavity should not be syringed at all. Second, if the nasal cavity should be syringed, there never should be used a tip which closes up the entrance to the nose." A. Bruckmann² tells of a number of cases compiled from the literature, in which the nasal syringe caused disease in the ear. Bacteriologic examinations by Netter and Zaufal⁴ showed that in most cases of otitis media after irrigation of the nasal cavity *Diplococcus pneumoniae* Fraenkel-Weichselbaum and *Streptococcus pyogenes* have been found in the tympanic cavity. Muehr recommends care in irrigating the nose.

If a syringe must be used, Schwartz's instrument is preferable, because it works from the nasopharynx towards the front. Concerning the treatment of adenoids as a prophylactic measure for disease of the ear, nothing short of removal of the growths at the earliest opportunity can be recommended. Haug reports that in 347 of 410 cases adenoids were the cause of diseases of the ear.

Enlarged tonsils do not require less attention, and also every affection of the nose and nasopharynx which interferes with the proper circulation of air. Ad. Barth⁴ says: "On account of some observations I am compelled to think that under circumstances a simple prevention of free breathing through the nose may give rise to an acute or chronic suppuration in the middle ear."

Fink,⁵ in his valuable essay, quotes Wurtz and Lermoyer, who showed that the normal secretion of the nasal mucous membrane destroys microbes. Only the normal secretion, however, acts in this way. Fink speaks of the evil effects of coryza in infants, which shows itself in affecting proper nutrition, sound sleep, etc.

Of all affections of the ear, 60% are said to be caused by affections of the nose and the throat, and still the strange combination, oculist and aurist, exists. We know that infection of the ear takes part in general diseases more than is commonly supposed, be it through the eustachian tube or through the circulation, or through centrally located affections. Recently this fact has come more and more to attention by the search in autopsies for pathologic changes in the ear. Although it is a well-known fact that in many acute infectious diseases the ear is not exempted, as in diphtheria, scarlet fever, measles, influenza, pneumonia, mumps, typhoid fever, etc., it remained for a more recent date to show in what an unexpectedly large percentage of cases the ear is involved.

In this connection, I may add a suggestion in treating an acute suppurative middle ear. Politzer⁵ says that with every acute middle-ear suppuration pus is found in the cells of the mastoid process, because pus flows into the mastoid antrum and cells when the patient lies on his back. This, naturally, does not always lead by necessity to a real inflammation of the mastoid process. According to this statement by Politzer, it might, perhaps, be advisable to consider whether it would not be wise to forbid these patients to lie on the back for a number of days, in order to avoid a mastoid complication.

A very important factor in preventing deafness and deafmutism is the proper consideration of marriages between people who are deaf and in the families of which deafness exists. We have a direct, or an indirect inheritance,⁶ and the result of consanguineous marriages. Direct inheritance is caused if one or both of the parents are deafmutes; indirect inheritance is such that develops deafmutism only in the second or third, or even later, generations. However, deafmutes, or consanguineous parents may have children with entirely normal ears. Alexander Graham Bell,⁷ after a careful study of the question of consanguineous marriages, says: "I do not look upon the consanguineous marriage as a cause of deafness, but as a means of increasing and intensifying the defect where a tendency to deafness already exists. We have no proof that a consanguineous marriage produces deafness in a family which has, hitherto, been free from the defect." He says further:⁸ "1. A deaf person, not born deaf, who has no deaf relatives, will probably not increase his liability to have deaf offspring by marrying a blood relative. 2. A deaf person, born deaf, who has no deaf relatives, will probably increase his liability to have deaf offspring by marrying a blood relative. 3. A deaf person, whether born deaf or not, who has deaf relatives, will probably increase his liability to have deaf offspring by marrying a blood relative, especially if that relative should happen to be on the deaf side of the family. For example: If his father has deaf relatives and his mother has none, he will be more likely to have deaf offspring if he marries a relative of his father than if he marries a relative of his mother." Speaking in general, he says:¹⁰ "As there are few families entirely free from constitutional defects of some kind, a prudent person would do well to avoid a consanguineous marriage in any case, not necessarily on account of deafness, but on account of the danger of weakening the constitution of the offspring. Remote-ness of blood is eminently favorable to the production of vigorous offspring, and those deaf persons who have many relatives deaf would greatly diminish their liability to have deaf offspring by marrying persons very remote in blood from themselves. Deafness and other defects would be most likely to disappear from a family by marriage with a person of different nationality. English, Irish, Scotch, German, Scandinavian, and Russian blood seems to mingle beneficially with the Anglo-Saxon American, apparently producing increased vigor in the offspring." As probabilities for guidance for deaf people, in order to diminish the liability to have deaf offspring, Bell gives the following: First, by marrying a hearing persons in whose family there is no deafness. Secondly, by marrying a deaf person (not born deaf) who has no deaf relatives, or a hearing brother or sister of such a person.

Professor Fay¹⁰ divides 5,000 marriages, in which 8,000 deaf persons were concerned, into 2 groups, those concerning people known to have deaf relatives, and those not known to have had such, etc. Deaf persons who have deaf relatives will have nearly 40% of deaf children, while deaf persons without deaf relatives, who marry, will have only 1.2% of deaf children. Brooks comes to the conclusion that "The intermarriage of people with deaf relatives is almost sure to result in deaf children, more than half of the children being deaf, whether the marriage is between deaf or hearing people."

It is important to mention that *lues hereditaria* may

cause deafness, even in more advanced ages. I had 2 cases under my observation which I think to be of this character; other symptoms made the diagnosis very probable. One girl became deaf when about 15½ years old, and another at the age of 10. Frankenberger¹¹ believes that adenoids can cause deafmutism. This can be easily understood if we remember that a child always becomes a deafmute if it is deaf before it is 4 years old, and usually if it is deaf before it is 7 years of age.

As acquired deafness mostly results after meningitis, scarlet fever, diphtheria, typhoid fever, smallpox, etc., we understand the necessity of continuously paying attention to the organ of hearing under these circumstances. If a child that can already speak becomes deaf, it should be induced to speak much and plainly, and it should enjoy, as soon as possible, instructions for deafmutes. We know that the German method (reading from the lips and use of the sound language) is the most advisable. This also should be learned by persons who are only hard of hearing and not entirely deaf. Jacobson recommends it; I do the same, but I find that my advice cannot be followed in Detroit at present, as I wish it could, on account of the lack of teaching facilities. It seems, however, that this condition will be remedied very soon.

Knowing the connection of the nose and throat with the ear, we should avoid anything which may affect the former. It, therefore, is of great importance that we breathe pure air. We all know that there exists more nose and throat trouble at those times of the year when the wind and the vehicles whirl up the dust on the street. This is a very well-known fact, but little attention is paid to it. Considering that the average number of respirations in an adult is 16 in a minute, 960 an hour, and 7,680 in 8 hours, it certainly must make a difference to the nose and throat, and to the general system, what kind of material we inhale. Whoever keeps his eyes open must be astonished at the lack of understanding and the lack of care which is exercised to avoid the whirling of particles called dust. Nearly every hour of the day the most simple precautions are neglected. Dry dusting and dry sweeping in the houses and on the streets should be avoided. As much as possible the streets should be properly cleansed before people go to their places of occupation. They should be kept free of dust as much as possible, and this should also be considered in public meeting places. I am of the opinion that carpets and draperies should not be used in places where many people meet. That little respect exists for dust can clearly be seen when we remember that travelers in parlor cars even pay the attendant for whirling up the dust from their clothes and hats, so that they and their companions get the full benefit of the same. I think that the dust and the smoke in Chicago have not little to do with the bad prognosis in pneumonia.

At Atlantic City, during the meeting of the American Medical Association, we could enjoy pure air in one part of the city, and only about 100 yards from the boardwalk, vehicles raised an amount of dust which could not have been worse in any place. If the dust contains microbes they can do their work; if it does not contain them, it prepares the soil for them. The evil effects of dust in various occupations have been recognized, and one of the most important hygienic propositions of today is to procure, under all circumstances, pure air.

Winckler¹² says, quoting an experience of Wegman:

"In a woodturner's shop a woman suffering from tuberculosis of the lungs occupied a certain separate place. After she died, a robust and healthy looking girl was engaged. Soon she acquired tuberculosis and died. Another successor experienced the same ill fate. The place got a bad repute on account of the dangerous wood-dust. After close observation, however, it was found that the first tuberculous patient had constantly expectorated on the chippings, and that these had been left in their place for a time until they were removed at long intervals; that the sputum dried out and got into the air; in this way the successor found a working place strongly impregnated with tuberculosis bacilli. She did not do better than her predecessor, and this gave cause for further infection. There does not exist any doubt that the susceptibility of the entirely healthy organism for the infection for the *Bacillus tuberculosis* can be prepared by the dust. This infection may be more or less slight, respectively, may occur after a shorter or longer time-limit."

Dr. B. R. Shurly, of Detroit, in a paper before a local medical society, reported the very important observation that he found a considerably larger percentage of diphtheria among children who lived on unpaved streets.

An equal temperature is also most important. It has been said that we catch heat as much as we catch cold. We also should avoid the possibility of cold air being blown into the meatus on very cold days, such as we have in Michigan; especially people with wide ear-canals should be careful. I would recommend wearing a little cotton in the meatus in those days. People with perforated drum-membranes must not allow water to enter the ear, not only to prevent an inflammation of the tympanum, but also to avoid the possibility of water entering the lungs in this way. The opinion has been expressed that sudden death while bathing might sometimes be attributed not so much to heart-failure as to the before-mentioned cause.

Unwelcome conditions may follow the piercing of the lobules of the ear. The late Max Thorner,¹³ in an interesting paper on the subject, tells of the bad results—sometimes even fatal—which may follow this "barbaric" custom.

Attention should be directed to the abuse of drugs, especially of quinin, by the public, and sometimes by the physician. Guder¹⁴ made experiments which proved, among other things, that, first, 1 gram of quinin hydrochlorate diminishes considerably the hearing for the watch, and sometimes for the voice, after a time of 2 to 2½ hours. Second: That in 11 cases out of 12, noises appeared after 1½ hours, and that these noises lasted until the next morning in cases which remained long enough under observation. Incidentally, Guder remarks that quinin, if given on account of fever, might best be given 2 to 2½ hours before an attack is expected. Schwabach¹⁵ concluded from clinical observations that permanent disturbances in the ear may take place even after moderate doses of quinin and salicylic acid. It is a custom whenever there seems to be a slight disturbance, to "break up the cold" by taking quinin. I know of a lady who took quinin right along in small doses, as a preventive, without any occasion whatever.

The Fourth of July nuisance must also be considered. I might mention two patients of mine—a lady whose hearing was impaired, not by her own carelessness, on a Fourth of July; the other one, a boy who injured his

ear by firing off about 50 firecrackers. It little astonishes us to hear of those things when we know of the danger to which the ear is exposed with artillerymen, etc.

In regard to the proper care of the system, Haug, in his excellent essay, "Die Grundzüge einer hygienischen Prophylaxe der Ohrenentzündungen," etc., strongly recommends that the teeth should be cleansed and gargles applied in the evening before retiring, and that this should be done after each meal. Further, he recommends rinsing the mouth before each meal. Haug says (page 9): "I can quote from my experience the instance that in some families tonsillitis, diphtheria, etc., which had been endemic in the same, stopped entirely since they followed my orders, without any other help" (removal from infected rooms, operation, etc.). The proper way of gargling consists (Haug) in allowing a small amount of fluid to move slowly backwards, the head being kept in a half-reclined position, and to throw the fluid out after the muscles of the throat contract by reflex. Also a gymnastic of the lungs is advised; 6 to 12 deep inspirations should be made, the mouth kept closed during that time, and this should be repeated in bed 6 to 12 times, not oftener, in a horizontal position. Haug reports that this procedure also helps to procure a sound sleep.

The public, in general, becomes aware of the value of the organ of hearing only after it is impaired. We physicians, guided by our experiences, should carefully steer the public through the straits of life and again and again point out to them where danger threatens.

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CHRONIC VILLOUS ARTHRITIS.¹

By S. L. WEST, M.D.,

of Philadelphia.

It is with some diffidence that I assume to direct attention, in particular, to a disease called chronic villous arthritis, in differentiation to the various forms, in general, of arthritis, especially that of the knee-joint. I have selected the knee-joint because it is the largest joint of the body, and the one most exposed to trauma.

Our modern textbooks are conspicuous for their brevity and silence respecting chronic villous arthritis, preferring to class it under chronic arthritis, rheumatoid arthritis and arthritis deformans; but both clinical

and pathologic experience have much to offer in its support. To Schüler belongs the honor of first having clinically and pathologically defined chronic villous arthritis, and thereby clearly differentiated it from chronic arthritis, arthritis deformans and rheumatoid arthritis. Chronic villous arthritis is a peculiar morbid process occurring with relative frequency in young adult life, rarely after the fortieth year, involving generally several joints at the same time. Family history is negative, traumatism may play a far greater part in its production than has so far been demonstrated. Unlike chronic arthritis it does not follow, or depend upon a strumous or poor systemic condition of the general constitution. The progress of the disease, as its name implies, is slow, (chronic) attended with pain, enlargement of the joint structures, impaired motion and usefulness of the joint, and seldom attended with elevation of temperature, except at occasional periods of exacerbations in its progressive activity.

This peculiar morbid process is principally confined to the villi of the synovial membrane, resulting in a chronic hyperplasia of the villi, seldom or never involving the ligaments, cartilages nor bones at their articular extremities. This villous hyperplasia occurs in irregular prominences, in various parts of the articular capsule, thereby differing from both the *acute* and *chronic* forms of arthritis attended with effusion of liquids into the articular capsule; although in some stages of the disease you may have effusion of fluids into the articular capsule; this is, however, subordinate to the villous hyperplasia of the synovial membrane. This hyperplasia is productive of a peculiar fringe-like growth of the villi, much larger than that produced in other forms of arthritis. At the seat of these local prominences, the villi are enormously enlarged. They are generally firm, though under certain not well-defined conditions they become soft and slippery to the sense of touch, indicative of degenerative action. In a freshly opened joint they appear reddish or bluish-red in color and highly vascular. Though this peculiar morbid process may continue for months, or even years, in no instance, so far as I have been able to observe, does it result in destruction of the ligaments, cartilages or bones of the articular extremities. This is one of its strongest points of differentiation from chronic or other forms of arthritis.

As to the etiology of the disease, but little is known or recorded; the weight of clinical and pathologic evidence, however, is in favor of a short bacilli, with polar or dumbbell-shaped enlargement. The inflammatory hyperplasia of the synovial membrane, and enormous production of the villi, as I have above pointed out, as well as the cellular multiplication, are attributed to the action of this bacilli.

The differentiation of chronic villous arthritis from other forms of arthritis will be all the better understood by the following enumeration and classification of such symptoms under their respective forms, as would tend to confound one form of arthritis with that of another, at the same time leaving out of the question the enumeration of those symptoms that are common to all forms which, when taken together, go to make up each form respectively.

In chronic villous arthritis the family history is usually negative; it usually occurs in adult life—rarely after 40 years; trauma may be a causative factor, especially in the monarticular variety; it does not depend upon a strumous diathesis or general poor

¹ Read before the Medical Association of the State of Delaware at its annual meeting at Rehoboth, June 12, 1900.

health; it is attended with pain, enlargement of joint-structure, limited motion, and impaired usefulness; there may be joint-deformity; no elevation of temperature, except occasional periods of exacerbation of progressive activity; it does not materially involve the ligaments, cartilages, nor bones; there is no abnormal heat, nor discoloration of the parts involved; there is seldom effusion of fluids into the articular capsule.

In chronic arthritis the family history is negative; it attacks all ages of youth and adult life; largely depends upon poor systemic condition; there is usually a history of previous attack of acute arthritis or arthritis deformans, or of infectious diseases, as measles, scarlet fever, diphtheria, erysipelas, typhoid and typhus fevers, pyemia, septicemia, pneumonia, malaria, cerebrospinal meningitis, gonorrhea, syphilis, etc.; pain and swelling, with symmetrical contour of the affected joint, limited motion, elevation of temperature, may exist; there is serous (or so-called pus) effusion into the articular capsule, with floating patella; palpation elicits fluctuation; discoloration varying from pink to purple; deformity and enlargement of articular extremities of the bones, ligamentous, cartilaginous and bony degeneration.

In tuberculous arthritis there is family history of heredity; it occurs in early childhood principally; trauma is an exciting cause; there is pain, swelling, limited motion, always elevation of temperature, irregular contour of area affected in early stage—later, symmetrical; effusion of fluids and so-called pus; ligamentous, cartilaginous and bony degeneration; epiphyseal enlargement—usually monarticular, may be polyarticular; the tissue involved may be ivory-colored or colorless in early stage, but in the advanced stage it becomes pink.

Syphilitic arthritis is usually polyarticular, of secondary stage, with a history of primary infection, skin eruption, sore throat, iritis, arthralgia of the joint, redness and swelling, and symmetrical contour; in the tertiary stage there may be gumma in the periosynovial tissues, hyperplastic synovitis, cartilage degeneration; in the hereditary stage, both serous and hyperplastic synovitis with papillary growths, thickened articular capsule and cartilage; periostitis; osteochondritis, osteitis, osteomyelitis of the long bones.

Rheumatoid and gouty arthritis may be monarticular or polyarticular, with history of previous attacks; rheumatic and gouty diathesis, synovitis attended with profuse serous infusion; inflammatory proliferation; chronic thickening of articular capsule and cartilages; enlarged epiphysis with connective-tissue formation; peculiar grating sound caused by the deposition of lime salts in the joint.

In arthritis deformans there may be heredity in some cases; trauma, especially in monarticular form; it may occur at any period of life; acute or chronic hyperplastic proliferation and thickening of synovial membrane may exist; hypertrophy of fringe or villi, filling joint cavity, at times depositing fat in the villi producing a condition known as "arborescent" lipoma; thickening of joint capsule; degeneration of ligaments, cartilages and bones; distortion of joint.

From the foregoing history of this disease the line of treatment suggested is palliative and radical, or medical and surgical. Of the former, rest, regulation of the bowels and general secretory and excretory functions, and appropriate treatment to meet complications. Locally, ichthyol, mercury and belladonna, followed by plaster-of-paris, or silicate of soda dressing to immobilize the joint, give the best measure of benefit. And, of the

latter, free opening up of the joint, under thorough asepsis, excision or removal of the villous hyperplasia, washing out capsular cavity with a 1:1000 mercuric chlorid solution, at a temperature at not less than 110°, close wound by interrupted or other approved suture, apply wet bichlorid dressing, and follow by plaster-of-paris dressing to immobilize the joint. If the villi give evidence of degeneration, after its excision and thorough washing out of capsular cavity with hot bichlorid solution 1:1000, it may be well to inject capsular cavity with warm sterilized iodoform emulsion, put in drainage-tube, close wound with two or more sutures close up to drainage-tube, apply wet bichlorid dressing and follow by plaster-of-paris dressing. At the expiration of a week or ten days follow by second injection of warm sterilized iodoform emulsion, and dress as before. Should impaired motion or false ankylosis of the joint follow, massage and passive motion instituted every second or third day will complete the restoration of the joint-function.

SOME REMARKS ON CATALEPSY, WITH NOTES OF A CASE.

By GEORGE WILLIAM NORRIS, A.B., M.D.

Resident Physician at the Pennsylvania Hospital for the Insane.

THE cataleptic state (by which we understand a neurosis characterized by the patient's inability to change the position of his limbs, while another person can place the muscles in any degree of flexion or extension at will), although by no means a great rarity in our asylums, is perhaps of sufficient infrequency in general practice to warrant a few remarks, and the recital of some notes of a case recently seen at the Pennsylvania Hospital for the Insane.

CASE.—L. L., male, aged 23, a student by occupation, having no history of insane relations, intemperance, nor syphilis, was admitted in August, 1898. In the spring of that year he had been a student at the High School, where, though industrious, he had failed in his examinations, and had in consequence become very despondent.

He continued to worry, ate poorly, lost considerably in bodily weight, and was soon after this time noiced pounding his head against the wall. Six months later (about the time of his admission) he became violent and destructive, requiring to be restrained. He refused to dress or undress or help himself in any way; he was continually soiling his clothes and bedding with his discharges, and had not been heard to speak for a period of 6 months. His limbs offered no resistance to movements and remained in any position in which placed for considerable periods.

Soon after his removal to the hospital he was noticed masturbating, on account of which he was circumcised and blistered, which seems to have checked the habit.

For nearly 2 years his condition has remained practically unchanged despite treatment, though his physical nutrition has been much improved by the use of good food, tonics, etc. On several occasions he has screamed loudly, and once replied to the attendant, who chided him for not swallowing more quickly, that he "ate as fast as he could." During 22 months he has never lapsed from his cataleptic condition, although varying slightly from day to day in the amount of time in which his limbs would remain in given positions.

The accompanying photographs show well the grotesque positions in which he will remain when so placed. His face meanwhile, void of expression, with upturned eyeballs and a slight quiver of the lids, bespeaking the almost total suspension of intellect and oblivion to his surroundings. He will put forth no voluntary effort, though he does swallow when food is placed in his mouth, and when left to himself gradually leans against some object for support, the chin sinks upon the breast, the arms dangle at the sides, in which attitude when coupled with a pale, clammy skin and scarce

visible respiratory movements, he much resembles a sitting corpse. Indeed death has been simulated by cataleptics¹ to such an extent, it is alleged, that the unfortunate individuals have been buried alive; though at present such an occurrence would be all but impossible.



Showing expressionless face, upturned eyeballs and half-open lids.

On *physical examination* the knee-jerks are found to be much increased. The conjunctival reflex is present, but deep puncture of the skin elicits no response from any part of the integument. The pupils are equal, mobile, and respond promptly to light. An examination of the eye-grounds could not be obtained. The optic axes are slightly divergent. Examination of the heart, lungs, urine was negative. The circulation is sluggish, and the temperature slightly subnormal. Blood count showed 5,000,000 reds and 72% of hemoglobin.

As *etiologic* in the production of this functional neurosis the following conditions have been mentioned: Mental shock, anxiety, grief, and fright. Its chief predisponent is hysteria; hence it is seen most commonly in women during the period of their sexual activity. Of the fact that fright will, in the lower forms of life, produce catalepsy there can be but little doubt. Darwin² has concluded that the so-called shamming of death by insects was nothing more than catalepsy, due to "the paralyzing effects of excessive fear" inasmuch as the positions assumed were not like real death, and hence not brought about by conscious simulation.

This neurosis has also been noted after chloroform and ether narcosis; it is not uncommon in the course of certain mental diseases, notably melancholia, and has been produced in its most extreme degrees by means of hypnotism. Indeed Heidenhein³ remarks that "the hypnotic state is nothing more than an artificially produced catalepsy." It is alleged to have occurred in rare cases of epilepsy; in an imperfect form as the result of malarial intoxication and again in organic brain disease, especially meningitis.⁴ Cases have also been reported as occurring in chorea, pregnancy and anemia.⁵ Vogt,⁶ speaks of an Alpine village near Würzburg, where intermarriage had long been practised, in which one half of the population were subject to cataleptic attacks of a few minutes' duration.

The *duration* of the cataleptic state has in this case been far in excess of the usual time, and while a well authenticated case, seen several times by Charcot, which lasted thirteen years, is on record,⁷ yet attacks enduring from a few minutes to several days are the usual rule.

Niemeyer⁸ regards as closely allied to this condition instances of people who are by emotional shock or great fright "struck dumb," as the saying is, and will remain for several seconds unable to move or speak. And examples of individuals in whom some startling

announcement while eating will cause the momentary arrest of the food-suspending fork before their very mouths, are among the experiences of nearly everyone.

Savage⁹ mentions the case of a cataleptic in whom the so-called "flexibilitas cerea" was so extreme that the patient stood on one leg, holding the arms at right angles to his body for two hours. Instances are occasionally observed in which the rigidity is so great that the individual will remain horizontally extended with his head and heels supported by two chairs, devoid of all intermediary support.¹⁰ Fatigue it would seem having as little place among these cases as in chorea, athetosis and other motor neuroses independent of volition.

As may be regarded from the foregoing, attacks often come on suddenly. Not infrequently ushered in by vertigo, tinnitus aurium, insomnia, chasmus, or a sense of intracranial pressure, the patients remaining rigid in the attitude in which the attack began, and resisting any efforts to place them otherwise. Sooner or later, however, this disappears and is replaced by the almost pathognomonic mouldability [flexibilitas cerea.]

As to the *pathology* of catalepsy, a truly curious perversion of function must exist in order to produce it. A condition which while in a measure allied to spasm, yet produces no resistance to change of position. The motor center, while of sufficient stimulatory intensity to retain the muscles in one poise, accepts with equal



Patient remained in this attitude about 20 minutes, after which arms gradually yielded to the attraction of gravity and sank to his side.

alacrity, and without the slightest opposition, its substitution by another. As summed up by Gowers in an article on the subject: "A deficient control of the motor centers of the cortex, permitting their overaction, regulated by the afferent impulses and repeated in the spinal cord, is the best theory we can at present frame of the process." But it must not be overlooked that a certain proportion of cataleptoid cases develop and per-

sist in this condition owing to the existence of some fixed delusion.

Regarding the frequency of this curious condition, Savage¹¹ states that "it is rare to be without some cases of partial catalepsy at Bethlehem." Niemeyer¹² remarks that cases of this neurosis belong "keineswegs zu der Seltenheit," and I think that most practitioners have usually seen at least one case in their visits to asylums or their attendance to neurological clinics.

The prognosis as regards recovery from the acute attack is usually good, the patient sooner or later passing out of this condition; but in neurotic subjects or through successive attacks, mental impairment often follows. Permanent cure will be likely in proportion to the freedom of the individual from affections of sensibility or motion after the attack.¹³

Recovery may be sudden or gradual; in the former



Patient remained in this attitude about half an hour.

case the patient quickly regaining consciousness; in the latter yawning and stretching like a person aroused from deep slumbers, and remaining in a stuporous and dreamy condition for a variable period. In a case recorded by Rogers,¹⁴ the patient gradually resumed consciousness, being able to write long before he was able to speak, and retaining some recollection of events which had transpired during his attack. As a general rule, however, complete oblivion enshrouds the entire cataleptic period.

In the treatment of catalepsy many drugs have from time to time been recommended and tried, only to be subsequently abandoned. Tonics, alteratives, electricity, massage have been employed with varying success. Rogers¹⁵ cites interestingly two well-marked cases of this disease, which were cured by the continued administration in ascending doses of thyroid extract.

The application of hot and cold douches, the administration of emetics, the inhalation of ammoniacal fumes, amyl nitrite, snuff, etc., have at times served to awaken patients from short attacks. A case of prolonged catalepsy was cured through the continued, alternate application of heat and cold to the head, though the delusions from which the patient suffered before the attack persisted thereafter. Hypnotism has been suggested and tried as a therapeutic measure with apparently as little advantage as in other forms of mental disorder.

In the detection of simulated catalepsy the device first put into application by John Hunter, is at times employed. It consists in attaching to the patient's outstretched arm a weight. Then suddenly, and without his or her knowledge, severing its suspending string; when in such cases the arm will fly upward, while in the true variety it remains stationary, as was the case with our patient.

The treatment in the present instance has been directed mainly toward improving the patient's general condition. Arsenic was administered with negative results, and thyroid extract has been given in increasing doses up to the amount of 60 grains per diem (equivalent to 6 fresh sheep's glands). This latter medication has, barring the increased rate of the pulse and respiration, and an improvement in the peripheral circulation, been without any apparent benefit to the patient. He still remains in a stuporous condition, and while he will doubtless in time pass out of the state of catalepsy, he will not improbably emerge from it with more or less dementia, like many other cases of insanity which after the acute stage of a severe and prolonged nerve-storm has passed away remain but as the shattered fragments of their former psychic selves.

I am indebted to Dr. A. R. Moulton for his kindness in allowing me to publish the foregoing case.

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THE STRUGGLE FOR LIKE LOBULE.

A Study of the Interior Temporal Gyrus.

By WALLACE WOOD, M.D.,
of New York City.

THE posterior base of the brain presents three swellings which, from their appearance, may be likened to root, stalk, and flower. These three swellings, as far as they have been investigated in human brains, have been rather looked upon as appendages of the three higher senses—smell, hearing, and sight.

I confess that my study of the brain of ruminants have led me to a different conclusion, which is, that these lobes are vital, belong not to the three higher senses, but are rather of the animus of the physique; that in the bull, *Bos taurus*, for instance, these lobes hold the animus of the bull tongue, and bull throat, and of the bovine corporosity, and the power of reproducing

and propagating the bovine race. They can be nothing else.

The rational inference is that in homo, a being that in many respects resembles this far from ignoble animal, these lobes have the same significance; that in them we are to seek the spirit of substantial living and lusty thriving, and sound propagating; in short, the root, stalk, and flower of the vegetative life. The dissection, preparation, casting, and photographing of the brains of something over a hundred ruminants have convinced me that the posterior spheres in bos and homo are homologous.

Is there a visceral or pectoral lobule? If a prepared brain be put into our hands for study, we trace and demonstrate first the fissures, Sylvius, superior frontal, middle frontal, superior temporal, middle temporal, etc. Next we demonstrate the convolutions, superior, middle, and inferior frontal, middle and inferior temporal, etc., but we are finally attracted by the various *eminences* of different shapes, the lobules, oval, quadrate, cuneate forms, which appear not only on the mesial, but also upon the cranial surface. After a considerable practice in brain preservation, brain casting, and brain delineation, one comes to feel more and more the form or force of these protuberances, lobes or eminences, which are literally thrust upon us.

The sphenoidal pole thrusts itself forward, the bulb of the overocciput projects its pope's nose backward, the cone of the underocciput protrudes itself like a draco from under a mons, the paracentral lobule in many brains is exceedingly salient. The inferior frontal has a lobule always strongly marked. One can hardly place his finger upon the cortical surface without touching an eminence, a morphe, a definite form, head or tail or body, a glomerus, a suggested spiritual organism.

Let us enumerate these eminences or lobules by position. They are as follows:

1. The sphenoidal pole.
2. The temporal eminence.
3. The underocciput.
4. The overocciput.
5. Quadratus and parietal lobule.
6. The paracentral lobule.
7. The medicentral eminence.
8. The infracentral eminence or lobule.
9. The metopic crest, or anterior metopic lobule.
10. The metopic foot, or posterior metopic lobule.
11. The talker in third frontal, the "pied."
12. The "cap," or head of the talker.
13. Posterior lobule of midfrontal gyrus.
14. Anterior lobule of midfrontal gyrus.
15. The prora.
16. The superorbital salience.
17. The pole of the insula.
18. The pole of the orbit.

We may add to these others, notably the lobule lying on the under surface between the sphenoidal pole and the occipital pole. It is found by a cortical swelling of the middle and inferior temporal gyri. It is the under portion which is in question.

Here, then, is this prominent bulge, sometimes lying more lateral, sometimes more medial. It appears enormous in the ruminants, shorter in cat and other carnivora.

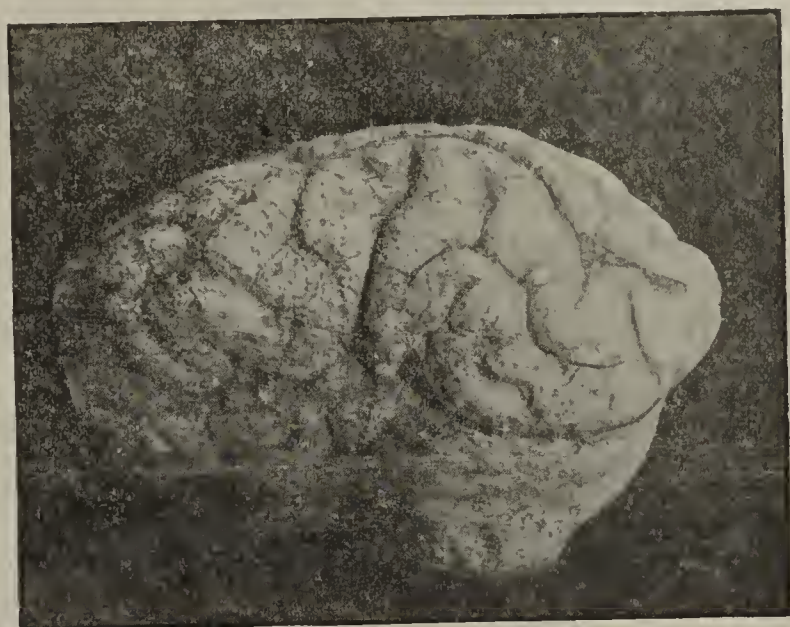
The sphenoidal pole is gustatory, of this the evidence is conclusive. This stoma-looking lobule with its cross incision is the image of the glossopharyngeum, can be nothing else than the cerebral head of the glossopharyn-

geal nerve, together with associate centers. It is the chef and criterion, the lobule of the banquet. In its labyrinth are the spiritual representatives of the bountiful table of nature or of art.

The opposing pole, the occipital, the united gyri fusi-formis and lingualis, with terminal bulbs or ramps or lobules, from the superior or middle temporal, or the third occipital, or from two or all three of them, is the lobus genitalis. Its shape in primates is more or less palliform, and this form made up of stemons, ramps, or stamen-like or serpens-like double curves.

This, then, is the "burning bush," the ever budding "rod of Jesse," the fleur de lis "fairy tree," etc, the soul and maintenance of the life of the race, as its polar opposite, the sphenoidal pole, a veritable lobus succulentius, is the spiritual supporter or nourisher of the life of the individual.

Between the two lies the temperooccipital swelling. It is bounded by the auditory area, the genital area, and the gustatory area. To which does it belong or with which does it best associate?



Left hemisphere of deer from the Philippine Islands. The perpendicular fissure of Sylvius separates it into anterior and posterior. Posterior to this fissure is a great triangle—the temporal lobe. The anterior-superior portion is the superior temporal gyrus; the superior-posterior portion is the middle temporal gyrus; the inferior portion is the inferior temporal gyrus. Posterior is the genital lobule. The inferior temporal gyrus resembles a living creature—a worm, a seal, a hippocamp, or hippomorph, showing three parts—head, breast, and dura. This hippomorph is to be found upon human hemispheres as well as upon those of ruminants.

What is its function? Is it auditory? Is it gustatory? Is it an annex of the affection? Is it none of these? Is it all of these in association, with something added?

Is it not perhaps auditory, respiratory, and circulatory, and digestive; that it is a combined projection and association center for the acoustic, pneumogastric, the cardiac, sympathetic, phrenic and intercostal fibers?

If this is thoracic, pectoral, visceral, where is the mammalian lobule, the center for the breast? It must be here.

In the brain of cows I have seen a great blossoming in the temperooccipital region, but this blossom seems further posterior. Yet we remember that the bovine mammae are inguinal, not pectoral. In human brains I have often observed a curious papilla or coiled lobule at this particular point.

Upon the brains of herbivoras, deer, antelopes, etc., the inferior temporal gyrus takes the organic fusiform

shape—that of a swollen and sigmoid-flexed intestine. We seem to see the mouth or beginning, the belly or breast or swollen middle, and the end, like a vent or cauda.

We can hardly resist the temptation to believe that the beginning is glossopharyngeal, the middle pneumogastric, and the end pudendal or splanchno-pudic. In short, that it is a spiritual representation in the cerebrum of the course of the ingestive, digestive, and egestive tract.

Above it, in small ruminants, ramps the middle temporal, which here seems the tail of the temporal eminence or auditory lobule. Can this gyrus, perhaps, be both auditory and respiratory?

In a female human brain now in hand the tempero-occipital lobule appears in outline like two serpents ramping in a posterior direction, and, as it were, melting their heads together. These ought to be the projection gyres of certain afferent nerves, and we ask again is the area acoustic, or visceral, or pectoral? Perhaps it is all; now one, now the other, as spirit or matter strive for the place.

Anterior to this glomerus, in the specimen mentioned, is the great succulent stome or sphenoidal pole, while posterior to it is the anthos—the flower. Shall we be safe in calling it the lobus vitalis, valens, robustus, as the other two are the lobus succulentius or gustatorius and lobus propagatorius?

The suggestion is that this swelling is visceral, pectoral, thoracic—that it is the “haemal tube” center. If so, is it not the vital knot which the wrestler strains upon when he advances for the final grapple with his antagonist? If so, it is of cardinal importance, for it would be the animus or spirit of the struggle for life.

I do not see how it is possible, in the light of comparative anatomy, for the under surface of the brain to represent anything very lofty or spiritual. It seems to me rather as the soul of the vegetative life.

It is, then, the disheartening and discouraging lobule—that is, when it is small, feeble, and mean (I have a brain—a case of lypemania—in which it is completely atrophied); it is the lusty heart and vigorous lobule when it belongs to an ox, or a horse, or an athlete. It is an invalid lobule when it belongs to an invalid; it is staunch in the youthful and well nourished.

Succulence and corpulence are the main characteristics in the physique *et morale* of the domestic swine, as of the stall-fed ox, and these spirits swell and fill the lowest parts of the brain, just as salience and insolence are the two striking features in the physique *et morale* of the wildcat, which two spirits rise to the highest point of the brain.

If, therefore, the sphenoidal lobule is glossopharyngeal and esophagic, a lobule of the animus gulæ, and the lobule immediately following it contains the animus of heart and lungs, the animus visceralis, or vitalis, or robustus, or valens, is it not the center for the stout heart, the heart of the bull, the heart of oak? Would it also be the fumus, thumus, thumoleon or cœur de lion? Would it be the lump of courageousness? Would it not be the part of the soul referred to when we say, “Come, pluck up heart, let’s neither faint nor fear”?

It is true that courage is a large word—animus, virtus, audacia—and that courageous is a still larger—animosus, acer, audax, fortis—Luys located the quality in the cerebellum, but a strong heart, strong lungs, strong thorax seems to be the proper physical basis.

These, then, are animated by the two nervous or unconscious centers, the cerebellum and medulla oblongata, and also by the higher or gyral centers, namely, by the very prominent front-lateral lobule that strikes, bites and roars; and the equally prominent inferior temporal droop, the lobule under discussion, in which perhaps resides the soul of heart, lungs and thorax.

The valens, the valient soul, the vrai cœur de lion, may be a powerful band of association fibers connecting the two. Courageousness fears nothing and can overcome anything.

Fear strikes to the heart. Where does it strike the heart? Love emboldens the heart. Where does it embolden the heart? Where is the local habitation of gallantry, bravery? Is there a cogitation center under the temporal eminence, a pneumocardogastric center? Yes.

VENESECTION IN PNEUMONIA FOLLOWED BY INJECTION OF NORMAL SALT-SOLUTION.¹

By WILLIAM PORTER, A.M., M.D.,

of St. Louis.

THE suggestion that I have to offer is founded upon something more than a mere hypothesis. The physician of 20 or 30 years ago, bled in cases of threatened cardiac failure in pneumonia, and the good results led him to bleed again. Within the last year or two, the modern physician has injected the normal salt-solution in cases of lobar pneumonia with advantage. It is a fair proposition that these two procedures can be combined, and while by venesection we attempt to relieve the tendency to right-sided heart-failure and remove a certain amount of toxin-laden blood, we at the same time, by means of the salt-solution, increase the pulmonary circulation, accomplish dilution of the toxins that remain and increase the oxygen-carrying capacity of the blood.

I shall here use the term pneumonia as having reference to the lobar or so-called croupous inflammation, distinct in cause, progression and manner of resolution from the bronchopneumonia or lobular form. May I remind you of the classical distinction of the schools, that the former is an acute, general disease with local manifestations in the lung, and the latter is a local disease with general manifestations? In the typical or lobar form, the attack is accented upon the heart and the nervous system. The organic lesion in the lung may be extensive and respiration and circulation be fair, while on the other hand the heart may fail where there is but little lung-invasion.

The character of the blood in pneumonia and the condition of the blood-supplying organs is a large field for study. Upon deductions from such investigations, the most rational and direct methods of medication may be based. The impression upon the nervous system in pneumonia is also an important factor. I believe that instead of three stages, as we find enumerated in the books, we have four, and that the first stage is that of vasomotor paresis dependent upon toxin poisoning, of which the main symptom is the feeling of general malaise and the climax, the chill that inaugurates the so-called first stage of the books.

Certain is it that vasomotor inability is a prominent and anxious complication as far as, and at times beyond, the crisis in the last stage. This adds to the

¹ Read at the Annual Meeting of the Missouri State Medical Association.

necessity for investigation along the lines that I have mentioned. If the toxin-poisoned blood with its excess of fibrin can be brought nearer to the norm, we should expect that the nerve-force which this blood supplies will be stronger and that favorable resolution will be hastened.

What is the condition of the blood in pneumonia? Granted that there is a pneumococcus infection—and we do not have to argue this in this Association—we quickly have a toxemia due, as shown by Wells,¹ to the development of pneumococcal toxins and possibly antitoxins. This writer also says that the blood may contain pneumococci as well as toxins, at first following the infection, the specific gravity of the blood is increased and also the number of white-blood corpuscles. Whether this leukocytosis is protective or not is an undetermined, interesting question. We find with it an increased amount of hemoglobin and fibrin. The proportion of the latter in the blood is sometimes 5 times as much as in the normal. In this condition of the blood, with depressed cardiac force, the tendency is often to the formation of heart-clot, which occurs in about 1 case in 20, and is doubtless in many instances believed to be heart-failure.

Time will not permit me to speak of the destructive changes in the blood elements, but there are two additional phenomena that have a decided bearing on our subject. One is the great diminution of the chlorids and the other, lessened capacity of blood aereation.

Absence of the chlorids from the urine in pneumonia cases has been noted by many diagnosticians. A typical report was made by H. Hutchinson,² of London, who found a greatly increased quantity of chlorids in the urine of a number of pneumonia cases and there was no vicarious excretion through the skin, intestines or sputum. The blood was also poor in chlorids. It is true that other acute diseases are characterized by the retention of chlorids, but not to so marked a degree as pneumonia. The tissues contain a little more than the norm, but it is not stored up in any special organ.

The blood-changes affect the nervous system, and with the increase of the pneumococcus toxins there is the initial chill, the subsequent fever and the vasomotor depression. The lowering of arterial tension in the early stages is due, according to the most recent investigations, to the inhibitory action of the toxin upon the nerve-fibers of the capillary walls and bloodvessels and not to direct heart-failure which may occur later, from a blood-clot or loss of nerve-supply to the cardiac muscle. With blood so changed and the mechanism of the circulatory organs so impaired, the capacity for aereation is greatly diminished. May not this explain why, in many cases where there is a comparatively small amount of pulmonary lesion, there is the rapid respiration, the quick pulse, the high fever and general depression of an exceedingly acute and grave disease?

Upon this premise we have a better understanding of the record of results following venesection in former days and a good cause for its reintroduction to the practice of today. Upon this theory, it is not so much the relief of the heart that is needed, or a lessening of the pressure in the inflamed lung, as it is a withdrawal of as much of the toxin poison as is possible, a lessening of the amount of fibrin and a restoration of the air-carrying and nutritive capacity of the blood.

I regret that the clinical experiments at the City

Hospital, under the management of Dr. Amis, are not far enough advanced to make us willing to quote them. A careful record of all the attending phenomena is kept and the promise is good, but we all recognize that in estimating results in any new method, conservatism is demanded. In private practice so far I have limited the use of the salt-solution to enemas, but will use it whenever indicated hereafter.

Since writing this paper several cases have been treated as above indicated, with good results. One marked case in Division 10, care of Dr. Apepen, of marked lobar pneumonia of the right lung, with threatened heart-failure complicated by violent delirium tremens, was bled to the extent of 18 oz. on the day after admission, and normal salt-solution of 24 oz. injected. No other treatment except strychnia was used and the patient made a good recovery. The immediate relief was most marked in this case.

This method is justifiable, first because venesection is in itself a step in the direction of relief of poison-infiltrated and overcrowded bloodvessels, and because the injection of the normal salt-solution is an effort to restore the blood to its normal condition. A reference to the records of the past and study of the results of more recent investigations of hemic changes in pneumonia will sustain the first proposition. I believe that venesection alone is a remedy that is too often neglected, especially in sthenic cases.

The second step in the procedure, especially when it is made the second and not advanced alone, is also reasonable. Penrose³ records that by the infusion of the salt-solution in several cases, the toxins were diluted, delirium relieved, and elimination through the sweat-glands and kidneys promoted. The temperature was lowered and the heart stimulated. Penrose did not precede the saline infusion by venesection, but advocates the latter, should the circulation seem disturbed by the additional volume of liquid. I believe that venesection should be done first for the reason already given, and also that it is a most important and reasonable preparation for the injection.

Lenhartz⁴ found that the immediate result of intravenous saline injections in acute diseases in children was to lower the blood-pressure and increase the force of the heart. The consequent lavage of the whole system aided diuresis and diminished the toxins. The number of the blood-corpuscles and the hemoglobin and blood-pressure did not show much increase, but the excretion of sodium chlorid became rapid, and the high specific gravity of the urine showed that a large quantity of waste was being eliminated.

The saline injection is shown by Reid Hunt, of the Johns Hopkins University, to increase the amplitude of the respiratory undulations of the blood-pressure, and Penrose believes that this indicates that the salt-solution increases the circulation in the lungs, and their ability to take up more oxygen. He also believes that the patient is more susceptible to the influence of oxygen inhalations.

In the experiments at the City Hospital, venesection is ordered as soon as the diagnosis is well established, *i. e.*, within 4 days at farthest from the initial chill, and generally earlier. The amount of blood to be removed is not necessarily large. More can be removed if necessary, and until this method of treatment is better established, it should not be pushed to extremes.

¹ *Journal American Medical Association*, August, 1899.

² *Centralblatt für innere Medizin*, No. 49, 1899.

³ *Johns Hopkins Hospital Bulletin*, July, 1899.

⁴ *Annales de Médecine et Chirurgie*, September, 1899.

From 8 to 12 ounces will generally give relief in the average cases as we meet them, and the class of patients that come to the hospital. At once, the subcutaneous injection of the salt-solution is ordered, giving this the preference over the intravenous injection because it is slower and the effects more gradual. In an urgent case I should not hesitate at transfusion.

A most convenient method of preparing the normal salt-solution is a modification of Jennings' condensed solution. In this the potassium chlorate is lessened and the amount of the sodium chlorid increased. There is also a smaller amount of the phosphate. My reason for the change is the seeming greater demand for the sodium chlorid. The solution is:

R.—Sodium chlorid.....30 grains.
Potassium chlorate.....60 grains.
Sodium sulfate.....60 grains.
Sodium phosphate.....40 grains.
Sodium carbonate.....60 grains.
Distilled water to make.....6 fluidounces.
One part of this solution in sixty of distilled water.

I hope that further investigation may justify this method as an addition to our treatment in pneumonia. I use the word addition advisedly, for it should be by no means a substitute. The very pathological conditions outlined demand the greatest care in the ordinary methods of promoting elimination by the skin, bowels, and kidneys, and above all, of heart support. The value of oxygen in cases of greatly impaired aeration is not sufficiently understood. It seems to be especially useful after the injections of the salt-solution.

Heart tonics should be chosen according to the indications. It is not so much a question of a heart tonic in an urgent case as what kind of a tonic. Strychnia is nearly always indicated, and digitalis, if there is vascular relaxation and an easily compressible pulse. The well-known effect of nitroglycerin on the muscular coats of the arteries, and, as some think, upon the vasomotor system, should limit its use in pneumonia to the few cases of high-pulse tension with cardiac failure. On no account should heart-depressants be used, even in the first stage, to lower arterial tension, which is undoubtedly due to toxin poison. Diminish the toxins and guard the heart.

I have had no satisfactory experience with the anti-pneumococcus serum. It is yet a question that is to be solved. The general treatment of pneumonia, however, is too large a question to be discussed in a paper intended to call attention to a single proposition.

HYALIN CASTS PRESENT IN PUERPERAL ECLAMPSIA.

By L. NAPOLEON BOSTON, M.D.,
of Philadelphia.

Bacteriologist to the Philadelphia Hospital and to the Ayer Clinical Laboratory of the Pennsylvania Hospital; and Demonstrator in charge of Clinical Laboratory in the Medico-Chirurgical College, Philadelphia.

THAT the urine from cases of puerperal eclampsia always contains casts, is a statement none can doubt; however, when the urine is alkaline—a condition which I have never observed—no casts would be found present, yet they might be formed in the kidneys in great numbers. A probable reason for the statement that no lesion of the kidney is present in eclampsia, is, that in searching in the urine for the anatomic elements of

renal disease (casts) we overlook them, by reason of our using the power of illumination usually employed for the study of casts.

The commonest form of casts present is in its refractive power and transparency similar to the casts found in chronic interstitial nephritis (hyalin), while the morphology is widely different. These casts are usually long and broad, with highly refractile centers and a faint, whitish outline or border, just inside of which is seen a narrow band of a dull pearl tint. They are broken squarely or obliquely at one or both ends, while

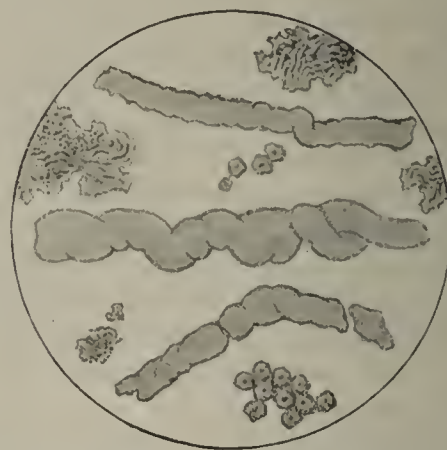


FIG. 1.—Casts found in urine, obtained by catheter between convulsions. Eyepiece iv, obj., Queen 1-6.

it is quite common to find one extremity markedly tortuous, transcribing many coils and occasionally tapering slightly. The above forms of casts comprise nearly all present, yet a few granular casts are to be found, and it is the finding of this variety that causes the examiner to conclude that there are but few casts present. I have repeatedly found persons studying carefully a granular cast when only a moderate change in the amount of light enabled them, by careful focus, to view the same field filled with the above-named varieties. This hyalin variety of casts may safely be regarded as

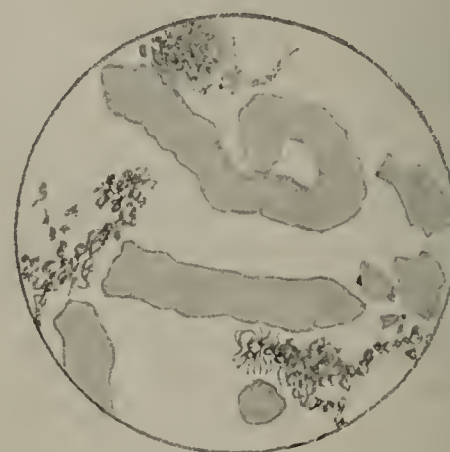


FIG. 2.—Casts from urine of a case of puerperal eclampsia. Eyepiece ii, obj., Queen 1-6.

the most difficult form to detect, and unless the examiner is on his guard, they may escape notice. Under a low-power lens (2-3), many of these pale casts are readily seen; but when an attempt is made to bring them into focus under a higher power, 1-6 or 1-8, we at once notice that the definition is not distinct, and that the most careful adjusting of condenser, lens, and diaphragm are necessary. Here may be the opportune place to speak in reference to the need of a condenser and an iris diaphragm in the study of urine. I have never been able to see, under a 1-6 or 1-8 lens, the form of casts under discussion, without their aid; and while we commonly hear that these accessories to the micro-

scope are only necessary for the study of blood and bacteria, such statements are misleading, incorrect, and must emanate from persons who have overlooked the finer points in microscopic urinalysis. There is no task more difficult, in the field of medical microscopy, than the satisfactory study of hyalin casts.

Tapeworm-form casts are quite common, and this variety frequently resembles the so-called amyloid cast. A peculiarity of the casts present* in the urine from eclampsia patients, is, that they are easily preserved by adding a few drops of chloroform, or a weak solution of bichloride of mercury to the urine, which usually causes casts to become darker, and later to disintegrate; while these varieties may show little or no change for several weeks. It is singular that the urine may contain no casts in from 24 to 72 hours after delivery. In one instance, a case seen with Dr. F. K. Brown, of this city, the woman had many convulsions before delivery, which was accomplished by rapid dilation of the cervix and the use of forceps, under ether-anesthesia. The patient remained unconscious for 15 hours after delivery, yet the urine, voided on the third day, did not contain casts. In all fatal cases observed casts have been present in the urine obtained a few hours before death; while their disappearance from the urine, after delivery, has been a favorable symptom. Figs. 1 and 2 were sketched from specimen slides, permanently mounted.

REPORT OF A CASE OF FOREIGN BODIES IN THE BRAIN.

By CLARENCE A. GREENLEAF, M.D.,
of Rochester, New York.

Assistant to the Staff of the Rochester City Hospital.

THE exact location of foreign bodies within the cranium is an absolute necessity to determine whether or not operative interference is feasible or advisable. While cerebral localization shows, to a certain extent, what structures have been injured, it gives no evidence of the size, nature, and situation of a suspected foreign body. By the use of the x-ray, however, exact localization is possible, as illustrated by the following interesting case which I am permitted to report through the courtesy of Dr. E. M. Moore, Jr.

The patient, a male, 37 years of age, shot himself in the head with a 22-caliber bulldog revolver in 1889. He fired 3 shots, holding the revolver at the right side of his head behind the ear. The patient states that he held the revolver in the same position while firing the first two shots, but that when he fired the third he moved his head forward. He immediately became unconscious and was removed to St. Mary's Hospital and placed under the care of Dr. E. M. Moore, Jr. Examination at this time revealed one wound upon the right side of the head and a second one over the occipital protuberance. The first one penetrated the skull, while the second was a simple scalp wound. He remained unconscious for 3 weeks. He remained in the hospital for 3 months, although the external wounds were healed at the end of 3 weeks. At the time of his discharge from the hospital the patient had no symptoms except a parietic condition of the right leg and a left heminopia. In April of this year the patient consulted Dr. Moore again, hoping that something might be done to relieve him of his continued disability. A physical examination made at this time showed the following conditions: A depression upon

the right side of the head about the size of a ten-cent piece 6.5 cm. posterior to the upper margin of the right ear and a linear scar about 1.5 cm. long just above the occipital protuberance. Neurological examination shows the gait of the right leg to be parietic, of the left leg normal. Station is good with eyes closed. There is no voluntary motion of the toes of the right foot. Flexion of foot, extension of leg and flexion of thigh are weakened. The muscles of the foot react to strong faradism. The grasp of the right hand is 50 pounds, of the left 48 pounds. The difference in the circumference between the right and left thigh is $\frac{7}{8}$ of an inch,

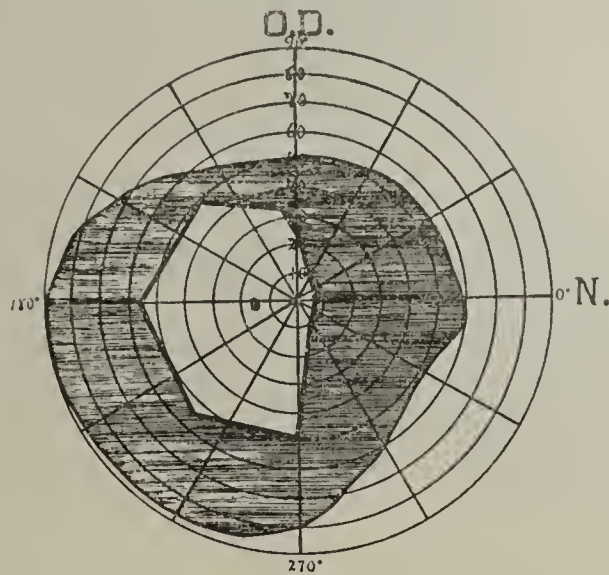


FIG. 1.

while the circumference of the right and left calf are equal. The right kneejerk is exaggerated, while the plantar reflex is normal, but produces no movement of the toes. There is a slight ankle-clonus upon the right side. There is no disturbance of the sense of touch; the sense of taste is diminished, principally upon the right side of the tongue which is protruded slightly to the right, although movement to both sides is possible. The sense of smell is somewhat diminished in both nostrils; the hearing is good in both ears. There is no disturbance of the sense of pain. Aphasia, word-blindness and word-deafness are absent and the memory and general intelligence are good.

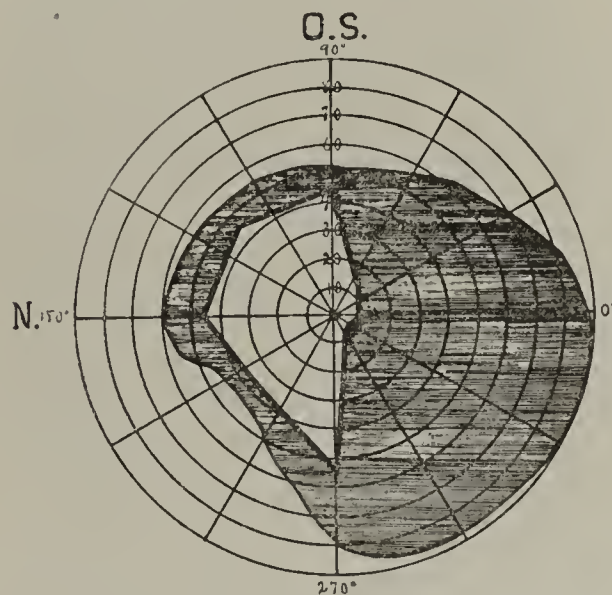


FIG. 2.

Ophthalmological examination reveals a lateral heminopia of the left side. Figs. 1 and 2 show the patient's field of vision. V. O. D. $\frac{20}{20}$. V. O. S. $\frac{20}{20}$. Ophthalmoscopic examination is negative.

X-ray Examination.—Fig. 3 is a lateral view and shows a distinct shadow denoting the presence of a bullet in the brain. This shadow is 4.5 cm. from the upper surface of the skull and 6 cm. from its posterior wall. There is also a fainter irregular shadow which probably indicates an organized blood-clot, about 2.5 cm. in diameter, situated 0.5 cm. posterior to the bullet. A distorted shadow is seen in the lower posterior part of the head. Fig. 4 is an an-

* *New York Medical Journal* for November 4, 1899. Monatsberichte über die Gesamtleistungen auf dem Gebiete der Krankheiten des Harn- und Sexual-Apparates, May, 1900.

teroposterior view showing two distinct shadows. The upper, more rounded one corresponds to the shadow of the bullet shown in the lateral view. The lower one is more distinct in Fig. 4 than in Fig. 3 on account of the distortion produced by the distance of the foreign body from the plate. Measurements of the radiograph from which Fig. 4 is made



FIG. 3.

show that the distance of the upper foreign body from above downward, is the same as in the first plate, and that it is located 4.4 cm. from the lateral wall of the skull. The lower shadow or bullet is 8.2 cm. from the inner wall. The nature and extent of the hemianopsia indicates that the lower foreign body lodged in the right optic tract and its location

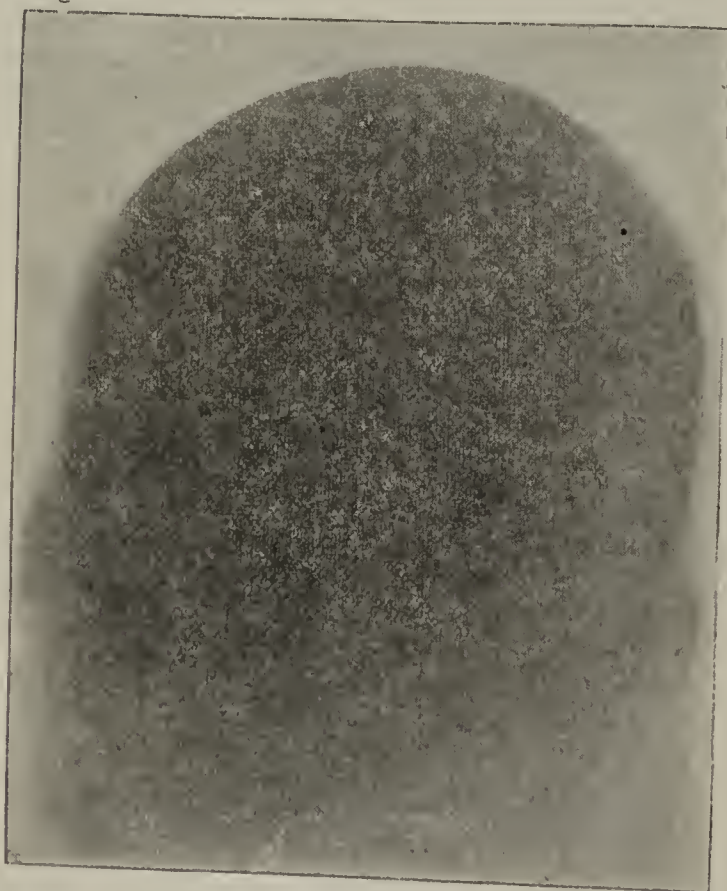


FIG. 4.

as demonstrated by the x-ray corresponds exactly to this position. Fig. 5 is a schematic illustration of the optic tract, and the location of the bullet.

This case presents a few points of special interest:

1. The question of the brain areas involved in the injury as shown by the symptoms and the result of the neurological and ophthalmological examinations.
2. The value of the x-ray in determining, not only

the presence of the foreign bodies, but also their location. 3. The value of the x-ray in determining the feasibility or advisability of operative interference. In this case it is apparent that an operation for the removal of the foreign bodies is out of the question. It is a remarkable fact that during all these years the symptoms

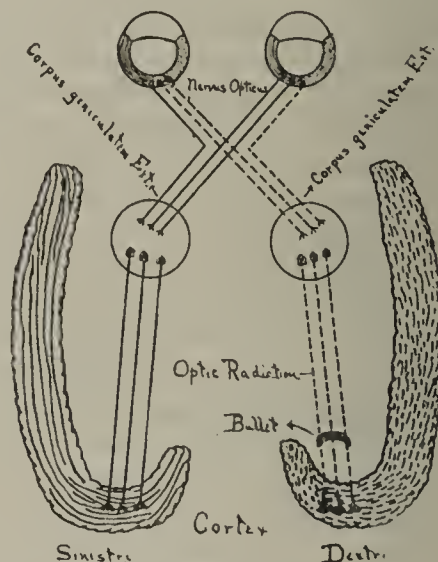


FIG. 5.

have remained practically stationary, and this fact is also an argument against operative interference, even if it were possible, as the result would be extremely doubtful. Another question to be considered is whether one or two bullets entered the brain, and whether, if one only entered, it divided as it passed through the bones, as in a case reported by Tuffier (*La Presse Médicale*, December 20, 1899). The patient states that he fired two shots with his head and the revolver in the same relative positions. There was only one wound of entrance and this would seem to confirm the above statement. The radiographs, also, show one complete circular shadow and another flattened or crescent-shaped in an entirely different plane, from which we may conclude that there are two distinct bullets.

I am indebted to Dr. Wheelock Rider for the ophthalmologic examination and to Dr. Robert G. Cook for the neurologic examination.

THE ELECTRICAL TREATMENT OF UTERINE FIBROIDS.

By GIDEON C. SEGUR, M.D.,
of Hartford, Conn.

By the electrical treatment I mean the application of the galvanic current. Its application is indicated in cases of uterine fibroids in which the symptoms of pain and hemorrhage, one or both, are pronounced, and may be used when they are absent for the purpose of promoting absorption and thus reducing the size. I use a battery consisting of 45 Leclanche cells, with a cell selector, whereby any one or more of the cells can be connected in the current; a switch by means of which the poles can be changed; a current controller, by means of which the current can be gradually increased or diminished without shock; a milliamperemeter to register the exact dosage; a large clay electrode 6x8 inches, which is usually applied to the abdomen attached to the positive pole, and a series of amalgamated or steel uterine electrodes of various sizes.

As early as 1871, the treatment of uterine fibroids by galvanism was begun by Ephraim Cutter; the applica-

tion being made with electrodes, consisting of two small needles introduced into the uterus through the vagina, in his first case, August 21, 1871. In other cases one needle in the uterus and a sponge electrode placed over the pubis. Most of his cases, however, of which he reported 50 in 1887, were treated by puncturing with both electrodes, attacking the most prominent portions. Improvements in application were devised by Apostoli early in the eighties, as a result of a careful study of the subject, and consisted in the intrauterine application of the negative pole and a large, close-fitting, external, positive pole, for which sculptor's clay afforded the best material. Many conscientious practitioners, notably Thomas and Skene, Keith, of London, A. Lapthorn Smith, of Montreal, A. J. C. Skene, Augustin Goelet, G. Betton Massey, E. H. Grandin, and others have been successfully using it in their practice for years. While the ordinary physician lacks the confidence and skill requisite to perform the necessary surgical operation for the extirpation of these growths, he can at comparatively slight expense place himself in a position to at least symptomatically cure a very large percentage of these cases.

There is nothing in the armamentarium or in its application but that can be readily learned by an intelligent physician. It requires time and patience to keep the appliances in perfect order, and to make the necessary applications. These are the principal objections, if objections they be, to its use.

The usual care and attention to asepsis which is given by the painstaking surgeon, should apply in this treatment. An antiseptic douche should precede the treatment, and it has been my custom to introduce a speculum and cleanse the vagina thoroughly with Dobell's solution and also the canal before introducing the electrode, which should also be aseptic. I prefer to introduce the electrode through the speculum before removing the latter, which can be again inserted before the electrode is removed, the condition noted and suitable applications made. When the os is very sensitive, an application of cocain can be made rendering the introduction of the electrode painless.

By means of the Bailey improved rheostat, the current can be increased so gradually as to produce no shock (usually no sensation within the uterus, a feeling of warmth upon the abdomen under the positive electrode) until the patient experiences a sensation of tension within the uterus and a burning sensation under the abdominal pad, when a rest can be taken. Tolerance will soon prevail, and an increased amount of electricity can be applied, depending upon the strength, disposition, and nervousness of the patient. The amperage will vary from 40 to 60 milliamperes. My experience has been, that a stronger current can be borne but for a very few minutes, and causes extreme exhaustion, oftentimes dizziness and faintness, so that I never now push the current above that dosage which the patient can tolerate without too much effort, but continue its application for a considerable period, often as long as thirty minutes.

I believe that by this method of application, as good results have been achieved as by the use of a stronger current for a shorter period. Nearly as much care is necessary in diminishing the current at the close of the seance to avoid shock, and I often employ five minutes, reducing from 60 milliamperes.

The most ardent advocates of the electrical treatment of uterine fibroids do not claim that it will cure every

case of a fibroid nature, although the conviction is strong that it will do so in uncomplicated cases, viz., that where it does not succeed, there is some degenerative process present, such as a cyst or an abscess within the tumor or a breaking down of the epithelium, from some cause, in which the application does not have a curative but sometimes an irritative effect. In these cases the application does no harm, but really good in that it assists in the formulation of a correct diagnosis and points the way to a more radical and serious method of treatment.

I have selected three cases from my records to illustrate my experience with this treatment.

CASE 1.—Mrs. K. P. (B.), aged 32, was treated in March, 1889, for chronic metritis, retroflexion, and dysmenorrhea. The retroflexion was overcome and the inflammation readily yielded. November 18, 1890, she returned, complaining of menorrhagia since the last menses, October 10; before that time her flowing had been scanty; shortness of breath; abdomen bloated; constipation; urine, light colored and frequent, very free and ammoniacal; appetite, voracious; left temporal and occipital headache, and pain in sacral region. Examination—Uterus enlarged, sound passed readily $3\frac{1}{2}$ inches. Posterior and to the right is a mass associated with the uterus, as large as a turkey's egg, and somewhat sensitive. Local treatment, consisting of douches, applications of iodine and tampons medicated with belladonna, iodoform and glycerin were used and ergot $\frac{1}{4}$ dram three times daily after meals. Early in December she had a severe cold, and developed a peritonitis which confined her to her bed and aggravated her condition. She grew steadily worse, the tumor increasing in size, and another developing upon the right side extending anteriorly. An application of galvanism was made first, February 7, 1891, a large clay positive electrode applied to the sacrum and a large sponge (negative) in left inguinal region. The current was gradually carried to 20 milliamperes, as gradually reduced, the poles changed and the same process repeated; iodine to cervix and vault belladonna and iodoform tampons; potassium iodid 30 grs. internally, three times daily. Treatment, February 13. No pain after last treatment; intrauterine negative ($3\frac{1}{2}$ inches); sacral positive 10 milliamperes for 10 minutes, local applications repeated. Third treatment, February 28. Menses February 16 to 20—not very free, only little pain. Has been feeling good. Intrauterine negative from 10 to 25 milliamperes for 10 minutes—iodine, etc. Fourth treatment, March 7. Has had pain since March 2 inside, low on left, no discharge; intrauterine negative 25 milliamperes 15 minutes. Fifth treatment, March 24. Menses 10th to 17th, considerable pain, and flowed freely; since 17th has had much lameness in arms and legs. Intrauterine positive (10 milliamperes 5 minutes) followed by negative 25 milliamperes for 10 minutes, also faradism, from feet to hands; potassium iodid, 5 grs. three times daily. Sixth treatment, March 31. Pains all over still continue. Not much discharge after last treatment. Intrauterine negative to 30 milliamperes for 20 minutes; faradism from feet to hands. Continue potassium iodid, increasing 1 gr. daily till taking 10 grs. three times daily. Was not seen again till June 4, when she reported that she had not felt so well in five years. Uterus very mobile, and very little sensitive, tumor about as large as my fist, posteriorly and to the right; sound passed 3 inches. July 25, has been regular with menses, less free, no pain, little leukorrhea. No inflammation of uterus, continue potassium iodid, 20 grs. three times daily. November 6, 1891. Regular menses each month—about five days—usual amount, no pain; stopped potassium iodid in September. Notices enlarged abdomen, but has no inconvenience; this month some leukorrhea. An examination shows fibroid smaller, depth of canal $2\frac{1}{2}$ inches, no sensitiveness.

In this case the pain was relieved by the electricity upon its first application, the electrodes being applied externally and the current only carried to 10 milliamperes. The intrauterine positive application (10 milliamperes 5 minutes), March 24, at time of fifth treatment, controlled the menorrhagia, and after the sixth treatment, there being no more pain or hemorrhage, and the tumor having largely dimin-

ished in size, the electrical treatment was discontinued and the iodid continued, which, being well tolerated, she was enabled to take for two months. May 22, 1900: Says she has never had any trouble since her treatment in 1891, is perfectly well. Examination shows no tumor, uterus retroverted, the fundus being attached to the sacrum, no sensitiveness.

CASE 2.—Mrs. D.W. C., aged 40, married 15 years. (March 23, 1898) Housewife. One labor, 6 years ago. I first saw her at boarding-place, writhing with abdominal and lumbar pain with which she had been suffering for several days. The abdomen was tense and sensitive; some slight bloody discharge; pelvis by digital examination seemed filled with dense, hard, inflammatory exudate. Perfect quiet in bed, Hg. Cl. douches and suppositories of aristol (gr. iij), opium (gr. ij), and belladonna, gr. $\frac{1}{4}$, enabled her to come to my office March 30. She had been suffering from pain in lumbar region, down back to right knee for years, but much worse the past month, and extended to left side and across abdomen, incapacitating her for her household duties. Bowels usually irritated by cathartics; movements light and thin like a child's. Feels tired and has no ambition, appetite poor, nothing tastes good; very nervous, easily excited and sensitive. Has much headache, frontal or occipital, sometimes with nausea and vomiting. Restless and cannot sleep; sometimes lies awake 3 and 4 hours. Catamenia began at 13; last occurred March 5, to March 7, recurs every 4 weeks; amount always small, lasting 3 or 4 days. For a week before period has severe pains "all around," diminishing after flow is established. Has a thick, light-colored leukorrheal discharge most of time, for which has used douches more or less. Examination—Fistulous opening at left and anterior to anus; passed probe 4 inches. Large uterine fibroids filling pelvis, making a dense, hard, irregular-shaped mass with indications of intrauterine breaking down. A palliative treatment of iodine with glycerin tampons was given, and she returned in one week for an electrical treatment. This treatment was intrauterine negative, sacral positive to 15 milliamperes for 6 minutes. No pain was caused, slight bloody discharge followed removal of electrode. The positive external electrode was placed upon the sacrum because of localized pain there. April 13: Second treatment of 20 milliamperes for 8 minutes was given, with the same application of the electrodes. April 21: Third treatment of 40 milliamperes for 10 minutes was given vaginal negative, sacral positive, the position of the tumor being so changed as to make it impossible to enter the cervical canal. May 5: Fourth treatment of 40 milliamperes for 10 minutes was given vaginal negative, abdominal positive, and borne nicely. Her menses April 26 to May 1 were attended with much pain but were more free than usual; says she is feeling finely. May 12. Upon inquiry as to how she was feeling said, "I am dancing all the day; free from pain." The fifth treatment, similar to the last, was given to 50 milliamperes. June 2: The tumor has so diminished in size as to enable me to rotate it sufficiently to bring the cervix forward and to stretch it with graduated dilators, so that the intrauterine electrode could be inserted $1\frac{1}{2}$ inches. Eleven treatments in all were given, the last being upon August 11.

CASE 3.—Miss C. O. B., age 40, housekeeper, was brought by her family physician for consultation February 26, 1891. For 5 years her menses had been increasing in duration and amount until there was only one week's respite each month, and much blood in hemorrhages, which came on suddenly and recurred frequently so that she was obliged to keep very quiet and in bed much of the time; much pain in sacral and left inguinal regions and left leg from which she is seldom free. Is very much concerned about herself, fearing she will never get any better without an operation and dreading that. The left side of the pelvis was filled with a fibrous growth which was irregular in outline, and extended upward to a level with the umbilicus; another growth was attached to the fundus. She willingly acceded to my advice to try what electricity would do for her (while awaiting the menopause), and treatment was given at once, consisting of an intrauterine negative application carried to 25 milliamperes, and lasting 10 minutes. These treatments were repeated March 5 and 25, April 1, 8 and 23. When she came for her sixth treatment, April 29, she reported: "No pain in back. Am able to go up and down stairs, stepping with each foot for the first time in 5 years."

I will not enter into detail respecting her treatment at this time, but will summarize it by stating that her treatment continued over a period of 5 years, during which 80 applications of electricity were made (the last being given January 17, 1896), the highest amperage being 60 milliamperes, tolerance being the guide, and the time of treatment being from 20 to 30 minutes. Several times, dilation of the cervix, once under ether, was performed and several times vaginoabdominal applications were made. There were times when the tumor seemed to grow rapidly and there would be a recurrence of the old symptoms to some extent, but a few treatments would again reduce the size and relieve the distressing symptoms and we would both be encouraged. She entered heartily into cooperation with me in her treatment, and to that fact is due the beneficial results. Her physician informed me that: "She is well and strong. Her abdomen has diminished in size during the last few years. She has had no hemorrhage during the past 5 or 6 years, is perfectly satisfied that her treatment was by means of electricity and not with the knife, and would recommend it for conditions such as her's was 10 years ago."

In the discussion of this subject I have secured the cooperation of some of the most experienced gynecologists who have given special attention to this method of treatment.

1. Dr. Howard A. Kelly reports, May 12, 1900:

"I have had one most interesting case of a fibroid uterus treated for years most thoroughly by Apostoli, in Paris. The patient continued to have excessive hemorrhages, and I this winter did an abdominal hysterectomy. Microscopically there was no evidence of the electrical applications. This is my only recent experience."

Respecting this treatment, Dr. Kelly tells us (Operative Gynecology, vol. ii., p. 354). "The galvanic electric current is probably the most efficient means of controlling hemorrhage, and producing such permanent surface changes in the uterine mucosa as will tend to prevent its return."

2. Augustin H. Goelet, under date of May 12, 1900, says:

"That after most diligent and painstaking trial of this treatment, I have come to the following conclusions, viz.: (1) It is applicable only in interstitial growths of moderate size, and has better effect upon myomatous growths; (2) I have never seen a tumor of this kind (fibroid) disappear under its use; (3) It does, in some cases, effect considerable reduction in the size of the tumor; (4) It will relieve the symptoms produced by these growths, when it is used appropriately; it will relieve pain, congestion and pressure symptoms, and will arrest hemorrhage, but the relief is not always permanent; (5) Coincident with the local improvement there is always a marked improvement in the general condition of the patient; (6) It does not, *per se*, produce adhesions, but, on the contrary, with the shrinkage of the growth, adhesions which had existed previously are stretched and in some instances torn loose. It is a mistake to suppose that electricity will produce adhesions when it is used in a proper manner. When numerous adhesions are examined in these cases, on opening the abdomen after electricity has been used, they have either existed previous to its use or it has been used improperly. The introduction of unclean electrodes, or the carrying of infection into the uterus from the vagina, would certainly set up inflammatory action and tend to produce adhesions, but that would be no fault of the agent employed.

3. G. Betton Massey, who has without doubt had the largest experience in this treatment of any practitioner in the country, writes May 13, 1900:

"Am applying the methods daily with but slight modification. The only comment called for by me is one of regret

that so many surgeons should still persistently ignore the facts that have been marshaled in favor of this treatment in their published papers, many of them dismissing the subject in a line of mere condemnation. It is a satisfaction to know that many others are quietly using this method, and getting excellent results, even though they write little for the journals, so that, on the whole, I feel confident that the Apostoli treatment is steadily on the increase amongst those physicians who are willing to give it a patient trial in suitable cases. Those surgeons who wish to use the knife only, will of course condemn it, and we ask too much of average human nature to expect them to act differently. The slight modification that I said I now make in the method, refers to the use of an amalgamated gold or copper electrode whenever the bare intrauterine pole is positive. I now use this invariably, securing a diffusion of antiseptic mercurials coincident with the electric action.

Dr. A. Laphorn Smith, of Montreal, an early pupil of Apostoli, who was largely instrumental in introducing this treatment into this country, writes under date of May 19, 1900:

"1. Owing to the great improvements in technic, my last 10 hysterectomies for fibroid all recovered; 7 in 1899, and 3 in 1900. Some of them were very large tumors. 2. I am gynecologist at 3 hospitals, and one very large dispensary, so that I am very much pressed for time, being also a professor in the college here and having my private practice besides. For these two reasons I am using electricity much less; but I have just as much faith in it as ever. And I have good reasons for believing in it, for I meet many patients in the streets of this city, who were invalids from fibroid tumors who were cured by electricity, and are now well. Out of 102 patients who came to me with fibroids from all over this continent, 65 have been completely cured of their symptoms, so that they have not required to consult a physician for them since; and several of the others were benefited, although not cured. While the failures were all those who could not bear a high current, some of these were afterwards operated on and found to have badly diseased tubes and ovaries. So that, while circumstances prevent me from giving it the preference, I can still strongly recommend it to those who are not compelled or enabled to make themselves abdominal surgeons, as I am obliged to be."

CONCLUSIONS.

1. Electricity properly applied may be considered a specific for the treatment of uterine fibroids.
2. A moderate dosage, 40 to 50 milliamperes, applied for 20 to 30 minutes relieves pain and influences a diminution in size.
3. There are no dangers to be feared from its use if carefully conducted.
4. Puncture is not necessary in order to obtain practical results.
5. No serious operation should be undertaken until after electricity has been tried.

CONGENITAL UNILATERAL PTOSIS WITH ASSOCIATED MOVEMENTS.

By FREDERICK KRAUSS, M.D.,

of Philadelphia.

Eye-Surgeon to St. Christopher's Hospital Dispensary.

THIS singular condition, which is barely mentioned by many authorities on diseases of the eye, and entirely overlooked by others, is of sufficient rarity to be interesting.

Swanzy, who devotes much attention to this subject, states that "there are only 30 cases on record. It is most commonly the left lid that is affected, and the paralysis may be congenital or acquired. These conditions have been observed, viz., elevation of the drooping

lid when the eye is adducted, when the eye is abducted, or when the mouth is open.

"A synchronous contraction of the pupil has been noticed in some cases, while in some the elevation of the lid occurs also with a lateral motion of the jaw and with deglutition. Gowers' explanation is that in these cases the levator is not wholly supplied by the third nerve, but partly by nerve-fibers which in the third variety take their origin in the nucleus of the fifth pair, and which also supply the external pterygoid and digastric. . . . Needless to say, no remedy can be applied for relief of this condition."¹

The characteristics of the case cited below are as follows:

1. Complete ptosis of the left lid upon attempted binocular vision.

2. Complete elevation of the left lid upon closure of the right eye, and instant return of ptosis upon opening the right eye.

3. Partial elevation of the left lid upon opening of mouth, extreme elevation upon added protrusion of tongue.

4. Failure of left superior rectus to draw the eye up synchronously with the elevation of the deficient lid.



Especially marked was this when the right eye was also open,—the lower edge of the left cornea being about 3 mm. below that of the right eye.

5. Irregular movements of the eyeball; an absence of regularity in the actions of the extrinsic muscles of the eye as associated with those of the fellow eye.

These conditions would indicate a preference of the psychical impulse to travel from the brain to the third nerve center of the left side (thus raising the right lid), a deficient connection between the third nerve centers or fibers with each other (producing unsymmetrical action), and, lastly, it would indicate an abnormal connection between the centers of the fifth nerve and the third nerve center on the right side of brain (causing elevation of left lid with the protrusion of the tongue).

The improvement which this patient made proves that the connecting fibers of the third nerve were merely deficient and not absent.

George N., aged 6 years, male, schoolboy, entered my clinic at St. Christopher's Hospital Dispensary on April 27, 1900. Family history is entirely negative. Father and mother living, well; have 3 other children, all of whom are healthy in every respect. Mother says she had a severe fright, while pregnant at 6 months with the child, on account of false report of her husband's death. The child was born at term

¹Swanzy, "Diseases of the Eye," last edition.

with the assistance of a midwife and without any complication. The mother noticed that the left side of face was thin and poorly developed, compared with the right side, and that there was an absolute ptosis of the left lid. The child could not lift the lid at any time apparently for several years. The baby was very nervous and could not walk until he was more than two years old. He has gradually been improving in general health since then without special medical attention. He has never had any sickness other than measles and chickenpox 4 years ago.

The *present condition* is as follows: There is a marked frown constantly present on the forehead; complete ptosis of the upper lid of the left eye—which is instantly removed by covering the right eye, and just as quickly returns when the eye is uncovered. When the mouth is opened the lid is three-fourths elevated; the protrusion of the tongue causes an extreme elevation, lasting about one minute, when the ptosis gradually returns. Upon each and every fresh protrusion of the tongue, the lid is instantly elevated. The ptosis becomes extreme when fixation is attempted and the mouth is closed. When the right eye is not converging, there is usually a small margin of the sclera visible between the left lid upon voluntary effort at elevation. Upon monocular fixation the ocular movements of the right eye are good in all directions, while those of the left eye are somewhat restricted upwards and inwards, otherwise normal. When the left lid is forcibly elevated—upon binocular fixation—O.S. turns down and out. Upon increased convergence of O.D. the left eye diverges markedly. There seems to be but little correlation in the ocular movements of the eyes. The pupils of each eye are 2.5 mm. in diameter, and the irides respond equally and freely to light, accommodation and convergence. There are no apparent associated movements of the pupil. Abduction, adduction or movements of the head do not affect the ptosis. There is but a slight asymmetry of the face at the present time, the left side being somewhat smaller than its fellow. The patient has a high arched palate, hypertrophied tonsils, especially on the left side. He can breathe easily through nostrils. Ophthalmoscopically, without use of a mydriatic the following condition was revealed:

Right eye. Pupil oval, long axis 90° , media clear. Disc oval, 7×8 , long axis at 60° , there is a faint chorioidal ring all around disc. excentric excavation outside, vessels at the long axis of the disc being best seen with $+2D$.

Left eye. Pupil oval, long axis at 90° , media clear. Disc oval, 7×8 long, axis 100° , reddish grey in tint, chorioidal ring all around; there is a marked absorption of retinal epithelium throughout the visible eye-ground. The veins are rather full. Vessels at the long axis of disc are best seen with $+2D$.

It was impossible to procure fields of vision or the muscle-balance, on account of the patient's youth and unreliability of answers.

The treatment adopted was the administration of strychnin sulfate $\frac{1}{100}$ grain 3 times daily, and the occlusion of the right eye for a portion of each day.

July 30, 1900. The patient is able to keep the left lid elevated voluntarily, and does so about half the time. Upon close fixation, however, after the lapse of 1 or 2 minutes, the left lid begins to droop, the eyeball following it in its course so that the lower edge of the left cornea is 4 mm. below that of the right cornea. After a momentary closing, the will-power is again applied, resulting in a sudden, almost spasmodic, extreme elevation of the left lid. In this the eye follows, but incompletely, so that a small area of about 2 m. of sclera is seen above the cornea and below the upper lid.

Fixation of objects at one or more meters leaves the eyes in an apparently normal position. Close fixation still results in convergence of the right eye and divergence of the left eye.

The condition is, however, markedly better than when first seen by me.

In conclusion, I wish to call attention to the following:

1. To the marked improvement in the congenital lesion—complete ptosis—so that patient can voluntarily raise the lid and keep it open most of the time.
2. To the theory that there are, in most persons, con-

necting fibers between the fifth and third nerves. Many people in apparently normal health, when protruding the tongue or opening the mouth very wide, will also increase the palpebral fissure by extremely elevating the lids. In the pathological condition of congenital ptosis, I would suggest the probability of an excessive development of these weak connecting fibers, and an equally great lack of development in the proper third nerve fibers nominally supplying the parts involved.

That these fibers were present in this case is evidenced by the improvement which followed immediately upon the exercise of the deficient lid, by compelling the patient to keep the eye open as long as possible by occluding the fellow-eye. At first, the left eyelid tired very quickly, but gradually the exercise could be continued several hours. At the present time he can voluntarily lift the deficient lid and keep the eye open a great proportion of the time, *even* with the right eye exposed.

NATIONAL VOLUNTEER EMERGENCY SERVICE MEDICAL CORPS; ITS OBJECTS, SCOPE AND IMPORTANCE.¹

By J. ADELPHI GOTTLIEB, M.A., M.D., LL.D.,
of New York City.

Commandant Director General Nat. Vol. Emerg. Serv. Med. Corps; Associate of the Military Service Institution of the United States; Member of the New York County Medical Society and Ass'n; Medical Ass'n Greater City N. Y.; Fellow New York State Medical Ass'n; American Med. Ass'n, etc.

PUBLIC health and welfare has become of late years one of the most important elements of modern civilization. It is a subject in which all mankind has an interest. The suggestions embodied in this essay, for an institution which is to protect the health, life, and limb of the public is offered as a contribution to a great cause; and the writer sincerely trusts and hopes that it will have the desired influence, by promoting the welfare and comfort of the community.

Hitherto, the great subject of rendering aid at catastrophes of national importance, or in the field in time of war, belonged almost exclusively to private civic aid societies. We all appreciate the grand and noble work accomplished by the various "Red Cross" societies the world over; and that they have served as a valuable auxiliary is an undisputed fact. More, their services were absolutely required and needed, but the sphere of usefulness of such private societies is a matter of the past. True, they have been the incentive, but the time has arrived when they must give way to the improved methods of this enlightened century.

By the subjoined citations we are characteristically reminded of the necessity of a thoroughly trained and disciplined corps, with all the advantages of regular drills, routine emergency work, and the resulting comradeship and *esprit de corps* due to the social intercourse of its members, with a staff corps enrolled from among the foremost men of the nation. From such a body the Government could draw material when in need of same—a quasi training school, or "waiting list," as it were.

The following excerpt from an official report is to the point, and proves the need of such a corps:

"The difficult and delicate questions connected with philanthropic assistance outside the permanent military organization are regulated thus: Representatives of Aid Societies must place at the disposal of the commandant their staffs of attendants and all supplies brought by them, for dis-

¹ Presented to the Section of State Medicine, American Medical Association, at the meeting held at Atlantic City June 5, 6, 7, 1900.

tribution to hospitals, etc., and societies have no power to remove or distribute their members or supplies, and no civilian is allowed to visit any hospital except on pass especially granted. This regulation will be appreciated by officers who are cognizant of the wasteful and often demoralizing prodigality of Aid Societies, and of incompetent intrusion that, intermingled with valuable aid, embarrasses active military service. Any popular war will find the volunteer army that must prosecute it, flooded from the rear with patriotic gifts and overrun with enthusiastic helpers."

The foregoing needs no comment, as it is a clear statement of conditions existing in the past, and to date, the world over. This almost tolerable condition of affairs is further augmented by a recent dangerous and outrageous phase of reckless manner in which these private societies are conducted, and the integrity of the personnel which compose some of them. The misuse of this plausible disguise, suggests the greatest care to be observed in endorsing private "Red Cross" movements, unless they be under absolute control of particularly well-known and reliable auspices. The recent episode brought to public attention, and on which an editorial in the *New York Medical Journal*, vol. lxxi, No. 17, for April 18, 1900, comments with deserved severity on the treason to the Geneva Cross of a so-called hospital corps that went from this country to the Transvaal. (The editorial is of such merit as to deserve being quoted in its entirety):

TREACHERY TO THE RED CROSS CAUSE.

An incident has recently occurred in relation to the South African War which is discreditable beyond expression; if that were all, however, it would not be worth our while to comment on it, but when we add that it seriously jeopardizes the future status of those grandly humane principles which form the keystone of Red Cross work, and are one of the greatest glories of the present age, we are giving good reason for the execration in which the perpetrators of this dastardly outrage must ever be held by all right-thinking people. The outrage to which we refer is the action of the so-called "Chicago Ambulance Corps," the members of which, leaving these shores under the auspices of the Red Cross, ostensibly as an organization to tend the wounded Boers in the Transvaal, on their arrival at Pretoria almost to a man tore off their Red Cross Badges and accepted the arms offered them by the Boers, to take part as combatants in the struggle. This action has, it would appear, been followed by other so-called ambulance corps in the Transvaal.

The whole value of the Red Cross organization depends upon its being always above suspicion of any partisan motives. It is only by implicit and unshaken faith on the part of all who may chance to be belligerents that no hostile use will ever be made by any power of the neutrality, the immunity, and freedom of movement and action accorded to the Red Cross insignia, that these privileges, so essential to carrying out its glorious object, viz., the mitigation of the inevitable suffering of warfare, can continue to exist. The deadliest blow that has ever been struck at the laudable work of the Geneva Convention has been delivered by this so-called Chicago Ambulance Corps. It was cowardly and treacherous, and we sincerely hope that every one who has participated in it will meet the fate in Africa which he richly deserves. The isolated instances of misuse of the Red Cross flags, of firing on ambulances, and of firing from ambulances are trivial in comparison with this in their far-reaching import. Such acts must first be clearly proved to have been intentional, which in the vast majority of cases on either side we refuse to believe them to be; and, when, unfortunately, some individual instance is shown to be not accidental, but due to design, even then we must make allowance for the fact that no commander of a large army can control omnipotently the action of every individual in it any more than the most civilized community can entirely prevent the commission of crime. All that can be done is to visit an offence with condign punishment of sufficient severity to act as a deterrent to the great multitude.

But if there be room for suspicion that duly accredited

Red Cross emissaries may not be really philanthropists at all, but foes in disguise, and cowardly and treacherous ones at that, then the whole foundation of the beneficent Red Cross Institution will have been shaken, and military commanders will find it a matter of wisdom to "ward off" all such bodies from the theater of war, lest they should prove wolves in sheep's clothing. Thus all the great benefits of the humane spirit of the age, essaying to reduce the, in any case, appalling suffering of warfare to a minimum, a spirit never probably displayed to such great advantage as in the South African war, will be dissipated, and warfare will be conducted as aforetime with the barbaric savagery from which it has in the passing century so largely emerged.

The band of unscrupulous marauders to whom we have referred, came near, we understand, owing to their swash-buckling behavior and other suspicious circumstances, being stopped at Lorenzo Marques from proceeding further, but the circumstances which finally turned the scale in their favor and secured a letter from Miss Clara Barton, testifying to her personal acquaintance with their identity and objects. It is painfully evident that Miss Barton, whose name commands respect everywhere, has been sadly duped in the matter, and we sympathize earnestly with her in the mortification which she is now evidently enduring at the treatment meted out to her by her protégés. We trust that the lesson thus received will prevent any further countenancing of independent and irresponsible bodies for Red Cross work, and that only regularly enrolled Red Cross members, of some standing, will, in the future, have their services in any way recognized.

We think that all questions of the merits of this or any other war side, any belligerent capturing such treacherous persons would be perfectly justified in not extending to them the privileges of prisoners of war, but dealing summarily with them. Nay, more. Such wholesome action would prove clearly that the neutrality of the Red Cross must and shall be respected, that it may continue unmolested to discharge its glorious functions.

The preceding argues forcibly for the necessity of a recognized, disciplined, strictly medico-military corps whose members are obliged to take an oath of fealty and are amenable to the most stringent military laws and discipline. Therefore in this onward march of natural events we must look forward to a regularly organized institution in accord with the strides and progress of the twentieth century. The subject which I present to your attention is an attempt to meet this latest and important phase of social economy.

That a growing attention to the subject of protecting the health of the people is being manifest all over the world, cannot be denied; for today the most learned and distinguished members of the scientific world are engrossed in the problem of preservation of public health; and the people and press, who are rarely slow to comprehend matters which it is to their advantage to know, are beginning to appreciate the necessity for a regularly established volunteer emergency corps and the benefits consequent thereto. Every good citizen takes a just pride and deep interest in the safety and prosperity of his country, and his patriotism bears a direct ratio to the degree of attention and protection he is to receive in time of need.

Within the past few years we have all become painfully cognizant of the numerous local and national disasters, in which, in almost every instance, the hands of both civic and military authorities have been tied for various reasons, such as—time required for the course of official sanction, unavailable funds, inability of procuring immediate equipment, inefficient or lack of expert service, etc. I need but mention the yellow fever and smallpox outbreaks in various parts of the United States (Marine-Hospital Service alone reported 4,286 cases of yellow fever), catastrophies occasioned by the floods, hurricanes, cyclones in various sections of

the country; the tornado in Northern Missouri, etc., in which multitudes were killed, injured, or rendered homeless; the West Dunellen, Redding, Hudson River and Santa Fe Railroad accidents; the many conflagrations; and, lastly, the breaking of a platform during a public function at St. Augustine, Fla., in which 200 persons were injured, not forgetting the ravages of the plague in the East, which at this writing reports from Bombay mention 12,323 deaths recorded from the plague from November 19, 1899, to February 17, 1900, a short period of but three months; and over 6,000 in other districts in India. In the Philippine Islands 100 cases were reported between January 20 and February 15 of this year. It is unnecessary to further summarize the appalling disasters and catastrophies. The safeguards for epidemics must be attentively watched and provision made so as to be able to amply cope with any unforeseen surprises; particularly with this state of activity in our newly acquired channels of infection—the colonial possessions.

The formation of a completely equipped, trained, and drilled volunteer emergency service medical corps is a natural consequence and is inevitable. Such an institution would at once inspire public confidence, allay and dispel all fear and anxiety from the minds of the people, by being ready to serve the community at a moment's notice. This advanced period demands such an energetic and efficient organization as the following excerpt from the constitution of the National Volunteer Emergency Service Medical Corps will prove:

"Its objects shall be to render medical or other aid and relief to the community in event of pestilence, catastrophe, war, etc., by maintaining an equipped, trained, and drilled service corps, to anticipate, prepare, and execute sanitary measures which will insure the health and safety of life and limb of the people. To render aid to injured, transport sick and injured to place of succor, to provide food, shelter, clothing or medical relief and medicines to the victims of calamities as exigencies may require. To encourage the reading and discussion of papers on subjects pertaining to sanitary, medical, medico-military and public health matters; and to place equipments and service at the disposal of civic and military authorities of National or State Government subject to requisition on call.

"There shall be an Advisory Council, whose duty it shall be to act in an advisory capacity on all matters concerning the good and welfare of the organization, guard its interests, and who shall suggest ways and means for improvement or advancement of the objects of the corps. Of which the following shall be ex-officio members: the President of the United States, Vice-President, Secretaries of State, Treasury, War, Navy, Interior, Attorney and Postmaster-Generals, the Judges of the Supreme Court of United States, the General commanding the Army, and Generals commanding the military departments of the United States, Admirals of the Navy, Surgeon-Generals of the Army, Navy, and Marine-Hospital Service, the Governors of the several Commonwealths of the Union, the president and chief health officer of each State Board of Health, the president of each duly incorporated and regularly accredited National and State Medical Society. All of whom shall be ex-officio members while holding their respective official position, and such eminent and distinguished persons whose sentiment is in accord with the objects of the corps and whose wise counsel is beneficial, may be elected by the Executive Board of Administration permanent members."

PERSONNEL.

CLASS A.—CIVILIANS.

The corps to be composed of civilians from the various walks in life (bankers, merchants, artisans, tradesmen, clerks, etc.) who enrol for a period of 5 years as privates of the Hospital Corps and take an oath of fealty and allegiance to the Constitution of the United States, constitution of State and National Government to nonpartisan neutral aid

in emergency as noncombatants, in accord with the articles of the Geneva Convention; and to be governed by the military code and regulations of the corps; they are required to attend weekly or monthly drills, at least 8 in the year (one evening a week or month, optional with the command) for instruction in first aid to injured, common means employed for the urgent relief of the sick or injured; individual and camp hygiene; matters pertaining to epidemics, catastrophes; transportation of sick or injured; litter drill and instruction in military evolution, the senior medical officer of a detachment being responsible for the theoretical and practical instruction of officers, noncommissioned officers and privates of the hospital corps, who will institute a regular school of instruction, and the senior commandant of field service will instruct in military drill and custom.

From the privates of the hospital corps are appointed (after election by their colleagues and examination for their fitness by the proper officers), the commissioned and non-commissioned officers, such as medical officers, adjutants, quartermasters, chaplains, wardmasters, armorers, trumpeters, ambulance drivers, blacksmiths, carpenters, etc.

CLASS B.—MEDICAL STUDENTS.

Medical students who by reason of special education and intended devotion to the treatment of the sick are enrolled on the list of medical cadets and are assigned to a squad of litter bearers for field work, as lance corporal, and are next in line for promotion as acting hospital stewards.

CLASS C.—TRAINED NURSES.

The nursing corps consists of female trained nurses (hospital graduates), who enrol for a period of 4 years and who receive special professional instructions in the routine work of military hospitals, care of patients in special cases, sun-stroke, suffocation from smoke, exhaustion, conduct and care of infectious and contagious diseases, epidemics, quarantine, etc., and who are assigned to duty at shelters, field hospitals, lazarettos, field infirmaries, receiving depots, etc. From this corps could also be available at a moment's notice extra nurses for public institutions in events of immediate necessity, such as sudden accidents or epidemic, where the regular resident staff of the institution is overworked or insufficient.

CLASS D.—GRADUATE PHARMACISTS.

Regularly licensed pharmacists who enrol as privates of the hospital corps are appointed (after examination) as hospital stewards and apothecaries to hospitals, shelters, lazarettos, field-infirmaries, etc.

SERVICE STAFF CORPS.

Consists of qualified physicians appointed from civil life, after medico-professional and military examination; and of retired or honorably discharged surgeons who have been in the service of the Army, Navy, Marine-Hospital-Service, National Guard or State Militia who are assigned to duty and rank respectively:

RANK.	CAPACITY.
Surgeon-Lieutenant.	Acting Assistant Surgeon.
Surgeon-Lieutenant (1st).	Assistant Surgeon.
Surgeon-Captain.	Passed Assistant Surgeon (Senior).
Surgeon-Major.	Surgeon.
Surgeon Lieut.-Colonel.	Surgeon (Chief of Hospital).
Surgeon-Colonel.	Surgeon " "
Surgeon-Capt.-General.	Medical Director.
Surgeon-Major-General.	Commandant Director-General.

ADMINISTRATIVE STAFF CORPS.

Surgeon-Major General, Commandant Director-General.	
Captain-General.	Adjutant-General.
“ “	Judge-Advocate-General.
“ “	Quartermaster-General.
“ “	Commissary of Subs.-General.
“ “	Purveyor-General.
“ “	Paymaster General.
“ “	Inspector-General.
“ “	Chief Sanitary Engineer.

Who are selected from civil life or from ex Army, Navy or National Guard and Military officers by virtue of their recognized integrity and ability, by being specially qualified for the departments to which branch of service they are assigned.

HOSPITAL AND AMBULANCE CORPS.

In order to facilitate the rendering of prompt and efficient service and to insure the proper grade of authority, discipline and regular defined duties, and permit organization on a minimum basis, the corps is divided into a series of working units, and designated according to the strength of each command, thus:

A squad—four privates of the hospital corps, one medical cadet, one nurse, one wall tent, two stretchers, four cots, the unit. A detail, consisting of three squads; a company, consisting of three details; a platoon, consisting of two companies; a battalion, consisting of two platoons; a division, consisting of two battalions; a department, consisting of two divisions. And the consequent complement of extra officers, etc., as the command is augmented.

A DETAIL.

Composed of three squads; 12 litter bearers, 3 medical cadets, etc., 3 nurses, 3 wall tents, 6 litters, 12 cots. Plus—

Additional allowance. { 2 acting hospital stewards,
1 acting assistant surgeon lieutenant,
1 assistant surgeon 1st lieutenant,
1 adjutant sergeant-major,
1 trumpeter,
1 large wall tent, 1 ambulance, 6 litters, 3 cots.

COMPANY.

Composed of three details; 36 litter bearers, 9 medical cadets; 9 nurses; 6 acting hospital stewards, 3 acting assistant surgeons, 3 assistant surgeons, 3 adjutant-sergeant-majors; 3 trumpeters, 3 large and 9 small wall tents, 36 litters, 45 cots, and 3 ambulances. Plus—

Additional allowance. { 3 assistant surgeon-captains,
1 surgeon-major,
1 commandant of ambulance service lieutenant,
1 adjutant lieutenant,
1 quartermaster-lieutenant,
1 commissary of subsistence lieutenant,
1 paymaster-lieutenant,
1 chaplain (no military rank),
1 sergeant ward master-armorer, 1 trumpeter,
1 cook, 4 artificers, 4 teamsters, 1 receiving depot tent, 1 ambulance, 1 material and supply wagon, 1 transport wagon, 4 litters, 5 cots.

PLATOON:

Composed of two companies, 72 litter bearers, 18 medical cadets, 18 nurses, 12 acting hospital stewards, 6 acting assistant surgeon-lieutenants, 6 assistant surgeon 1st-lieutenants, 6 assistant surgeon-captains, 2 surgeon majors, 2 lieutenants commanding ambulance service, 8 adjutant lieutenants, 2 chaplains, 2 quartermaster-lieutenants, 2 commissary lieutenants, 2 paymaster-liutenants, 2 sergeant ward master-armorers, 8 trumpeters, 2 cooks, 8 artificers, 8 teamsters, 6 large wall tents and 18 small, 80 litters, 100 cots, 2 receiving depot tents, 8 ambulances, 2 material and supply wagons, 2 transport wagons. Plus—

Additional allowance. { 8 surgeon-majors,
1 surgeon lieutenant-colonel,
1 commandr. of ambul. serv. captain,
1 adjutant
1 quartermaster
1 commissary of subsistence
1 paymaster
1 chaplain,
1 sergeant ward master-armorer, 2 trumpeters, (one a corporal),
2 artificers, 1 cook, 4 teamsters, 1 field-infirmiry, 4 ambulances, 1 material and supply wagon, 1 transport, 1 baggage wagon, 20 litters and 50 cots.

BATTALION.

Composed of two platoons, 144 litter bearers, 36 medical cadets, 36 nurses, 24 acting hospital stewards, 12 hospital stewards, 12 acting assistant surgeon-lieutenants, 12 assistant surgeon 1st-lieutenants, 12 assistant surgeon-captains, 20 surgeon-majors, 2 surgeon lieutenant-colonels, 6 commanders ambulance service, 18 adjutants, 6 quartermasters, 6 commissaries, 6 paymasters, 6 chaplains, 6 ward master-

armorers, 20 trumpeters, 6 cooks, 20 artificers, 24 teamsters, 36 small and 12 large wall tents, 200 litters, 300 cots, 4 receiving depots, 24 ambulances, 6 material and supply wagons, 6 transports, 2 baggage wagons, 2 field infirmaries. Plus—

Additional allowance. { 2 surgeon lieutenant-colonels,
1 surgeon-colonel,
1 commandr. ambul. serv. major,
1 adjutant
1 quartermaster
1 commissary of subsistence
1 paymaster,
1 judge advocate,
1 sanitary-engineer,
1 inspector,
1 chaplain, 1 ward master-armorer, 2 trumpeters (sergeant), 4 artificers, 1 cook, 4 teamsters, 1 lazaretto, 25 litters, 75 cots, 3 ambulances, 1 material and supply wagon, 2 transports, 1 baggage wagon.

DIVISION.

Composed of two battalions, 288 litter bearers, 72 medical cadets, 72 nurses, 48 acting hospital stewards, 24 hospital stewards, 24 acting assistant surgeon-lieutenants, 24 assistant surgeon 1st-lieutenants, 24 assistant surgeon captains, 40 surgeon-majors, 6 surgeon lieutenant-colonels, 2 surgeon-colonels, 14 commanders ambulance service, 38 adjutants, 14 quartermasters, 14 commissaries, 14 paymasters, 2 judge-advocates, 2 sanitary engineers, 2 inspectors, 14 chaplains, 14 ward master-armorers, 44 trumpeters, 48 artificers, 56 teamsters, 14 cooks, 72 small and 24 large wall tents, 450 litters, 750 cots, 8 receiving stations, 54 ambulances, 14 material and supply wagons, 16 transport and baggage wagons, 4 field-infirmaries, 2 lazarettos. Plus—

Additional allowance. { 1 surgeon-colonel.
1 assist. adjutant-general lieut -colonel.
1 " quartermaster " "
1 " commissary " "
1 " judge-adv. " "
1 " purveyor " "
1 " paymaster " "
1 " inspector " "
1 sanitary engineer
1 com. of ambulance service
1 chaplain, 1 ward-master-armorer, 2 trumpeters (sergt.-major), 8 artificers, 8 teamsters, 15 cooks, 144 small, 48 large wall tents, 50 litters, 250 cots, 1 ambulance, 1 field hospital, 1 shelter camp equipment, 3 material and supply, 3 transport, and 2 baggage wagons.

DEPARTMENT:

Consists of two divisions, 576 litter bearers, 144 medical cadets, 144 nurses, 96 acting hospital stewards, 48 hospital stewards, 48 acting assistant surgeon-lieutenants, 48 acting-assistant surgeon lieutenants, 48 assistant-captains, 80 surgeon-majors, 16 surgeon lieutenant-colonels, 6 surgeon-colonels, 30 commanders ambulance-service, 78 adjutants, 30 quartermasters, 30 commissaries, 30 paymasters, 6 judge-advocates, 2 purveyors, 6 inspectors, 6 sanitary engineers, 30 chaplains, 30 ward-master-armorers, 92 trumpeters, 112 artificers, 128 teamsters, 30 cooks, 144 small, 48 large wall tents, 500 litters, 1,000 cots, 16 receiving stations, 110 ambulances, 34 material and supplies, 38 transports, 16 baggage wagons, 8 field-infirmaries, 4 lazarettos, 2 field hospitals, 2 shelter camp equipments. Plus—

Additional allowance. { 1 surgeon-captain-general medical director,
1 deputy adjutant-general colonel.
1 " quartermaster " "
1 " commissary " "
1 " judge-adv. " "
1 " purveyor " "
1 " paymaster " "
1 " inspector " "
1 " engineer-in-chief " "
1 " com. ambul. service "
1 ward master-armorer; 3 trumpeters (principal musicians), 3 artificers, 2 teamsters, 1 cook, and such other personnel and equipments as may be found necessary.

The uniform is of "cadet gray" cloth, regular brass button blouse, trimmed with green and red, or green and gold, with proper marks for easy and quick identification.

• Commissioned officers wear fly-front coat, trimmed with gold, silver, and green.

The uniforms are at once attractive, serviceable and entirely original, thus easily recognized and memorized as to what organization the wearer belongs.

Such a corps organized and equipped on the preceding military system, disciplined and specially trained, would be ready for any and every immediate emergency service, whether casualty, epidemic, riot, war, parade, or civic function (*at which casualties generally occur*).

With such an ambulance service detail—company, platoon, or battalion—permanently established and located in every city and town in the Union ready to render relief whenever and wherever required, and prepared to be called into requisition at a moment's notice to assist State health boards in the enforcement or execution of sanitary measures, or in the field at the call of civic or military authorities, would inspire the confidence of the people and assure the safety of the community.

Every loyal and public-spirited citizen should consider it a privilege to become a contributing member or annual subscriber of such organization, and the public no doubt would do their utmost toward securing such efficient corps. The vast field of usefulness for such complete body is patent, and needs no further comment, the actual necessity of which is so obvious as to hardly need more than mention to carry conviction to all minds, even such military authorities as are prejudiced against such organizations through their unfortunate and harassing experiences with undisciplined and incompetent private aid societies. It is equally logical to assume that public approbation and support would be proportionate to the actual and prospective benefits to be derived from such organization.

Some opposition might be encountered as to the acquirement of military titular designations. But all objections to that are overcome by the fact that the designations of military rank and title are based upon the nomenclature in use by various governments of the world, thus making the system universal, or rather, international. The corps being an independent military unit for itself, with clearly defined duties and scope of action, characteristic and original uniforms (gray color with green trimmings) which are easily recognized, and in no way conflicting with the appearance of the established Governmental forces extant. This corps would in no way interfere with the work and duties of existing regular military bodies or with National or State organizations, but rather, in case of emergency, encourage and cooperate with them. The clothing, therefore, of its officers with military rank is only for the purpose of giving grade of authority and distinction, which, it must be acquiesced, is absolutely essential and necessary to secure obedience, respect of inferiors, and to facilitate the proper discharge of designated duties. The further reasons for conducting the organization on a distinct military system are apparent, as will be seen, for instance, should the corps be required to take to the field in aid of the civic government in epidemics, etc., the duties required of the special purely military departments are obvious, as will be appreciated by a brief review:

Adjutant's Dep't.

Keeps the records and archives of the organization; its personnel, strength and location of commands; issues orders; attends to the clerical duties of the body.

Judge-Advocate Dep't.

Is the legal advisor of the organization, advises as to quarantine and military law; and is the department to which all questions as to the administration of justice are referred.

Quartermaster's Dep't.

Provides quarters and transportation for the corps, shelter for the victims of calamity; storage of supplies, equipments, etc.

Commissary Dep't.

Arranges and provides for the feeding of the corps when in the field; distributes and purchases food for the victims of catastrophes.

Purveyor's Dep't.

Acts as the expert purchasing agent of the organization, contracts for supplies, equipments, etc.

Engineer's Dep't.

Advises as to laying out of camp and temporary settlements; erection of shelters, securing and purifying water; prepares topographical diagrams of the country; maps; telegraph and field signals, etc.

Paymaster's Dep't.

Has charge of the funds of the organization, its receipts and disbursements, collections, etc.

Inspector's Dep't.

Reports and examines into condition of commands; proficiency and discipline of personnel; condition of equipments, etc.

From the preceding brief epitome outline recital of the facts, there can be no question as to the efficiency and importance of such an ideal institution; such highly efficient public sanitary organization is a befitting monument to public spirit and progress of the century. Without entailing either upon National or State Government the expense of maintaining or equipping, being self-supporting from the revenue derived from subscribing members, no better avenue could be found where philanthropic people are more assured that their money is not misdirected, having individual voice in its disposition, which could not be given to a better cause than that of helping mankind in time of greatest need. Guarded by an advisory council composed of the leaders of the nation, the best disposition of its funds is assured.

With our vast wealth and tremendous population, public spirit, and our country the first in enterprise, which surpasses in energy and leads the world in manufactures, we should not hesitate in showing other nations our advanced ideas and American spirit for protecting and aiding our fellowmen.

The enthusiasm engendered by the recent wars and disasters has not altogether subsided, and the many trials and embarrassments encountered are still fresh in the public mind.

Thus the foregoing rational demonstration of this seemingly stupendous task, is simple enough indeed, if we call to our assistance the aid of that strong factor and moulder of public education, the ever alert public press, which in this advanced and enlightened century reaches the eye, ear, and heart of every loyal wellwisher of our glorious country.

Thus with the voice of the community in favor of this movement, the press of the land could grasp this opportunity to use its tremendous power and influence to disseminate broadcast the call of this movement in aid of public welfare—a magnificent organization, the admiration of the world, which would stand as a unique and perpetual monument to our American spirit and zeal for ages to come.

The Philadelphia Medical Journal

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GEORGE M. GOULD, M.D., *Editor*

Collaborators

JOSEPH SAILER, M.D.

D. L. EDSALL, M.D.

D. RIESMAN, M.D.

J. M. SWAN, M.D.

M. B. TINKER, M.D.

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Organized Defense of Physicians in Unjust Malpractice Suits is one of the most pressing duties of the profession. Such a union has existed in London for several years and has been of the greatest service in preventing blackmailing suits and injustice to honorable physicians, the number of cases having been greatly reduced from that of previous years by the mere deterrent effect of the fact that thoroughgoing defense would be insured to those unjustly assailed. In Minnesota such a union is in active and beneficent operation, limited to the State, and in Canada the plan is under discussion. The only American institution with which we are acquainted, and the territory of which is not limited, is the Physicians' Guarantee Company, of Fort Wayne, Indiana, which is commended by Dr. Reed, the president of the American Medical Association. We trust that organizations undertaking such work under the proper conditions will become popular with the profession, because it is a great wrong when a capable physician having done his duty is subjected to the expense of defending himself, and the wrong becomes infamous when in addition he may lose his case because of inadequate defense. Of course, the greatest care must be exercised by the companies in not defending real malpractice cases.

Intestinal Bacteria and Intestinal Poisons in the Brain as a Cause of Infantile Convulsions.—Intestinal disturbances have often been considered the cause of convulsions in children, but there has been very little direct proof that there was any real foundation for this belief, and the etiology of this condition has not been very satisfactorily explained. Johannes Seitz, of Zürich, in the *Correspondenz-Blatt für Schweizer Aerzte*, 1900, vol. 30, p. 138, reports interesting observations on this subject, together with seven cases in which he has been able to demonstrate intestinal bacteria as a cause of brain symptoms. In this paper he reports at length the case of an infant that had always suffered from gastrointestinal disturbance and constipation. After several attacks of convulsions death resulted and Seitz was able to cultivate from the cerebrospinal fluid of the ventricles of the brain *Bacillus coli communis* together with several other intestinal bacteria. For some time the strength of the little patient had enabled it to overcome this source of cerebral irri-

tation, though the symptoms of vomiting, unrest, and pain were present, but sudden death resulted from respiratory and cardiac paralysis. Seitz mentions several publications in which he has called attention to this subject previously, the earliest publication having appeared in the same journal as the present publication in 1895. In all he has observed 15 cases in which he believed there was evidence of this origin of the cerebral symptoms, and in seven cases bacteria from the intestine were directly demonstrated. In the other cases it is quite possible that the symptoms were caused not by bacteria directly but by bacterial poisons. The bacteria were discovered only after the most thorough examination and they were usually present in small numbers. Staphylococci, streptococci, and members of the colon group were most frequently found.

Although Seitz first published his observations so long ago as 1895, and has subsequently called attention to the subject in two other well known journals, his work does not seem to have attracted much attention or to have been confirmed by other observers. His report of this case is fully given and shows evidence of careful work. The observations are suggestive, and if confirmed, may be helpful in explaining several rather obscure conditions whose etiology has been thus far imperfectly understood.

Of the baleful possibilities of alcoholic indulgence medical men need no extraprofessional evidence. To it can be traced no small measure of crime, disease and death. The appeal of the commander-in-chief of the British forces in South Africa that the welcome of the troops returning to England "may not take the form of 'treating' the men to stimulants in public houses or in the streets and thus lead them into excesses which must tend to degrade those whom the nation delights to honor," is therefore both timely and judicious. There may be legitimate differences of opinion as to the physiologic activity and the therapeutic utility of alcohol, as to what constitutes temperate or moderate and what excessive indulgence, but none will deny that those who abstain are on the safe side and assume no risk.

The definition of the word "operation" would, at first, seem sufficiently clear, and yet, when rigidly scrutinized, it is by no means so. A recent medicolegal

case brought several errors and indistinctions to the attention, and upon collating and classifying the definitions given in a large number of lexicons we find noteworthy differences and mistakes. All but one or two incorporate one or more errors, and there is one that gathers and endorses all of the five following inaccuracies:

1. An operation is performed by an authorized surgeon or by a legalized practitioner of medicine. An instant's attention shows that an operation may be performed by a nonmedical person.

2. It is performed by one person upon another who is the patient. But, as we all know, an operation may be performed by and upon oneself.

3. It is performed by means of surgical instruments. Operations, however, are performed every day without instruments.

4. It is manual. But every surgeon knows of operations done without the use of the hands.

5. It is with the object of relieving disease or restoring health. And yet in cosmetic operations, in vaccination, in criminal abortion, and in malingering, the object is not the restoration of health.

In the presence of these criticisms almost the only definition that will undergo testing is the simple one that an operation is *a surgical act* (or *procedure*). The essence of the matter appears to be expressible by one word which no dictionary, so far as we know, has caught. The distinctive difference between all other therapeutic measures and surgical ones resides in the word *mechanic*. This is manifest in the etymology of the word *surgeon*,—*one who works with the hand*. But though a surgical act may be carried out by other means than the hands, the nature of the procedure is mechanic in contradistinction to other means essentially chemic or physiologic.

The Epidemic in England of Peripheral Neuritis Traced to Arsenical Contamination of Beer-making Materials.—The official report (see *British Medical Journal*, December 8, 1900) of Dr. James Niven, Medical Officer of Health for Manchester, to the Hospital Subcommittee of the town on the outbreak of the arsenical poison, states that about 1,000 cases have been notified by medical men, and about 700 have been sent to the union hospitals. Allowing about 300 cases for which no returns have been made, there have been at least 2,000 cases seen by the physicians of the district.

Dr. R. D. Cran, medical officer of health, third district, Salford Union (in explanation of the terrible dimensions which the epidemic has reached), remarks on the difficulty of diagnosis in the early cases. During the past few months a gradually increasing number of cases of peripheral neuritis came under his charge which he attributed to some poisonous substance in the beer, clearly not lead, but which he did not feel justified in stating to be arsenic, as no rash was visible in

any of the cases. For some months he had had patients coming to him with peculiar skin eruptions, but he did not link the two series of cases, and in none was there any marked sickness or diarrhea. The majority of these cases of peripheral neuritis occurred in persons in whom it was nearly impossible to distinguish between the almost uniform darkening of the skin due to arsenic and that due to dirt, without closest examination, preceded by vigorous application of soap and water. It was only toward the later periods of the epidemic that cases began to emerge from the typical alcoholic type, with loss of memory and the peculiar waking dream-like state.

Although the cases of multiple neuritis have been less numerous in Liverpool than in Manchester, there has been a decided increase, and the symptoms correspond with those of beriberi, and it is remarkable that in all cardiac enlargement with a marked increase in the pulse was present. An investigation of the urine by Dr. John Hill Abram and Dr. Nathan Raw showed the presence of arsenic. Upwards of 1,100 barrels of beer have been emptied down the sewers.

In Heywood, Lancashire, in the last 6 months, 200 or 300 people have suffered from peripheral neuritis. Early in June a number of cases claimed the attention of the medical officer, and as close inquiry revealed that the sufferers invariably took beer or stout, an inspection was made of the brewery vats and pipes. Not only the heavy drinker has suffered, but those who took only from 1 to 2 pints daily. As soon as Dr. Reynolds' discovery was known, samples of beer and stout were analyzed and arsenic was found in some of the samples. He finds it difficult to believe that 0.04 gr. of arsenic per gallon could produce such serious symptoms in persons taking only a pint a day.

At Bacups the case of child, aged 2, is reported by Dr. John Brown. Her father keeps a public house and she was accustomed to get little sups of beer from the customers.

In 4 distinct cases of peripheral neuritis he examined the beer and found arsenic present, in some cases in dangerous quantities. Out of 14 different samples 12 showed distinct evidence of arsenic.

At Darlastan, South Staffordshire, 50 cases which came under the notice of Vincent J. Magrane were mostly ushered in with vomiting, diarrhea, severe abdominal pain, and urticaria, and all were among beer-drinkers of various classes.

William A. Newall and John R. Prytherch, of Chester, believe that some of the cases of peripheral neuritis are due to beriberi, and there seem to be no restrictions regarding the landing of sailors from ships affected with beriberi.

Pigmentation in the cases presenting the most typical symptoms of beriberi were very slight or absent, and in others it came on several weeks after admission to hospital where arsenic had not been prescribed nor

beer given. None of the cases presented inflammatory lesions of the skin.

Newall and Prytherch are of the opinion that the present epidemic is due to some other cause than the arsenical contamination of beer—inasmuch as the amount of arsenic found in the analyses, varying from 0.01 to 0.28 gr. per gallon, does not constitute a dangerous contamination—and they note also the general absence of diarrhea. They record the ingestion of 6 pints of beer daily by men in a district supplied by 5 different breweries without any peripheral neuritis. Of the cases under their notice some were in total abstainers.

The increase of insanity among soldiers in the tropics has been the theme of much exaggerated comment for political purposes by vicious newspapers, yet it may be equally wrong to deny that there has been any increase. The report of the Surgeon-General of the army shows that tropical service in Porto Rico in 1899 caused 3.76 cases per 1,000, while in the United States the rate was only 1.37. For the whole army the rate for the ten years prior to 1898 was 1.7, but in 1898 it rose to 1.8, and in 1899 to 1.78. These figures may denote a great increase in the number of cases in the army which saw service abroad, for they are based upon the whole army strength which in these two years contained at least 100,000 men who served but a very short time and that in the home camps, and those that did go abroad had short tours as a rule. It is also said that many cases recover during the sea voyage home, and the number of cases officially reported is less than half of those actually insane. It has also been said that the cases of less severe mental failure, particularly in the older men, have been appallingly numerous. As these cases never appear in the reports, it is quite likely that the real facts will never be known. On account of the large percentage of recoveries among the younger men, there has even been a disposition to deny that they have been insane.

The real truth seems to be midway between these two extremes. All the cases appear to be cerebral exhaustion due to tropical diseases or the climate or the worries of the campaign, and, according to the severity of the exhaustion, the symptoms vary from simple loss of mental vigor to depression, nostalgia or actual melancholia or even the dementia of a permanent senility. Only those in whom the exhaustion has passed the limit of recuperative power are incurable, and these are to be expected mostly among the neurotic and the aged. In the press notices of the report of the chief surgeon at Manila it is stated that the sick report is increasing and that there is no hope of a decrease, because the soldiers are becoming more and more exhausted instead of becoming acclimated.

The lesson to be drawn from the facts would seem to be, that the coming reorganization of the army should

be of such a character that officers and men could be sent home as soon as they show signs of exhaustion and that they should not be kept there until they are too far gone to recuperate. If the Philippines are to be retained it looks as though there would have to be a constant stream of fresh officers and men sent there to replace the exhausted.

Suggestions to Writers, No. 63. Concerning the Accent, the Retrocession of Accent, the Elision of Syllables, and the Shortening of Words.—In a preceding article was noticed the power of emphasis of a chosen word in a sentence to change the meaning of the sentence. In the same way the accentuation of different syllables in a word may be used to lay stress upon a chosen aspect. For instance in a metaphysical discussion one may contrast or bring out his meaning better by strong emphasis of the first syllable of *immateriality*, or of *materiality*. One may say, "this is a car'cinoma, that a sar'coma, that an en'chondroma," although usually one would accent the penult. Such usages, however, serve to make it clear that a freedom of location of the accent in a word like that of a word in a sentence is for the most part lost. When, or for what purpose, the accent in English was deprived of freedom and chained down to a certain syllable in each word, are questions probably beyond clear solution. In some languages, for example, the French, there is no accentuation of syllables as commonly pronounced, and other things render the accent impossible even when desired. But in English another extreme came about, of always demanding an accent somewhere and often rendering the least important of all syllables the accented one. The logical method of accentuation, if every word must have an accent, would have been to put the stress upon the root or stem, upon the syllable which was the heart of the word and conveyed the essential and primitively significant thought. Instead of that the old English language-makers seemed to clap it down by rule of thumb, or mechanically, regardless of primary, secondary, or tertiary importance, thus serving to take much of the freedom and life out of the tongue. At present, however, we are apparently unconsciously, but still effectively, taking back the liberty of which we were deprived, at least we are taking liberties with accentuation that are highly interesting. Among other tendencies observable is an escape from the obligation of accenting some syllable of every polysyllabic word—as if otherwise it would not be full-fledged and respectable. In many compounds as usually pronounced there is no accented syllable whatever, or it is only slightly accented, or there is an imperfect double accent, *e. g.*, *cerebrospinal*, *adenocarcinoma*, *arteriosclerosis*, etc.

The retrocession of the accented syllable in a word is the most noteworthy fact in this connection. To be entirely aristocratic nowadays a word must not show a

penultean accentuation,—that is too plebeian. We remember a revered professor who vainly protested against this new fangle by an especially powerful accent upon the penult in *revenue*, *somnolence*, *recognize*, etc. Once, doubtless, we should have said *formida'ble*, at a later time, *formid'able*, while today the accent is placed on the first syllable. *Par-e'-sis* was once common; it is now *par'-e-sis*. And it is the same with thousands of words, in which the tendency is discernible toward a retrocession of the accent to the antepenult and even to syllables preceding that. For purposes of contrast we may even throw it back to the fifth, sixth, or seventh syllable, as in *homogeneity*, *heterogeneity*, *materiality*, *immateriality*, etc., etc. In some long compounds it may be a dozen or two stations before the end of the word. Now what is the result, the subtle logic hidden in this retrocession of the English accent? We suspect the same wisdom will be found, more unconscious, perhaps, but still a prerequisite of the evolutionary mechanism, in the merciless placing of the accent somewhere. Both facts indicate a husbanding of force, a comparative indifference or neglect of relatively unimportant syllables. In thousands of words we have elided a useless letter, although we still write *infra-abdominal*, *interrelation*, etc. We might wisely write *infrabdominal*, *interelation*, etc. This need and determination to shortcut and condense has served to make English the most concise of all languages, and the American has vowed to speed the process at double quick. How long will it be before the best dictionaries must regretfully and cynically chronicle *phone* without an apostrophe, and *wire* without quotation-marks? Willynilly, the conservative Englishman must henceforth *trek* into new etymologic lands and *outspan* where old linguistic customs must be renounced. A boorish philology may intolerably trouble a very aristocratic conqueror and may, as has often happened in the past, supremely dominate him—philologically! "We must educate our masters," is one method of concealing from ourselves that we have been defeated, and that "our masters" are right. It seems to us that the retrocession of the accent is simply one way of condensation by emphasizing one syllable toward or at the beginning of a word and belittling the rest, in many cases hustling them out of sight, in others utterly cutting off the useless tail. The more the accent is shoved toward the beginning of a word the less, when quickly spoken, one hears about all the syllables that follow after, until some are half-ignored, fused, or even lopped off entirely. The etymologic, perfectly proper three-syllabled *thyreoid*, *choreoid*—who ever pronounces them except with two syllables? After we have said *for'midable* for a few years the *a* will be pronounced even less than it is now. After many generations of useless iteration people grew tired of *scientific*, *publical*, *domestical*, etc., and those who would so write them now would be laughed and sneered at by

people whose ancestors would have made merry at *scientific*, etc. We have all grown tired of *publically*, rightly holding *publicly* to be preferable. Sometime, likewise, we shall recognize that to adverbialize a thousand words we need not insert the *al* which we have cut off as adjectives, but can insert the *-ly* directly, as, *e. g.*, *allopathicly*, *homeopathicly*, *scientificly*. The retrocession of the accent will help us to do this and many other good things. In accentuation we have already traveled backward in *allopathy*, and in *homeopathy* to the antepenult, and it may be doubted if *al'lopathy* is not the more common and the better pronunciation. If so, *ho'meopathy* is inevitable. As no one would raise a finger in aid of *homeopathical* and *eclectical* and *osteopathical*, let us not be dogmatically and allopathically antipathic but homeopathically assent? If Hahnemann had applied the dogma *similia* to linguistics instead of to medicine, he would have been far more successful as a philologist than he has been as a therapist.

Mosquito Inoculations of Yellow Fever.—We are in receipt from the War Department of copies of the following telegrams received at the Surgeon-General's office from Major Reed with reference to his mosquito inoculations in yellow fever:

TELEGRAM.

COLUMBIA BARRACKS, December 15, 1900.

SURGEON-GENERAL, Washington:

Experimental station established November 20; 3 cases already; diagnosis in 2 confirmed by Guitéras, Finley, Albertini, and Gorgas; theory conclusively proved.

(Signed)

REED.

TELEGRAM.

COLUMBIA BARRACKS, Cuba, December 16, 1900.

SURGEON-GENERAL, Washington:

Four cases all within period of incubation, diagnosis confirmed in each case by Guitéras and others; inoculation successful in 80%.

(Signed)

REED.

Encysted Periurethral Growth.—Huger (*Maryland Medical Journal*, October, 1900) gives the history of a man of 70, who when young had several attacks of gonorrhea and in recent years had several times passed gravel from the bladder. While voiding urine he felt a hard body passing from the bladder along the urethra. It stopped suddenly with some pain and a blocking of the urine. No blood was passed. Soon the bladder became distended and there was great desire to urinate. A rubber and then a silver catheter failed to dislodge the foreign body. The patient reported that subsequently he passed a gravel, but was still unable to pass urine. Under local anesthesia an incision was made into the urethra, where a hard body could still be felt. The cut revealed a collection of gravel in the aggregate the size of a buckshot in the periurethral tissue. The mass was completely cut off from the urethra, but produced a bulging into the urethra sufficient to stop for a time the gravel which was passing. The author is of opinion that there had existed a stricture, and the pathologic condition posterior to this had led to the opening of several ducts into which the small gravel collected, granulations and new-formed tissue encasing them. The retention of the urine after the passing of the gravel is explained by an enlarged prostate and the condition of the bladder. [A.B.C.]

Reviews.

Studies in the Psychology of Sex. The Evolution of Modesty; The Phenomena of Sexual Periodicity; Auto-Erotism. By HAVELOCK ELLIS. Pages xii, 275. Sold only to Physicians and Lawyers. Philadelphia: F. A. Davis Company, Publishers. Extra Cloth, \$2.00, net.

The title of this volume expresses its general object, which is not, we believe, to feed a prurient and morbid taste under the guise of medical science, but to study in a serious manner the problems chosen. Many will doubtless disagree with the conclusions of the author, but those interested will at least find in the book a valuable contribution toward the elucidation of many obscure questions.

Diseases of the Heart, Bloodvessels, Lymphatics, Blood, and Ductless Glands. A wall chart. Published by M. J. Breitenbach Company, New York.

We are glad to see that pharmaceutical manufacturers are adopting methods of advertising more in consonance with professional and scientific standards. The waste of money, the tactlessness, and utter incongruity of much of the past advertising addressed to the medical profession have not been proofs of soundest judgment or of the best professional spirit. For these reasons we are pleased to note such an excellent attempt to epitomize the knowledge of the subjects and diseases presented by this wall chart. There is nothing said as to treatment, and, so far as we can see, the pathology and symptomatology are correct. We are also pleased to note American spelling.

Masters of Medicine: Thomas Sydenham. By JOSEPH FRANK PAYNE, M.D., Oxon., Fellow and Harveian Librarian of the Royal College of Physicians, Late Fellow of Magdalen College, Oxford. New York: Longmans, Green & Co.

Physicians will welcome this latest addition to the famous series of Masters of Medicine, issued in such excellent style from the press of Longmans, Green & Co. Considering that the constant complaint of all biographers of Sydenham has been the paucity of material, the present biographer must be congratulated upon the industry that has enabled him to produce the comprehensive volume which so systematizes and adds to the knowledge of this great man. Many of the facts have been obtained only through long and painstaking research through old records, and the volume throughout is compiled from original records, whether previously quoted or not. The indexing and bibliography of the volume is most excellent, and the literary style is beyond cavil.

A Manual of Medicine. Edited by W. H. ALLCHIN, M.D., Senior Physician and Lecturer in Clinical Medicine, Westminster Hospital; Examiner in Medicine in the University of London, and to the Medical Department of the Royal Navy. Vol. I: General Diseases. Diseases Excited by Atmospheric Influences and the Infections. 8vo, pp 441. New York: The Macmillan Company, 1900. From John Wanamaker's. Price, \$2.00.

This manual is comparable to the systems with which we have in recent years been made familiar. The present volume, dealing with general diseases, is made up of articles written by 22 contributors, including the editor. The authors are principally well-known Englishmen, distinguished for their original observations with regard to the subjects on which they write, and the articles, while compendious, bear a certain stamp of authoritativeness. The scope of the work is defined as consisting in "an account of the various forms of disease, more especially from the point of view of their clinical manifestations and treatment. The subjects of etiology and morbid anatomy are briefly summarized, and . . . the aim has been to present such a picture of the several maladies as will conform to the appearances detected

at the bedside, and to enable the observer rationally to administer such treatment as our art affords." The volume is of convenient size and clearly printed.

Anleitung zur Diagnose und Therapie der Kehlkopf-, Nasen- und Ohrenkrankheiten. By RICHARD KAYSER, M.D., Breslau, 1901. A Guide to the Diagnosis and Therapy of Laryngeal, Nasal, and Aural Diseases. Breslau: Richard Kayser, M.D., 1901.

This book is designed for the use of those who take a polyclinic course and desire to inform themselves rapidly concerning the essentials of laryngology and otology.

Methods of examination are carefully described, and the portion of the book dealing with laryngoscopy in children is especially worthy of note. The book contains nothing that would prove of interest to a laryngologist or otologist, but simply places well-known facts in a shape to be rapidly learned by students. The therapeutic portion of the work is not likely to be recommended by teachers to their classes, as laryngologists differ so greatly in the details of nose, throat, and ear treatment, and each one likes to teach his own methods. Kayser relates his in such a general way that it is hard to see how his brief descriptions, lacking all detail, can be of use even to guide postgraduates in their studies. For instance, the entire subject of septal deformities is crowded into the space of a little over a page. An attempt has been made to assemble so many subjects in the 159 pages of the book that the author has succeeded in slighting all but a few of them in a remarkable manner. The book does not seem worthy of so able an author.

Diseases of the Nervous System. By H. OPPENHEIM, M.D., Professor at the University of Berlin. Authorized Translation by EDWARD E. MAYER, A.M., M.D., Pittsburg, Pa. First American from the Second Revised and Enlarged German Edition. J. B. Lippincott Co, 1900.

American neurologists will doubtless be pleased to have a translation of Oppenheim's work on diseases of the nervous system. The work itself does not impress us as being more acceptable than any of our best American and English books on the same subject; but we must reflect that in writing a conventional textbook an author is of necessity restricted in the execution of his plan. It is difficult for him to be widely original, because he must travel a beaten track, and do over again what many others have done before him. In the performance of this task the author has been successful, and has produced a book which is both valuable and interesting, and yet is not particularly noticeable for its individuality. We cannot, of course, attempt to criticise it in these columns, but must content ourselves and our readers with a general impression. The book is marked by thoroughness in its pathology, and by much more therapeutic zeal than is usually found in a German writer. In fact, the treatment is quite optimistic and given with a detail that is hardly surpassed in any textbook. With all this the book is written from the latitude and longitude of Germany. The work of American neurologists receives but scant notice, and nothing like justice. This is noteworthy, because the reverse is just the opposite of true; German writers being sought and quoted in this country with a zeal that is not always tempered with knowledge and judgment. Oppenheim's book, we should say, will be a satisfactory addition to our already long row of neurological textbooks, especially as its writer has already achieved an excellent reputation as a neurologist.

Malaria in Italy.—It is reported that Prof. Celli and others interested in eradicating malaria from Italy are framing measures to present to the Chamber, making punishable by law the neglect of landed proprietors and all employers of labor to provide, in malarial districts, every means of fighting the fever. Another measure provides for the government supplying quinin to the public at a little more than cost price.

Correspondence.

PRESERVATIVE EMBALMING FLUID.

By JOHN S. MILLER, A.M., M.D.,
of Denver, Col.

Demonstrator of Anatomy, Gross Medical College.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

I HAVE used Professor Addinell Hewson's "preservative injection for the embalming of human bodies" for dissecting-room study, the formula of which was recently published in your journal. This preparation is all that Dr. Hewson claims for it. It is a most valuable aid and comfort to the anatomist. When one enters an anatomical room where this formula has been used, he is at once impressed by the absence of the foul odors commonly found. Another feature is the life-like appearance of the cadaver, the subject looking better, perhaps, than in life, and to the touch the tissues are soft and pliant. The same natural appearance persists throughout the dissection. The most delicate white nerve fibers can be traced to their termination. At first it was suggested that the escaping vapor from the formalin (a constituent part) would cause severe bronchial irritation in the dissector. This is not the case, as the vapor of formalin is rapidly dissipated by volatilization. The value of Hewson's solution can be fully appreciated by those anatomists who remember the old zinc chlorid solution which bleached the tissues and caused shrinking and hardening of same.

COINAGE OF NEW WORDS.

By JOSEPH DAVIDSON, M.D.,
of New York.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IN the issue of the JOURNAL of November 17, Dr. D. Riesman proposes the coinage of certain new words, to be incorporated into the English language, and incidentally contribute to the felicity of medical phrase. The ready adoption of these new words would, in my opinion, establish an undesirable precedent. It is true the English language lacks that quality for word-formation which is peculiar to the German language, but for this the superior wealth of its vocabulary is sufficient compensation. There does not seem to be any necessity for "apeioration" when we can render the meaning of *Verschlimmerung* by such words as *deterioration*, *aggravation*, *exacerbation*, and others, according to the sense in which it is employed, if indeed it must be rendered by a single word at all. There are many terse and sententious English words for which there are no equivalent single German words. In spite of its etymologic analogy, "Apeioration" (Ger. *Verschlimmerung*) would not be the exact antonym to *amelioration*, for which the German is rather *Linderung* than *Verbesserung*, while *Verbesserung* is *betterment*, *amendment*, etc., and *Besserung* is *improvement*. Not any less dispensable seems to me the newly-formed word "parvify" and "parvification," from the Latin *parvus*, *facere*, as opposed to *magnify* (from *magnus facere*) in preference to *minify* (from *minus facere*) for the German word *verkleinern*, which may also be variously translated as *belittle*, *disparage*, *diminish*, *decrease*, etc., according to its meaning.

Why, after all, should the German language be made the standard for the English language? Therefore, why not "draw upon the English language as long as it can stand the strain?"

ARE DOCTORS' NAMES WORTH MENTIONING?

By JAMES H. McBRIDE, M.D.,
of Pasadena, Cal.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

MEDICAL journals seem to be adopting, or have adopted, the practice of referring in their abstracts to authors of medical articles by their surnames, omitting their initials. If an author is to be properly identified his initials should be given. I saw lately in a medical journal that Sachs said so and so. Did this refer to Dr. B. Sachs of New York, or to some Dr. Sachs in Germany, or some other of the 11 of that name in America? The reader is entitled to know and he can only know when the name of the author, not half of it, is given.

There are 35 McBrides practising medicine in the United States. They are, of course, all generous and thoroughly good fellows and yet not one of them but would wish to have his name mentioned in full in a medical journal when mentioned at all. Think of some reviewer saying McBride says so and so, and thus scattering the credit that belongs to one into nine States and among 35 names. When I write a good thing, which, of course I rarely do, I wish to have credit for it; the very rarity of the feat makes me the more anxious that my work be properly credited.

Imagine writing Mitchell for Weir Mitchell, or DaCosta for J. M. DaCosta. There are other DaCostas and Mitchells who might do something worth mentioning. Think of their honors being swallowed up by those continental reputations in Philadelphia. The other DaCostas and Mitchells must have chilly sensations when they think of it.

Initials testify to the progress of the race; they were used to designate men as particular individuals when it came about that the individual was worth mentioning because he amounted to something.

Of all the minor possessions that man has gained during the toilsome centuries, there is none that confers upon him more of what is strictly an individual character than the little letters he puts before his surname. Not even his hairless body, nor his erect spine, nor the house he lives in, nor his bank account, nor his oratory, nor the books he writes, mark him off from his fellow men; but his initials do, and in this hurrying life he is at least entitled to the brief distinction of a name, one that will enable the world to identify him.

BIRTH OF AN ANENCEPHALIC MONSTER, FOLLOWED
TWO YEARS LATER BY ONE OF SPINABIFIDA
WITH CONGENITAL ABSENCE OF THE OCCIPUT
AND DOUBLE TALIPES VALGUS.

By A. M. DAVIS, M.D.,

Pathologist to the Germantown Hospital.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

PATIENT J. R., aged 34 years; married at the age of 26; had the usual diseases of childhood, but was always otherwise healthy. All history of alcoholism or venereal disease absolutely denied by both parents. Her children were born as follows: First child—10 months 2 weeks after marriage—healthy; second child—17 months 2 weeks after first—healthy; third child—2 years 3 months after second—healthy; fourth child—2 years 1 month after third—healthy; fifth child—3 years after the fourth—healthy. These children are living at present and show normal development. Two years after the birth of the fifth child, a miscarriage occurred during the third month of pregnancy, immediately after a severe fall; recovery was rapid and uninterrupted. One year after the date of miscarriage her seventh child was born after

an apparently normal pregnancy, fetal life being felt at the beginning of the fifth month. Labor began at 3 A.M. and terminated naturally at noon of the same day, the presentation being that of face with left matoanterior position. The child was a typical anencephalic monster with absence of both hemispheres, prominent eyes, and broad neck. Breath-sounds and heart-beats were present at the time of birth, but ceased a few minutes after the termination of labor. The weight and dimensions of the body were normal with the exception of the cranium. The placenta was found to weigh less than 1 pound, the lobules being interspersed with much connective tissue; the cord was centrally inserted.

The eighth delivery occurred 1 year and 10 months after; when 2 months pregnant a severe uterine hemorrhage occurred suddenly without apparent cause and without pain, the amount of blood lost being from 1 to 2 pints. One month later a second hemorrhage occurred in the same manner, being not quite so profuse as the first. From this time onward pregnancy progressed normally, fetal life having been first noticed the beginning of the fifth month. After a short labor of 7 hours a female child was born at term in the L. O. A. position, vertex presentation. The body was 53 cm. in length, and weighed 8 pounds. The position and size of the internal viscera were apparently normal. From the fourth dorsal vertebra to the sacrum the spinous processes of the vertebra were absent, the transverse processes being spread outward, thus greatly increasing the transverse diameter of the column. The meningeal coverings of the cord protruded in a sac, which contained a quantity of cerebrospinal fluid. The integument on either side of the spine was entirely wanting over the erector spinae muscles, their fibers being plainly visible.

An examination of the cranium showed it to be apparently normal, with the exception of entire absence of the occiput, the brain being felt distinctly beneath the skin as a soft pul-taceous mass; reflex action, produced by irritation of the exposed medulla (Herrgott's sign), could not be obtained.

Both feet presented marked talipes valgus and the left patella was entirely absent, allowing free articulation antero-posteriorly.

The child was apparently well nourished at birth, but nursed poorly and died at the end of the third week. Motion and sensation were present over the entire body until death.

The case seemed of interest because of the two anomalous births immediately following the other and the negative etiology.

CHOLECYSTOTOMY FOLLOWING EXPLORATORY INCISION FOR APPENDICULAR ABSCESS.

By G. C. KILGORE, M.D.,

of Allen, Pa.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

MRS. H., aged 27 years, mother of 5 healthy children, youngest 5 months old, previous health good, complained of cramps in the stomach at intervals of from 2 to 3 weeks, the attacks increasing in severity, but yielding to treatment consisting of free catharsis, local application of hot turpentine stupes, morphia, in sufficient doses to relieve the pain. June 26 the patient was taken suddenly with violent pain in the right epigastric and hypochondriac regions, acute nausea, and vomiting, temperature rapidly rising to 104°, marked tympanites and peritoneal tenderness being present.

The attending physician diagnosed the case as acute gastritis and enterocolitis and instituted the routine treatment for same. Four days later I was called in great haste to see the patient and found her suffering great pain, temperature 104°, pulse 140 and very weak; I was told that she had been unable to retain any food on her stomach since the onset of the attack, and that she had several chills during the day. Physical examination revealed a moderately distended abdomen with marked tumefaction. About 2 inches above, and 1 inch to the left of McBurney's point, I palpated what I supposed to be a pus-sac of possible appendicular origin, and as the patient continued to have marked chills and was constantly growing weaker, I decided to operate without delay. I made hasty, but as thorough preparation as was possible

for an aseptic operation, and with the able assistance of Drs. Phillipy and Diven, of Carlisle, Pa. I made an incision above and to the left of McBurney's point, and found the intestine distended and inflamed, and the gallbladder greatly enlarged, and closely adherent to the gut. I carefully broke up the adhesions and made an incision about 1½ inches in length, through the neck of the gallbladder, and evacuated about a teacup full of pus, and a large quantity of serum, introducing my index finger I succeeded in extracting 11 gallstones of large size and several smaller ones, after which I irrigated with a normal salt-solution and closed the incision with catgut-sutures. I washed the abdominal cavity with a hot saline solution and hastily closed the incision with silkwormgut, not taking time to suture the peritoneum and fascia separately, but included all of the structures with the interrupted suture in order to hastily terminate the operation. After powerful stimulation the patient reacted and her strength was maintained by rectal alimentation for the next 6 days during which time she suffered only from hiccoughs. I would add that ice was constantly kept upon the wound, and that the wound healed by first intention. The patient made an uninterrupted recovery, and was able to sit up at the end of the fourth week, and she now enjoys the best of health.

It is not with the intention of adding anything to the knowledge of abdominal surgery that I report this case, but it demonstrates what may be accomplished by the general practitioner of the rural districts, even where the environments are bad, and no trained nurses, or hospital equipments are at hand.

During my brief experience as practising physician here in the country districts, I find the people greatly opposed to all surgical procedures however slight they may be, and this I believe to be occasioned by too great conservatism on the part of the country physicians, and I think it the duty of every regular practitioner to proceed fearlessly in those cases where operative measures are demanded, instead of catering to the popular demand of the people for medicinal treatment only.

The Treatment of Tuberculosis of the Larynx.—

R. Imhofer (*Prager medicinische Wochenschrift*, October 4, 1900) discusses the treatment of laryngeal tuberculosis with special reference to removal of the ulcerated area. In some of the milder cases the application of lactic acid is sufficient, but if there is considerable infiltration, curetment is essential. He advocates the use of Krause's double curet for most cases. In rarer cases Landgraf's curet or a simple curet may be employed. Krause's instrument consists of 2 cutting rings which bite off tissue like a forceps. Two instruments are made of this kind, one of which cuts in a sagittal, the other in a transverse direction. It is necessary to carefully anesthetize the area which is to be excised and a 20% to 25% solution of cocain is recommended. Then by the use of the curet the diseased tissue is removed. It is important that the exact location of the instrument should be carefully determined by the laryngeal mirror before cutting. The hemorrhage in these cases he finds insignificant. Many patients who are suffering from severe pain, difficulty in respiration and in swallowing, and who have come under treatment in a condition considered hopeless, have been enabled to take nourishment without pain, and their respiration has become easier, and their general condition much improved. Imhofer believes that recovery is possible, even in severe cases. The duration of the process of healing depends upon the severity of the case. On an average it is about 6 months, and even then recurrences must be expected in many cases. Imhofer concludes that the surgical treatment of laryngeal tuberculosis is the most successful of which at present we have knowledge. A bad general condition and advanced local disease is no contraindication to the treatment. By this method of treatment the patient can suffer no harm, and there are possibilities of great improvement. Laryngeal phthisis, even in the advanced stages, he considers a curable disease. [M.B.T.]

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Calendar of Meetings of Philadelphia Medical Societies for the week ended December 29, 1900:

Monday, December 24—Neurological Society.

Wednesday, December 26—County Medical Society.

Thursday, December 27—Pathological Society.

A hospital for children will be erected at McKeesport by a request of Mrs. Pauline Auberle. Catholic charities also received \$250,000.

Entertainment at Jewish Hospital.—A musical entertainment was given recently to the inmates of the Philadelphia Home for Aged and Infirm Israelites at the Jewish Hospital.

The University of Pennsylvania recently received \$4,000 from a friend whose name has not been made public for the equipment of a physical laboratory in that institution. A fund of \$500 was also presented to be devoted to prizes.

Diseased Cattle Sent to New Jersey.—Suit has been brought against the Trenton Abattoir Company by the Board of Health of Trenton to collect penalties for bringing diseased cattle into the State. Recently 20 cows from Bucks county, Pa., were condemned as tuberculous and killed.

Impure Borax.—Steel manufacturers and wholesale druggists of Pittsburg have been cooperating for some weeks in the detection of the adulteration of borax, of which about 10 carloads are used in that city every week, largely in the making of steel. It has been found that 60% of the borax furnished to Pittsburg has been adulterated to the extent of from 40 to 65%. A crusade against this resulted in 20 arrests in Pittsburg last week.

Students of Medicine in Philadelphia.—The following is a list of the total number of students enrolled in the colleges of Philadelphia for the year 1900-1901: Jefferson Medical College, 752; University of Pennsylvania, Department of Medicine, 566; Department of Dentistry, 416; Medico-Chirurgical College, Department of Medicine, 416. Department of Dentistry, 120, Department of Pharmacy, 63; Woman's Medical College, 164; Philadelphia Dental College, 398; Pennsylvania Dental College, 298; Philadelphia College of Pharmacy, 442. This makes a total of 1898 students of medicine, 1224 of dentistry, and 505 of pharmacy.

Hospital for the Tuberculous.—With a view to raising \$10,000 for the purchase of a city home and a mountain site, the managers of the Free Hospital for Poor Consumptives of Philadelphia have just issued an appeal to the charitably disposed public for contributions, and an effort will be made to get the desired amount in a short time. The president of the institution, Dr. Lawrence T. Flick, calls attention to the fact that the idea of furnishing care and treatment for poor tuberculous individuals originated and was first put into execution in this city, and that the death-rate from this disease has been reduced one-third in this city since 1884. The organization is now spending \$1,000 a month for the board of tuberculous patients, this amount being raised by voluntary contributions.

The State Board of Health in its recent annual report states that the most important subject of legislation at the present time is the institution of safeguards for public water-supplies. The last legislature recognized 2 facts: First, that the State has a right to exercise control over public waters and to forbid their pollution; second, the State Board of Health is the proper body to enforce this authority. This law applies only to cities of the first class and efforts are being made to have it extended. Concerning school directors the report says: "The law authorizing school directors to assume certain functions of a board of health is still on trial. The fact that during the past year only 24 school boards have availed themselves of this opportunity to aid in the protection of the public health would seem to indicate that it does not commend itself to the great body of

school directors throughout the State. The entire number which have reported to the board as having assumed their new responsibilities is but 56 out of a possible 2700. The total number of cases of smallpox officially reported as having occurred in the State during the epidemic which began in December, 1898, is 1429 with 18 deaths. The report calls attention to the fact that the State Board favors the placing of pulmonary tuberculosis in the class of contagious and notifiable diseases.

Vital statistics of Philadelphia for the week ended December 15, 1900:

Total mortality	CASES.	DEATHS.
Inflammation of appendix 1, brain 6, bronchi 7, kidneys 13, liver 1, lungs 53, peritoneum 9, pleura 2, stomach and bowels 14, tonsils 1		107
Lungs—tuberculosis of 47, edema of 3, hemorrhage of 3, abscess of 1		54
Marasmus 11, inanition 15, debility 2		28
Heart—diseases of 25, fatty degeneration of 2, Apoplexy 12, paralysis 6		27
Carcinoma of neck 2, bowels 1, brain 1, breast 2, esophagus 1, pancreas 1, stomach 5, uterus 2, abdominal tumor 1		18
Puerperal convulsions		16
Old age		14
Diphtheria	94	14
Casualties		11
Uremia 5, Bright's disease 2, diabetes 3, ...		10
Brain—diseases of 2, softening of 3		5
Epilepsy		4
Typhoid fever	87	4
Septicemia		4
Cirrhosis of liver		3
Bowels—tuberculosis of 1, obstruction of 2		3
Whooping-cough		3
Scarlet fever	76	2
Abscess of hand 1, liver 1, asthma 2, anemia 2, membranous croup 2, cyanosis 2, diarrhea 1, erysipelas 1, hernia 1, influenza 2, intussusception 1, measles 1, poisoning—corrosive sublimate 1, stricture of pylorus 1, suicide—hanging 1, shooting 1, syphilis 1, teething 2, tetanus 1, ulceration of stomach 1, unknown Coroner's cases 2		

NEW YORK.

To Prevent Smallpox.—As a result of the recent smallpox scare in Jersey City, 4,000 girls in Lorillard's tobacco factory have been vaccinated.

Typhoid fever still prevails in Sing Sing prison, 23 convicts being ill at present. The cause of the outbreak is thought to be a broken water pipe which runs through some old buildings that have outside closets.

Passaic River Polluted.—Much alarm is felt in Jersey City over the prevalence of typhoid fever. The water-supply comes from the Passaic River, which is said to be polluted. A committee of 18 prominent citizens has been appointed to take action in the matter.

No Arsenic in American Beer.—The United States Brewers' Academy of New York has analyzed various specimens of the glucose produced in this country and used in the manufacture of beer, the object being to ascertain whether the American product contains arsenic, as did, it is alleged, the glucose used in making the Manchester, England, beer, which poisoned more than a thousand persons recently. No trace of arsenic was found in any of the specimens.

Inspection of Barber Shops.—In consequence of complaints made of contracting barber's itch, the Board of Health of New York propose to enforce new sanitary regulations in all barber shops, and an inspection will be made to see that all implements used are sterilized in antiseptic solutions after each separate use. That a clean towel is provided for each person, that pure soap and running water is furnished, and that head rests and shaving cups are cleansed. The use of sponges and powder puffs will be prohibited.

The Society of the Lying-in Hospital in its recent report calls attention to the increase of 6% in the number of women treated by midwives, and also to the abuse and mal-

practice of this class, and the introduction of a bill at the last session of the Legislature to regulate the practice of midwifery in this State by others than legally authorized physicians. It also shows the accommodations at the disposal of the Department of Charities in the Borough of Manhattan for women in childbirth, and says that it finds it difficult to believe that the 68 beds for waiting women and 56 beds for childbirth cases are inadequate. Treating of the immigrant class, the report cites statistics to show that the average wages received by the husbands of women treated was \$29.84 per month, so that, rent paid, there remained about 70 cents per day on which to support and clothe each family. The data are given to show how impossible it is for these people to save anything for medical attendance.

The New York State Hospital for the Care of Indigent Crippled and Deformed Children, incorporated by the last legislature, is now open for the reception and treatment of patients. It is located at Tarrytown, N. Y., and has accommodations for about 30 patients. The board of managers appointed by Governor Roosevelt are the Right Rev. Henry C. Potter, Bishop of New York, president; George Blagden, Jr., secretary and treasurer; J. Hampden Robb, J. Adriance Bush, and Dr. Newton M. Schaffer. Patients from 3 to 15 years of age will be received, who have resided in the State of New York for a period not less than 1 year, and all applications will be acted upon in the order of their reception. No patient will be received except upon affidavit of guardians that he is unable to pay for private treatment. Application for admission should be made to Dr. Newton M. Schaffer, surgeon-in-chief, No. 28 East Thirty-eighth Street, N. Y., who will appoint a time and place for the examination of the patient. Patients living at remote points are referred to the following gentlemen, out-of-town members of the consulting staff: Dr. A. Vander Veer and Dr. S. B. Ward, of Albany, N. Y.; Dr. Louis A. Weigel, Rochester, N. Y.; Dr. Roswell Park and Dr. Charles G. Stockton, Buffalo, N. Y.; and Dr. Richard B. Coutant, Tarrytown, N. Y.

New York Neurological Society.—At a meeting December 4, 1900, DR. WILLIAM M. LESZYNSKY presented a man, 21 years old, in whom the chief feature of interest was a trembling of the hands more marked on the left side which had existed as long as he could remember and was growing steadily worse. Dr. Leszynsky believed this man had recovered from a paralysis which he had had at one time and was now suffering from a **terminal condition of an infantile palsy**. DR. M. ALLEN STARR said that 5 years ago he had been able to collect 145 cases of spinal tumor, in 22 of which operation had been undertaken. In the 2 cases forming the subject of the paper the symptom, pain, had been very prominent, and this together with the symptoms of pressure on the cord had allowed of the diagnosis being made. The tumors were both removed. In the discussion emphasis was given to the advisability of operating without delay as soon as a diagnosis had been established with reasonable clearness. **An analysis of the symptoms observed in cases of tuberculous meningitis at the Babies' Hospital.** DR. C. A. HERTER read a paper with this title. There were 24 cases of tuberculous meningitis, and in 15 of these there were autopsies. In these 15 cases, 6 were at the age of 8 months; 7 were one year old or under. In 9 cases of tuberculous meningitis without autopsy, 6 were 5 months old. These figures showed that tuberculous meningitis was not so rare in the first year of life as had been supposed by some writers. Of the cases 19 had run their course in less than one month. An interesting feature was that at times the knee-jerks would be alternately exaggerated and absent.

New York Academy of Medicine.—At a meeting of the Section on Orthopedic Surgery, November 16, 1900, DR. T. H. MYERS presented a baby, 1 month old, under treatment for **fracture of the femur**, which occurred at birth, just below the trochanter minor, with the very unusual displacement of the lower end of the upper fragment backwards. A plaster-of-paris jacket was applied in which was incorporated a steel bar, $\frac{3}{4}$ by $\frac{1}{8}$ inch, extending from the angle of the scapula to the toes, and bent at a right angle at the buttocks and the heel. Traction was made and eversion overcome by adhesive plaster applied to the limb and fastened to the steel foot-piece. The plaster of paris enclosing

the pelvis provided secure countertraction. A light plaster-of-paris bandage secured the limb to the splint and held back the upper end of the lower fragment. A fenestrum permitted the dressing of the cord. The child fell asleep at once on this application. No displacement. Shortening $\frac{1}{4}$ inch. DR. JUDSON presented a girl, 7 years of age, with symptoms of **disease of the left hip** of 12 weeks' duration. On presentation the child walked when the splint was off with no defect in her gait. An ischiatic crutch had been applied to be worn in the daytime with a high sole on the well foot, directly to relieve the limb from the labor of locomotion and the affected bone from bearing the weight of the body, and ultimately to permit the resolution of the inflammation by natural processes. Dr. Judson also presented a boy of 7 years of age slowly convalescing under mechanical treatment for **white swelling** of the left knee. A year ago the patient's general condition was most unfavorable, and locally there were sinuses surrounding the knee, great swelling and the usual evidences of a disintegrating joint. In spite of the most unfortunate and discouraging environment, improvement had been marked generally and locally. The treatment was by a fixative brace worn day and night, and an ischiatic crutch worn only in the daytime. Prognosis was in favor of a useful limb, of good length, with no flexion and no deformity except a slight and unimportant degree of subluxation. DR. TAYLOR reported the case of a girl, 6 years of age, an instance of **typical funnel chest** of moderate degree. There were no evidences of rickets and the child's health was good. She was the fifth child in a family of 7. Her mother had the same deformity, but knew of no other cases in the family. DR. GIBNEY exhibited a specimen from a patient, 5 years old, affected with **Pott's disease with deformity**, who died unexpectedly in the night with **abscesses arising from carious vertebrae**. He had seen no less than 6 children die in a similar manner. Autopsies had not made clear the cause of death.

New York's Vital Statistics.—According to the report of the Health Department for 1899, made public only recently, the health of the city in that year was excellent; 65,343 deaths were reported, giving a death-rate of 18.41 per thousand. The city rate was lower than that of any of the large cities of Europe. In London the rate was 19.80, in Paris 20.20, Berlin 18.70, Vienna 20.60. The death-rates for past years are as follows: 1880, 26.41; 1885, 25.55; 1890, 24.87; 1895, 23.11; 1896, 21.52; 1897, 19.53; 1898, 19.28. There were reported 33,486 cases of contagious diseases—nearly 4,000 less than in 1898. Only one borough, Richmond, showed an increase, due to scarlet and typhoid fever; in the Bronx these cases diminished by 50%. Infant mortality also showed a marked decrease as compared with 1898. The sanitary bureau made 1,632,672 inspections and reinspections in the course of the year, and preferred 79,019 complaints; 40,282 complaints were received from citizens, also. Inspection of foodstuffs resulted in the seizure and condemnation of 10,274,930 pounds of milk, fruit and fowls, meat and fish, and the imposition of fines aggregating \$5,770. Bananas and melons made up the largest item of seizures—3,149,697 pounds of the former and 1,817,765 pounds of the latter. As a result of school inspection, 9,367 out of 12,8787 pupils examined were excluded from school. About $\frac{1}{2}$ of these were in the primary grades. Deaths by accident numbered 2,620, 1,563 of which were in Manhattan. Falls caused 643 deaths; burns and scalds, 355; drowning, 352; 269 were killed on railroads; sunstroke killed 141, and poison 221. The births aggregated 77,632, over 12,500 in excess of the deaths. January, March, and August lead in the number of births; May had the fewest, 5,792. In that year 8 women 100 years of age and over died; the oldest was 104 years 7 months 2 days.

NEW ENGLAND.

Waltham Hospital, Mass.—The hospital authorities are considering plans of enlargement, and 15,000 square feet of land from Mt. Feake Cemetery, which adjoins the hospital land, have been given to the trustees by vote of the Waltham Board of Aldermen.

Home for Feeble-Minded Children.—The Milford Woman's Club of New Hampshire proposes to establish a home for the feeble-minded in that State. The project is to be submitted to all the women's clubs in the State, and a sub-

scription list, headed by the Milford club, with a contribution of \$50 and a pledge for an annual gift of \$25, to support the home, will be presented. It is believed that there will be a general response.

Helen Keller, the deaf, blind, and previously dumb student at Radcliff College, recently made a brief address to the freshman class, of which she is a vice-president. Her words were few, spoken in a low, musical, unmodulated voice, which was not lacking in strength, and could be understood quite readily by those accustomed to her. She is now 19 years of age, and is making a steady improvement in her new achievement.

CHICAGO AND WESTERN STATES.

Bequest to Hospital.—H. M. Hanna, brother of Senator Hanna, has turned over to the trustees of the Lakeside Hospital, of Cleveland, 1,000 shares of the Northern Pacific Railroad, valued at \$81,580.

Verdict.—The suit of Dr. James W. Crewdson, of Louisiana, Mo., for medical services to the late Fielden Estes, amounting to \$6900, was concluded November 24, when the jury returned a verdict of \$2375 for the plaintiff.

State Sanatoriums.—At a recent meeting of the Board of Health of Alameda, Cal., a resolution urging legislative action to provide for the establishment and maintenance of State sanatoriums for the care of the tuberculous was unanimously adopted.

Practising Without Certificates.—Warrants have been issued for the arrest of 3 women and 1 man, of Los Angeles, California, charged with practising medicine without having obtained certificates from the State Board of Medical Examiners.

The Bethesda Hospital for Incurables at St. Louis was opened December 1. The building is the gift of Mr. R. M. Scruggs, of St. Louis, and cost over \$70,000. It has facilities for the accommodation of 80 patients, an excellently fitted operating room, and an isolated ward for the treatment of contagious diseases.

Diploma Dealer Sentenced.—James Armstrong, president of the Metropolitan and Independent Medical Colleges, and the Illinois Health University, institutions in Chicago devoted exclusively to the sale of bogus diplomas, has been adjudged guilty of using the United States mails to defraud and sentenced to serve one year in jail and pay a fine of \$500.

Indians Disobey Sanitary Laws.—A special from White Rock, Utah, says that at the request of Agent Myton, Troop K from Fort Duchesne has been ordered out to prevent trouble at the Wintah agency. Over 30 children in the school are down with measles and other diseases, and their parents have been much dissatisfied because the children were not allowed to go home.

The Chicago Pathological Society held a meeting December 10, 1900. DR. ZEIT read a paper on **Ureterointestinal anastomosis**, illustrated by gross and microscopic specimens, and by photographs and drawings. The paper discussed an experimental study of the pathology and bacteriology of ureteral implantation into the rectum as practised on 120 dogs and implantation of the trigonum into the rectum on 21 dogs. The operations were made with a view of devising an operation for cases of malignant disease of the bladder. The conclusions reached are that no matter what is the operation employed with a view of preventing ascending renal infection, the pathology of ureteral implantation into the rectum is the pathology of pyelonephritis and its sequels. All the variations of this form of suppurative nephritis were observed in the operated dogs, from the earliest beginning of ascending infection a few days after the operation up to the healed process with induration and cicatrization and resulting granular contracted kidneys. Operative results on 21 dogs with implantation of trigonum into rectum were more favorable. A number of experiments on white mice and guineapigs were described, undertaken with a view of producing an artificial immunity to in-

fection with *Bacillus coli*, but the serum of immunized animals only clumped bacilli used for immunization. Intraperitoneal injections of other virulent cultures of *Bacillus coli* proved pathogenic to other animals immunized by virulent colon bacilli obtained from other sources. The experiments are being continued. An artificially produced immunity to the group of colon bacilli appears to be the only hope of making ureterointestinal anastomosis a feasible operation.

SOUTHERN STATES.

A Physician as Secretary of State.—The newly elected governor of Maryland has recently appointed as secretary of state Dr. C. R. Layton, a practising physician of Georgetown.

The New Orleans Board of Health is seriously handicapped by the Council which curtails the expense appropriations of the board. The last requisition of \$25,000 was cut down to \$5,000.

The Association for Improving the Condition of the Poor, of Baltimore, has recently received a bequest of \$60,000, left to the association by the will of the late Mr. Jacob Craft Whittington.

Scarlet fever has spread over the middle and upper Carolinas. The Board of Health has closed the churches in Seneca, prohibiting gatherings of all kinds. Last week Clement College was closed on account of the prevalence of the disease.

The Orleans Parish Medical Society held a meeting on December 8, 1900. The following officers were elected: President, E. D. Martin; vice-presidents, H. B. Cessner, L. C. LeBeuf, and George Stumpf; secretary, W. H. Perkins; treasurer, M. H. McGuire; librarian and corresponding secretary, S. P. Delaup.

The New Orleans Charity Hospital will soon have 100 nurses added to the present corps and thus provide trained nurses for the male medical and surgical wards. A special building for the accommodation of the nurses will also be erected at the cost of \$25,000. Plans for this building will be submitted at the next meeting of the board of administrators.

Cocain Drunkenness.—An order has been issued to the police of New Orleans by Chief of Police Caster to arrest all persons dealing illegally in cocain or suffering from cocain drunkenness. The order said: "The constant use of cocain has assumed large and serious proportions and is daily increasing to such an extent as to be a menace to public health. You are directed to notify the force under your command to use extreme diligence in enforcing the city ordinance against the use of cocain and to make arrests. This menace is general throughout the city. This order must be strictly adhered to, and you will make written reports to this office of each offender arrested and from whom the drug was purchased, whether from a druggist or pedler."

Homeopaths Seek Recognition in Municipal Hospital.—A memorial has been presented to the Commissioners of the District of Columbia by the Homeopathic Medical Society which recommends that a plan be devised whereby a fixed proportion of patients be assigned to a homeopathic department in the proposed Municipal Hospital. This, it is suggested, shall be done preferably by establishing separate buildings, or wings, for the respective systems. It is stated that this demand for representation is made after conference with the respective medical societies of the District, and it is suggested that the proposition should be definitely determined before an application for appropriation is submitted to Congress.

CANADA.

Toronto Medical Schools.—Steps are being taken to combine the Toronto Medical College and the Trinity Medical College of the same city. Representatives of the 2 faculties held a meeting, and a committee composed of 3 members of each faculty has been appointed to draft a definite basis of amalgamation.

A Hospital for Women.—It is reported that a committee of women has been appointed in Toronto, Canada, to formulate a scheme for the maintenance, in connection with the Women's Medical College, of a Women's Hospital for Ontario, in which all the operations shall be performed by women surgeons, and the resident physicians shall also be women.

MISCELLANY.

Dr. Velde, of the German Legation at Pekin, has been tendered, through Andrew D. White, the United States Ambassador, America's sincere gratitude for the services rendered by him to American soldiers and sailors during the siege of Pekin.

Reoccupation of Tortugas.—The Navy Department has been advised that the Marine-Hospital Service is about to abandon its quarantine station at Dry Tortugas. This will permit the Navy Department again to occupy the coaling and repair station upon which the yellow fever season interrupted the work of the constructors.

Chocolate for Soldiers.—The merits of chocolate as food for troops in the field appear to be greatly appreciated. In the recent autumn maneuvers of the Austrian Army in Galicia, a chocolate ration was found to be equal to about 5 times its weight of the best beef. From Russia also come equally favorable reports. In this country it forms a chief constituent of a new emergency ration with which trials have been lately carried out.

Surgeons in the Navy.—The Surgeon-General of the Navy, in discussing the difficulties in securing officers for his corps, is reported to have said that he did not understand why men did not wish to be examined, that many who have made inquiries in regard to the examinations have afterwards gone into the Army. Notices have been published in regard to the betterment of the condition of the assistant surgeons and to the number of vacancies. The Surgeon-General says that fully one-third of those who apply for admission to the medical corps are found physically disqualified.

Mosquito Inoculation.—A cablegram to Surgeon-General Sternberg announces that the recent experiments with mosquito inoculation have been completely successful in 80% of the cases under treatment. These experiments are being conducted by Dr. Reed and other surgeons of the army near Havana. They are based upon conclusions reached by Major Reed and other medical officers recently appointed to conduct scientific investigations with reference to the acute infectious diseases prevalent in Cuba. So far the treatment has been limited to Spanish immigrants desirous of immunity to yellow fever who have voluntarily presented themselves for inoculation with an understanding of the nature of the experiment.

Resignation of Dr. Anita Newcomb McGee.—The only woman with the rank of lieutenant in the army has resigned. Dr. Anita Newcomb McGee, daughter of Simon Newcomb, the astronomer, was appointed acting assistant surgeon in the United States army in August, 1898, to aid in the selection and equipment of a corps of army nurses for field and hospital work. The appointment carried with it the rank of first lieutenant and the right to wear the shoulder-straps and uniform of an officer of that grade, a right of which she did not avail herself. The work for which she was appointed having now been fairly organized, Dr. McGee has resigned, and no successor will be named. In accepting her resignation, Surgeon-General Sternberg has complimented Dr. McGee highly upon the services she has rendered.—[Springfield Republican.]

Obituary.—JAMES FLUERY STEWART, of Cold Spring Harbor, L. I., December 11, aged 24.—O. R. EARLY, of Columbus, Mississippi, December 11.—PETER F. CURLEY, of Newport, December 13, aged 39.—JOHN C. ACHESON, of New York, December 12, aged 68.—W. H. JONES, Medical Inspector U. S. Navy, retired, of Bethlehem, Pa., December 13, 1900.—S. HOEPFNER, of Hamilton, Ontario, December 14, aged 49.—JOHN IGNATIUS GROSS, of Baltimore, December 14, aged 69.—DAVID AVISON, of Colorado Springs, December 6.

—GREGORIO DE QUESADA, in New York, December 5.—J. A. LORD, of Edgerton, Wisconsin, December 3, aged 42.—WALTER C. PEASE, of Cumberland, Wisconsin, December 6.—W. C. MOORE, of Clarkstone, Georgia, December 3.—ELLIOTT BARTON PALMER, of Cincinnati, December, aged 30.—W. S. BUNN, of Lawrence, Kansas, December 13, aged 45.—D. R. HOKE, of Water Valley, Miss., December 13, aged 75.—N. B. JONES, of Belle, Missouri, December 13, aged 50.—HENRY B. FELLOWS, of Chicago, December 15, aged 63.

Health-Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, for the week ended December 14, 1900:

SMALLPOX—UNITED STATES.				CASES.	DEATHS.
CALIFORNIA:	Oakland	Nov. 24-Dec. 1 . .	4		
GEORGIA:	Houston	Dec. 1-7	24		1
ILLINOIS:	Chicago	Dec. 1-8	1		
KANSAS:	Topeka	Dec. 1-8	9		
KENTUCKY:	Lexington	Dec. 1-8	2		
"	Russell	Nov. 20	Epidemic.		
MICHIGAN:	Detroit	Dec. 1-8	2		
"	Grand Rapids . .	Nov. 24-Dec. 1 . .	1		
"	Reported present at 28 places . .	Nov. 24-Dec. 1 . .			
MINNESOTA:	Minneapolis . .	Dec. 1-8	1		
NEBRASKA:	Omaha	Nov. 24-Dec. 1 . .	3		
N. HAMPSHIRE:	Manchester . .	Dec. 1-8	20		
NEW YORK:	New York	Dec. 1-8	12		3
OHIO:	Ashtabula	Dec. 1-8	4		
"	Cleveland	Dec. 1-8	32		2
PENNSYLVANIA:	Steelton	Dec. 1-8	1		
TENNESSEE:	Memphis	Nov. 24-Dec. 8 . .	5		
"	Nashville	Dec. 1-8	5		
UTAH:	Salt Lake City . .	Nov. 24-Dec. 8 . .	69		

SMALLPOX—FOREIGN.				CASES.	DEATHS.
BRIT. COLUMBIA:	Gabriela Island .	Nov. 21	1		
"	Nanaimo	Nov. 21	13		
EGYPT:	Cairo	Nov. 11-18	1		
FRANCE:	Paris	Nov. 18-25			8
MEXICO:	Tuxpam	Nov. 19-26			4
RUSSIA:	St. Petersburg . .	Nov. 10-17	4		1
"	Vladivostok . . .	July 1-30	1		
"	Warsaw	Nov. 10-17			32
SCOTLAND:	Glasgow	Nov. 23-30	30		1
SPAIN:	Barcelona	Oct. 6-Nov. 11 . .			49
"	Valencia	Nov. 4-18	2		
YUCATAN:	Morida	Nov. 15-30	Several cases.		

YELLOW FEVER.—FOREIGN AND INSULAR.				CASES.	DEATHS.
CUBA:	Havana	Nov. 24-Dec. 1 . .			7
"	Puerto Padre . .	Dec. 3	1		
MEXICO:	Mexico	Nov. 18-25			1
"	Tampico	Nov. 18-25			6
"	Vera Cruz	Nov. 24-Dec. 1 . .			2

CHOLERA.				CASES.	DEATHS.
INDIA:	Bombay	Oct. 30-Nov. 6 . .			3
"	Madras	Oct. 27-Nov. 2 . .			10

PLAGUE.—FOREIGN.				CASES.	DEATHS.
EGYPT:	Alexandria . . .	Nov. 5-12	1		1
GERMANY:	Bremen	Nov. 6			1
INDIA:	Bombay	Oct. 30-Nov. 6 . .			84
"	Madras	Oct. 27-Nov. 2 . .			1
MADAGASCAR:	Tamatave	Oct. 15-29	2		1

PLAGUE.—INSULAR.				CASES.	DEATHS.
PHILIPPINE ISLANDS:	Manila	Oct. 13-20	3		2

Smallpox still prevails in many parts of the United States. From New York 54 cases have been taken to North Brother Island. Of these 8 have been discharged as cured and 3 have died. Dr. Blauvelt, of the Bureau of Contagious Diseases, is reported to have said that at least a million people had been vaccinated since the outbreak began. In Schenectady, N. Y., 3 cases are being treated in a pest house. The disease exists in an Indian camp near Spokane, and 1 case is reported at Walla Walla, Wash. In Washington, D. C., 6 new cases are reported. There are 8 cases in the hospital. The smallpox situation in Eastern Utah is reported alarming. The greater number of the cases are among the foreign-born miners in the coal camps. There are about 100 cases at Scofield, while Winter Quarters, Clear Creek and Sunnyside Camp, in the east end of Carbon County, report

numerous cases. In St. George's Hospital, Kansas City, Mo., there are 40 cases. Only 1 death has occurred from the disease. The Council of Yukon, Alaska, has ordered that every person in that section of the Yukon territory be vaccinated at once. This district contains about 12,000 people. The Council ordered 12,500 vaccine points, of which the first shipment was expected by mail about November 15. Six Dawson physicians were employed at \$30 a day each to go out on the creeks and vaccinate all who have not been vaccinated within 7 years. No deaths have yet occurred from smallpox.

The Navy Ration.—Surgeon James D. Gatewood, at present assistant chief in the bureau of medicine and surgery, according to the *Army and Navy Register*, has made these statements in official form to the department: "There are many reasons why a recruit should be allowed his outfit, for the lack of money affects his welfare in many ways. Not the least of these is the relation to the question of food. No men long in the navy depend solely upon the regulation ration. Whatever may be the scientific relations of the navy ration it does not satisfy, and the amount that is utilized is not sufficient by itself to prevent the craving for additional food. Undoubtedly not a little of the dissatisfaction can be traced to the fact that the cooks are unskilled, as it has not yet been regarded as essential in the Navy to train men for that important duty. But much of the discontent has its source in the ration itself. It does not seem to be generally recognized in the service that the ration is much overvalued. It seems fair to state that while it issued at a value of 30 cents its actual cost is now only about 18. As a result, when a ration is commuted the money not only secures a necessary additional variety and a better relation of nutritive substances, but adds largely to the calories, thus producing a distinct gain from a scientific point of view. Yet even with that increase, messes composed of men long in the service find it necessary to add to the fund secured by the commutation of 25% of the rations. The amount contributed by each member varies in different messes from \$2 to \$5 a month.

Changes in the Medical Corps of the U. S. Army, for the week ended December 15, 1900:

BAHR, WILLIAM, hospital steward (appointed December 3), now on temporary duty at Rock Island Arsenal, Ill., will be sent to his proper station, Fort Leavenworth, upon the return to duty of Hospital Steward Isaac C. Clarke.

DEMAY, CHARLES F., acting assistant surgeon, having relinquished unexpired portion of leave is assigned to duty with troops on the transport "Meade," to sail for the Philippine Islands about December 1.

PINTO, ALVA S., acting assistant surgeon, is relieved from temporary duty at the Army General Hospital, Presidio, and assigned to temporary duty with troops on the Army transport "Meade" to sail for the Philippine Islands about December 1.

TREW, NIEL C., acting assistant surgeon, is granted leave for 1 month from December 1.

MCCULLOCH, JR., Captain CHAMPE C., assistant surgeon, will proceed to Manila, P. I., upon the Army transport "Meade," to sail about December 1. Upon arrival at Manila, Captain McCulloch will report to the commanding general, division of the Philippines, for assignment to duty.

FRASER, SIMON J., acting assistant surgeon, now in this city, is assigned to temporary duty with troops on the Army transport "Meade," to sail for the Philippine Islands about December 1. Upon arrival at Manila, Acting Assistant Surgeon Fraser will report to the commanding general, division of the Philippines, for assignment to duty.

WILSON, RICHARD, acting assistant surgeon, is granted leave for 1 month.

MCCULLUM, FRANCIS M., acting assistant surgeon, now at Kansas City, Mo., will upon the expiration of his present leave, of which he availed himself at San Francisco, Cal., proceed to Jefferson Barracks for temporary duty.

WILSON, COMPTON, acting assistant surgeon, is granted leave for 1 month from December 7.

STOCKARD, JAMES K., acting assistant surgeon, is granted extension of leave to include January 19.

GOULDING, T. F., acting assistant surgeon, leave is extended 1 month.

WILLIAMS, ABRAHAM D., acting assistant surgeon, now in New York City, will proceed to Jacksonville, Fla., and report by letter to the Surgeon-General of the Army for annulment of contract.

KELLER, WILLIAM L., acting assistant surgeon, is relieved from temporary duty at Fort Logan and will proceed to San Francisco, Cal., for assignment to duty with troops en route to the Philippine Islands, where upon arrival he will report to the commanding general, division of the Philippines, for assignment to duty.

WILLIAMS, ABRAHAM D., acting assistant surgeon, having reported to the Surgeon General of the Army en route to Jacksonville, Fla., in compliance with orders of December 7 will proceed to San Francisco, Cal., for assignment to duty with troops en route to the Philippine Islands, where he will report to the commanding general, division of the Philippines for assignment to duty.

BYRNE, JOHN G., acting assistant surgeon, now at San Francisco, Cal., will proceed to Fort Wright for duty.

GOULDING, TIMOTHY F., acting assistant surgeon, is granted leave for 1 month with permission to go beyond the limits of the division of Cuba.

MENDOZA, F. F., acting assistant surgeon, is granted leave for 1 month.

WALES, Captain PHILIP G., assistant surgeon, having reported his arrival at San Francisco, Cal., will proceed to Fort Duchesne.

BACON, JOHN E., acting assistant surgeon, is relieved from duty at Fort Duchesne, to take effect upon the arrival at that post of Assistant Surgeon Captain Philip G. Wales, and will proceed to San Francisco, Cal., for assignment to duty with troops destined for the Philippine Islands, and upon arrival at Manila will report to the commanding general, division of the Philippines, for assignment to duty.

The following changes in the stations of officers are made: First-Lieutenant SANFORD H. WADHAMS, assistant surgeon, is relieved from further duty in the department of Puerto Rico, and upon the expiration of leave granted him October 13 will report at Columbus Barracks, Ohio, for duty. Upon the arrival at Columbus Barracks, of First-Lieutenant SANFORD H. WADHAMS, assistant surgeon, Major TIMOTHY E. WILCOX, surgeon, is relieved from duty at that post, and will report to the commanding general, department of the Lakes, Chicago, Ill., for duty as chief surgeon of that department.

Changes in the Medical Corps of the U. S. Navy, for the week ended December 15, 1900.

PEARSON, J. F., pharmacist, ordered to the Naval Academy.

PRYOR, J. C., assistant surgeon, detached from the "Albatross" on reporting of relief and ordered home to wait orders.

BUTLER, C. S., assistant surgeon, detached from the "Independence" and ordered to the "Albatross."

DENNIS, J. B., assistant surgeon, detached from the "Wheeling," on reporting of relief, and ordered home and to wait orders.

FISKE, C. N., assistant surgeon, detached from the naval hospital, Mare Island, Cal., and ordered to the "Wheeling."

WHEELER, W. M., passed assistant surgeon, detached from the "Kearsage" and ordered to the "Alabama."

RICHARDS, T. W., passed assistant surgeon, detached from the "Alabama," and ordered to the Bureau of Medicine and Surgery, Navy Department.

PLEADWELL, F. L., passed assistant surgeon, detached from the Bureau of Medicine and Surgery, and ordered to the "Kearsage."

Changes in the U. S. Marine-Hospital Service, for the week ended December 13, 1900:

AUSTIN, H. W., surgeon, detailed as medical officer in command of the national quarantine service on the Delaware Bay and river. December 5.

MEAD, F. W., surgeon, granted leave of absence for 1 day. December 7.

CRAIG, R. C., acting assistant surgeon, granted leave of absence for 7 days from December 19.

WALERIUS, M., senior hospital steward, granted leave of absence for 7 days from December 4.

CRAGG, JAMES, hospital steward, died at Key West, Fla., December 2.

Radical Cure of Hernia.—Shepherd (*Montreal Medical Journal*, October, 1900) says certain principles underlie all operations for hernia—first, the excision or obliteration of the sac; second, closure of the canal; and, third, union by first intention. He has employed all the recognized methods and prefers Bassini's. Some form of absorbable suture is much the best. The author asserts that no suture will hold longer than 3 or 4 weeks tissues which are on the stretch. They will simply cut out and lie loose in the tissue. So no advantage is gained in using suture material which lasts longer than this. He prefers chromicized catgut. It is better to dissect out the sac with a knife than to tear it out with the fingers. Never cut the internal oblique nor transversalis in transplanting the cord, merely pull the edges aside. The incision should be made well above Poupart's ligament so that after suturing the conjoined tendon to Poupart's ligament there is sufficient of the external oblique muscle left to suture to its upper portion. The patient should be kept in bed for 3 weeks. The author has adopted rubber gloves, and believes his improved results warrant their continued use. [A. B. C.]

Foreign News and Notes.

GREAT BRITAIN.

Owen's College, Manchester.—The late Dr. D. J. Leech, professor of materia medica and therapeutics in this institution, leaves £10,000 to endow a chair of materia medica and therapeutics.

The Surgical Aid Society, which furnishes gratuitously surgical instruments of all descriptions to the afflicted poor, has received a bequest of £30,614 by the will of Edward Mackeson, of London.

Journal of Hygiene.—A quarterly publication edited by Dr. G. H. F. Nuttall, will issue its first number, January 1, 1901, from the *Cambridge University Press*. Its scope will be similar to that of the *Archiv für Hygiene* and *Zeitschrift für Hygiene* and it will, it is hoped, be the chief medium for original workers among English-speaking people.

Palmistry.—A young woman was recently brought before the Torquay bench of magistrates charged with professing to tell fortunes by palmistry with intent to deceive; she was fined 10s. and costs. The letters F. B. I. M. S. were printed outside the door of her rooms and were explained by her solicitor to mean: "Fellow of the British Institute of Mental Science."

CONTINENTAL EUROPE.

Prince Gustavus Adolphus, the eldest son of the Crown Prince of Sweden and Norway, is reported ill with diphtheria.

Sun-baths are frequently prescribed by Berlin physicians for nervous complaints. An establishment has recently been opened in Strelau, a suburb of Berlin, for the giving of these baths.

The first tuberculosis sanatorium for the Portugal poor has been opened in the old fort of Ontao, on the sea-coast, near Setobal, with capacity for 100 patients. It is under the patronage of the Queen of Portugal.

To honor the memory of Pasteur the Stockholm Medical Society will give a gold medal every 10 years. Max von Pettenkofer, of Munich, received the first medal. The receiver must be a scientist whose works have done most to promote bacteriology or hygiene.

The notification of contagious diseases has been made compulsory on the attending physicians by the Spanish Government, a royal decree to that effect being issued October 10, 1900. The diseases are not specified in the decree, and no provision seems to be made for its proper execution.

Paris is said to be the cleanest city in the world. Every morning 2,000 male and 600 female scavengers, divided into 149 brigades, turn out to perform the toilet of the capital. The men work from 4 in the morning till 4 in the evening, less 2 hours off for meals, or 10 hours a day. The women are engaged in the morning only.

German Medical Examinations.—A bill regulating the entrance to the medical profession has been sent by the Imperial Government to the Bundesrath. It prolongs the period of study to 5 years, enlarges the subjects upon which the examinations are based and provides for 1 year of practical work before a license can be granted to practise.

Antimalarial Vaccine.—The *British Medical Journal*, in stating the claims of Dr. Kuhn, medical officer to the German troops of the South West African Protectorate, who is said to have discovered a method of curing malaria and of affording complete immunity to its attacks by inoculating patients in the very height of the malarial paroxysms with an organic liquid obtained from horses suffering from an epizootic prevalent there—probably that known as horse

sickness—laments the vagueness of the information, particularly as to the nature of the organic fluid which has such effect.

Horseflesh as a Food.—It appears from a series of experiments reported in the *Revue Général des Sciences* (Paris), that the popular prejudice against the use of horseflesh as food has some physiologic foundation, since the experimenter, M. Pflüger, found that its exclusive use as a diet is injurious. As he has also discovered a simple antidote to its harmful effects, however, the heroes of future sieges need not hesitate to employ it as a food. If one wish to use horseflesh as a food, it is a good plan, to avoid intestinal troubles, to add the kidney fat of beef or mutton, in the proportion of about an ounce of fat to 2 pounds of meat. It is also a good plan to boil the meat in water and to throw away the bouillon.

Against Tuberculosis in France.—From a summary issued by Dr. Léon Petit it appears that the recommendations of the special commission appointed by the French Minister of Public Instruction are: That the Public Health Bill now before the Senate be passed, with the addition of certain clauses relative to the sanitation of dwellings; that tuberculous patients in hospitals be isolated, precautions being taken to secure the antisepsis of wards and the protection of the staff; that in the army and navy, in prisons, etc., special measures of prevention be adopted; that tuberculosis be included among contagious diseases; that attention be paid to the prophylaxis of tuberculosis in railways. The necessity of an active antituberculosis propaganda is insisted on, and it is urged that preventive measures be taken in all places and collections of persons under the direct control of the State. The commission also recommends a stricter regulation of the meat and milk-supply, and the adoption of measures for the repression of alcoholism as an accessory cause of tuberculosis. Dealing with curative measures the commission lays down the conditions required in a sanatorium, and urges that facilities should be provided for the treatment of poor children in seaside hospitals. It recommends the establishment of antituberculosis dispensaries in towns, and a more liberal application to tuberculous persons of the law of July 15, 1893, which should be made easily applicable to small communes. It now remains for the French Government to see that the recommendations of the commission are carried out.—[*British Medical Journal*.]

MISCELLANY.

Typhoid in South Africa.—It is reported that a question put to the Government in the House of Commons recently elicited the statement that there had been 15,625 cases of typhoid fever among the British troops in South Africa and that of this number 3,642 proved fatal.

Obituary.—E. T. GRIFFITHS, of Birmingham, November, aged 77.—JOHN IRON BEVAN, of Swansea, November 30, aged 53.—JAMES CARROLL, of Dublin, November 27.—GEORGE VERNON CURRIE, of London, December 3, aged 72.—CHARLES BARRY HART, of Torquay, November 25, aged 67.—PETER CORMACK SUTHERLAND, of Colony of Natal, November 30, aged 79.

Rattlesnake Poison as a Cure for Leprosy.—Dr. Adolpho Mercondes de Moura, of St. Paulo, Brazil, contributes a paper on the application of rattlesnake poison to the cure of leprosy to *The German Medical Weekly Journal*. This poison has been used for a long period by the natives for the treatment of skin diseases and even leprosy. Many wonderful cures of lepers through rattlesnake bites having been reported to him, Dr. de Moura set himself to make investigations. He experimented with the poison on 15 lepers, and he has come to the conclusion that the lepra tuberculosa if not complicated with another disease, is curable by its means. Professor Lewin, of Berlin, discusses the subject in the same number of *The Weekly Journal*. While he contends that the rattlesnake poison is not a true antidote, nevertheless he admits that it may have a temporary effect on the disease, and considers the matter worthy of investigation.

The Latest Literature.

British Medical Journal.

December 1, 1900. [No. 2083.]

1. Causes and Cure of Insomnia. SIR JAMES SAWYER.
2. The Relation of Veterinary Science to Human Medicine. SIR C. J. NIXON.
3. On the Operations for Congenitally Misplaced and Undescended Testicle; with Notes of Cases of Congenital Deficiency of the Testicle. THOMAS ANNANDALE.
4. Fundamental Points Connected with the Pathology of Diabetes Mellitus. F. W. PAVY.
5. The Face and Pupil in Alcoholic Neuritis. SIR T. LAUDER BRUNTON.
6. On the Causation of the Congenital Stridor of Infants. JOHN THOMSON and A. LOGAN TURNER.
7. Cases of Akromegaly and Infantile Myxedema Occurring Respectively in Father and Daughter. F. M. POPE and ASTLEY V. CLARKE.
8. Hughlings Jackson and the Cortical Motor Centers in the Light of Physiologic Research. PROF. EDUARD HITZIG.
9. Prognosis and Treatment in Pulmonary Tuberculosis. ROBERT MAGUIRE.
10. The Hydrostatic Test of Stillbirth. T. DILWORTH.
11. A Case of Rodent Ulcer Treated with Pure Resorcin. H. BOWEN WILLIAMS.
12. Development of Rodent Ulcer from Sebaceous Cyst. J. BUSFIELD.
13. Severe Angina Pectoris Relieved by Oxygen Inhalations. CHARLES STEELE.
14. Case of Lateral Dislocation of the Knee Caused by Direct Violence. THOS. B. CARLYON.

1.—Sawyer divides **insomnia** into secondary insomnia and intrinsic insomnia. Secondary insomnia is due to pain, elevation of temperature, frequent coughing or dyspnea. For the therapeutic control of this kind of insomnia we may employ remedies that directly cause sleep or measures that combat the cause of the insomnia. Intrinsic insomnia is a simple inability to sleep. It is convenient to arrange the different clinical varieties of this form of insomnia into groups, in which the cause of the affection is the principle of division. These groups are (1) the psychic, (2) the toxic, (3) the senile. The majority of the subjects of the psychic variety of insomnia are men of the nervous temperament; unnatural excitation of the cerebral cells is probably the initial fault. In the toxic variety the cause of the sleeplessness acts primarily upon the bloodvessels of the brain, giving rise to some degree of arterial hyperemia. The poisons concerned in the production of the symptom are the milder noxious agents such as tobacco, alcohol, tea, coffee, and the autogenetic poisons that accumulate in the bodies of the gouty persons or of those whose kidneys are inadequate. A smoker who suffers from insomnia may find the cure of his sleeplessness in the restriction of his smoking and the same may be said of habitual users of alcohol, tea, and coffee. [J.M.S.]

3.—Annandale finds the 3 most common places for **congenitally misplaced and undescended testicles** are: (1) On one side of the perineum (most common); (2) in the region of the saphenous opening; (3) in front of the pubes at the root of the penis. In **operating** on these cases he proceeds as follows: An incision is made so as to expose the spermatic cord and its junction with the testicle; then the cord and testicle are drawn out and all attachments fixing the latter in its abnormal position are carefully divided. The corresponding side of the scrotum is opened with the finger and the testicle placed in it, 2 catgut or silk stitches are passed through those portions of the gubernaculum still attached to the testicle where they had been divided and these same stitches are also passed through the base of the scrotum to fix the testicle in its proper position, after this the opening through which the testicle had passed into the perineum is carefully stitched up by means of subcutaneous catgut sutures, and lately he has been carrying the stitch that passes through the gubernaculum and scrotum through the thigh also; this makes a steady traction on the testicle and

holds it in position. He also reports 2 cases of congenital absence of the testicle, although the vas deferens was in its proper position. [W.S.N.]

4.—As a result of experimental inquiry Pavy has been led to consider that by the following 3 processes the carbohydrate of the food is disposed of in the villi of the small intestine and in the liver, and thus prevented from reaching the general circulation as sugar: 1. By transformation into fat. 2. By synthesis into proteid. 3. By transmutation into glycogen. In the **pathology of diabetes**, if for any reason one of these processes fails to dispose of its proportion of carbohydrate, we get the alimentary form of glycosuria. In the more grave form of diabetes the sugar eliminated in the urine is derived partly from the breaking down of the tissues of the body and partly from the food. [J.M.S.]

5.—Brunton noticed that in patients suffering from **alcoholic neuritis**, before the loss of the knee-jerk and the extreme hyperesthesia of the skin appear, the face becomes mask-like and expressionless, the lips appear to move apart from the cheeks, and, what is sometimes still more extraordinary, the lips themselves may seem very mobile. The eyebrows and the eyes may move in accordance with the lips, but a fixed and expressionless band stretches across the nose and cheeks between the eyes and lips, the skin upon the cheeks remaining motionless and unwrinkled, while the lips, eyebrows, and forehead may be moving freely. The author also noticed that the reflex of the **pupil** to light at the same period of the disease is rapid and extensive, whereas the contraction of the pupil on accommodation to a near object is slight and sluggish or entirely wanting. Indeed in one or two cases a dilation instead of a contraction on accommodation was recorded. [J.M.S.]

6.—Thompson and Turner conclude: 1. That the primary element in the causation of **congenital stridor** is a disturbance of the coordination of the respiratory movements, probably due to some developmental backwardness of the cortical structures that control them. 2. That the change of form of respiration found is merely an exaggeration of the normal infantile type, and is mainly, if not entirely, the result of a constantly recurring sucking-in of the upper aperture of the soft larynx, which is induced by the ill-coordinated and spasmodic nature of the breathing. That it is, in fact, an acquired deformity strictly analogous to pigeon-breast. 3. That there is no proof that any congenital malformation of the upper laryngeal aperture exists in these cases. 4. That the supposition of a congenital deformity is not essential to account for the symptoms. 5. That the sounds are not produced in the pharynx, and that they are not produced in the trachea by compression exerted by a large thymus or enlarged lymphatic glands. This latter conclusion is drawn on two grounds: First, because in none of the fatal cases of congenital stridor recorded have enlargement of the thymus or lymphatic glands been noted; and, second, because in 2 cases that the authors have examined, in which compression of the trachea by enlarged bronchial glands was found after death, the symptoms were of a very different type. In these cases the stridor was mainly expiratory; the larynx did not move up and down with respiration as it does in cases of intralaryngeal obstruction, and there was much greater respiratory distress. The stridor is probably produced partly in the larynx proper, and partly at the abnormally approximated aryepiglottic folds. 6. That the neurosis causing the symptoms has not seemed to depend on the presence of adenoid growths or other obvious causes of reflex irritation. [J.M.S.]

7.—Pope and Clark report the case of a man, aged 38 years, who was suffering from **akromegaly** as indicated by the occurrence of a gradually progressive localized symmetrical hyperplasia of both bones and soft parts of the forearms, wrists, hands, and feet; bitemporal hemianopsia, lassitude, rheumatic pains of long duration, absence of vomiting, optic neuritis, and giddiness. The eldest child of the patient, a girl, aged 20 years, was a sufferer from a condition diagnosed to be infantile myxedema. [J.M.S.]

9.—Maguire sets forth some of the features that influence the **prognosis of pulmonary tuberculosis**. Lack of resonance and deficiency of breath-sounds and movement, without adventitious sounds, form the most favorable presentation. The presence of adventitious sounds increases the gravity of the case. The finer the rales heard the better for the patient. Coarse bubbling rales are eminently unfavorable for him. The greater the lack of percussion resonance

worse is the prognosis. Localization of the signs at the x alone carry the more favorable prognosis. Basic tuberculosis of primary origin is more favorable. Multiple initial lesions have a bad prognosis. When tuberculosis attacks apparently full-blooded it must receive an unfavorable prognosis. Deformity of the chest causes our prognosis of tuberculosis of the lungs to be more unfavorable. Tuberculosis of the lungs attacking those who are the subjects of tuberculous glands is generally very slow in its progress and amenable to treatment. The author strongly discountenances attempt at the dispersion of such glands by means of injections; but when the surgeon cannot deal with them, nuclein acts well when given by mouth. Pleurisy and serous effusion preceding an attack of tuberculosis would seem not to increase the gravity of the tuberculosis. Pyemia, when followed by tuberculosis, increases very greatly the gravity of the latter disease. Precedent pneumonia does not appear to have an unfavorable influence on engrafted tuberculosis. Tuberculosis of the lungs following that of the urinary organs is not increased in gravity by the infection of the latter. [J.M.S.]

1.—Williams treated a **rodent ulcer** on the left side of the nose of a woman of 70 years of age which had resisted other remedies; **resorcin** ointment healed it in about 2 months. [W.S.N.]

2.—Busfield reports a case of **rodent ulcer of remarkable size**, developing from a sebaceous cyst in a man of 70. The ulcer involved most of the right side of the face, and in places the bone was exposed as also was the right eye. [W.S.N.]

3.—Steele reports the case of a man, aged 50 years, who had **inhalations of oxygen for angina pectoris**. For weeks he has had no attack. [J.M.S.]

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Lancet.

[December 1, 1900. [No. 4031.]

Prognosis and Treatment in Pulmonary Tuberculosis. ROBERT MAGUIRE.

Treatment of Certain Chronic Abscesses by Simple Aspiration. WILLIAM H. BENNETT.

A Method of Measuring the Bactericidal Power of the Blood for Clinical and Experimental Uses. A. E. WRIGHT.

Fungus Disease of the Ear. W. K. HATCH.

Notes on Cases of Movable Kidney, with Remarks on Them. HENRY DAVY.

The Open-air Treatment of Phthisis; an Interesting Case. J. FLETCHER LITTLE and F. W. FORBES ROSS.

South African Horse-sickness; Its Pathology and Methods of Protective Inoculation. ALEXANDER EDINGTON.

Arsenical Poisoning from Beer-drinking. T. N. KELYNACK. Analytical Report. WM. KIRKBY.

The New Prophylaxis Against Malaria; an Account of Experiments in Latium. PROFESSOR ANGELO CELLI.

Perforating Shell Wound of the Left Chest Apparently Healed; Acute Strangulated Diaphragmatic Hernia; Laparotomy; Death. WM. EDWARD HOME.

Two Cases of Effusion Into the Sac of the Pericardium, with Fatal Termination in 24 Hours. FREDK. WILSON.

2. A Case of Spontaneous Evolution in Arm Presentation. J. BELL.

Two Unusual Cases of Intussusception. LAWFORD KNAGGS.

1.—Maguire divides **tuberculosis** into 3 stages: invasion, progress, and result. In the first, the object of treatment is complete cure; in the second, we hope for arrest, and in the third the outcome is exceedingly dubious. Nevertheless, he mentions a case that had attended the Brompton Hospital for 15 years, having had, during the entire time, the physical signs of cavities in the lungs, although her general health remained excellent. The earliest changes are lack of resonance, and deficiency in the breath-sounds. Later there is retraction of the apex of the lung, and the prognosis becomes distinctly grave, especially if rales are present. Fine rales are not so serious as coarse rales. Very rarely tuberculosis commences in the base of the lung, and in these cases the prognosis is more favorable; if, however, the dis-

ease is secondary to pneumonia, or occurs as a lesion secondary to tuberculosis elsewhere, the prognosis is very grave. When it commences in the middle lobe of the right lung, it is usually rapidly fatal, and this is equally true if the middle lobe is invaded by a secondary lesion. Multiple lesions are, of course, very unfavorable, particularly if they are all primary, because under those circumstances they indicate the intensity of the tuberculous poison, and the vulnerability of the patient. Among the more unfavorable types of tuberculosis is one that Maguire names **multiple pleuritic onset**. The patient complains of malaise and irregular aches and pains. A careful physical examination reveals a few slight pleuritic rubs, otherwise the physical signs are often negative. In these cases a severe hectic fever develops, and the patient quickly dies. Another fatal form is emphysematous. The patient complains of cough, and a sense of suffocation. The physical signs are those of emphysema, but there is rapid emaciation, often slight fever, and then rapid breaking down of both lungs. In general Maguire believes that if the symptoms are out of all proportion to the physical signs, the prognosis is bad. He mentions as an instance of this a type in which the patient remains in bed for a long period of time, suffers from emaciation and extreme weakness, but has none, or only slight cough; there may be a few rales at the apex, and a few streaks of blood in the sputum; then suddenly there is a furious outbreak of pulmonary tuberculosis and early death. He suggests for this the name of **latent pulmonary tuberculosis**. Among his other observations is the fact that anemic patients usually do better than florid patients. Any deformity of the chest is rather unfavorable. In patients with tuberculous glands, other forms of tuberculosis run a very slow course. In such cases the glands should be excised in order to get rid of an added focus of infection. Pleurisy and pneumonia preceding an attack of tuberculosis render the prognosis very grave. The pleuritic effusions, however, occurring in the course of pulmonary tuberculosis should not be removed unless they cause mechanical disturbances, as they appear to have a favorable influence upon the pulmonary condition. Tuberculosis commencing in the urinary tract usually remains localized for a long period. A study of 22,000 cases leads him to conclude that heredity does not play such an important role as has hitherto been believed. [J.S.]

2.—Bennett advocates simple **aspiration** in the treatment of certain **chronic abscesses**. In general the best plan is free incision and scraping, followed by suturing or drainage according to the case. But when working among poor people in unsanitary surroundings with inadequate means for obtaining asepsis and difficulty with regard to dressings, such extensive operations are sometimes impossible for the general practitioner. Bennett does not advocate the indiscriminate use of aspiration in chronic abscesses to the exclusion of free incision and scraping, but he believes that in many cases it may be adopted without interfering with the patient's ordinary avocation and it may be used with safety in some cases in which more radical means are dangerous. Certain cases which are not cured by aspiration are reduced in size so that a radical operation is reduced from a measure of great severity to one of comparative slightness. In tuberculous disease of the lymphatic glands aspiration is not recommended under any circumstances, but 2 cases of disease of the hip-joint with large abscesses are reported, in 1 of which improvement resulted so that a slight radical operation was necessary, while in the other the disease was entirely cured. A case of psoas abscess was also successfully treated. Absolute surgical cleanliness is of the greatest importance. In performing aspiration the needle should be withdrawn the moment any sign of blood shows itself. The abscess may be aspirated repeatedly and should not be allowed to regain more than half the size before aspiration. [M.B.T.]

3.—Wright has undertaken an elaborate series of investigations in order to determine the **bactericidal power of the blood**. To accomplish this, he has devised the following ingenious method: Measured quantities of blood-serum in greater or less dilution are mixed in capillary tubes with a gelatin culture of the microorganism which has been incubated for 1 or 2 days. Control tubes are then filled with an equal amount of the culture, and some indifferent fluid, both are incubated, and the colonies counted at the end of

1 or 2 days. The capillary tubes are made in the ordinary manner, and are then graduated by filling them with a solution of colored fluid, from some capillary pipet holding about 5 cmm. such as that supplied with Gowers' hemocytometer. This column of the fluid is then allowed to flow from mark to mark until the capillary tube is graduated. The blood may be obtained from a finger, and is allowed to clot, and then centrifugated. Ordinarily it is desirable to dilute it considerably in order to test the maximum action. The mixture of blood serum and culture is then drawn into capillary tubes, one end of each being sealed. An ingenious device is described for mixing the 2 fluids without producing air-bubbles. The tubes are examined between two glass slides, the space between which has been filled with Canada balsam or cedar oil. The results of this method applied to typhoid fever were as follows: In 50 normal bloods a two-fold dilution sufficed to kill the bacillus, and in 22 cases separately tabulated, a tenfold dilution was sufficient; and in 15% bactericidal effects were complete in forty-fold dilutions. This bactericidal power diminishes very rapidly after the withdrawal of the serum. The addition of antityphoid serums of high agglutinative power to normal blood, caused almost complete loss of the normal bactericidal power. In guineapigs inoculated with serum, cultures produce after a time an increase in the bactericidal power. [J.S.]

5.—Ten cases of **movable kidney** are reported and some conclusions are drawn from the histories. Davy divides these cases into 2 distinct classes; the first in which the kidney can be felt and can be replaced to its usual site; the second group in which the tumor when found cannot be replaced. Under the latter condition it is often very difficult to make an accurate diagnosis. Hydrosalpinx, enlarged gallbladder, hydatid disease of the liver and a liver produced by tight lacing must be considered. In the more favorable cases the symptoms seem to subside when the patient wears an abdominal belt with an inflation-pad in the region of the kidney in front, which keeps the kidney from constantly shifting its position. In some cases the belt is of no avail, the symptoms continue and the patient's life is rendered miserable. In such cases operation should be recommended. One case is reported in which nephropexy was performed and the result was only partially successful. [M.B.T.]

6.—A man of 24, with **tuberculosis**, went to South Africa, where he did not improve; upon his return to England he was extremely emaciated, there was cough, and profuse expectoration filled with tubercle bacilli; there was a cavity in the left lung, consolidation of both apices, and ulceration of the larynx. The temperature was high. After failure to improve in a hospital he was sent home, where he carried out the **open-air treatment**. In 5 weeks he had gained 5 pounds, and was then sent to an institution where the open-air treatment was continued. In the course of some months he had increased very considerably in weight, the cough and night-sweats had ceased, there was very slight expectoration, and the patient was apparently cured. A few tubercle bacilli, however, could still be found in the sputum. [J.S.]

7.—Eddington describes his experiments upon the prevention or cure of **South Africa horse sickness**. The disease is apparently contracted by grazing during the night. It is exceedingly severe, killing, in some regions, as many as 90% of all the horses annually. A single attack protects against all others. It does not appear to be directly contagious from horse to horse; the symptoms consist either of enormous swelling of the head with dyspnea just before death, or the dyspnea without the swelling. The cause of death is a serous or gelatinous exudation found in the interlobular spaces of the lung, in the subpleural and subpericardial tissues, and sometimes in the subcutaneous tissues. This fluid inoculated into other animals does not invariably cause the disease, but the blood of an infected animal will always produce the characteristic symptoms. The disease so communicated is similar in all respects to the original spontaneous form. Injection of the filtered serous exudation does not convey immunization. Various animals besides the horse were tested; it was found that the donkey is much more resistant, none of 12 dying; only 4 of 21 cattle died, and none of 17 goats. Sheep are slightly susceptible, and rabbits, guineapigs, rats, and mice not at all. The blood from a donkey which had been inoculated produced very variable results. As a result of a number of experiments,

Eddington found that protection could only be obtained when there was a definite reaction, that the susceptibility of horses varies very greatly, that it was difficult to attenuate the virus with any degree of accuracy, and that the most important thing was to obtain a virus fixe. Animals were gradually immunized or "salted" by injecting increasing doses of the blood. The serum from these animals had neither protective nor curative influences. A standard virus was prepared, however, by mixing 1 ccm. of virulent blood with 100 ccm. of blood from an immunized animal. By rendering the dilution less, doses of increasing severity could readily be given. By this method 16 horses were immunized with the result that 11 were "salted," that is resisted a large dose of virulent blood, and 5 died. Another series of 7 were inoculated with slightly varying doses, and 5 were protected; and the third of a series of 12 horses treated with somewhat stronger dilution, all giving characteristic reactions. The "salted" animals, when inoculated are capable of conveying the infection to others; although they exhibit no symptoms of the disease, their condition representing one of toleration. [No results of bacteriological or other investigations regarding the nature of the disease are given. J.S.]

8.—A number of cases of **peripheral neuritis** which have been observed in Manchester, present certain peculiarities that distinguish them from alcoholic neuritis. The paresthesia are intense, and often painful. There is inflammation of the conjunctivas of the eyes and nose; there is often a history of nausea and vomiting, and the paralysis is frequently extreme. There is considerable pigmentation of the skin, and occasionally various eruptions, such as herpes papules, etc., desquamation, thickening of the skin, changes in the nails, and sometimes boils. Colic is very unusual; there is no disturbance of the urinary system, and the apparent cause is the consumption of beer, although a large proportion of the cases did not drink to excess. Analysis of the beer showed the presence of arsenic. The cause of the contamination of the beer was found to be in the sugar, and it was introduced with the sulfuric acid used in its manufacture. A sufficient quantity was found to account for chronic arsenical poisoning. [J.S.]

9.—Celli describes the following methods of **preventing** the occurrence of **malaria**: First, ointments applied to the skin, calculated to prevent the mosquitos biting, and second, the mechanical protection of houses. This is best accomplished by the use of wire gauze instead of the ordinary netting, and a porch built of this gauze in which the people can live with safety in the open air. In addition, all cases that have been infected are thoroughly cured. The results of this method were simply extraordinary. Even in the most dangerous districts, large numbers of the employees of the railroads passing through these districts, spent the entire summer without contracting the fever, and their wives and children were similarly fortunate. Even the wretched habitations of the peasants, when carefully protected, were found to fail to develop their usual quota of cases of the disease. [J.S.]

10.—A man who had been suffering two days with symptoms of acute **intestinal obstruction** was operated upon, but the obstruction was not found. Two days later, death followed. At the necropsy the upper part of the left chest was occupied by a collapsed lung, while nearly the whole side was occupied by omentum and a knuckle of the transverse colon which had escaped through a **slit in the diaphragm**. This slit had been caused 4½ months previously by a fragment of shell which had penetrated the chest and which had not been removed. [M.B.T.]

11.—Wilson reports 2 cases of men who died rather suddenly with dyspnea, and at the autopsies the only changes found were pleurisy on the left side, and pericardial effusion. [J.S.]

13.—Two cases of **intussusception** are reported in which operation was performed. In the first case a female child 3 months and 2 weeks old had been taken with symptoms of intussusception 2 days before admission to the hospital. Celiotomy was performed and a double invagination was reduced. Reduction was at first easy, though there was difficulty in unfolding the last three-fourths of an inch of intestine. The child died 4 hours after the operation, while vomiting, when apparently she had rallied satisfactorily from the operation and all was going well. In a second case a

oman of 29 was operated upon for the relief of an intussusception of the small intestine caused by an intestinal polypoma. Her illness had begun 5 weeks previously with severe pain, diarrhea, and vomiting. The acuteness of the attack subsided, but she was troubled with vomiting every day, which became worse 10 days before admission, subsiding and again becoming worse the day before admission. After reducing the intussusception in the usual manner a firm nodular tumor as large as a hen's egg was felt in the bowel. A longitudinal incision was made opposite the mesenteric attachment and a pedunculated fatty tumor was removed. Bleeding was arrested and the mucous membrane was sutured. An uneventful recovery followed. [M.B.T.]

New York Medical Journal.

December 15, 1900. [Vol. lxxii, No. 24.]

- Remarks on Indications for the Radical Therapy of Uterine Fibroids. O. THIENHAUS.
- Derangements of the Organs of Vision, which may be Attributed to Autoinfection, or to Autointoxication. J. H. WOODWARD.
- The Treatment of Trachoma by Expression, with Special Reference to the Recurrence of the Disease. THOMAS R. POOLEY.
- Cysts in the Ligamentum Latum: Their Kinds and Location. BYRON ROBINSON.
- The Prevention of Nausea and Vomiting during Anesthesia. LOUIS J. HIRSCHMAN.
- Strangulated Inguinal Hernia, Containing the Cecum and Appendix. HENRY PERKINS MOSELEY.

1.—Thienhaus, in discussing the necessity for **radical therapy of uterine fibroids**, says that myomatous growths of the uterus, like foreign bodies such as gallstones, bullets, etc., so long as they give rise to no symptoms whatever are by no means subjects for any interference. Though symptomatic and palliative treatment of fibroids with drugs, electricity, or mechanical means, may be beneficial in well-selected cases, there is no certain way of removing them except by surgical operation. Radical operative treatment is indicated in cases: 1. In which we find, or can suspect, carcinomatous or sarcomatous degeneration in the fibroid itself. 2. In which fibroids are complicated with malignant degeneration of the uterus or adnexa. To determine this condition with certainty it may be necessary to have a careful microscopic and macroscopic examination, by an expert, of tissues obtained by curetment. 3. Operation is absolutely indicated in cases of torsion and rotation of the myomatous uterus, because of the danger of gangrene and septic peritonitis. 4. In cases which are of such enormous extension that they threaten life by pressure on the diaphragm and on the other abdominal organs. 5. Cases which produce hydro-nephrosis, or even complete anuria by pressure on the ureters, sometimes with inflammation of the kidneys, pyelonephrosis, etc. 6. Cases, which by the location of the origin of the fibroid, or by retroflexion of the uterus, produce grave symptoms of incarceration in the small pelvis, such as serious neuralgia, symptoms of severe dysuria in connection with ischuria paradoxa and coprostasis. 7. In cases in which uterine fibroids grow quickly, particularly near the climacterium, radical therapy has to be employed. In many of these we find cystic, myomatous, or sarcomatous degeneration. 8. In cases of uterine fibroids in which suppuration has occurred, or which are gangrenous, or are in a state of becoming gangrenous after partial or total inversion of the uterus, thereby causing great pain by labor. 9. Uterine fibroids, complicated with umbilical hernia, pyosalpinx, ovarian cysts, pelvic cysts, tuboovarian abscesses, abscesses in the broad ligament, phlebitis. 10. Weakening menorrhagias and metrorrhagias produced by fibroids, which give the patient the waxlike appearance that of itself enables us oftentimes to make a probable diagnosis at first sight, are further indications. 11. Fibroids, which, at the end of pregnancy, and at the beginning of labor, are obstacles to childbearing. 12. More seldom it may be found necessary to operate during pregnancy. All surgeons will probably agree upon these 12 points, but in cases in which there is no great immediate danger to indicate surgical treatment, but in which there exist conditions in the patient

which make the removal of the growths desirable, the question of operative interference cannot be settled by discussion, but must be left to the individual discretion, and must be treated individually, as well from the standpoint of the patient as from that of the surgeon. [W.K.]

2.—Woodward divides the **derangements of the organs of vision**, which may be attributed to **autoinfection or autointoxication** into 2 classes: Those that are purely functional, and those in which there is some demonstrable structural lesion. The first occur in such cases as neurasthenia and migraine, where, by correcting some slight optical error and then treating the gastrointestinal system, the patient is promptly cured; but not so with the second class, where this organic change in the eye is accompanied with rheumatism, gout, or Bright's disease. These rarely improve, and operative treatment is only temporary. Intraocular hemorrhages, although, at times caused by slight pressure, often give rise to quite extensive trouble, and care should be taken not to confound them with muscae volitantes. [W.S.N.]

3.—Pooley in the **treatment of trachoma** finds that the operation of **expression** gives the best results, and relapses under this method are not so likely to occur, but it has its limits too, and proper after-treatment must be carried out in conjunction with it. [W.S.N.]

4.—Robinson has made a study of **cysts of the ligamentum latum**, in 100 cases, and finds **their kinds and location** as follows: 1. Supraoviductal in 7%. 2. Of the diaphragmatic band in 65%. 3. Cysts of the mesonephritic uriniferous tubules in 38%. 4. Of the mesosalpinx 25%. 5. Hydroparaspinal cysts in 25%. 6. Cysts of the mesonephritic duct (Gartner's duct) in 30%. 7. Lymph cysts of the ligamentum latum in 25%. 8. Chiari's cysts he was unable to confirm, not being able to study any. 9. Kobelt's cysts occurred in 45%. 10. Cysts of the proximal end of the oviduct in only 2%. 11. Cysts under the perisalpinx are not easy to distinguish and no numerical estimation was attempted. 12. Cysts, fragments of the adrenals in the ligamentum latum, no estimation made. 13. Cysts of the fimbriae occur less frequently than is supposed. The macroscopic cysts in 100 subjects constituted 90% and their division is as follows: A. From the pronephros. 1. Hydroparaspinal cysts, 25%. 2. Lymph cysts 25%. 3. Cysts (hydatid) of Morgagni, 6%. 4. Cysts of the proximal end of the oviduct, 2%. 5. Cysts of the fimbriae, 2%. 6. Cysts under the perisalpinx none. 7. Chiari's cyst, none. B. From the mesonephros. 8. Kobelt's cysts in 45%. 9. Cysts of the mesonephritic uriniferous tubules in 38%. 10. Cysts of the mesonephritic duct in 30%. 11. Cysts of the mesosalpinx in 25%. 12. Supraoviductal cysts in 7%. [W.S.N.]

5.—Hirschman has found that the administration of chlorotone gave good results in **preventing nausea and vomiting during anesthesia**. To women he administered 10 grains, to men, 15 grains, about a half hour before operation, and in a series of 50 cases where 30 received this drug only 3 suffered from nausea, and 1 vomited; while of the other 30 cases, 24 vomited, and 19 of them could not retain food the following day.

Medical Record.

December 15, 1900. [Vol. 58, No. 24.]

- 1. Wounds of the Heart, with a Report of 17 Cases of Heart Suture. L. L. HILL.
- 2. Internal Hemorrhage, the Result of Traumatic Rupture of Adhesions due to Acute Appendicitis, with the Report of a Case. LOUIS J. LADINSKI.
- 3. Insanity, its Causes; Is there in Woman a Correlation of the Sexual Function with Insanity and Crime? MARY DIXON JONES.
- 4. Analgesia in Children by Spinal Injection, with a Report of a New Method of Sterilization of the Injection Fluid. WILLIAM SEAMAN BAINBRIDGE.

1.—Hill reports 2 cases of **wounds of the heart** and a series of 17 others in which the heart was sutured. His first was a girl, 8 years of age, whose heart a needle had penetrated at the level of the fifth interspace. It was simply extracted under cocaine, and recovery followed. The second, a colored man of 28 years, stabbed in the fourth interspace a little to

the right of the left nipple line. The pulse was poor and suffering intense, the pericardium was enlarged and evidently it was rapidly filling with blood, and pressing upon the heart's action; this was proved by operating. Great relief and general improvement followed and the case ultimately recovered, although complicated by a traumatic pericarditis. In suturing the heart the same needle is used as in intestinal operations. Silk is the best material, and it should be inserted and tied during diastole. The question of administering an anesthetic is still unsettled, but under no circumstance must the patient struggle. The other cases reported were collected by Giordano. The chief danger in wounding the heart is the involvement of the coronary artery, the injuries to the auricles are more fatal than the ventricles, and to the apex least of all. Wounds inflicted during systole are more fatal than during diastole and perpendicular cuts more than diagonal ones, and after these wounds heal the cicatricial tissue is not as firm as the heart-muscle and cases have been reported where it has ruptured after healing and death following. Blows over the heart are most apt to cause rupture after a full meal.

2.—Ladinski reports a case of traumatic rupture of adhesions about the appendix resulting in almost fatal hemorrhage, in a boy of 11 years, caused by a fall. The great difficulty was in the diagnosis. The appendix was bound down in a U shape, and the jar ruptured the meso-appendix for about $\frac{1}{2}$ inch. [D.L.E.]

3.—Jones gives a general discussion of the question of the relation between the various phases of the sexual function in women with insanity and crime. She insists that the only relation between menstruation, pregnancy, parturition, and other similar conditions is, that if the individual is already predisposed to psychic neurosis, the slight extra strain that any one of these conditions causes may induce the onset of insanity. She strongly opposes Clouston's divisions of insanities. She does not even believe in syphilitic insanity, nor in the possibility of a uterine and amenorrheal insanity. She considers there is no such thing as an insanity necessarily belonging to the puerperal state, and considers that it is not scientifically accurate to speak of puerperal insanity. In general, she insists that all the sexual functions are physiologic, and that she does not believe that physiologic processes themselves, unless acting in a person of evil construction, will cause any pathologic conditions. [D.L.E.]

4.—Bainbridge has used spinal injections of cocaine to produce analgesia in children, the youngest being only $2\frac{1}{2}$ years old, and on this one he performed, first an osteotomy and tenotomy in which analgesia was produced by the injection of 7 m. of a 1% solution between the third and fourth lumbar vertebrae. Again, in a few weeks he injected the same amount of eucaïn and redressed the leg without the least bit of annoyance to the child. Then the week following this, another operation for talipes was performed under cocaine. This time 10 m. were injected. After these operations the child showed some slight reaction, but during the time they were performed it played with a doll. One of the children, a girl of 4 years of age, became frightened and caused some annoyance, but analgesia was complete. In most of the cases there was very little reaction, except in one, a boy 7 years of age and poorly nourished, who for a few days afterwards remained in a stupor, and another, an epileptic boy of 9 years of age, who in the first 16 hours had 3 fits. The headache in most of them was easily controlled by acetanilid and caffeine. His method for sterilizing the cocaine is to pour over it about a dram of ether and allow it to evaporate, and then dissolve it in boiled water.

Medical News.

December 15, 1900. [Vol. lxxvii, No. 24.]

1. Treatment of Influenza in Children. A. JACOBI.
2. The Clinical Picture of Epidemic Influenza. GLENTWORTH R. BUTLER.
3. Influenza and the Nervous System. J. M. MOSHER.
4. The Bacteriology of the Influenza Bacillus. AUGUST JEROME LARTIGAU.

5. The Treatment of Influenza in Adults. REYNOLD WILCOX.

6. A Note Concerning the Treatment of Influenza by the Employment of Hydropathy. E. L. SHURLY.

7. Infantile Grip with Unusual Temperature Range. L. LA FETRA.

1.—Jacobi discusses the various methods or the treatment of influenza in children. He believes that prophylaxis is almost impossible as the disease is so widely spread during epidemics and so readily communicable. There is no specific although many drugs have been so recommended. Cold water is not indicated in cases of high temperature, but warm, not a hot, bath often soothes muscular pain and restlessness. He appears to have reached no positive conclusion regarding the value of quinin. In severe cases of vomiting the patient should be fed by the rectum; the temperature can best be reduced by some of the coal-tar antipyretic particularly antipyrin; acetanilid should never be employed. Caffein is the most efficient stimulant for heart-failure; spartein is also useful. He calls attention again to the value of Siberian musk, and states that by its use he has saved the lives of several apparently hopeless cases. [J.S.]

2.—Butler mentions the following types of epidemic influenza. 1. The respiratory, with severe cough and slight physical signs in the lungs. 2. The nervous form, with severe headache, pain in the back and limbs, and prostration. The gastrointestinal type, with nausea, vomiting, abdominal pain, and diarrhea. 4. The typhoid or febrile variety, with delirium, dry brown tongue, tympanites and recurrent chill. The sequels are bronchopneumonia, pleurisy, abscess and gangrene of the lungs; edema of the lungs and enlargement of the bronchial glands; abnormal quickness of the pulse, irregularity of the pulse, and weakness of the heart's action. There may also be melancholia or mania with migraine, and in rare cases violent meningeal symptoms. A neurasthenic state also occurs; there may be enlargement of the spleen, various forms of nephritis and suppuration in various parts of the body. The most reliable diagnostic sign is the discovery of the bacillus. This requires the assistance of an expert. The 3 diseases most likely to be confounded with influenza are typhoid fever, cerebrospinal meningitis, and bronchopneumonia. [J.S.]

3.—Mosher calls attention to the fact that an attack of influenza may cause the development of latent form of nervous disease, and thus give rise to the belief that it has been the cause of such conditions as paralysis agitans and systemic degenerations. The nervous symptoms accompanying the attack may be in the peripheral nerves, giving rise to severe pains in the back and limbs, or symptoms of polyneuritis followed by degeneration of the muscles. Various affections of the heart also occur, particularly bradycardia. He reports the case of a woman, about 40 years of age, who had a severe attack followed by dyspnea, and then by numbness over the entire right half of the cranium; this region was analgesic and hypesthetic, and there was loss of hearing in the right ear, followed by loss of smell and tactile sense in the right nostril. There was then paresis of the respiratory muscles of the left side; there were various spasmodic and clonic movements; Cheyne-Stokes respiration, photophobia, and temporary stupor. An injection of morphia relieved all the symptoms, and she finally recovered completely. [There seems sufficient reason to believe that hysterical element was present in this case.] He also reports the case of a girl, 14 years of age, who had severe delirium with meningeal symptoms, and who was finally regarded as insane. She developed symptoms of consolidation at the apices of both lungs, then severe decubitus over both hips, but finally she recovered completely. Mosher concludes that the toxin of influenza attacks the nervous system, causing various affections of the peripheral nerves, and various types of insanity. The latter are due probably, in great part to vital depression. [J.S.]

4.—Lartigau, in the course of a brief description of the peculiarities of the bacillus of influenza, mentions the degenerative forms observed by Grassberger and himself. He speaks of the extreme susceptibility of the bacillus to various destructive agencies, the favorable effect exerted upon cultures by Staphylococcus pyogenes aureus; the fact that they do not develop in the lower animals, even monkeys; the inability to produce immunity; the fact that the bacilli may

persist in the sputum for weeks after the abatement of the symptoms, and the methods of bacteriologic diagnosis, and concludes: "If the sputum contains an almost pure culture of a very minute bacillus, which takes the stain faintly when compared with the other bacteria present, and which is decolorized by Gram's method, it may be assumed that the case is one of influenza." To obtain cultures the mouth should be washed with sterilized water, the exudate obtained from the pharynx with a swab and then rubbed on solidified serum containing hemoglobin. [J.S.]

5.—Wilcox makes the following suggestions for the **treatment of influenza**: When the disease attacks the respiratory system it is important to give a stimulating expectorant such as ammonium carbonate in 5 to 10 grain doses as often as may be necessary. If stimulants are required, strychnia may be employed. If the convalescence is tardy, carbonate of creasote is especially valuable. In the gastrointestinal form, a preliminary dose of calomel should be given, followed by some form of intestinal antiseptics by doses of bismuth salts. High intestinal irrigations aid much in eliminating the toxins. In the neuromuscular type it is necessary to relieve the pains. This can best be done by a combination of the coal-tar products guarded by caffeine. Morphine produces bad results. The diarrhea that often occurs should not be treated. Warm baths frequently relieve the pains and keep the skin in a good condition. [J.S.]

6.—Shurley recommends the more general employment of hydrotherapy in **influenza**. This acts partly by promoting elimination, and in the early stages should be used in the form of persistent hot water baths, the steam bath, or the hot water pack. Quinin is also useful. It is not always desirable to introduce steam directly under the bedclothes. If the temperature is very high, a cold pack may be employed in order to allay pain. Paregoric or opium is the most satisfactory drug. Phosphorus seems to act favorably during the convalescent stage. [J.S.]

7.—La Fetra reports a case of **influenza** in a girl baby, 13½ months old, in which an excussion of 10.5° in 24 hours was noted on one occasion and 9.5° on another. Her removal from home in which the infection was present was followed by prompt recovery, and by an equally prompt relapse on her return home. La Fetra believes that the sulfur fumigation that was employed was inefficient, and recommends formaldehyd. [J.S.]

Boston Medical and Surgical Journal.

December 13, 1900. [Vol. cxliii, No. 24.]

1. Pericarditis with Effusion. GEORGE G. SEARS.
2. Cases of Acute Oral Inflammation. JOHN C. MUNRO.
3. The Results of Operations on Varicose Veins. J. B. BLAKE.
4. A Contribution to the Therapeutic Action of Heroin. BERNARD LAZARUS.

3.—Blake reports 11 operations for **varicose veins**. He concludes that the radical cure of varicose veins by dissection is not successful in every case. To obtain successful results the cases must be selected, and sometimes palliative treatment proves more satisfactory. Conditions which militate against good results are old age or an extremely debilitated condition, excessive and extensive varicosity, and occupations which favor the development of varicose veins. Cases which may be cured by a thorough and careful operation are local varix, even of marked prominence, extensive varix limited to a single venous stem, varicosities which are a bar to civil or military examinations in cases in which the development of permanent varicosity was at least partially due to more or less removable conditions, such as flatfoot, tight garters, etc. Operation, even if not entirely successful, will usually relieve such complications as thrombosis, hemorrhage, and ulceration. The conditions which follow unsuccessful operations are pain in and about the scar, general swelling, and tenderness of the leg, the development of varicosities above or below the scar. In all cases general systemic treatment as well as local treatment should be prescribed, together with exercise and the avoidance of continued upright position whenever possible. Cure of symptoms does not necessarily mean removal of all visible varicosities. Comparison of relative methods of multiple

ligation, and continuous dissection must be based upon a larger number of cases than are here recorded. [M.B.T.]

4.—Lazarus reports briefly 9 cases out of a series of 52 that he had treated by the use of **heroin hydrochlorid**. The ill effects have been few and have only been noted when large doses were used, such as ½ grain. He considers the drug a most valuable aid to the medical profession. Its range of application, while originally confined to the treatment of respiratory affections, has been much extended by later observations. In pulmonary affections accompanied by coughs, he would rank it as a specific, while its analgesic qualities in neuralgia and its antispasmodic effect in asthma and whooping-cough have been so well established as to entitle it to a prominent place in the treatment of these affections. [J.M.S.]

Journal of the American Medical Association.

December 15, 1900. [Vol. xxxv, No. 24.]

1. Nephrorrhaphy. CHARLES P. NOBLE.
2. New Points in the Anatomy and Histology of the Rectum and Colon. J. RAWSON PENNINGTON.
3. Colitis, Constipation and Appendicitis; Their Etiologic Relations. MILES F. PORTER.
4. Treatment of Immature Cataract. JOHN E. WEEKS.
5. Rheumatism and the Prevention of Heart Complications. JAMES J. WALSH.
6. The Heart in Acute Rheumatism. DELANCY ROCHESTER.
7. Ear Diseases in Infancy and Childhood. J. HOMER COULTER.
8. Treatment of Skin Cancers Without OPERATION. HENRY W. STELWAGON.
9. Tænia Flavopunctata. FREDERICK A. PACKARD.
10. Compact Operating-Case for Military Service. NICHOLAS SENN.
11. Sarcoma of Vermiform Appendix-Sarcoma of the External Urethral Orifice. THEO. G. DAVIS.
12. The Use of Alcohol in Treatment of Carbolic-Acid Burns and Poisoning. HERMAN A. KLEIN.

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| 1.— | See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1280. |
| 2.— | " " " " 1271. |
| 3.— | " " " " " |
| 4.— | " " " " 1442. |
| 5.— | " " " " 1265. |
| 6.— | " " " " " |
| 7.— | " " " " 1296. |
| 8.— | " " " " 1293. |

9.—Packard, while performing a necropsy on a woman, who died of sepsis caused by a **suppurating hydatid cyst**, found a **tænia favopunctata** in the small intestine 2.5 cm. above the iliocecal valve. Just before the woman died she passed a segment 16.5 cm. long. When the worm was found it was still living and 15 cm. from the lower extremity it was tied in a tight knot. Its total length was 27 cm.; the color was white, of a yellowish cast, the head was distinctly black at the tip and was flattened from side to side, measuring 1 mm. by 0.5 mm. The pigment was deposited in the shape of a four-leaf clover and each division represented a sucking disc; there was no cupping. The neck was 1 mm. long by 1.5 mm. in width. At a distance of 1.5 m. transverse striations were seen, evidently marking the divisions between the proglottides. The following segments resembled those passed during life, and tapered from the neck 3 mm. wide and 2 mm. long, to 7 mm. wide and 1 mm. long; one edge was 1 mm. thick, and extending toward the center were dark lines 1/10 mm. in thickness and 3 mm. in length; these were the uteri and contained eggs. The worm is very rare in the human subject, this being only the sixth case reported. [W.S.N.]

Annals of Surgery.

September, 1900. [Vol. xxxii, No. 3.]

1. Cubitus Varus; or, "Gunstock" Deformity following Fracture of the Lower End of the Humerus. LEWIS A. STIMSON.
2. The Results of Castration and Vasectomy in Hypertrophy of the Prostate Gland. ALFRED C. WOOD.
3. Massage in the Treatment of Recent Periarticular Fractures. GEORGE WOOLSEY.

4. Excision of the Wrist by a Modification of Mynter's Method. WILLIAM J. TAYLOR.
5. The Ileocecal Orifice and its Bearing on Chronic Constipation, with Report of Two Cases Relieved by Operation. WILLIAM J. MAYO.
6. Hernia of the Bladder through the Pelvic Floor from the Traction of a Subperitoneal Fibroma. FRANCIS B. HARRINGTON.
7. On the Influence of Anesthesia on the Effect Produced on the Circulation and Respiration by Irritation of a Sensory Nerve. SIMON PENDLETON KRAMER.
8. The Pathology of Fracture of the Lower Extremity of the Radius. FREDERIC J. COTTON.
9. Tetanus: A Study of the Nature, Excitant, Lesions, Symptomatology, and Treatment of the Disease, with a Critical Summary of the Results of Serumtherapy. ALEXIS V. MOSCHCOWITZ.

1.—**Gunstock deformity of the humerus** consists in marked permanent adduction of the forearm, most apparent when the elbow is in full extension. Clinically the most important feature is the abrupt movement made by the forearm toward the ulnar side as the limb approaches full extension and a peculiarly ungraceful appearance of the limb in this position. Flexion, extension and rotation are usually normal. The immediate cause is a change in the relations of the transverse axis of the elbow-joint to the longitudinal axis of the humerus, a change by which its normal inclination looking downward and outward is changed to one looking downward and inward. Stimson has collected several specimens and skiagrams which throw some light upon the cause of this condition. They show that the deformity due to undoubted fracture and ascent of the internal condyle which has previously been considered the almost exclusive cause of this deformity are almost unknown. In all the joints one point stands out prominently; the unbroken line of the articular surface. This proves that the line of fracture does not extend through it; the cause of the deviation of the axis of the joint is not ascent of the internal condyle or descent of the external condyle, but a twist of the entire articular process. Another point is that the displacement in all is angular, pivoting on the inner side just above the internal epicondyle. Experiments upon cadavers showed that in all the fracture was produced by forcible adduction of the extended forearm. Two forms of fracture resulted, one purely supracondylloid, the other, the line of fracture began on the outer side, at or close above the junction of the shaft and epiphysis and passed inward. In all, the periosteum remained in great part unbroken. Stimson believes that it may be fairly assumed that in treating these fractures the displacement is usually corrected, but it recurs during the application of dressings or subsequently. The only agent which could produce it is the unsupported weight of the limb. Correction of the displacement could probably be easily made by pressure upward and outward against the olecranon in rectangular flexion of the joint or abduction of the fully extended forearm and maintenance of the latter position for a week or two. It should be combined with confinement to bed. He does not believe that full flexion of the joint could be trusted to correct the displacement or prevent recurrence because in all patients with a deformity free flexion of the joint was possible. As the deformity does not prevent the attitude, the attitude cannot prevent the deformity. [M.B.T.]

2.—Wood has collected 150 cases of **castration for hypertrophy of the prostate**. He finds that in 51.5% of the cases the prostate decreased in size and in many other cases there was improvement of the patient's general condition, relief of cystitis and return of normal micturition and other evidences indicating a decrease in size of the prostate. He believes that over 90% were benefited. In only 4.6% was there no improvement. The mortality was slightly over 80%. Even in fatal cases improvement was frequently noted. In a considerable number of fatal cases the kidneys were infected as the result of the enlargement, and a fatal result might have been prevented by proper treatment at the right time. Few instances of mental disturbances are reported. On the other hand, many instances of improved mental and physical vigor are noted. He found no change of voice or alteration of disposition which has been theoretically suggested as an objection to the operation. Wood has also collected 193 vasectomies for prostatic hypertrophy.

The prostate diminished in size in over 9% of these cases; there was improvement in micturition in 15%; cystitis was cured or relieved in over 6%, and residual urine diminished or disappeared in 50%; mental disturbance was noted in a few instances. In this respect the two operations were on the same footing. He believes that these figures give ample reason for advising and performing one of these operations in suitable cases. Brief abstracts of the cases which Wood has collected are given. [M.B.T.]

3.—Woolsey credits Championnière with the introduction of **massage in the treatment of fractures**. Immobilization only relieves pain from the movement of the fractured ends. It imperfectly restores the form of the part, does not favor repair of bone or restoration of function, but often causes scanty callus, delayed union or nonunion, and results in stiffness of joints, atrophy of muscles and disturbance of circulation. On the other hand, a certain amount of motion is favorable to repair of bone. Massage in addition to furnishing this prevents atrophy of muscles, reduces swelling and restores the circulation. There are certain contraindications to its use, such as the presence of large blebs, projecting fragments, great mobility, the tendency to reproduction of deformity, and in compound fractures. Woolsey sees no advantage in entirely discarding splints in the early period of treatment. Their use gives confidence to the patient and a sense of security that no displacement is likely to occur. Particular attention should be paid to the position of the limb, carefully reducing deformity and keeping it reduced, during massage, between the periods of massage, and when the limb is in a splint. If this is not possible from the onset after preliminary massage, plaster should be applied and kept on from 8 to 14 days. Then massage is commenced. The results in these cases are better as far as position is concerned, equally good functionally and nearly if not quite as quickly obtained as when massage is employed from the first. If after massage for some time position be imperfect or if after 3 weeks firm union has not taken place he advises using plaster for 8 to 14 days, though the functional result is thereby delayed. He believes that the treatment of fractures, particularly articular and periarticular fractures by massage and passive motion, gives the best and quickest result as to bony union and function of any method of treatment. [M.B.T.]

4.—A man, 32 years old, had typical **tuberculous arthritis** of the wrist which had begun about 2 years previously. The wrist-joint was excised through an incision on the dorsum of the hand extending from the radius downward between the second and third fingers. Taylor finds this incision very convenient, enabling all the bones of the wrist to be cleared out and the ends of the ulna and radius to be sawed off with less inconvenience than any of the older methods. The result obtained in this case was excellent. [M.B.T.]

5.—Mayo discusses the anatomy of the ileocecal orifice and states that in a number of abdominal operations recently he has examined the ileocecal coil with some care in order to estimate approximately the size of the ileocecal orifice and to determine its bearing on obstinate constipation. He finds that in most cases inspection will reveal no marked abnormality. The wall of the ileum may be invaginated by the finger into the cecum. He reports 2 cases of chronic constipation in which the ileocecal orifice was abnormally small and in which the pain and constipation were removed by a **plastic operation enlarging** the caliber of the **ileocecal opening**. He believes that there are certain cases in which organic or functional narrowing of the ileocecal opening is responsible for a train of symptoms of which pain in the region of the cecum without marked disease of the appendix and chronic constipation are important symptoms. The patients upon whom we operated both recovered and remained free from constipation and in greatly improved condition, one of them 15 months and the other 18 months after the operation. [M.B.T.]

6.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 987.

7.—Kramer states that during the past 3 years he has been engaged in an investigation of **the nature of shock**. During these experiments he noted the phenomena produced by anesthesia on the circulatory and respiratory organs. Dogs were used for the experiments and the blood-pressure and cardiac contractions recorded by means of a manometer connected with the carotid artery. The movements of the thorax were recorded by means of a Berts exploring tambour attached to a strap of adhesive plaster

encircling the lower part of the chest. For control, certain unnarcotized animals were used. Ether was used as an anesthetic in all these cases. The central end of the crural nerve was stimulated. In the unnarcotized animals respiration increased in frequency, and the inspiratory effort was increased. Blood-pressure invariably rose if the animals were deeply anesthetized. There was absolutely no corneal reflex, and in most cases stimulation of the nerve was without effect upon the circulation or respiration. If the animals were partially anesthetized, the corneal reflex being present, respiration became accelerated and there was a fall in the blood-pressure a few seconds after beginning irritation of the nerve. He concludes from these experiments that severe vasomotor shock is more likely to follow operations done under partial anesthesia than those done under complete anesthesia. [M.B.T.]

American Gynecological and Obstetrical Journal.

October, 1900. [Vol. xvii, No. 4.]

1. The Consideration of the Methods of Hemostasis in Abdominal Surgery. E. E. MONTGOMERY.
2. Varicose Veins of the Vulva Complicating Pregnancy; Dermoid Cysts. WILMER KRUSEN.
3. A Case of Supposed Urethral Traumatism. HENRY B. STEHMAN.
4. Treatment of Adherent Cysts of the Ovary and Broad Ligament by Incision and Drainage; Report of a Case. J. E. ALLABEN.
5. Curage; Two Advantages it Possesses over Curettage. FRANK A. STAHL.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. VI, p. 683.
2.—“ “ “ “ “ “ “ “ “ “

3.—Stehman reports a case of **supposed ureteral traumatism**. After the removal of a large fibromyoma involving the breaking up of many firm adhesions, the abdominal dressings became decidedly moist from the escape of the urine. The usual tests were made to determine the location of the fistula, and, it being apparently in the ureter, the patient was anesthetized with a view of thorough examination. In dilating the tract a rent was made in the bladder and as the ureter could not be readily located, it was decided first to repair the rent in the bladder. This was accordingly done and thereafter no urine escaped from the fistula, but instead healthy granulation sprang up and it was soon closed. Evidently the defect was in the bladder, and this case demonstrates that the usual tests in determining whether urine escaping through an abdominal fistula is from the ureter or bladder are not always reliable, and do not possess the differential diagnostic value that the books teach. [W.K.]

4.—**Adhesions about abdominal tumors** are sometimes so extensive and so firmly organized that they form the most important consideration in the operation. There are cases in which the walls of the cyst are so perfectly incorporated with the adjacent peritoneum and so adherent to the various organs, that none of the methods usually employed in breaking them up, are consistent with a probable maintenance of life, and the idea of removing the cyst must be abandoned and some other method of treatment pursued. Allaben reports a case illustrating this condition and a successful way of dealing with it. The patient, aged 31 years, gave a history indicating that the trouble dated back about 15 years. When the abdomen was opened a characteristic parovarian cyst about the size of a man's head was seen. This was punctured and more than 3 quarts of straw-colored fluid was discharged. There were extensive organized adhesions of the cyst-wall to numerous coils of the ileum, to the vertebral peritoneum, to the rectum, and to the floor and left side of the pelvis. Considerable time was spent in an effort to enucleate the cyst, but its walls were so adherent to the broad ligament and the surrounding peritoneal surfaces that these efforts were abandoned. The cyst was then drawn out as far as possible into the abdominal wound and stitched to the peritoneum in the lower angle so as to completely shut out the peritoneal cavity from the cyst cavity. The abdominal wound was closed to within 2 inches of the lower angle, a rubber drainage-tube having first been passed through the bottom of the cyst and out of the

vagina. A few strips of gauze were passed to the bottom of the cyst and allowed to protrude through the abdominal wound. Save for a rather rapid pulse for the first few days, convalescence was uneventful. After the operation the patient's health improved very much; she was free from pain and other unpleasant symptoms for 4 months, when she began to suffer pain on the opposite side, and vaginal examination showed a tumor of the right ovary. A second celiotomy was performed 6 months after the first, through an incision 2 inches to the right of the old cicatrix, and a multilocular ovarian cyst about the size of 2 fists was removed without difficulty. An examination of the site of the first tumor showed nothing present to indicate the existence of a former cyst. The matting of the intestines had entirely disappeared, and even the cyst walls had been entirely absorbed, leaving the parietal peritoneum free and smooth at the point where the cyst walls had been drawn out of the abdominal wound. Recovery from the second operation was smooth and the patient has since enjoyed good health with restoration of a normal menstrual function. By incising, emptying, and draining the cyst cavity we remove the cause exciting adhesions and induce conditions that ultimately work a permanent cure, and at the same time do not expose the patient to conditions prejudicial to life. [W.K.]

5.—Stahl reports 3 cases of **abortion treated by curage** to show the special distinct advantages which the finger possesses over the curet: 1. The superior advantage of the finger in recognizing the presence of foreign bodies in the uterus. 2. The advantage of shelling out the secundines intact with the finger instead of the usual morselling by the curet and forceps. Both of these advantages are of much importance. In reply to the objection that the tip of the finger cannot reach the fundus the writer claims that although the index finger may often be too short and unreliable, this is not true of the middle finger, which is longer, stronger, and swivels better, and he has never yet failed in its use. Abdominal pressure is necessary with the other hand. To the second objection that curage is more painful than curettage, Stahl replies that it should not be so especially if chloroform is given. Even were it so, the security of knowing that the cavity is clear and that all danger has been removed, amply repays for the slight transient discomfort produced by the introduction of the half hand into the vagina. It is only a clumsy operator who is brutal, nor is such awkwardness a feature of digital manipulation alone; for a clumsily handled instrument is far more efficacious in inflicting pain than is the finger. [W.K.]

The Journal of Mental and Nervous Diseases.

October, 1900. [Vol. xxvii, No. 10.]

1. A Case of Adiposis Dolorosa with Necropsy. CHAS. W. BURR.
2. The Functional Significance of the Size and Shape of the Neuron. HENRY H. DONALDSON.
3. Revised Interpretation of the Central Fissures of the Educated Suicide's Brain. BURT G. WILDER.
4. Rigidity of the Spine. J. H. MCBRIDE.
5. A Case of Primary Progressive Muscular Dystrophy of the Facio-Scapulo-Humeral Type of Landouzy and Dejerine. ALLEN B. BONAR.
6. A Case of Hysterical Aphonia in a Grand Mal Epileptic. L. PIERCE CLARK.

1.—Burr reports the case of a woman of 36, who was brought to the hospital in a semicomatose condition. She weighed about 300 pounds, and the excess of flesh was distributed chiefly in the form of pendulous masses on the arms, thighs, and abdomen. She could not move the limbs, excepting slight flexion of the fingers; she was sensitive to pain; the reflexes were absent, and there was marked optic neuritis. This condition had lasted about 2 years. The coma increased and death occurred. At the autopsy the fat was found to be fibrous; there was interstitial neuritis, and the thyroid gland contained a concretion, and there was considerable colloid degeneration. A glioma occupied the position of the pituitary body. There was also acute parenchymatous nephritis, and sclerosis of the ovaries. The lesions correspond with those found by Dercum in his case which came to autopsy. In both instances there was **disease of**

the thyroid, but Burr's case is rendered more interesting by the simultaneous presence of a **lesion of the pituitary**. He does not believe, however, that we are yet in a position to indicate with precision the pathology of the disease. [J.S.]

2.—Donaldson has studied the relation and size between the axis cylinder and the ganglion cells of the spinal cord in white rats. He found that a close relation between the cross-section of the nerve-fibers and the side of the cell exists, but that both increase more slowly than the total weight of the animal. The nerve-fibers of large caliber do not necessarily have the longer course in rats, but apparently have a more extensive distribution. In the discussion that followed this and other papers upon the neuron, Putnam urged that the cell-body does not store impressions. Langdon believed that when we understand the **neuron theory** more perfectly it will be possible to obtain practical results in therapeutics. Van Gieson urged that the neuron theory was now quite firmly established; he expressed a general agreement with the retraction theory, but did not believe that the protoplasmic processes had amoeboid movements. Dercum also advocated the **retraction theory** as a working hypothesis; Collins, on the other hand, did not believe that the retraction theory was at present worth serious consideration. [J.S.]

3.—Wilder, in making a second report, at an interval of 6 years, upon the **brain of a suicide**, stated that he was convinced by careful study that he has been in error in describing 2 central fissures in the left hemisphere; the second fissure being an unusually long and complete postcentral. [J.S.]

4.—McBride reports 2 cases of **rigidity of the spine**. The first commenced at about the age of 20 with severe pain in the left great toe; then the left hip began to grow stiff, and, at the age of 30, the spine. Ultimately the left arm, and then the right arm became rigid, and the entire spinal column almost immovable. Excepting the pain in the great toe, he had not suffered throughout the course of the disease. Sight gradually failed in the eyes, and hearing was also imperfect at the time of the examination. The second case, a man, had a severe fall at the age of 33; subsequently the neck became stiff and painful, and this was followed by weakness in the arms, wasting of the muscles, and wasting of the muscles in the legs; there was slight pain over the fifth cervical vertebra, all the reflexes were greatly exaggerated, and there was ankle-clonus. The second case was probably one of traumatic pachymeningitis. [J.S.]

5.—Bonard describes the case of a Jewish girl of 17, who had always been extremely thin, and unable to close her eyes completely. At the age of 16 she discovered that she was unable to raise her hand to her head; it was then found that all the muscles of the right shoulder were atrophied, and also some of the muscles in the back and in the face, the orbicular and buccinator muscles. The muscles of the hands and forearms were unaffected. The case represents the facio-scapulo-humeral type of **progressive muscular dystrophy**, originally described by Dejerine and Landouzy. [J.S.]

6.—Clark reports the case of a German, who at the age of 25 commenced to have epileptic attacks; after these attacks he would sometimes have a temporary aphonia and whisper-speech would persist for 6 days. From time to time this condition occurred after attacks of petit mal, and finally it occurred spontaneously. A diagnosis was, therefore, made of **hysteric aphonia**. [J.S.]

Archives of Pediatrics.

October, 1900. [Vol. xvii, No. 10.]

1. Acute Nephritis Following Influenza. ROWLAND GODFREY FREEMAN.
2. Congenital Cardiac Malformation, with Endocarditis and Anuria. A. C. COTTON.
3. Atresia of the Larynx Due to Traumatism, the Result of Faulty Intubation. W. P. NORTHRUP.
4. Report of a Case of Pulmonary Stenosis. S. McC. HAMILL.
5. A Case of Suppression of Urine Apparently Due to Ascaris Lumbricoides. FRANK VANDER BOGERT.

- 1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 998.
- 2.—“ “ “ “ “ “ 999.
- 3.—“ “ “ “ “ “ 1000.

4.—Hamill reports the case of a boy, aged 6 years, whose family history gave evidence of acute articular rheumatism and heart disease. Since an attack of measles in January of the present year, the patient has had a short, dry, hacking cough by day, with nervous paroxysms of cough on first lying down at night. Three days before he was seen, the boy developed headache, which has persisted constantly until the present time, and he had other typhoid symptoms. A Widal test, made on the third day after admission, was negative, again negative on the ninth and fifteenth days, and finally positive on the twenty-first day of the disease. The patient ran through a rather typical, mild attack of **typhoid fever** without disagreeable symptoms. The heart-condition seemed but little influenced by his illness. He was seen about 3 months later with an attack of bronchopneumonia which had apparently no ill effect upon his cardiac condition. When the breath is held at the end of expiration there is a visible pulsation in the second interspace to the left of the sternum. The cardiac condition was as follows: There is a faint systolic thrill palpable over the entire pericardium, which is especially distinct along the upper edge of the sternum in the third and fourth interspaces. Auscultation reveals a rather rough, blowing, systolic murmur heard over the entire precordium, and to some extent over the entire anterior portion of the left chest, with its point of maximum intensity in the second left interspace. Over the portion of the heart extending to the right of the sternum a peculiar, loud, flap-like, systolic sound is heard, which suggests the loud first sound of mitral stenosis. There is no accentuation of the pulmonary sound. The murmur is believed to be due to **obstruction at the pulmonary orifice**. [J.M.S.]

5.—Vander Bogert reports the case of **suppression of urine** in a girl, aged 5 years, who had a history of not having passed her urine for a period of 19 hours. The trouble began 4 days before admission, with severe pain in the abdomen, which caused the patient to lie with thighs flexed. She became very constipated and her abdomen was tender to pressure. There was no history of vomiting, nor of any symptoms referable to suppression of urine. Soon after admission she passed urine. Her temperature was 101.2° F.; pulse, 120; respiration, 48; and from that time the temperature varied between 98° and 102.5°, rising in the evening and falling to normal in the morning until July 16, when it rose to 103.4°. The throat was found to be inflamed and a dose of antitoxin was given. The temperature gradually fell and on July 19 reached normal, where it practically remained until the child left the hospital on August 6. In the 2 weeks following admission the daily amount of urine never exceeded 9 ounces, and only twice did it reach that amount. On July 23 it increased suddenly to 13 ounces, and at 7 o'clock that evening a round worm, measuring 27 cm. in length was passed by the bowels. From that time until the child left the hospital, on August 6, the daily amount of urine averaged 12 ounces. Frequent chemic and microscopic examinations of the urine were made, but always with entirely negative results. Lumbricoid eggs were found in the stools on July 25 and eggs of the *Trichocephalus dispar* on the 29th. The patient was subsequently treated by calomel and santalin for 3 successive nights, but no more worms were passed. [J.M.S.]

Edinburgh Medical Journal.

October, 1900. [Vol. viii, No. 4.]

1. Points of Practical Interest in Surgical Gynecology; V. Affections of the Female Genitalia as Causal Factors in the Etiology of Neuroses and Insanity. H. MACNAUGHTON JONES.
2. The Clinical Forms and Pathologic Anatomy of Spinal Syphilis. R. T. WILLIAMSON.
3. A Contribution to the Mechanism of Articulate Speech. S. W. CARRUTHERS.
4. A Case of Epithelioma of the Tongue, Associated with *Trichina Spiralis*. F. W. HOPE ROBSON.

1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. VI, No. 15, page 689.

2.—Symptoms of **compression of the spinal cord** or nerve-roots may be produced by **syphilitic disease** of the vertebrae such as syphilitic caries, necrosis, gumma, exostosis, periostitis, or osteitis. This is an exceedingly rare form of

spinal syphilis, and may at first be mistaken for tuberculous caries or tumor of the vertebrae. The diagnosis is based on (1) the evidence of disease of the vertebrae, with or without implication of nerve-roots and spinal cord; (2) the absence of indications of tuberculous disease, carcinoma, or tumor-growth in any part of the body; (3) the evidence of previous syphilitic infection; (4) the good results of anti-syphilitic treatment. In another very rare form there are symptoms of **chronic meningitis**, without indications of involvement of the spinal cord. The evidences of previous syphilitic infection, the absence of fever, the absence of any indication of tuberculosis or of spinal caries, are important points in the diagnosis. **Meningomyelitis** is the most common form of spinal syphilis. There are meningeal symptoms first, followed, in course of time, by symptoms of involvement of the spinal cord. The cord symptoms consist of paraparesis or paraplegia, usually with increase of the deep reflexes, and rigidity, and frequently with bladder-symptoms and sensory disturbances. There may be partial or complete anesthesia to all forms of sensation; but often some forms are affected and others spared; sometimes loss of sensation to temperature (especially to cold) is the chief or only sensory disturbance. Pathologically, both the meninges and the cord are affected. Syphilitic disease of the bloodvessels usually plays an important part in the pathologic anatomy. The nervous elements of the spinal cord are damaged (1) by cell infiltration or gummatous infiltration; (2) by softening or degeneration, following partial or complete obliteration of the bloodvessels. Sometimes the symptoms of spinal syphilis resemble those of **acute transverse myelitis**, or even of spinal hemorrhage. There is a sudden onset of paralysis of both legs, with paralysis of bladder and rectum. There may be loss of all forms of sensation, or analgesia and thermoanesthesia only; or thermoanesthesia, whilst other forms of sensation are normal. This form is known as **acute syphilitic paraplegia**. **Erb's syphilitic spinal paralysis** is still another form of the disease. In this condition the patient presents the familiar symptoms of spastic paresis or paralysis, as regards gait, attitude and movements. The patellar tendon reflexes are increased, and ankle-clonus is present, but there is relatively only slight muscular rigidity. The bladder is constantly affected. As a rule, there is only slight though constant affection of sensation. The onset of the disease is gradual, seldom rapid. In the form characterized by **paraplegia with combined degeneration in the posterior and lateral columns**, the chief symptoms during life are paralysis of both legs with rigidity, and bladder and rectal symptoms. In rare cases of spinal syphilis the symptoms have been those of a localized meningeal or intramedullary spinal tumor, and a **gumma** has been diagnosed. In addition to the clinical forms already mentioned, there are a number of other rare varieties, in which the symptoms often resemble those produced by nonspecific cord lesions: 1. Cases of Brown-Sequard's paralysis due to a unilateral lesion of the cord. 2. Cases of triplegia, in which both legs and one arm are paralyzed. 3. Cases somewhat simulating disseminated sclerosis, in the evidence of multiplicity of lesions; these are due to multiple syphilitic lesions. 4. Cases simulating lateral sclerosis; due to secondary sclerosis of the crossed pyramidal tracts of the cord, with slight changes elsewhere. 5. Cases simulating anterior poliomyelitis. 6. Cases simulating amyotrophic lateral sclerosis or progressive muscular atrophy; due to meningomyelitis in the lower cervical region. 7. Cases simulating pseudohypertrophic paralysis in the gait and manner of rising into the erect posture, but differing in the severe pain in the back and limbs, and in other symptoms. Such cases are probably due to chronic syphilitic meningitis in the lumbar and sacral regions of the cord. 8. Cases simulating syringomyelia as regards the sensory symptoms; due to meningomyelitis of special distribution. 9. Cases simulating locomotor ataxia due to a meningomyelitis invading the posterior columns of the cord, or to a gummatous infiltration of the posterior columns. The question of the syphilitic origin of true locomotor ataxia is unsettled. Pathologically, the changes in this disease are not of a syphilitic nature in the strict sense, and the disease can only be regarded as a postsyphilitic degeneration by those who attach the greatest importance to the connection between tabes and syphilis. It must be allowed that in a small proportion of cases of tabes there is no evidence or

probability of previous syphilitic infection. But there can be no doubt that a history of venereal disease, of some form, is obtained much more frequently than in the cases of other chronic affections of the nervous system. In 32 cases of spinal syphilis which have come under Williamson's observation the forms of disease were as follows: Syphilitic disease of the vertebrae, 0; chronic syphilitic meningitis, 3; meningomyelitis, 16; acute paraplegia (acute syphilitic myelitis), 6; chronic syphilitic spinal paralysis (Erb's form), 4; gumma of the cord (verified), 1; triplegia, 1; pseudotabes, 1. The pathologic changes produced by syphilis may be divided into 3 classes: 1. Those that indicate syphilis most clearly, such as gummata, or gummatous infiltration of the meninges or cord; minute gummatous nodules in the walls of the vessels; and inflammation of the meninges, followed by caseous and fibroid changes. 2. Changes that are very suggestive, but not quite conclusive, of syphilis, such as disease of the bloodvessels, endarteritis, and periarteritis, endophlebitis and periphlebitis. 3. Changes secondary to the vascular disease, such as thrombosis of spinal vessels, or complete or partial obstruction of the vessels, from thickening and disease of their walls. As a result of either of the 2 vascular changes, softening and degeneration of nerve-elements occurs; occasionally spinal hemorrhage is produced. Following the destruction of the nerve-elements, ascending and descending sclerosis gradually develop. A thorough antisymphilitic treatment should be prescribed, and there is good evidence that mercury and potassium iodid are of service. After the 2 drugs have been employed together for a time, it is best to use them alternately. [J.M.S.]

4.—Robson recites the case of an ironworker suffering from a growth on the left side of the tongue, which presented the usual characters of an epithelioma. As the growth was small and limited to the left side, half of the tongue was removed with the aid of the ecraseur. A portion of the growth was examined microscopically, with a view to confirming the diagnosis, when the following very peculiar appearances presented themselves. In addition to an ordinary epithelioma invading the substance of the tongue from the surface, between the muscular fibers, and lying in their long axes, were numerous **encysted Trichinae spirales**. The parasites showed evidence of calcification, indicating their somewhat remote advent. The specimen, besides being a pathologic curiosity, is interesting, inasmuch as the irritation caused by the calcified trichinae might prove a factor in the causation of the growth. No history of any illness, such as trichinosis, could be elicited; and a careful examination of the right half of the tongue failed to demonstrate any signs of disease. [A.B.C.]

Deutsche medicinische Wochenschrift.

September 27, 1900. [26. Jahrg., No. 39.]

1. The Diagnosis of Tuberculous Peritonitis. H. LÖHLEIN.
2. A Peculiar Case of Purpura Rheumatica. PAUL EDAL.
3. A Case of Multiple Typic Periostitis. H. CONRADT.
4. The Pathology and Therapy of a Douglas Abscess in Perityphlitis. J. ROTTER.
5. The Treatment of Scabies. RICHARD SACHS.

1.—Löhlelin considers that while the difference between **ascites and ovarian cyst** is usually a distinct one, medical physicians commonly see less of the obscure cases of **peritoneal tuberculosis** than do surgeons, cases of curious tumor-formation and localized ascites being relatively frequently admitted to surgical clinics, while they are rare in the experience of medical practitioners. As distinctions in the diagnosis he particularly mentions the observation of the temperature for several days and the importance of examination under ether. He has also found that in tuberculous peritonitis there is usually some relative or absolute dulness on the left lower side of the abdomen and some resistance in that region. The explanation for this is, that with disease of the mesentery its retraction draws the bowel over to the right, while the left side is more or less completely filled with exudate. He describes a curious case in which a diagnosis of tuberculous ascites with ovarian cyst was made, but in which operation showed that there was tuberculous peritonitis with distention of the bladder and adhesions of this organ to the abdominal wall, the distended bladder simu-

lating a cyst. He insists upon the importance of rectal examination of Douglas's pouch. One frequently feels large tubercles in this way, but the small tubercles are even more common and can be readily felt. One can also by rectal palpation determine the degree of improvement after operation by noting the condition of the tubercles. Another point which he recommends is an incision in the posterior vaginal vault and examination of the local peritoneum in this way, and, if necessary, excision of small bits of diseased serous membrane. [D.L.E.]

2.—The case reported was that of a man of 41 who had apparently a croupous pneumonia. Ten days later he was admitted with a severe bronchitis, some fever, albuminuria, and marked delirium. Four days afterward small **hemorrhages** appeared on the left arm which increased in size and in number, and were markedly elevated above the skin surface. The **purpura** persisted, new hemorrhages appearing practically every day and involving all portions of the body. At one time there was free hemorrhage from the folds of the skin, and some hemorrhage from the mucous membrane. There was marked symmetry in the hemorrhage. The most peculiar and important fact noted was that there were also, in all, 17 more or less deep hematomas formed, and that they were always upon the left side of the body. Bacteriologic examination of the blood was negative, there was no involvement of the heart, and the spleen was not enlarged. Unusual conditions noted were severe sweats, and a remarkably quick coagulation of the blood. The latter was so marked that it was almost impossible to get blood for counting and hemoglobin estimation, the flow stopping so quickly. The case was believed to have demonstrated that nervous influence acting upon the vasomotors was responsible for the hemorrhage. This conclusion was due to the limitation of the hematomas to the left side, a condition which could not have been caused by a general dyscrasia of the blood, but must have been due to some local cause. The blood-examination showed a normal number of red and white cells, with slight reduction of the hemoglobin. An interesting observation was the fact that the blood plates were much increased in number. This is chiefly of interest in relation to the fact that there is evidence that the blood platelets are of importance in blood coagulation, and that they increase in those conditions where the blood tends to coagulate with undue rapidity and decrease in the contrary conditions. [D.L.E.]

3.—The case occurred in the person of a girl of 15. She had an attack of typhoid fever in January; 6 months later she had **periostitis** of the tibia, skull, and left hand. Operation showed pus, and the presence of the typhoid bacillus. An interesting fact was the observation that while this bacillus gave reaction in high dilution with the blood of a rabbit inoculated with typical typhoid bacilli, the patient's blood would not react with typical typhoid bacilli or with the bacilli isolated from the pus even in a dilution of 1 to 30. The bacilli were virulent to guineapigs. The explanation of the negative result of the agglutination test may be found in the fact that the agglutinating power of the blood is often soon lost after general typhoid infection, and there was no general infection with typhoid from the abscesses. The observation is of importance in showing that post-typhoid metastatic infection need not necessarily give a Widal reaction. In other words, that a negative result with a Widal test is not an absolute sign of the absence of local typhoid infection. These cases Conradi considers to be not the result of a specific tendency of certain tissues to infection with typhoid while other organs have become immune. He thinks they are rather the result of modification of the bacilli themselves; they have become less virulent, and while they live in the body they have lost their infectiousness. Some local conditions, such as trauma, then reduces the resistance of the tissues and the bacilli again assume a relative virulence. He thinks that the typhoid bacilli cause local suppuration only when they have lost their specific character. [D.L.E.]

5.—The treatment recommended is the use of **peruol**, which is a benzylester of benzoic acid. This is mixed with oil in proportion of 1 to 3, energetically rubbed in all over the body, with the exception of the head and neck. This is twice repeated within 36 hours, then a bath is given, and the clothes are changed. Thirty-five cases so treated all improved very quickly, and in only 4 was a recurrence noted; in these cases the treatment was not properly carried out,

the clothes were not changed, so there was opportunity for new infection. Peruol was found to kill the parasites in experiments more quickly than any of the other substances ordinarily used for scabies. The author has also used **Shorwell's method** with satisfactory results in 25 cases. There is likely, however, to be more irritation of the skin, and it should not be used when the skin is delicate or particularly in children. Peruol causes no irritation of the skin or other organs, has no odor, and does not stain the clothes. [D.L.E.]

October 11, 1900. [26. Jahrg., No. 41.]

1. Viscin and its Therapeutic Application. G. RICHL.
2. Atrophy and Development. M. MUHLMANN.
3. Psychology and Brain Anatomy with Special Review of Modern Phrenology. W. WEYGANT.
4. The Pathology and Therapy of Bladder Tuberculosis. LEOPOLD CASPER.
5. The Etiologic Significance of Trauma. DIRSKA.

1.—Riehl describes the method which he has used for obtaining viscin from the *Viscum album* (the white mistletoe), a plant very common in Europe. The product is extremely adhesive and furnishes a good basis for plasters, traumaticin and gelatin preparations. It is much cheaper than india-rubber preparations. [D.L.E.]

4.—Casper has written an article on pathology and treatment of **tuberculosis of the bladder**, basing his considerations on the study of 35 cases. In most all the cases there was tuberculous process going on in other organs. Most frequently the original foci of disease were found in the kidney, next in the genitalia (prostate seminal vesicles and testicles) and with these conditions there was generally associated more or less disease of the lung. Primary tuberculosis of the bladder was found only in 3 cases, 2 of which developed as sequels to gonorrheal cystitis. Gonorrhea plays a very important part in the etiology of tuberculous cystitis, having been present in 33% of the cases. [G.B.W.]

October 18, 1900. [26. Jahrg., No. 42.]

1. The Present Position of the Hand-Disinfection Question and the Next Problems of the Same. DÖDERLEIN.
2. Curing of a Case of Epileptic Insanity. EDMUND ROSE.
3. An Apparatus for Experiments in Metabolism with Infants. B. BENDIX and H. FINKELSTEIN.
4. The Pathology and Therapy of Tuberculosis of the Bladder. LEOPOLD CASPER.
5. Hemianopsia and its Local Diagnostic Utilization. H. SOLOMONSOHN.

1.—Döderlein says that it has been proved by numerous researches, that it is impossible to completely **disinfect the hands**, and that in all operating the surgeon never does have an absolutely sterile wound; however, many wounds heal without inflammatory reaction, even in the presence of various microorganisms. He endeavors in his article to show that though our hopes, so far as obtaining an ideal disinfection of the hands is concerned, have been destroyed, much is to be accomplished by further research in a somewhat different direction. The question as regarding the use of gloves is a very important one and many others still unsolved await further enlightenment from some worthy researcher. [G.B.W.]

2.—The case was that of a boy who in September, 1898, fell and received a wound on the forehead parallel to and above the left eyebrow. This healed without trouble, but a few days later it was noticed that the boy, who was then 6 years old, and who had previously been entirely normal mentally, paid no attention to any words addressed to him, had a wholly expressionless appearance, and began to have severe **epileptic attacks** which were frequently repeated. He ceased entirely to speak, either spontaneously or when addressed. His physical condition seemed entirely good, but his mental condition was grievous. He made constant purposeless movements, was exceedingly dirty in all his habits, and had an abnormal appetite. He passed through an attack of measles, and was somewhat improved at first, but soon after was in the same condition as previously. He was **operated on**. The wound was found to be free from adhesions to the skull, the skull was normal, and although the dura was opened and the brain tissue was punctured, nothing

abnormal was found. The wound was therefore closed; the patient seemed perhaps slightly better after the operation, but there was little change, and he had typical epileptic attacks. The operation was undertaken in January, and the child was discharged with the advice that he should be placed in a school for weakminded children. In the following summer the mother reported that the last epileptic attack had occurred in April, and the child at the time of the report was seemingly entirely well. He recognized all his surroundings, he was of normal intelligence for a boy of his age, epileptic attacks did not occur, and there was nothing in his mental or physical condition to indicate that he had any remnants of his previous epilepsy. The explanation for this cessation of the attacks is not readily given. Rose suggests that since the trephine opening had remained patulous this may have acted as a safety-valve regulating internal pressure. [D.L.E.]

3.—The apparatus described is one which allows of the application of a urinal to children while undertaking **metabolism experiments**, and while not binding the children so tightly as to make them uncomfortable prevents loss of urine. It consists of a somewhat hammock-like arrangement with pockets in the lower ends in which the legs are fastened. [D.L.E.]

4.—Regarding the diagnosis of **tuberculosis of the bladder**, it is noteworthy that in certain instances, the smegma bacillus has retained the carbolfuchsin stain with remarkable tenacity, resembling in this way very closely the tubercle bacillus. The 2, however, can be readily differentiated by cultivation on blood-serum and glycerin agar. The smegma bacillus develops within 24 hours and that of tuberculosis not until 10 to 14 days have elapsed. When the tuberculous process is primary in the bladder, the posterior wall is generally affected. When it is an ascending infection following disease of the genitalia, the fundus and the region of the sphincter are the parts attacked, and when the condition of the bladder is secondary to disease of the kidney or ureters, the ulceration is found around the openings of the ureters. Cystoscopy of the bladder should not be practised except in cases where diagnosis cannot be otherwise determined. As to the treatment of tuberculosis of the bladder: there is the general—consisting of proper and hygienic administration of internal medicine—the local and the operative. Regarding internal medication, Casper believes in the use of creasote and guaiacol carbonate. In the local treatment, one should never, as in ordinary cystitis, distend the bladder with irrigations. In many cases, it is probably best to inject a small quantity of fluid, the best of which is 1 to 10,000 to 1 to 5,000 solution of corrosive sublimate. Topical applications may also be made with cotton twisted on the end of an applicator. It is seldom that any toxic symptoms will be noticed from the use of the sublimate. If after 3 or 4 applications no results are obtained, little can be expected from the use of the sublimate, because the benefit of this drug is generally observed even after its first injection. The first improvement is noticed in the relief of the pain, the tenesmus being more difficult to relieve. Operations in tuberculosis of the bladder should be done only in those cases in which the tuberculous process is known to be limited to a circumscribed area. [G.B.W.]

5.—Solomonsohn has written a very specialized article on **hemianopsia**, going over the question in quite a detailed manner. [G.B.W.]

October 25, 1900. [26. Jahrg., No. 43.]

1. Salkowski's Determination of the Alkalinity of the Blood. WALDVOGEL.
2. Gonorrheal Nerve Diseases. A. EULENBURG.
3. Experience in Copper Factories. L. LEWIN.
4. Hemianopsia and its Local Diagnostic Utilization. H. SOLOMONSOHN.

1.—Waldvogel has found that in doing Salkowski's method for the **determination of the alkalinity** of the blood that when one places a given quantity (10 cc.) of sulfuric acid solution in the Schlösing apparatus over the ammonium sulfate solution and leaves it there for several days some of the sulfuric acid has disappeared. This he attributes to a physical process in which the ammonium sulfate abstracts water from the sulfuric acid solution. He uses normal sulfuric acid instead of $\frac{1}{10}$ normal as Salkowski recom-

mends, since he has found the latter to be insufficient. He therefore determines exactly the amount of fluid remaining in the sulfuric acid chamber before he determines by titration with $\frac{1}{10}$ normal NaOH how much the acidity has been reduced. He found the normal for men to vary between 350 and 400 mg., for women between 300 and 350. The effect of fever was to reduce the alkalinity, but there was no direct parallelism between the temperature and the reduction of the alkalinity, and the reduction of the alkalinity persisted in some cases when the temperature had receded to normal. In cases of slight fever the alkalinity was not always diminished. Anemias reduced the alkalinity. In one case of severe pernicious anemia associated with typhoid fever and with marked rise of temperature, he found his lowest result, *i. e.*, 40 mg. After 60 hours abstinence from food he found in one man a reduction to 214 mg. This patient showed at this time a slight acetoneuria. Waldvogel believes that after 5 days' action of the ammonium sulfate it is quite possible that some of the alkaline elements of the blood-corpuscles may diffuse into the fluid and thus cause error. [D.L.E.]

2.—Eulenburg describes the following **gonorrheal complications of the nervous system**: Neuralgia-form affections, muscular atrophy and atrophic paralysis, neuritis, and myelitis. Under the heading of neuralgia he places 14 cases which he has observed, including the instances of neuritis, since they cannot be distinctly separated. There were 4 cases of muscular atrophy and atrophic paralysis, and 1 of myelitis. Of the cases of neuralgia 6 affected the sciatic nerve, 2 the tibia; one of them appeared in the form of achillodynia, and another case was a neuralgia of the nerves of the arm. An important point in the cases of neuralgia of the sciatic was that the nerves of the sacral plexus were not alone affected. In 5 the nerves coming from the lumbar plexus were also affected and in 2 cases the brachial nerves. This spreading of the neuralgia to other nerves he considers an important diagnostic point. In presenting his statistics in general he has left out cases in women which were probably due to this cause since it was so difficult to demonstrate the existence of gonorrhea. In 6 cases limited to the main trunk of the sciatic, 2 were left-sided, 1 right sided, 3 on both sides, one side always being affected chiefly. In 2 cases there was reason to suppose the beginning of a tabes because of these bilateral neuralgia-forms pains. The onset of the neuralgia was from 2 months to several years after the attack of gonorrhea, but the gonococcus could still be demonstrated in most cases, or had been demonstrated shortly before the onset of the attack. The cases of muscular atrophy with atrophic paralysis were chiefly instances of atrophy about joints which had shown gonorrheal involvement. As an example he describes a case in which there had been involvement of the right shoulder, and subsequently there was atrophy of the pectorals, serratus, latissimus, and other muscles on the right side, and subsequently an atrophy of the corresponding muscles on the other side, so that the case presented a strong resemblance to progressive juvenile dystrophy. The patient improved, and ultimately became almost entirely well. As an example of cases of myelitis he reports one observed by him in which there was absence of patellar reflexes, pains along the spine of very severe degree, loss of power in the legs and in the muscles of the back, with atrophy of the muscles of the right arm and also of the legs and feet. There was some involvement of the bladder and rectum. This man recovered entire health. In the diagnosis of those conditions he insists strongly upon the importance of the discovery of gonococci in the secretion from the urethra, or the presence of chronic urethritis and its results, such as prostatitis and cystitis, or metastatic gonorrheal affections such as joint involvement, endocarditis, diseases of the endometrium and adnexa. Certain peculiarities in the symptomatology of the affections themselves are important. First, a tendency to appear in the form of sciatica with coincident involvement of the lumbar and sacral nerves, and particularly of the genital nerves; also a tendency to the occurrence in young persons to sudden severe paroxysms of pain often accompanied by intermittent fever, also a tendency to be associated with sexual neurasthenia. Muscular atrophy or atrophic paralysis is likely to be situated about joints commonly affected with gonorrhea, it follows certain forms of arthritis, and is likely to involve the corresponding muscles on the other side of the body. The gonorrheal affections of the cord have a ten-

ency to some resemblance to degeneration of the posterior columns, but are distinguished by a coincident tendency to involvement of the motor sphere (*i. e.*, muscular atrophy), absence of pupillary symptoms and by the general course. The prognosis is not unfavorable. Treatment should be instituted according to the individual case, but Eulenburg has found iodipin, particularly when given subcutaneously, to be valuable. [D.L.E.]

3.—Lewin reviews the past work on **copper poisoning**, and reports the results of his own observation of a large series of cases and the influence upon himself of the inhalation of copper in factories. He decides that there is every evidence that large amounts of copper, when taken in through the mouth or through the lungs, if in soluble form, are likely to cause acute poisoning, the symptoms being due to the direct effect of the copper upon the albuminous tissues and the formation of copper albuminate. Symptoms which are due to absorption are extremely rare. Copper dust when inhaled may cause acute disturbance of the gastrointestinal tract, sialorrhea, and similar disturbances, which soon disappear. If the influence is chiefly upon the respiratory tract it causes an uncomfortable feeling of irritation in the larynx, a feeling of pressure under the sternum, sometimes a little spasm of the glottis, cough, and expectoration. All these symptoms are those of any mechanical irritant and are such as are caused by any metallic salt. He does not think that there is any evidence that any specific or important poisoning with copper is seen in workers in copper. The affections to which these people are subject are due, he thinks, to the unhygienic influences under which they live, or to their poor nourishment, and similar conditions. [D.L.E.]

4.—Solomonsohn concludes his article on hemianopsia by reporting in detail 3 cases. [G.B.W.]

Wiener klinische Wochenschrift.

September 20, 1900. [13. Jahrg., No. 38.]

1. The Etiology of Primary Acute Gastrointestinal Diseases of Infants. THEODOR ESCHERICH.
2. Investigations Concerning Tonsillotomy and its Possible Relation to the Diphtheria Bacillus. L. HARMER.
3. A Contribution to our Knowledge of Scarlet Fever and Measles. JAROSLAV ELGART.

1.—Escherich classifies the **gastrointestinal diseases of infants** as follows: A. Ectogenic intoxications (produced by the ingestion of spoiled milk containing toxic substances). (a) Toxic catarrh of the stomach or intestine. (b) Cholera infantum. B. Chymus infection (endogenous intoxication from abnormal decomposition of the intestinal contents and secondary inflation of the intestinal wall). (a) Bacterial dyspepsia (acid diarrhea). (b) Dyspeptic catarrh. C. Intestinal infections (inflammatory irritation or invasion of the intestinal wall by pathogenic bacteria). (a) Inflammatory catarrh (inflammatory diarrhea). (b) Inflammation: gastritis, gastroenteritis, enteritis, enterocolitis, colitis. Escherich also postulates a number of theses, the more important of which are: 1. That the bacterial flora in the infant's intestine, although derived from without, is constant and autochthonous owing to the constant chemico composition of the food and intestinal contents. 2. The flora of the stool under normal conditions is within wide limits independent of the bacteria introduced with the food. [D.R.]

2.—Harmer's studies led him to the conclusion that after every **tonsillotomy a deposit** develops in the wound within 24 hours; sometimes a distinct membrane is produced. The deposit consists principally of fibrin, leukocytes, and necrotic parts of the wound surface. Bacteria, principally cocci, are present in the deposit, and probably play an etiologic role. The diphtheria bacillus is not the cause of the deposit, but a bacillus belonging to the pseudodiphtheria bacillus group is often present. Danger does usually not attend the tonsillotomy deposit, but it is well to apprise the patient in advance. During the existence of the diphtheria epidemic it is not wise to perform laparotomy, at least not without the necessary precautions. [D.R.]

3.—Elgart is of the opinion that in **scarlet fever** and **measles** the exanthem is not the essential element, and that the primary disease is in the throat and the nose-conjunctiva respectively. On the strength of this view he endeavored to

prevent the spread of endemics by applying antiseptics to the mucous membranes. He caused children to inhale various solutions—lime-water, boric acid, in 3% solution; iodine tri-chlorate, in 0.05% solution; sodium chlorate, in 3% solution. The effect was that no case of either measles or scarlet fever occurred afterwards in the hospital. Scarlet fever having been introduced, all cases remaining (19) and those afterwards received (98) were treated in the way designated, and none developed scarlet fever. The author therefore concludes that the **inhalation of disinfecting solutions** is capable of preventing the development of measles and scarlet fever endemics, provided the intensity of the original case and the type of the prevailing epidemic is mild. [D.R.]

Centralblatt für Gynäkologie.

October 6, 1900. [No. 40.]

1. Cystic Growths in Ovarian Remnants. I. E. WALDSTEIN.
2. Abortion in Consequence of Gonorrhea of the Uterus. DRAGHIESCUM and SION-MOSCHANA.

1.—Waldstein reports 4 cases of **cysts** occurring in some remnants of ovarian tissue which has not been removed in the radical operation, because of existing adhesions and decomposing tissues which it was necessary to take away piecemeal. The growths were all successfully removed and the patients recovered. [W.K.]

2.—Draghiescu and Sion-Moschana believe that more researches should be made in regard to the deleterious influence of the **gonococcus** on the **gravid uterus**. They report a case where abortion occurred, after every effort was made to stop it, and the bacteriologic examination developed the fact that the diseased lining membrane of the uterus showed groups of diplococci identical with the gonococcus of Neisser, together with staphylococci and the ordinary bacteria found by Döderlein in normal vaginal secretions. [W.K.]

October 13, 1900. [No. 41.]

1. Upon Pathology of the Placenta. EDMUND HERRMANN.
2. A Case of Atrophy Caused by Ligating the Vessels in an Apparently Tuberculous Bilateral Salpingitis, on Account of the Impossibility of Extirpation. A. C. LINDFORS.

1.—Incited by the work of Bulius, who demonstrated a moderate proliferation of **syncytium** in the **placenta** of an eclamptic patient, Herrmann made an examination of the placenta of a nephritic woman, and found in the placenta of 8 months and of a full-term placenta, on the one side persistence of syncytium in a condition such as is usually seen only in a 4 to 6 months placenta, and on the other side the appearance of the seat of the syncytic proliferation. [W.K.]

2.—Lindfors reports a case of a woman, aged 20, upon whom he operated for bilateral subacute **salpingoophoritis**. He found both tubes much enlarged, the surface being thickly covered with innumerable tuberculous nodules of red-gray color; and they were so imbedded by firm adhesions with ovaries, intestines, etc., that he considered extirpation impracticable; and instead, according to the principles of Antal, placed ligatures of silk en masse on the uterine end of the tube and the infundibulopelvic ligament on both sides, thus producing atrophy of the tubes. The patient recovered, and examination 2 years after the operation showed her in an apparently healthy condition with very small ovaries and string-like remnants of the tubes. It is indeed rare that removal of the adnexa is prevented by adhesions, but when these or other complications prevent their removal, it is well to know that ligating the vessels properly will produce atrophy and check the progress of the disease as in the case reported. [W.K.]

October 20, 1900. [No. 42.]

1. The Disinfection of the Obstetrician's Hands. R. KOSSMANN.
2. Correction of Ahlfeld's Article, "Some Remarks on the Tubinger Experiments in Disinfection of the Hands." (*Centralb. f. Gynäkologie*, 1900, No. 37.) TH. PAUL and O. SARWEY.

3. Remarks upon Ahlfeld's Article, "A Contribution on the Question of the Genesis of Puerperal Fever." VON KRONIG.

1.—Kossmann in discussing the vexed question of **disinfection** of the hands recommends a three-fold procedure: Three minutes cleansing with Marmor's soap, first without and then with water; then 7 minutes washing in 20% solution of chinosol, and after drying immerse them in chirol, let them dry, 3 minutes. [W.K.]

2.—Paul and Sarwey say that their experiments show with certainty that the hands cannot be made free from germs by means of hot water and alcohol disinfection as recommended by some writers. [W.K.]

3.—Kronig corrects some of Ahlfeld's misunderstanding and declares that, in our ignorance of the biologic peculiarities of the infectious puerperal bacteria, Ahlfeld's assertion that 96% alcohol solution used as a disinfecting agent destroys all kinds of bacteria germs on the person or hands of the obstetrician, cannot be accepted without question and further examination. [W.K.]

October 27, 1900. [24. Jahrg., No. 43.]

1. Something upon Forceps as an Instrument for Improving Fetal Presentation in Reply to Dr. Modest Popescul, "Face Presentation; Chin Posterior." I. O. SCHAEFFER.
2. A Case of Fatal Hemorrhage from a Ligated Umbilical Cord. J. BALIN.

1.—Schaeffer's conclusion based upon experience is that in **unfavorable face and brow presentation**, if the birth-passages are normal, the **use of forceps** to correct the presentation or to extract the child is **usually contra-indicated**. If the head is small, with short occiput, or if is freely movable in relation to the body, the use of the hand guided by sufficient experience may save the life of an otherwise lost child. The attempt to use forceps is, however, forbidden. For a firmly fixed head the change of presentation manually according to Rose or Valland is first to be tried, and this will help to make clear the difficulty in each case. Also for the anterior frontal presentation with sinking of the brow, with normal birth-passages, with large head and long occiput, great caution must be observed in bettering the position. In conclusion, it must be observed that lever forceps are liable to cause the long enduring reflex nervous disturbances incident to excessive distention and bruising of the parts. [W.K.]

2.—Balin reports a case of **fatal hemorrhage from a ligated umbilical cord**, and after discussing the causes thereof concludes with words of Runge: "A hemorrhage before the fall of the navel cord can only take place when the umbilical cord has been carelessly tied. In order to make such hemorrhage impossible we must demand a most definite carefully executed ligature of the umbilical cord." [W.K.]

Centralblatt für innere Medicin.

October 20, 1900. [24. Jahrg., No. 42.]

1. A Contribution to the Pathological Action of Alcohol. GEORG ROSENFELD.

1.—A review of the previous work upon the **influence of alcohol upon the liver** is given, and Rosenfeld then gives his own investigations, which consisted in the administration of definite amounts of alcohol to dogs which had been kept without food for 6 or 7 days. The alcohol was administered through a stomach-tube in quantities of $3\frac{1}{2}$ to 4 cc. of 96% alcohol, given once or twice daily in large amounts of water. The animals were usually made decidedly drunk, but after as long as possible a period of poisoning they were killed before spontaneous death occurred. The livers were then removed, and the glycogen and the fat estimated by the methods of Külz and with Soxhlet's extraction respectively. The chief results of the investigation were that if doses of $3\frac{1}{2}$ to 4 cc. of alcohol per kilo of body weight were given as many as 4 times a day to starving animals, the liver was found to contain as much as 22% of fat—more than double the normal. The livers of such animals were found to be extremely poor in glycogen. The use of cane sugar with the alcohol decreased the amount of fat in the liver. When con-

trasted with the amount of alcohol which men take it may readily be seen that as much as 4 cc. per kilo of body weight is often taken by men in the form of the heavier liquors, and that even two liters of Pilsener beer will contain as much as 1 cc. of alcohol per kilo of body weight. This demonstrates that it is entirely possible for alcohol to produce fatty liver and to decrease the glycogen of the liver. The use of alcohol over a period of days, with subsequent stoppage of the dosage, was followed by recovery. This is analogous to the fact often observed that a few large indulgences in alcohol do less damage than continuous tippling. The lessened effect of the alcohol when sugar was given is analogous also to the fact that in man, if the alcohol is taken with food it is borne better than when taken on an empty stomach; but the animals which were given the alcohol alone nevertheless lived longer than those that were given sugar with the alcohol, and it shows that one who eats when he takes alcohol is by no means secure from disease due to the alcohol. [D.L.E.]

Neurologisches Centralblatt.

October 15, 1900. [No. 20.]

1. Inequality of the Pupils Resulting from the Different Action of Direct and Indirect Illumination. A. PICK.
2. The Pathogenesis of Epilepsy. Z. BYCHOWSKI.
3. Is it Permissible to Regard a Degeneration in the Posterior Columns that Diminishes in the Lower Part of the Cord, without Further Consideration, as One Proceeding from Above, Downward? (Acute Myelitis of the Spinal Cord After Amputation.) BIKELES.
4. The Tone Conduction of the Bones of the Skull in Diseases of the Brain and Its Membranes. F. WANNER and H. GUDDEN.
5. The Clinical Position of the So-called Erythrophobia. A. FRIEDLÄNDER.

1.—It is generally believed by ophthalmologists that often when the pupils are illuminated by lights of different intensity they are approximately equal excepting in very sensitive individuals. Pick, however, has observed that in many cases of epilepsy, neurasthenia, and other forms of functional psychosis, the **pupils** may **vary** considerably if the patient stands with a side toward the source of illumination, as for example, a window. Under these circumstances the pupil receiving the most light is always narrower. This seems to be due to a hyperesthesia of the centripetal apparatus. [J.S.]

2.—The patient, a man of 28, had his first attack at the age of 26; the second occurred 8 months later; the third at the end of the first year. Subsequently the attacks occurred at somewhat briefer intervals, lasting longer, and being more severe. These attacks were preceded by dizziness, and a sense of darkness; the patient then became unconscious and fell to the ground. There were no convulsive movements, but subsequently the patient felt exhausted. Aside from chronic constipation there is no other disease. For 12 or 13 years he has been engaged in preparing tobacco for the market, treating the leaves by a secret process, and for this reason working in a small room that was absolutely without ventilation. Every day he stood from 6 to 8 hours in an atmosphere loaded with the fumes of the leaves. Bychowski therefore ordered him to work in a larger room and to expose himself as little as possible to the nicotin-laden atmosphere. The result proved the correctness of his belief that **nicotin poison** was the cause of the attacks, the patient recovering completely. It therefore seems to be fairly well established that in this case the **epilepsy was due to chronic tobacco poisoning**. [J.S.]

3.—Bikeles, after calling attention to the article published by him in February of the present year, in this *Centralblatt*, reports two other cases, one of **acute myelitis**, in which the changes were identical with those previously described, and one of a spinal cord obtained from an individual dying 15 years after amputation of the left thigh. The **changes in the spinal cord** were very curious; in the lumbar region there was no appreciable difference in the posterior roots, there was, however, a distinct diminution in the size of the anterior and posterior cornua of the gray substance. There was also slight diminution in the size of the right posterior column at the level of the first and second lumbar segments,

which became more pronounced in the dorsal region. In the upper portion of the dorsal region there was a slight area of paleness in the neighborhood of the posterior median septum, and, in the cervical region, Goll's column was distinctly degenerated. Bikeles concludes from this that in the lower portions of the cord the degeneration was masked, by the fact that the fibers were uniformly distributed throughout the posterior column, whereas in the upper portion the long fibers were grouped together and, therefore, gave rise to a distinct degenerated area. The long fibers passing out through the posterior horns, apparently do not degenerate. [J.S.]

4.—The authors continue their article giving the results of the examination of various cases of chronic alcoholism, epilepsy, meningitis, idiocy, progressive paralysis, and infantile cerebral paralysis.

5.—Friedländer continues his description of cases of **erythrophobia**, concluding with 5 observed by himself. The first of these, a man of 30, had a distinctly neuropathic ancestry, and he had often suffered from migraine. At the age of 10 he blushed when spoken to by a young woman, and subsequently every time he saw this person. Later the blushing occurred whenever he was spoken to in the street. He had difficulty in sleeping unless he had prayed for all his relations, and had also various imperative movements; he also suffers from dermatographia; nevertheless he is an accomplished orator. The second occurred in a woman of 30, with marked neuropathic ancestry. The symptoms disappeared at the age of 18, but she is still excessively emotional. The third case, an artist of 33, also with neuropathic ancestry. He has various imperative movements and conceptions. The fourth case was a woman with neuropathic ancestry, imperative conceptions and suicidal tendencies. She is, nevertheless, capable of managing her household acceptably. The fifth case was a physician, 30 years of age, whose mother had various neurotic tendencies. He first noticed the tendency to blush at the age of 30; he became readily irritated, had tachycardia, and the symptoms gradually increased so that the mere naming of a person whom he knew caused the blushing. These symptoms had continued with varied intensity until Friedländer employed hypnosis, when, as a result of suggestion, they disappeared completely. It follows from this case, and from those detailed in the literature, that erythrophobia is not a disease, but simply a neurotic manifestation in a person suffering neuropathic heredity. Under these circumstances it hardly seems necessary to continue the name, except possibly for the purpose of describing the symptoms. [J.S.]

Deutsche Zeitschrift für Chirurgie.

June, 1900. [Band 56, Heft 1 and 2.]

1. Interparietal Inguinal Hernia. RUDOLF GOEBELL.
2. Torsion of the Small Intestine in Consequence of the Presence of a Cyst in the Mesentery. FERTIG.
3. The Radical Operation of Hernia. M. HIRSCHKOFF.
4. Osteomyelitis Traumatica Purulenta Cranii. H. FISCHER.
5. On Reform in the Dressings of Military Surgery. JULIUS PORT.
6. Hemorrhage Following Compression of the Trunk. HEINRICH BRAUN.
7. A Shoe Adapted for Walking on the Toes. EDM. ROSE.

1.—Goebell reports 2 cases of **reducible interstitial inguinal hernia** which had been cured by radical operation at the Kiel clinic during the past winter. The first case was a man of 49, who had an undescended testicle on the left side and had had for the past 10 years a reducible inguinal hernia on the left side which had never given any trouble until 6 weeks before his admission into the hospital. On examination an hourglass-shaped tumor was found, half lying above the external ring and the other half in the scrotum. After reducing the scrotal part of the hernia, it was found possible to reduce only about half of the interstitial portion because it was pushed down into the scrotum. If, however, the finger was placed on the external ring, after the scrotal hernia had been reduced, the reduction of the interstitial portion was easily done. After the reduction had been done, a slit could be felt in the subcutaneous tissues, extending outward from the external ring, which would admit 3 fingers,

and when the patient coughed the finger readily perceived the impulse of the intestines against them. At the operation the hernial sac was found to consist of 2 parts, one occupying the scrotum and the other, about 5 cm. in length, lying between the external and internal oblique muscles. The sac was dissected free and removed and the operation completed after the manner of Bassini. The atrophied testicle was found 2 or 3 cm. above the bottom of the scrotal sac. The second case was a man of 50 who had had a right-sided inguinal hernia since 14 years of age, and which for the past 14 years had extended upward until about 2 years previous it had reached the lower edge of the ribs. The testicle on the right had not descended into the scrotum, though the patient had noticed it several times at the external ring. The hernia was reducible, the whole mass going back into the abdomen with a gurgling noise. After the reduction, by invaginating the scrotum 2 fingers could readily be pushed through the external ring and it was also noticed that if the fingers were carried in a more external direction, an opening could be felt which would admit 3 fingers. At the operation an incision was made from the anterior superior spine of the ilium to the external ring, 22 cm. in length. The whole sac was dissected free from the scrotum and from between the external oblique and internal oblique muscles. The testicle was found in the interstitial part and together with the spermatic cord and the hernial sac was removed. The excess of tissue was cut away and the different layers of the abdominal wall carefully sutured together. Goebell concludes his paper by a rather extensive review of the literature and classifies and describes the different varieties of interparietal inguinal hernia. [G.B.W.]

2.—Fertig reports a case of **torsion of the intestine** due to a cyst of the mesentery, in which death followed after extirpation of the cyst from gangrene of the intestinal wall. The patient was a man of 30, who began to have severe cramp like pains about 4 months before his admission to the hospital. These pains were particularly severe after eating. A month later, he noticed for the first time a tumor in the abdomen, situated near the umbilicus, and about the size of a man's fist. Though he was somewhat constipated and for the past 3 weeks has had no fecal movement, his abdomen was not distended. On opening the abdomen, a cyst round in shape, and about the size of a man's fist, was found situated in the mesentery. Resection of the adjoining part of the intestine and removal of the cyst were done, and the abdomen closed. Two days after, the patient died, apparently from peritonitis. At the postmortem a portion of the intestine, near the seat of the operation, was found twisted twice on its long axis, and the supplying artery was closed by the twist. A larger part of the small intestine was found to be gangrenous. A detailed study of the postmortem findings showed that the torsion must have originated sometime before the operation, probably a quarter of a year previously, and in all likelihood was originally due to the presence of the cyst. No other morbid conditions could be found to account for the twisting. [G.B.W.]

3.—Hirschkopf reports the results of 191 patients, presenting 236 **hernias**, operated upon by Kocher or his assistants. First, as regarding the radical operation in infants, Hirschkopf says that the only real danger in children is one of infection, but this can be avoided by the proper observance of aseptic technic, and the use of occlusive bandage. There is, therefore, no reason why children should not be operated upon as soon as the hernia is discovered. As to results obtained by Kocher, infection occurred in 5.7%, and out of 191 patients there were no mortalities. Regarding the relapses in those cases that were operated upon by his invaginating method, in 83 cases 1.2% showed a return of the hernia. In the older method practised by Kocher of simply displacing the hernial sac, there were relapses in 3.6%. The method of invaginating the hernial sac is briefly as follows: After the sac has been dissected free of the surrounding tissues, a small opening $\frac{1}{2}$ cm. long is made 1 to 2 cm. outside of the internal inguinal ring. By blunt dissection the peritoneum is reached and opened. Through this opening a pair of long forceps is passed into the abdominal cavity to the hernial sac. The forceps is carried through into the sac to its extremity, on which it is closed, and by withdrawing the forceps the hernial sac is invaginated through its entire length and drawn partially out of the small lateral wound. Regarding the advantages of the Bassini operation and that of

Kocher, statistics gathered from outside sources give the following percentages: Mortality after the Bassini method is 0.3% to 0.5%, and after Kocher it is zero. Relapses after Bassini occurred in 4.4% cases and after Kocher's invaginating method, 1.2%. [G.B.W.]

4.—Fischer has written an elaborate article on **purulent osteomyelitis of the cranium** following injury. He says unless the skull is fractured, it is very seldom that an extradural hemorrhage is caused by traumatism. On the other hand, it is very rare for fracture of the internal table of the skull to occur, without an extradural hematoma being formed. It is not necessary when the trauma has laid bare the bone of the skull that suppuration and necrosis should take place. In fact, more often the periosteum either reunites or the bone becomes covered by a layer of granulating tissue. If the wound has traversed the aponeurosis of the occipito-frontalis, there is apt to be an extensive suppuration with destructive process resulting, because the aponeurosis offers a firm barrier to the exit and release of the suppurative processes. When pus is formed under the aponeurosis, it very frequently involves the muscles, which breaking down cause thrombosis of veins communicating with the dura. The term "bone contusion" should be only used in those cases in which the periosteum has become loosened from the bone. This may occur in an open wound or through the action of a subperiosteal hematoma. Hospital gangrene, of course, when it occurs, is a most serious complication. When the soft parts have been destroyed for any extent, necrosis of the bone generally takes place. Uncomplicated fractures of the internal table, of course, do not cause either otitis or purulent pachymeningitis. Traumatic purulent otitis of the skull, with great loss of substance, is a comparatively rare occurrence. [G.B.W.]

5.—Port reviews in a rather detailed manner the history of **military surgical appliances** from the beginning of the nineteenth century up to the present time. He says that the treatment of the wounded on the field has not kept in line with the advance of civil surgery, especially regarding mechanical apparatus for the treatment of wounds involving the bony structures. He describes various appliances made out of strip iron, suitable for all the more important of the injuries likely to be met with. They include skeleton splints for the aseptic and septic bullet wounds fracturing the bones of the lower leg, an apparatus for treating wounds of the rump and upper portion of the thigh, appliances for the treatment of bullet fractures of the shoulder, upper arm and elbow, for both septic and aseptic wounds, a splint for suppurating bullet fractures of the lower arm and ambulatory apparatus. [G.B.W.]

6.—Braun reports an interesting case in which a man was caught between machinery, so that his **body** was severely **compressed**. **Marked hemorrhages** occurred all over the head and neck; the eyelids became swollen, so that the eyes could not be seen; the entire face and upper part of the neck were distended and of a blue-black color; and small extravasations of blood, not disappearing on pressure, dotted the whole surface. The patient was absolutely blind, even after the lids were opened. Death occurred 30 hours after the injury. At the postmortem, the orbital fat was found infiltrated with blood. The mucous membrane of the nose was dotted with minute hemorrhages, and the intramuscular tissues of the neck were stained a dark red with infiltrated blood. The larger part of the tissues of the head and neck were markedly congested, or contained extravasated blood, though no signs of hemorrhages could be found in the brain or medulla. More or less dark red fluid was found in the pleural cavity, and several ribs were found fractured. In the abdominal cavity considerable fluid blood was found. Microscopic examination of part of the congested skin showed the capillaries and small veins to be markedly filled with blood-cells. The arteries were empty, and there were numerous small hemorrhages most plainly seen in the cutis. [G.B.W.]

Deutsches Archiv für klinische Medicin.

September 27, 1900. [Bd. 68, Heft 3 and 4.]

15. Experimental Investigations upon Ligno Sulfit, with Considerations upon its Employment in Tuberculosis. DANEGGER.

16. A Peculiar Alteration in the Form of Trachea and the Main Bronchi (Dilatatio Paradoxa Sive Paralytica). BROSC.
17. Influence of the Position of the Body upon the Frequency of the Contractions of the Heart. LANGOWOY.
18. The Routes of Infection of the Pleurae. GROBER.
19. The Relation between the Heart-muscle and the Muscles of the Body and its Influence upon Hypertrophy of the Heart. HIRSCH.
20. Clinical and Experimental Contributions to the Knowledge of the Paralysis of the Facial Nerve, and a Contribution to the Physiology of Taste, and Secretions of Perspiration, Saliva, and Tears. KOSTER.
21. The Diagnostic Value of the Investigations of the Fermentative Intensity of the Feces, according to Schmidt. STRAUSS.
22. A Grave Anemia Occurring in Metastatic Bone, Carcinoma, and the Myeloid Metamorphosis of the Spleen. FRESE.

15.—Danegger has performed a series of experiments, and made a number of clinical investigations regarding the use of **ligno sulfit** as a cure for pulmonary tuberculosis. This was originally discovered by accident; some phthisical workmen compelled to spend a considerable amount of time in rooms where wood-fiber was being digested, found that they experienced great relief. The material is usually prepared by placing small fragments of pine or spruce wood in concentrated sulfurous acid and calcium chlorid, as a result the cellulose is set free and the solution absorbs the ethereal oils and the mineral constituents. Practically, however, the active constituent is SO₂. This fluid for therapeutic purposes is placed in receptacles that expose a great surface to the air, and if necessary, it is agitated to promote vaporization. It was originally claimed that it had some disinfectant qualities, but a series of experiments with microorganisms showed that it was necessary for it to exist in the atmosphere to at least 1% in volume in order to destroy them. And this degree of concentration cannot be supported by human beings. It is not absorbed to any considerable extent by the blood, and even if such were the case, it could not be sufficiently concentrated in the tissue to have any antibacterial action; on the other hand it is an excellent expectorant, both in the lower animals and in human beings, causing, when applied directly to the trachea of cats at first an increased quantity, and then greater ease of expectoration. Upon the respiration it causes first increased frequency and then slowing and greater deepness, corresponding to the action of sulfurous acid. In cases of phthisis it seems to render the sputum more fluid. It appears to have no effect upon the general metabolism, but is particularly applicable to patients who have a severe depressing cough, with small quantities of viscid mucous sputum. It is not contraindicated by hemoptysis nor fever, and is possibly of benefit in laryngeal tuberculosis. The therapeutic dose varies from .001 to .005%. Its toxicology is the same as that of sulfurous acid. It irritates the mucous membranes, and may cause ulceration; it produces disturbance of respiration, and may even cause pulmonary edema. [J.S.]

16.—Brosch describes a specimen removed from a man of 63, who, in spite of progressive ossification of the costal cartilages, had the chest-type of respiration. The cartilages of the trachea at either end were turned outward instead of inward, giving to the trachea an exceptional breadth and considerable circumference; although the lumen was diminished, the bronchial cartilages had an oval form and were considerably enlarged, so that the circumference of the main bronchia was about 7 cm., although the lumen was actually diminished. Brosch suggests the name of "**dilatatio paradoxa**." The costal type of respiration was necessary in this case, because the depression of the diaphragm would have served to diminish the lumen still more, by exerting tension upon the air-channels. [J.S.]

17.—Langowoy has studied a number of cases suffering from various diseases such as croupous pneumonia, typhoid fever, chlorosis, tuberculosis of the lungs, nephritis, cirrhosis of the liver, pleural exudate, and various forms of cardiac disease in order to determine the **change in pulse-rate** that occurs as a result of **alteration in position**. He concludes that the increase in pulse-frequency that occurs in health in changing from the horizontal to the vertical posi-

tion, can be explained by the increased muscular effort to hold the body in a vertical position, by the decrease of the arterial and intracardiac pressure upon the cardiac ganglia, and by the decrease of intercranial pressure that diminishes the action of the inhibitory centers of the medulla. During convalescence this change in pulse-frequency is increased on account of the greater difference in arterial pressure produced by the loss of tone in the vessels. In cases of cardiac or vascular disease, the alteration in pulse-frequency follows the normal type unless the cardiac ganglia have suffered a diminution of irritability; this rarely occurs except when compensation is disturbed, and in such cases the symptom of decrease in pulse-frequency upon assuming an erect posture is a sign of gravest importance. [J.S.]

18.—Grober has made a literary and experimental study of the route by which infecting **microorganisms** may reach the pleura. The most important routes are, of course, the blood and lymphatic systems. Microorganism may readily pass through the mucous membrane of the bronchi to the pleural cavity. This Grober has proved by injecting slowly into the bronchial system of a small dog, a considerable quantity of a liquid holding a pigment in suspension. This was accomplished without causing dyspnea. The animal was killed almost immediately, and the pigment found in the lymphatic tissue of the mediastinum, and in the visceral and parietal pleural surfaces. A repetition of this experiment gave similar results. He then discusses the probability of infection from the mediastinum, through the diaphragm, and particularly through the lymphatic system. It is probable that many cases of tuberculous pleurisy are secondary to scrofulosis, and the pleura is probably a route by which the bacilli reach the lung. Infection may also take place from the tonsils; for an injection of a suspension of india ink into the tonsils of 2 dogs caused deep pigmentation along the peribronchial lymphatics, and of the mediastinal and subpleural lymphatic glands. [J.S.]

19.—Hirsch continues his study of the relation between the heart muscle and the muscles of the body. In this article he discusses the effect of obliteration of the pericardium, valvular disease, and chronic disease of the respiratory organs. The results are given in convenient tabular form. He concludes that the different portions of the heart may hypertrophy entirely independent of each other. In arterial sclerosis, hypertrophy only occurs if the bloodvessels of splanchnic viscera or of the aorta above the diaphragm are involved. It is probably desirable to differentiate between atheroma of the abdominal vessels and commencing interstitial nephritis. Renal disease usually causes hypertrophy of the entire heart; it is probably the cause of the so-called "beer heart," Hirsch never having seen a case of the latter in which nephritis did not exist. The condition of the heart in cases of vascular hypertrophy, is not yet clearly understood; obliteration of the pericardium will not cause cardiac hypertrophy; if hypertrophy of the left ventricle occurs in mitral disease, it is due entirely to mitral regurgitation, and never to stenosis. The auricles in mitral stenosis and in relative inuspid regurgitation hypertrophy in accordance with the amount of work they are called upon to perform. In pulmonary diseases such as emphysema, pleural adhesion, and in some cases of tuberculosis, hypertrophy occurs in the right ventricle; in cases of kyphoscoliosis there is a hypertrophy of the right ventricle that accords roughly with the degree of vertebral deformity. Often there is a simultaneous atrophy of the left ventricle. The latter is probably explained by the diminished work it is called upon to perform, as a result of the gradual impoverishment of the blood in consequence of the chronic venous congestion. This in contrary to Cohnheim's opinion, who believed that a weak right ventricle ultimately caused hypertrophy of the left ventricle, because in these cases clinical experience shows that the symptoms of insufficiency in the right heart have usually occurred for a long time. [J.S.]

20.—Koster has undertaken a systematic study of the clinical phenomena of **paralysis of the facial nerve**; he has collected 41 cases in the last 2 years, which he classifies as follows: 1. Those in which the lesion was situated outside the stylomastoid foramen. 2. Those in which the lesion was situated in the petrous portion of the temporal bone, which he subdivides into: (a) In the lower portion of the fallopian canal; (b) in the fallopian canal above the tympanum; (c) in the portion of the canal extending from

the porus acusticus internus to the geniculate ganglion. 3. When the lesion was situated in the extracerebral and intracranial portion of the nerve. 4. Paralysis following fracture of the temporal bone. Bilateral congenital paralysis (nuclear lesion). In the present article he discusses, particularly, the effect upon perspiration; in 23 cases this was diminished upon the paralyzed side; in 6 it was increased, and in 7 cases, although there were no objective disturbances, the patient experienced a subjective sense of dryness, or moisture. In several cases the restoration of the function of the sweat glands had occurred before the first examination. In 2 cases in which there was nuclear disease, the perspiration was greatly diminished on both sides, and in a case of progressive bulbar paralysis this same condition was present. The relation of the secretion of sweat to the electric condition of the muscles is shown in another table; in only 5 of the 38 cases was the reaction of degeneration complete. In other cases in which the reaction was present, perspiration was not altered. An interesting observation was, that in 2 cases the secretion of sweat was still disturbed long after the electric reactions were normal; although in the majority of cases in which this symptom was observed (10 out of 14) recovered earlier. The diminution is probably due to paralysis of the excitosudoral fibers; when the secretion is stored there is probably a collateral innervation through the trigeminal fibers. [J.S.]

21.—Strauss defends the work of Basch against the attack of Strassberger. He admits that the technic differed in some respects from that devised by Schmidt and Strassberger, but claims that the errors thus introduced were insignificant. [J.S.]

22.—Frese reports the case of a man of 26, who, 4 weeks before admission to the hospital had pain in the stomach, and 2 weeks later experienced severe pains in the bones, and noticed rapid emaciation. When admitted to the hospital an examination of the blood revealed a considerable reduction in the red-blood cells and hemoglobin; this continued until his death, 9 weeks after the first symptoms. Toward the end there was a slight leukocytosis. At the autopsy a carcinoma was found at the pylorus that had given metastases to the lymph-glands, lungs, and the medulla of the bone. Also the case of a woman of 28, who had suffered from gastric disturbances for 9 months. An operation revealed the presence of a **pyloric carcinoma** with metastasis of the adjacent lymph glands, a gastroenteric fistula was made, and the patient temporarily relieved. She gradually developed a profound anemia, from which she died. At the autopsy metastasis to the bones was discovered. In both cases the alterations of the blood resembled those of progressive pernicious anemia. In the first case the patient had high fever, which Frese ascribes exclusively to the neoplasm; in the second case an interesting feature was the presence of an enormous number of the eosinophile cells and eosinophile granules in the spleen; this was probably a myeloid alteration similar to that which occurs in leukemia, although leukemic alterations were not observed in the bone-marrow. [J.S.]

Intussusception in Children.—Primrose (*Canadian Journal of Medicine and Surgery*, November, 1900), says this is the most frequent single cause of intestinal obstruction, constituting probably $\frac{1}{4}$ of all the cases of obstruction in children. The cause is not known, but is probably due to some local irritation which starts a peristaltic action of the bowel, limited to a certain portion of the gut, and thus the passive portion is invaginated into the active portion. The occurrence of intussusception in the dying is a remarkable fact, and according to one authority it is found in $\frac{1}{4}$ of the cases coming to postmortem. The symptoms are usually characteristic, but are sometimes obscure. The peculiar pain which becomes gradually more intense and then subsides, vomiting, the mucous stools stained with blood, and the sausage-like tumor are usually found. The author reports 3 cases. In 2 of these the intussusception occurred at the ileocecal junction, and in the third there were multiple points of intussusception from 1 to 2 feet below the duodenum. In each of them inflation by air was performed, but without success. The author is not favorable to the inflation method since it often does not accomplish the desired object and is also attended with danger. Laparotomy was performed in each of these cases. Two of the children recovered, but the one with multiple intussusception died. [A.B.C.]

Original Articles.

THE DIAGNOSIS OF CALCULOUS DISEASE OF THE KIDNEYS, URETERS, AND BLADDER BY THE RÖNTGEN METHOD.¹

By CHARLES LESTER LEONARD, A.M., M.D.,

of Philadelphia.

THE development which has lately taken place in methods of physical diagnosis greatly facilitates the differential diagnosis of renal disease. Pathologic processes in other organs can be readily excluded, while the differentiation is being rapidly made between the various forms of renal disease that simulate each other very closely in their symptomatology.

The centrifuge, the segregator, the ureteral catheter, and the cystoscope are factors that have aided greatly in this development. The separate urines can be collected and a chemical and microscopic analysis be immediately made of each specimen. When these are combined with a thorough cystoscopic examination, the region of the lesion can be very closely determined, and the functional efficiency of each kidney, and the extent of its involvement in the pathologic process estimated. Bacteriologic examinations are valuable adjuncts, but as yet the positive results are the only ones upon which much dependence can be placed.

Each of these methods has its peculiar advantages and adaptations, each has its disadvantages. They form the parts of a whole and are each of intrinsic value and are complementary of the others. No one of these methods is as valuable by itself as when supplemented by the others. All have their appropriate place in the diagnosis of renal diseases and in estimating the amount of injury that has been done to the kidney.

In suspected calculous disease the analysis of the separate urines should always be made when possible. The cystoscopic examination of the bladder is also very valuable. Lesions of the bladder can be detected or eliminated. The character, quantity and regularity of the urinary flow can be observed. When calculi have been found in the kidney or ureter by other methods, the cystoscopic examination will determine whether the impaction produces complete or partial anuria on that side. This can also be determined by catheterizing the ureter, by using the segregator, or can be inferred from the presence or absence of a hydro-nephrosis, if the condition has been present for some time. The persistence of pain or the recurrence of attacks also show that the urinary flow has not been completely obstructed.

Next to the Röntgen method the ureteral catheter or sound has given the most reliable information regarding calculi. Albarran has had considerable success in employing it, but has recorded his failures and disbelief in its accuracy, although appreciating its value. Kelly has successfully detected calculi in this way, and by coating the tip of the catheter with wax has observed the scratches which the calculi produce. This method is valuable in confirming the results otherwise obtained, and should be employed wherever feasible. It cannot be considered absolutely accurate, as calculi imbedded or encysted in the kidney would not be touched. It is particularly adaptable to ureteral calculi, and besides

confirming other observations may serve to dislodge a small calculus or push it up into the pelvis of the kidney.

Bigelow's evacuator is very serviceable in finding these small calculi that have passed into the bladder but no further. An examination with it should always precede operation for the removal of a small ureteral calculus that has been detected by the Röntgen method, especially if any interval intervenes between its detection and the operation, or if massage has been employed in the attempt to dislodge it. This is equally true of all operations for the removal of foreign bodies. Operation must follow immediately after the localization or the localization must be repeated. Immobilization is always essential during the interval.

The Röntgen method of detecting or excluding calculi from the kidneys and ureters has proved itself to be absolutely accurate, when applied with the requisite technic. The errors which have been noted were all due to defective technic or inexperience in reading the negatives. The absolute negative as well as the positive diagnosis of calculous disease is feasible. It depends solely upon the production of negatives having detailed shadows of tissues less opaque than the least opaque calculus. When such a negative is obtained and correctly read no error can be made.

Twenty cases in which calculi of all sizes and chemical composition have been detected in the kidneys or ureter, attest its value. Among these are 6 in which calculi were found in the ureter; 4 in which multiple calculi were found, and 2 in which calculi were found on both sides. Not only have these positive diagnoses been confirmed, by the passage of calculi, by operation, and by postmortem examination, but the negative diagnoses have also been found correct in every case but one, in which the error was due to defective technic. The majority of these cases have been previously reported (*Annals of Surgery*, February, 1900) in conjunction with a description of the technic employed.

The advantages which this method possesses are its mathematical accuracy, and comprehensiveness. The equal value of the negative and positive diagnoses. The ability to detect calculi in their incipency before serious injury has been done to the functional efficiency of the kidney, and when the freedom from infection makes an aseptic operation possible. The dangers that threaten when a small quiescent calculus is present can thus be avoided, as well as the dangers of operating upon the wrong kidney; upon one without knowing the other is the seat of calculus; or of leaving a calculus behind by an incomplete operation. The operative interference is localized and limited to a very small area facilitating the operation and avoiding needless injury and traumatism to other portions of the urinary tract. Thus a calculus weighing 42 grains was located in the upper pole of the kidney and removed through a small incision directly down upon it, that barely admitted a finger. A small ureteral calculus was located just within the pelvic brim where it was found by bimanual palpation. It was removed by a transperitoneal ureterolithotomy, and proved to be a uric-acid calculus of the mulberry type which weighed $2\frac{3}{4}$ grains. A second ureteral calculus was removed per vaginam. A ureteral catheter was introduced and the vaginal wound packed, both packing and catheter were withdrawn on third day with perfect healing. This ureteral calculus was apparently a phosphate stone and weighed

¹Read before the Surgical Section American Medical Association, Atlantic City, June, 1900.

27 grains. A large calculus of the same character was removed from this patient's other kidney. It was broken and could not be weighed. It was phosphatic in composition, and measured over 2 inches in length. On the side where the ureteral calculus was found there was a large hydronephrosis, on the other a pyonephrosis. Other cases have been previously reported where encysted calculi were detected, and where multiple calculi were removed and the completeness of the operation assured.

Such advantages clearly demonstrate the superiority of this method over exploratory nephrotomy or any other method of diagnosis. It is free from all danger and inconvenience, and is more accurate. The absolute negative diagnosis renders treatment rational that would otherwise be hazardous. The danger from sudden impaction and anuria is always present so long as a calculus remains in the kidney, the renal pelvis, its calyces or the ureter. It has also been shown that bacterial infection is far more liable to take place in a kidney that is the seat of calculous disease or where the ureter is partially obstructed.

The detection and accurate localization of the calculus, in cases of unilateral or complete anuria due to calculous disease, is of the utmost importance in directing and limiting the operative intervention. Complete anuria is readily recognized, but the localization of the seat of obstruction, although of the greatest moment, has hitherto been a most difficult problem, uncertain of a correct solution.

Unilateral anuria can, of course, be easily recognized by employing the segregator, the ureteral catheter, or the cystoscope. This condition has, however, been frequently overlooked, and the cessation of symptoms attributed to the passage of or dissolving of the calculus and the credit given to the medicinal agent employed. The symptomatology of the processes is identical, but their pathology and results are vastly different. One leads to the recovery of full functional activity, the other, to atrophy and degeneration of the kidney with complete loss of function. Postmortem examinations and the results of operation upon the other kidney under these conditions show how frequently they escape detection.

Many of the recoveries attributed to this or that medicinal agent are founded on an incorrect diagnosis of the presence of calculus. Many others are in reality impactions with the establishment of unilateral anuria and the subsequent destruction of the kidney. In others the calculus becomes quiescent and the trouble recurs at a later period, after infection has taken place and greater injury has been done to the kidney.

With the possibility of such grave dangers as these in view, unless a calculus has been passed and recognized, or can be found in the bladder by a Bigelow's evacuator, or by some other means, a patient who has suffered an attack of renal colic should be examined for calculus. The question of unilateral anuria can be settled by the segregator, or the ureteral catheter, but calculus can only be detected or excluded with certainty by the Röntgen method properly employed.

The patient should be given the advantages of these methods of examination before nonoperative treatment is decided upon. Without them he is exposed to the immediate danger of the loss of one kidney, and the future dangers that surround the presence of a quiescent calculus in the kidney. The advantages that are derived from early diagnosis and operation should never be forgotten. This early diagnosis can be made in all

of these cases, as soon as a suspicion points to the presence of a calculus.

A glance at the symptomatology of diseases that may be mistaken for calculus, shows that it is impossible to deduce from them conclusions that would even exclude conditions purely outside of the kidney. A differentiation between the intranephritic pathologic processes and including those involving the ureters, requires all the aids which modern methods of physical diagnosis can command, and even then has its limitations.

The variations in symptomatology, illustrated by the 20 cases in which calculi have been found in the kidneys and ureters, are very great. In some the typical renal colic was present, followed by vomiting or a chill, while the results of the urinalysis were typical; in others one or other symptom was wanting; the pain was a dull diffused ache in the lumbar region, and the urine was frequently normal, except for a microscopic trace of blood; in others an indefinite lumbar pain, a persistent trace of albumin, and occasionally a few pus-cells were all that directed suspicion to the kidney.

The two cases that belong to this latter group are of particular interest, as they illustrate cases that might have been readily mistaken for chronic nephritis. In fact one had been treated as such at various periods during the 20 years in which the albuminuria had persisted. In neither case had there ever been any characteristic symptoms of calculous nephritis. There was an early history of a trace of blood in each case, but it did not excite suspicion, nor had it ever been noted since.

Such a marked range of symptoms shows how readily cases of calculous disease may be mistaken for other conditions and escape detection. Many cases that are apparently the result of entirely different pathologic processes will be proved to be calculous nephritis, if they are examined by the light of this new method. The negative diagnosis in such cases would render other than operative treatment rational, while the positive furnishes the indication for operation with all its advantages. Thus a harmless examination will make relief possible at an early period, in cases that would otherwise have drifted on until a more critical condition demanded intervention, and yet rendered it more hazardous. Examples like these accentuate the value of the negative diagnosis and show its utility, even in cases where a negative diagnosis by other methods is apparently accurate.

The 8 cases of operation in which a negative diagnosis for calculus had been given show how close is the similarity in symptomatology that so often demands operation when no calculus is present. The Röntgen method determines with absolute accuracy the presence or absence of all calculi in every case in which a satisfactory negative can be secured, if that negative is correctly read. It does not preclude the employment of exploratory nephrotomy, as there are many conditions that simulate calculous disease, that can be differentiated or relieved in no other way. It does, however, preclude by a negative diagnosis exploratory nephrolithotomy, or the actual incision into the kidney in the search for calculi. Unless some macroscopic pathologic process clearly indicates the necessity for incision it should be avoided. On the other hand a number of cases have shown the value of the Röntgen diagnosis in detecting calculi that the exploratory operation would have missed, since it was the only indication for incising a kidney that appeared normal.

The mechanical accuracy of this method is very great. Errors can creep in through faulty technic or lack of skill in reading the negatives. Where, however, the negative secured fulfils the requisite conditions, the experienced eye can detect or exclude all calculi. In some cases it may be as yet impossible to secure negatives with such detail, as in very corpulent or muscular subjects. The majority of failures and errors reported should, however, be attributed to a lack of skill or a faulty technic on the part of the operator and not to any inaccuracy in the method, or the inability of the Röntgen-rays to produce accurate negative or positive diagnosis. This is equally true of the errors that have been frequently attributed to this method of diagnosis in dealing with other surgical problems. The defects are not in the method, but in its inefficient and ignorant employment by those deficient in technic. These elements should rapidly decrease as the sources of error are recognized and the technic of the method is developed. They are common to all methods depending upon the acquirement of skill in making observations with accurate instruments.

Although the detection of vesical calculi is generally very easy by the ordinary methods employed, there are applications of the Röntgen method that are very valuable. These have been illustrated by the detection of encysted and multiple calculi, the determination of the presence of calculus in conjunction with an enlarged prostate, or where there is any other mechanical hindrance to the proper employment of the vesical sound.

There are other applications of this method in the detection of pathologic processes that involve the kidneys and bladder, that will develop by the future progress in the differentiation of tissues. They have only been indicated by the negatives that show the outline of the normal or hydronephrotic kidney or of the enlarged prostate. The perfection of a technic that will render their differentiation positive and accurate in all cases will greatly increase the value of this method in renal diagnosis.

ACUTE INFECTIVE ENDOCARDITIS FOLLOWING VACCINATION; RECOVERY.

By WARREN COLEMAN, M.D.,

of New York.

Professor of Clinical Medicine in Cornell University Medical College; Assistant Physician to Bellevue Hospital.

THE patient, a female, aged 23 years, gives a good family history and is in excellent physical condition. She had pertussis, varicella, and measles in childhood, but has had no serious illness since her tenth year. She has never had rheumatism. During the past year she has had two attacks of tonsillitis, but is unable to tell of what nature they were. From the interval of time elapsing since the last attack it apparently has no connection with the present illness.

Two months ago the patient was vaccinated. Extensive cellulitis developed and the axillary glands became involved. The vaccination wound is not yet healed but is clean. The patient has had a slight cough for a week.

The present illness began on February 18, —. The patient feels weak and feverish. She complains of small areas of tenderness on the arms and legs, chiefly about the elbows and knees. The areas are swollen and red. On the following day the patient had two chills, followed by profuse sweating. The knees and ankle-joints have become tender and give pain on the least motion.

February 21.—*Physical examination.* The patient is well nourished, though anemic, and has a distinctly septic appearance.

Lungs—negative.

Heart: There is throbbing of the vessels of the neck. The size of the heart is normal. A soft systolic mitral murmur is present, with accentuation of the pulmonic second sound.

Extremities: Numerous patches of erythema nodosum are found on the extensor surfaces of the arms and legs, mostly about the elbows and knees, but also extending down the anterior surfaces of the tibiae. The patches vary in size from a pea to a silver dollar. They are inflamed, infiltrated, elevated, exquisitely tender, and have a brawny appearance and touch. No fluctuation can be detected. The ankle and knee-joints are painful on motion and joint-pressure. There is neither swelling nor redness, however.

February 22.—The patient had a chill last night followed by profuse sweating. The cutaneous inflammatory processes are resolving, and, it may be added here, resolution proceeded without suppuration in any of the areas. Each patch, however, remained as a stain for some days, passing through the colorings of oxidizing hemoglobin. The pain and tenderness have left the ankles, but are still present in the knees. The right wrist has become tender and motion gives pain, but there is no external evidence of inflammation. The area of cardiac dulness has increased to the right of normal.

February 24.—The nurse states that the patient sweats freely, especially when asleep.

February 25.—The pain and tenderness have disappeared from all the joints but the right wrist.

February 26.—The patient had a chill last night followed by profuse sweating. Roughening of the aortic second sound is detected at today's examination.

February 27.—The pain and tenderness have disappeared from the right wrist.

February 28.—Roughening of the aortic second sound is more marked today.

March 1.—A distinct systolic murmur is heard over the aortic area.

March 2.—The patient's general condition is not so good. Both murmurs are pronounced.

The heart-dulness has increased still further to the right. The pulse is weaker.

March 5.—The patient had a chill, followed by sweating. Sweating is not as troublesome as in the early part of the illness.

March 6.—The patient complains today of pain and tenderness in the left wrist. There is no external evidence of inflammation. The pulse has become intermittent. Pulsation in the carotids is very pronounced.

During the three days from the 6th to the 9th the pulse became very irregular and intermittent and the arteries lost tone. The cardiac murmurs remained unchanged.

March 10.—The pulse has become still more irregular and intermittent. Since yesterday, the right ventricle, which had been slowly dilating, has dilated acutely and without exertion on the part of the patient.

The cardiac dulness now extends an inch and a half to the right of the sternum. From the 10th to the 13th the patient's condition remained unchanged.

March 14.—The pulse has begun to improve. The morning pulse is fairly regular, while the afternoon pulse is irregular and intermittent.

March 15.—The general condition begins to improve. The patient is bright and the pulse stronger.

March 20.—The cardiac dulness is diminished, but the murmurs are still pronounced.

March 25.—The murmurs are not so pronounced. The pulse is slower, regular, and of fair tension.

The cardiac dulness still extends to the right of the sternum, but is diminishing.

March 29.—Cardiac dulness has diminished still further. The mitral murmur is distinct; pulmonic sound accentuated. The aortic murmur is present but is not so loud. The patient is gaining flesh.

April 1.—The aortic murmur has disappeared, though the mitral murmur remains.

At this time the patient passed from under my observation.

The temperature-range during the patient's illness was low, running during the first two weeks from 100° F. to 101°—102° F. The highest temperature reached was 103.8° F., on February 24. During the last four weeks of the illness the temperature fluctuated on either side of 99° F.

Albumin was found in the urine at only one examination, and then in only small quantity, though it was repeatedly looked for. The specific gravity of the urine was persistently low, though the quantity was not increased above normal; thus, with 44 ounces, in 24 hours, the specific gravity was 1.006.

Unfortunately an examination of the blood was not practicable.

The Widal reaction, performed at the laboratories of the Board of Health, was negative.

The diagnosis of infective endocarditis, due to vaccination, is based on the following points:

1. The septic arm, which could serve as a focus of systemic infection.

2. The presence of a mitral murmur. (It may be added, that the patient's heart had been examined a few months previously and found normal.)

3. The coincident appearance of patches of erythema nodosum on the arms and legs.

4. The septic appearance and septic symptoms,—chills and sweating.

On examining the heart about $2\frac{1}{2}$ years after the attack the cardiac outline was found normal, with no evidences of either a mitral or aortic murmur. The arterial tension, however, was a little high and the aortic second sound somewhat accentuated, but this may have resulted from the excitement attendant on the examination.

The necessity of concealing the patient's identity compels me to omit mention of the name of a colleague, without whose careful bedside notes this report could not have been made.

THE USE AND ABUSE OF ZOOLOGICAL NAMES BY PHYSICIANS.

BY CH. WARDELL STILES, PH.D.,

of Washington, D. C.

Zoologist, U. S. Bureau of Animal Industry; Secretary of the International Commission on Zoological Nomenclature.

WHEN as a zoologist I am called into consultation by a physician or requested to make a microscopic examination for him, it is not unreasonable for him to maintain that in all my relations to the case in hand, I should feel myself bound by the code of ethics recognized by the medical profession. In other words, for the time being, I act in the capacity of a medical consultant and hence should submit to any rules and regulations adopted by the majority of medical practitioners and investigators for the guidance of medical workers at large. And if I divulged professional secrets obtained in consultation, it is very doubtful whether physicians would acknowledge it as a valid excuse were I to advance the claim that I was not acquainted with professional customs. It would be replied that I should inform myself of those customs before laying myself subject to them.

These principles I, as a zoologist, unreservedly admit and endorse. At the same time, it may be permitted to submit, that this is a day of reciprocity, and if zoologists who deal with medical matters are quasi-members of the medical profession, hence subject to the rules and regulations which govern that profession *sensu stricto*, then, conversely, physicians who deal with zoological matters become for the time quasi-zoologists, and should submit themselves to the rules and regulations of the zoological profession; and it does not seem extreme to maintain that before dealing with a zoological subject publicly, it is incumbent upon them to inquire into the zoological customs involved.

In connection with the principle here advanced, I desire most respectfully—but at the same time not with-

out emphasis—to direct attention to the abuse made by physicians of zoological names. To my regret, it is necessary to even go so far as to state that members of the medical profession, in their well-intending and most laudable object of advancing the knowledge of their colleagues, not infrequently, and, as I feel convinced, unintentionally, adopt customs which are strictly unzoological and which result in no inconsiderable amount of inconvenience, irritation, and confusion to their zoological friends and admirers.

In medicine, the terminology is more or less subjective, and based upon authority, without being bound by any regularly adopted national or international rules. In zoology, on the other hand, the nomenclature is objective, based upon priority instead of authority, and subject to certain iron-clad rules and regulations, the result of a century and a half of study, and adopted by the national and international congresses; they are known as the Code of Nomenclature.

Now, it can hardly be maintained by zoologists that all physicians should be familiar with the numerous intricacies of these rules. It would, however, seem probable that those physicians who are accustomed to publish original articles would have at least one systematic zoologist among their friends who could advise them upon the points involved.

Unfortunately, physicians too frequently take liberties with our technical names. If a name does not appeal to them as being especially euphonious, or as applicable, they change it. If they are not pleased, for any reason, with the spelling of a zoological name, they change that also. They do not stop to consider that in dealing with zoological objects and names, they are for the time being quasi-zoologists, and before changing a name in this manner, it is incumbent upon them to inquire whether such an alteration is in accordance with the best usages in zoology.

To take a few examples: The hydatid (*Echinococcus*) is suffering with no less than sixty names; the common unarmed tapeworm (*Taenia saginata*) has about forty names.

This multiplicity of designations is due very largely to the fact that physicians unnecessarily change names. Now, the changes in nomenclature, connected with the advance of our knowledge of classification, is extensive and regrettable enough, without any unnecessary alterations, due to the pure caprices of individual taste.

Again, it is now becoming more or less *à la mode* to simplify the spelling of medical terms. We now frequently write *diarrhea* instead of *diarrhoea*; *hemoptysis* instead of *haemoptysis*; *amebic* dysentery instead of *amoebic* dysentery. So long as the medical profession desires to simplify the spelling of its own terms, I have no criticism to offer, and am willing to follow the decision of the majority, if a majority can be obtained; but as soon as physicians extend their orthographic reform to zoological names and do so in direct contradiction to the international zoological code, I most respectfully, but also most vigorously, protest.

Thus: *amebic* (amibic or amoebic) *dysentery* is a medical term, and may be written by the medical profession as it sees fit. *Amiba coli* is the technical name of a zoological object; to determine how this word shall or shall not be written, is a prerogative of the zoological and not of the medical profession. According to the International Code, it should be written *Amiba coli* or *Amoeba coli*; yet it has become more or less fashionable in medical writings to adopt *Ameba coli*. Again, the

name of the hydatid is written *Echinococcus*, yet some of our reformed spellers in medicine change this to *Echinokokkus*. Some medical authors adopt for *Taenia saginata*, the spelling *Tenia*, *Tenea*, or *Tinea*.

These changes in spelling may appear mere trifles to the physician-author, yet I can assure him that they are nothing less than exceedingly exasperating to the zoologist. Our righteous indignation on this point has its basis in the following facts:

In zoology we are dealing with several million systematic names. Every genus must have a distinct generic name, and every species in a genus must have a specific name distinct from the name of every other species in that genus. Under these circumstances it will be readily understood that we have been forced to adopt rigid rules governing the use of these names, since otherwise we would soon become swamped in a chaos of Latin words.

Taenia to us is the name of a genus of tapeworms and was proposed in 1758 by Linnaeus. It is now proposed by our spelling-reformers to simplify this to *Tenia*. *Tenia* might be to us, however, a totally distinct animal; it might perhaps be the name of another worm, or of an insect, or of a snake, etc. Some medical authors prefer *Tinea*, but to us *Tinea* is the name of a genus of lepidoptera (the clothes moth *Tinea pellionella* belongs here) proposed by Fabricius in 1775. Still other medical authors have written *Tenea*, but to us *Tenea* is a genus of mollusks proposed in 1875. Again, Ehrenberg proposed the name *Amoeba* in 1830 for a genus of protozoa into which *Amoeba coli*—the organism associated with amebic, amibic, or amoebic, dysentery—has been placed. Our spelling-reformers wish to simplify this to *Ameba*, and they speak of *Ameba coli*. *Ameba* might, however, be the name of a totally distinct genus, and no end of confusion might arise by adopting *Ameba* for *Amoeba coli*. This case is one which is particularly in point. It has been quite generally overlooked that Ehrenberg was a spelling-reformer, and that his generic name *Amoeba* 1830 is simply a changed form of the word *Amiba*, proposed by Bory in 1824. The word comes from the Greek ἀμοιβή, and should have been translated into Latin as *Amoeba*. But it was not so transcribed at first, and the rendering adopted depends upon the stand taken upon "emendation."

One school of zoologists, known as the American school, maintains that the original spelling, good, bad or indifferent, should be adhered to, and in this event, *Amiba* should be accepted instead of *Amoeba*. To this school belong the vast majority of American systematic zoologists; also the majority of systematic ornithologists of the world, and the minority of the other systematic zoologists of Europe.

Another school, known as the "Purists," would agree with Ehrenberg, and correct the spelling to *Amoeba*, rather than adopt *Amiba*. This view is held by a small minority of systematic zoologists in America and by the majority of zoologists in Europe.

Accordingly, one has zoological authority for adopting either *Amiba coli*, or *Amoeba coli*, but there is not one iota of defense in zoological rules, regulations, or customs, of any land, for the name *Ameba coli*. Personally I am uncompromisingly in favor of *Amiba coli*, and I maintain that any other spelling, such as *Amoeba*, is contrary to the law of priority. While as for *Ameba coli*, its use is calculated to make confusion more confused; it has no zoological authority, and should not be adopted.

Many other cases could be mentioned, but these are sufficient to show the object of this paper, namely to support the thesis:

It is incumbent upon physicians to follow zoological customs in dealing with zoological subjects, as it is incumbent upon zoologists, to govern themselves by the code of medical ethics in dealing with medical cases.

PRIMARY CARCINOMA OF THE PANCREAS, WITH REPORTS OF FOUR NEW CASES.*

By FREDERICK A. BALDWIN, M.D.,

of Ann Arbor, Mich.

Assistant in Pathology at the University of Michigan.

[From the Pathological Laboratory of the University of Michigan.]

Of all the diseases of the pancreas, carcinoma, both primary and secondary, is the most common; *e. g.*, Ancelot¹ found that 59.7% of all diseases of the pancreas were carcinoma. From September 1, 1894, to September 14, 1897, Benda¹ made 3,018 autopsies and noticed that the pancreas was affected in 79, of which 8 were primary and 12 were secondary carcinoma of the pancreas. From 1868 to 1886, Segre¹ made 11,472 autopsies, and in 127 of these carcinoma of the pancreas was noted. Rhoda,¹ of the Pathological Institute of Kiel, found 13 carcinomas of the pancreas in 234 autopsies in which the pancreas was examined. But all these observers, except Benda, have not differentiated primary from secondary carcinoma, so that when Miralle¹ worked up this subject in 1893, he found only 113 cases then reported and he was not fully convinced that 7 of these were genuine.

Regarding the frequency of primary carcinoma of the pancreas as compared to primary carcinoma elsewhere, Willigk¹ found carcinoma of the pancreas in 22 cases of a series of 467 autopsies on patients dying from carcinoma, and Biach,¹ who made 18,069 autopsies from 1869 to 1879, noticed 22 carcinomas of the pancreas in 1,270 cases dying from carcinoma. Of the 5,565 autopsies made at the Wildener Krankenhaus in Vienna between 1857 and 1866, 6 primary carcinomas of pancreas were described in the 514 autopsies on carcinomatous subjects. Of the 477 autopsies made at the Rudolfs-spital, 221 were upon carcinomatous subjects and one primary carcinoma of the pancreas was noted.

Etiology.—In general, primary carcinoma of the pancreas does not differ from primary carcinoma of other organs. According to most authors, it occurs more frequently in males than in females. Benda found 5 of his 8 cases were in females; Miralle, 69 of the previously reported cases were in males; Segre,² 62% in males; Bigsby,³ 16 males to 12 females; DaCosta,³ 24 males in his 37 cases, and White makes the radical statement that two cases are found in males to one in a female. Besides all these reported cases, I have had access to about 50 more which I have found in the literature by means of the *Index Medicus* and which I have analyzed. Of these, 33 were reported as having occurred in males. As to the age in which primary carcinoma of the pancreas occurs most frequently, one may say that it is between 40 and 60. In Bigsby's cases, 14 were over 40 and all the females were over 50. In Benda's cases the average age for the males was 56 and for the

* Read before the Michigan State Medical Society at Mackinac Island, July 12, 1900.

¹ Körto: Krankheiten und Verletzungen des Pancreas.

² Eulenberg: Encyclopädie der gesamten Heilkunde.

³ Ziemssen: Encyclopedia of Practice of Medicine, vol. iii.

females 55½. The average age of the 50 cases I analyzed was 50, but I found one primary carcinoma of the pancreas reported in a female aged 26, by Fothergill,⁴ another in a male aged 24 by Bruen,⁵ another in a male aged 23 by Satterthwaite,⁶ and 4 between 30 and 40. Kühne in Körte's work on the pancreas is reported as having found a primary carcinoma of the pancreas in a child aged 12, Simon another in one aged 4, and Litten another in a newborn. Though he reports them, he discredits them as being bona fide cases of carcinoma.

Morbid Anatomy.—Primary carcinoma of the pancreas is found most frequently in the head, next in the body, and least often in the tail of the pancreas. In Benda's cases he was able to point out positively that the carcinoma arose in the head in 2 cases, in the body in 2 more, and of the others he was not sure. Of the 57 in which Segre could state the origin definitely he noticed that 35 arose in the head, 2 in the body, 1 in the tail, and 19 were diffuse. Miralle found that 83 of his 113 cases arose in the head, and Boldt pointed out that 23 of his 53 cases had their origin in the head of the organ. In my 50 analyzed cases I found the primary seat of the growth reported in the head in 24 cases, in the body in 3 cases, in the tail in 5, diffuse in 4, while in the others it was not stated.

Regardless of the situation of the tumor mass, primary carcinoma of the pancreas may arise by atypical cell-proliferation either from the epithelium lining the collecting ducts, or the acinous cells or the epithelial cells of the areas of Langerhans. In some of those arising from the epithelium of the ducts, we infer, from similar conditions found in the gallbladder, that prolonged irritation from calculi may be an important factor. Of my 50 cases only 1 was reported in which a calculus was noticed. This was reported by Suckling.⁷ As in carcinoma found elsewhere, the direct cause of the cell-proliferation in all cases except, perhaps, that just mentioned, is not known.

It is interesting to note here that those carcinomas arising from the areas of Langerhans usually pass through the stage of adenoma. The usual form of primary carcinoma as it is reported is the scirrhus, though few medullary carcinomata and adenocarcinomata are reported. Secondaries are not common except in the neighboring lymph-glands and in the liver. In my 50 cases no metastases were found in 10 cases, metastases were found in the liver 11 times, in the neighboring lymph-glands 11 times, in duodenum 5, in lungs 3, in kidneys 3, once in the right kidney alone, and once in the left kidney alone, spleen 3, capsule of spleen alone 1, opening of the common duct into the duodenum 2, pleura 2, omentum 2, colon 2, solar plexus and nerves 2, mesocolon 1, muscular coat of the intestine 1, abdominal wall 1, pyloric wall 1, opening of the cystic duct from the gallbladder 1, psoas 1, and in the remaining 8 cases it was not stated whether metastases were found or not.

Symptoms.—Though usually few in number, the symptoms of primary carcinoma of the pancreas are of such a character as to be of little diagnostic value. Ordinarily the first symptom noticed by the patient is pain. This is located in the upper part of the abdomen, many times localized to the upper umbilical region, and again it may be localized either in the right or left

hypochondrium. The pain is paroxysmal in almost every case and often cutting in character, or it may be lancinating. Again, it may be only a dull ache. Sometimes the pain resembles that of biliary colic so closely that the two diseases may be confused. The next most prominent symptom is a progressive emaciation, being found in varying degrees in every case. In some cases the emaciation is very rapid, while in others it is only slowly progressive. Though a symptom secondary to the organ diseased, jaundice is found in many cases. The reason for this is obvious, since most of the primary carcinomas of the pancreas arise in the head and so either by involvement of the common duct or from pressure from without, the lumen of the common duct is diminished and so the outflow of bile is hindered. This leads to a dilation of the gallbladder, later to an enlargement of the liver, and finally to general jaundice. Hand-in-hand with jaundice, one usually finds intestinal disturbances such as flatulency and diarrhea with clay-colored stools, especially in the later stages. While diarrhea is the more common, constipation may become a disturbing symptom. I found it reported as such in 9 of my series of 50.

From the nearness of the affected organ to the stomach, symptoms on the part of that organ are common, such as nausea, vomiting, gaseous eructations and other symptoms of "dyspepsia," becoming so prominent in some cases that the real disease is overlooked and the patients are treated for chronic gastritis. From pressure upon the portal vein by secondaries in the portal fissure or by the primary tumor itself, ascites may result. From pressure on the vena cava, edema of the lower extremities may be brought about. I found this symptom reported in 4 of the 50 cases. In one case reported by Vance⁸ chylous ascites was noted. In his case this symptom became so distressing that he was compelled to tap the patient's abdomen three times before death. No postmortem notes were added to the report, but in all probabilities the receptaculum chyli contained secondaries or was pressed upon by the primary tumor mass.

Petechial spots are sometimes present. I found them reported in 3 of the 50 cases. They were noticed over the abdomen and chest and in the axilla; in White's⁹ case they were found over all the flexor surfaces. Thrombosis of the saphenous vein alone may occur and be followed by its train of symptoms. In a case reported by Cane,¹⁰ this condition had been present. Later the patient developed a hemiplegia and still later an aphasia. Complete obstruction of the intestine may occur, but it is not common. I found it reported in 2 cases. One was reported by Flexner,¹¹ and in his case it was suspected before death that the cause of the obstruction was a carcinoma of the pancreas. The other case was reported by Beck,¹² and in his case malignant disease of the sigmoid and later the ascending colon was supposed to have caused the obstruction.

In one case, reported by Masters,¹³ the onset and course of the disease for some time was very similar to an acute infection. When first seen, the patient had an elevation of temperature and rapid pulse following a chill, acute headache, bilious vomiting, constipation, coated tongue, and general malaise. These symptoms continued for eight days and then subsided. Ten days

⁴ Fothergill: *British Medical Journal*, 1896, i, 1323.

⁵ Bruen: *Boston Medical and Surgical Journal*, 1882, cvii, 497.

⁶ Satterthwaite: *Medical Record*, N. Y., 1881, xix, 275.

⁷ Suckling, *London Lancet*, 1889, i, 127.

⁸ Vance, *American Practitioner and News*, 1895, xix, 297.

⁹ White, *London Lancet*, 1896, ii, 1805.

¹⁰ Cane, *British Medical Journal*, 1883, i, 354.

¹¹ Flexner, *Johns Hopkins Hospital Bulletin*, 1894, v, 16.

¹² *London Lancet*, 87, ii, 113.

¹³ Masters, *Med. and Surg. Reporter*, 1891, xxx, 232.

later these same symptoms returned for six days. At the time of the second attack, the patient had lost weight rapidly. Later, he complained of pain in the splenic region and the spleen became much enlarged. Jaundice was never present, though the skin "looked muddy." After a little time the patient developed an irritable cough with little expectoration. Examination of the lungs at that time showed nothing abnormal. At times the skin of the patient would be bathed in a profuse perspiration. He died soon after, and at autopsy a carcinoma of the head of the pancreas about the size of a hickory nut was found.

Physical examination in primary carcinoma of the pancreas usually reveals little. If the gallbladder is distended and the liver enlarged, these may be made out. An appreciable tumor in the region of the pancreas can be felt in some cases. I found it reported in 16 of the 50 cases, while in 2 cases, even under chloroform-anesthesia, no tumor could be felt. Examination of the stools shows a large amount of undigested fat. I found its presence reported in 6 cases of the 50, while 6 others, which were examined for it, showed no fat. Of the 6 in which fat was found in the stools, at autopsy, a duodenal ulcer complicating the carcinoma of the pancreas was found in 1 case, and compression of the pancreatic duct was demonstrated in the other 5. Of the 6 in which fat was looked for with negative results, 1 was a case of diffuse carcinoma, 2 were located in the head and the location of the others was not cited.

One is struck by the fact that the examination of urine in so many cases shows no sugar. From the involvement of the pancreas by carcinoma, you would expect to find diabetes present, but as Hanseemann pointed out, the most probable reason we do not find it present oftener is that the course of the disease is too short for diabetes to develop. I found sugar in the urine reported in but 6 cases of the 50.

From these symptoms it can be seen how difficult it becomes to diagnose a carcinoma of the pancreas.

I now wish to present 4 new cases which have come under the observation of the Pathological Laboratory of the University of Michigan, and which are here reported for the first time.

CASE 1 came under the care of Dr. Schoepfle, of Sandusky, Ohio; male, painter, age 50, previous history negative. The patient had never been sick until April, 1899, when he was suddenly taken ill with severe pains in the region of the umbilicus. A diagnosis of "lead colic" was made then, and he was treated for that. He did not improve, but began to emaciate. The pain became severe and constant in the right side, and paroxysmal in the region of the umbilicus. The abdomen became retracted, and the muscles so rigid that no examination of this region was possible. Later, jaundice developed, the liver became enlarged, and several nodules could be felt on the anterior surface of the liver, moving with respiration and showing umbilication. For a short time previous to the appearance of the jaundice the stools were offensive, clay-colored and contained particles of undigested food. His appetite remained good. The only symptom on the part of stomach was vomiting, which occurred 3 times, twice, undoubtedly, as the result of spoiled food, and once from no apparent cause.

At autopsy, the body was extremely emaciated and deeply jaundiced. A tumor was found involving the whole of the pancreas, and pressing upon the stomach and gallbladder. The liver was enlarged, icteric, and contained a large number of secondaries. The gallbladder was distended with bile, but contained no secondaries. The stomach was greatly dilated, reaching almost to the pubes. It contained no secondaries. On the surface of the left lung were a few small nodules. None were found on the heart. The entire pancreas, with parts of the liver containing secondaries, were sent to the laboratory for examination.

Sections taken from the main tumor mass show a framework of connective tissue, embedded in which are nests of cells of varying shapes and sizes, and possessing no intercellular substance.

The connective tissue which goes to make up this framework is, in most places, comparatively rich in nuclei, and the intercellular substance stains pinkish yellow with Van Gieson's stain. In some places the nuclei are few, and the intercellular becomes more marked, is glassy and stains bright rose red with Van Gieson's stain.

The cells which form these nests are closely packed together, and are irregular in shape. These cells contain nuclei which are round or oval, sometimes lobulated in shape, and are surrounded by an arrow ring of finely granular protoplasm. Most of cells are mononuclear, but some are polynuclear. The nuclei stain with varying intensities, some faintly, others darkly.

Those nuclei which stain the fainter when examined under an oil immersion $\frac{1}{2}$ inch are seen to be made of a coarse reticulum or linen network and a finely granular substance filling its meshes. On this network at varying intervals, the ids are seen. These ids are round or oval, and are of varying sizes. Some are only fine granules, others are much larger, and others 10 or 12 times as large as the smallest ones, and staining much more deeply. These, I take it, are the tumor cells in the resting stage.

There are areas where most of the nuclei stain deeply, and here one finds cells in all stages of cell division, but the division is not normal, for in some of the cells are found 2, 3, or 4 spindles on which the long chromatic filaments are seen. A striking peculiarity is seen in these nuclei which contain more than one spindle. When compared to those nuclei containing only one spindle, one sees that chromatin filaments in the nuclei with more than one spindle are just as many and just as large as those of the nuclei of only one spindle.

Then one sees other cells with nuclei which are just rearranging their chromatin filaments for the resting stage, and one sees a great irregularity in size and shape of their chromatin ids. Some are round or oval, others elongated, others spindle or pear-shaped, and others are club-shaped.

In the protoplasm of many cells, one finds vacuoles which in some are filled with a finely granular material not staining at all, and again the protoplasm of some cells shows a stringy or finely granular change in a varying amount, and these cells, when stained with Delafield's hematoxylin, give the reaction for mucin.

While most of the nests show a solid formation, in the center of some a space is seen in which the cells have been replaced by a granular matter staining brownish-yellow with Van Gieson's stain, and in which one may see little blue granules—the remains of the chromatin.

While the tumor, on the whole, shows it to be made of these solid cell nests, in some areas, it takes on a distinctly tubular type. Here, in these places, the connective-tissue framework is small in amount, being, as a rule, only 2, 3 or 4 cells in thickness. This connective tissue contains a moderate number of nuclei and relatively large amount of intercellular substance staining pinkish with Van Gieson's stain. The cells which lie between these trabecula of connective tissue are cuboidal in shape, and have no basement membrane. The number of cells in thickness in these spaces varies from 2 to 6 or 7. In all respects as to their finer anatomy they resemble the cells found in the solid cell nests, and described above.

The tumor receives its blood-supply from vessels which run in the definite connective-tissue stroma, and it has involved some of them by secondary growth, and since these show some striking points, I wish next to describe them. Some of the vessels have their lumen completely obliterated by growth into it of tumor cells, and others have their lumen partially or wholly closed by laminated thrombi, and when these are examined, one finds places where 2, 4, or 6 cells are seen which are entirely surrounded by fibrin and blood-cells of the thrombus. In some vessels it is easily seen how these cells become loosened and lie out in the thrombus. If one follows back along the vessel wall one sees a place where the wall has been involved by the tumor from without. First, there has been an invasion of the adventitia. From this coat the tumor cells have proceeded along the lymph spaces into the media and intima. Then points are

seen where the tumor cells have broken through the intima and have grown into the lumen. It is in these vessels that the laminated thrombi are found in which these loosened cells are noted. The cells found loosened in this wall possess all the characteristics of those found in the primary mass.

Along with the growth into the bloodvessels, the nerve-trunks have become involved. The amount of the involvement varies in nerves which show only 2 or 3 cells under their perineurium to those nerves which have become wholly replaced by tumor cells. In some of the nerves the course of the involvement can be seen. The cells are first seen as a small nest of 2 or 3 cells growing in the lymph spaces under the epineurium. From here they grow along lymph spaces till they are seen under the endoneurium. From here one can trace them along as they form a wedge between the nerve fibers, and by their proliferation causing the axis cylinder and medullary substance to disappear. In some places remains of the medullary substance can be seen as fine granular matter remaining inside the neurolemma, and staining yellow with Van Gieson's stain. Then, again, one sees places where the neurolemma with its nuclei still remains, but the space formerly occupied by the axis cylinder and medullary substance has become greatly distended. In some of these distended spaces one may find the same granular material mentioned above, but in many carcinoma cells are found filling up the space. In some the carcinoma cells do not completely fill the space, and are surrounded by this same granular matter.

All the ducts of the pancreas are greatly dilated and cystic. The epithelium lining them has undergone a mucous degeneration. In many places the epithelium has become hypertrophic. Sections taken from the nodules in the liver show them to be the same in structure as the primary growth in the pancreas. The liver-cells that remain show a brown atrophy. Sections taken through the duodenal wall show that the tumor was confined almost entirely to the tissues outside the muscular layer, but in one or two places small metastases were found in the muscular coat. All the lymph-glands in the neighborhood of the pancreas show secondary new growth in varying amounts.

From this it is seen that we have a primary adenocarcinoma of the pancreas arising from the acinous cells, with secondaries in the liver, wall of the duodenum, the neighboring lymph-glands, nerves, and bloodvessels.

CASE 2.—This was a specimen of pancreas and stomach, brought to the laboratory by Dr. Kingsley. Little clinical history of the patient was given, except that the patient suffered from chronic gastritis, and was treated for such. No malignancy had been suspected. At autopsy a mass the size of a half coconut was found replacing the pancreas and adherent to the stomach-wall.

Sections taken from the tumor mass show a framework of connective tissue, relatively rich in nuclei, in the meshes of which one finds nests of round or oval or irregularly shaped cells, closely packed together with no intercellular substance. Most of the cells forming these nests have only a narrow ring of protoplasm surrounding one nucleus, many of them, however, having been polynuclear, some of them being giant cells. Regarding the more minute anatomy of the cells which form the cell nests, it is hard to judge, for the tumor was not placed in any fixing fluid for 2 or 3 days after the autopsy, and so the cells had lost some of their finer points. As far as I am able to judge, these cells resemble in general those of the previously described tumor in their finer anatomy, with the exceptions that the nuclei show a greater tendency to become vacuolated, and that the cells themselves are larger in size. There had been secondary infiltration of the muscular coat of the stomach. My diagnosis, then, is a primary adenocarcinoma of the pancreas, arising from the acinous cells, with secondary infiltration of the stomach-wall.

CASE 3.—This was a case observed by Dr. Dock, and I am indebted to him for the clinical and autopsy data. Female, age 73, first seen December 4, 1895. At that time she had been suffering from jaundice for 3 weeks and emaciation for several months. For 3 days previous she had been vomiting blood. Examination showed marked jaundice and advanced emaciation. The abdomen was flat, and in the

epigastrium, just above the umbilicus, a hard, smooth, oval mass about the size of a goose egg was found. In the right flank, continuous above with the liver-dulness, a smooth, semi-elastic pear-shaped tumor was outlined. A diagnosis was made at that time of carcinoma of the pancreas. On the 7th, hemorrhages into the skin were noticed. At this time she complained of pain in the left groin and along the sciatic nerve, and numbness of the left leg. At the same time swelling of the left cheek was noticed. There had been no hemorrhages from the stomach, but small ones had occurred from the anus and the mouth. The patient died soon after and came to autopsy January 10, 1896.

Examination of the epigastric tumor showed that it had decreased in size, and that it had become more difficult to palpate than the tumor in the side. The skin and serous membranes were deeply jaundiced and contained many ecchymoses. A small amount of bloody fluid was found in the abdomen. In the head of the pancreas, a tumor, about the size of a hen's egg, was found. The tumor was conical in shape, nodular in outline, and alveolar in structure. The remainder of the pancreas was small and fatty. The pancreatic duct would not permit the passage of a firm probe, and was dilated to the middle of the tumor. The common and hepatic ducts were $2\frac{1}{2}$ cm. in diameter, and the cystic duct was 7 mm. in diameter. The gallbladder was distended to about the size of a goose egg. The liver was dark green in color with pale yellow areas. The bile ducts were dilated and filled with bile. There were a few small cavities throughout the liver, and these were filled with clear fluid. The stomach was negative. No hemorrhages into the mucous membrane of the stomach were seen. Hemorrhages were found in the pelvis and beneath the serosa of the descending colon. Sections taken from those parts, which are nearest normal, show an increase of the connective tissue and a cloudy swelling, both of the acinous cells and the epithelial cells of the areas of Langerhans. Sections were taken from the tumor mass, and in these sections there is a slight increase of the connective tissue and a cloudy swelling of the acinous cells. The areas of Langerhans show some marked changes. Some of them show a slight enlargement. Their epithelial cells are enlarged, and their nuclei very deeply, and in some of these areas one can see the lymph clefts between the masses of cells, and these show a beginning dilation. Other areas of Langerhans are seen in which the solid arrangement is lost entirely, and the cells have become arranged in anastomosing rods of 1 or 2 cells in thickness, and in these areas the lymph clefts have become greatly dilated. The cells which form these rods are large cuboidal-shaped cells with a relatively large amount of finely granular protoplasm surrounding a round or oval-shaped, deeply staining nucleus. In other areas of Langerhans, the rods are thicker and the lymph spaces still more dilated. The rods in these areas are made of cells, 4 or 5 in thickness, or even more in some places. In some parts of such areas one sees that the spaces found in them are not lined by the endothelium, but by the epithelial cells themselves, and in some of these cyst spaces one finds a granular debris in which desquamated cells and a few leukocytes are seen.

When the large trabeculae of connective tissue are examined, one sees nests of cells growing in the lymph spaces, having no intercellular substance, and limited by no basement membrane. The cells are irregular in shape and have a relatively large amount of protoplasm surrounding a round or oval nucleus which stains deeply. These nuclei show a reticulum on which the chromatin is arranged at varying intervals. These are vary in size, shape, and staining capacity, and in some of the nuclei atypical cell-division figures could be seen. In the larger of the cell nests one sees that the cells of the central portion have undergone a simple necrosis.

The pancreatic ducts are greatly dilated and cystic. The cells lining them have undergone a mucous degeneration, and the lumen of these ducts is filled with a stringy and, in some places, granular matter.

From these sections I diagnosed the tumor as a cystadenocarcinoma of the pancreas arising from the areas of Langerhans.

CASE 4.—This was a case which came under the observa-

tion of Dr. Nicola, then of Battle Creek, Mich., specimens of the pancreas having been sent to the laboratory for examination. Little clinical and no autopsy data were sent, except that it was thought to be a case of chronic gastritis during life, no malignancy having been suspected.

Sections taken from those parts which are apparently normal show that the connective tissue is increased to a slight extent, and that the acinous cells and the epithelial cells present cloudy swelling. Even here, in some of the areas of Langerhans, one sees occasionally a small dilated lymph space between rods of cells.

As one leaves these portions of the pancreas and examines sections taken from regions nearer the tumor mass, changes are seen in the areas of Langerhans. They begin to be enlarged, and they lose their solid appearance. The cells become arranged in an anastomosing network of rods, 1, 2, or 3 cells in thickness. The meshes between the rods are lined by endothelium, and are dilated. Then, there are other areas where the rod arrangement is not retained, but these cysts are seen to be lined by a mass of the epithelial cells, 5, 6, or even 8 or 9 cells thick, and no endothelium can be seen. In the cyst space, a granular matter is found, and embedded in it are desquamated cells. The nuclei of the cells, which so line the spaces, show an irregular arrangement of their chromatin ids, and some are vacuolated, and some irregular division figures.

In the lymph spaces of the connective tissue trabeculae of the pancreas, nests of cells are seen which are growing with no intercellular substance. These cells resemble those described above. The pancreatic ducts are dilated and cystic, and their epithelial lining shows mucous degeneration.

The microscopic findings, then, present the same picture as that found in the sections taken from specimens of Case 3, with the exception that the conditions found are more pronounced and one is enabled to see more division figures in the extremely cystic areas of Langerhans which are undergoing a malignant change. So that my diagnosis in this case would be a primary cyst-adenocarcinoma of the pancreas arising from the areas of Langerhans.

In conclusion I wish to emphasize some points more fully. In Case 1, I would point out the probable cause of the intense pain in the involvement of the nerves by the carcinoma. Another point I would emphasize is the finding of free carcinoma-cells out in the thrombus. From this it is easy to see how these cells might be set free in the blood-stream and lodge elsewhere and form secondaries. In Case 2, I would emphasize the difficulty of making a diagnosis of carcinoma of the pancreas, for this case was diagnosed clinically as a case of chronic gastritis and treated for such, no malignancy having been suspected. In Cases 3 and 4, I would point out again their origin. In these cases we can trace the development of the carcinoma from those areas of Langerhans in which the epithelial cells are hypertrophic, through those stages in which the areas of Langerhans are hyperplastic, and others are adenomatous, to those which show cyst-adenocarcinoma.

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ANGINA LUDOVICI.¹

By G. G. ROSS, M.D.,

of Philadelphia.

Assistant Surgeon German Hospital, Philadelphia.

LUDWIG'S angina, or phlegmonous cellulitis of the floor of the mouth, is a comparatively rare affection. It is a disease which is so rapid in its development and is attended by symptoms so distressing in character and accompanied by such a high rate of mortality that any addition to the literature extant upon the subject may be of interest.

Ludwig, of Stuttgart, in 1836 was the first to describe the disease in detail, hence the name.

The disease is an infection of the thick layer of loose connective tissue which fills in the space between the symphysis of the jaw and the muscles of the floor of the mouth. This tissue is rich in lymphatics and bloodvessels, and contains the ducts of the sublingual and submaxillary glands.

The disease may be either primary or secondary.

Primary infection may arise from wounds or ulcerations of the floor of the mouth and carious teeth; retarded development of the third molar, or so-called wisdom tooth, is an especially fruitful source of the trouble. Frequently a third molar will develop in the angle of a jaw already filled with teeth, causing pressure necrosis of the tooth, and the portion of alveolar process of the jaw forming its bed, thus giving rise to an abscess and a subsequent infection.

The secondary infections arise in conjunction with those infectious diseases which are accompanied by manifestations in the mouth, *e. g.*, diphtheria, scarlet fever, tonsillitis, etc.

An interesting discussion has arisen as to the differentiation of the acute infectious diseases of the larynx, pharynx, and floor of the mouth. Semon² claims that "the various forms of acute septic inflammation of the throat and neck, hitherto considered as so many essentially different diseases, are in reality pathologically identical, that they merely represent degrees varying in virulence of one and the same process, that the question of their primary localization and subsequent development depends in all probability upon accidental breaches of the protecting surface through which the pathogenic microorganism, which causes the subsequent events, finds an entrance, and that it is absolutely impossible to draw, at any point, a definite line of demar-

¹ Read, November 5, before the Philadelphia Academy of Surgery.

² Royal Medical and Chirurgical Society, London, 1895, vol. lxxviii, 181 to 233.

cation between the purely local and the more complicated, or between the edematous and the suppurative forms."

He reports 14 cases, all of which were of the secondary type of infection. It would seem clear from his cases to consider the acute septic infection of the larynx and pharynx as one and the same disease, and, so far as the character of the invading microorganisms is concerned, the primary may be included.

However, in true angina ludovici, the course is different and the infection essentially primary. The point of entrance is in the mouth proper, and the disease manifests primarily in the floor of the mouth and secondarily in the pharynx and larynx.

The pathology, so far as known, is very similar, if not identical, with that of erysipelas. The organisms which have been discovered from the researches of modern investigators are the streptococcus and the staphylococcus. It has been suggested that there is some organism which is especially virulent and active in this disease, but as yet it has not been discovered.

G. Leterier³ has collected 31 cases with 13 recoveries. This series includes cases collected from old literature, and the mortality is therefore higher than at present. Early recognition of the disease and prompt surgical interference will, in all probability, still further reduce the death-rate. Spontaneous cure by rupture of the abscess into the mouth may occur, but the majority will terminate fatally unless operation is instituted.

The symptoms are marked from the onset of the disease. They develop very rapidly and are of the greatest severity. Frequently in a few hours after the earliest manifestation of the disease a hard swelling will be found between the arch of the lower jaw and the hyoid bone. The swelling spreads rapidly, soon involving the neck and face in a hard, dark red, brawny induration. Respiration is soon impeded by involvement of the deep connective tissue of the neck. The pharynx and larynx become involved, and attacks of acute dyspnea with cyanosis supervene. The swelling may spread downward to the anterior mediastinum, and on to the chest-wall. Inspection of the mouth, although unsatisfactory due to fixation of the jaw, will disclose the sublingual tissue to be so edematous as to push the tongue against the roof of the mouth. In the early stage the swelling is unilateral, but soon both sides become involved and deglutition becomes difficult or impossible. Supervening the local condition a marked general sepsis occurs.

CASE 1.—Dr. W. S., while studying in Berlin, had an acute infection of the submaxillary region arising from a necrotic and undeveloped wisdom tooth. The inflammation developed rapidly and in twelve hours from the onset of the attack the symptoms were so marked that operation was demanded without further delay. The wisdom tooth being pried away from the last molar, fetid gas and pus escaped; the inflammatory mass in the submaxillary region was then incised. The symptoms rapidly subsided, only to recur a few weeks later, when he was again operated upon and the offending tooth chiseled out.

CASE 2.—Carl S., Austrian, aged 20. Family history good. Personal history excellent. Gastric fever at the age of 6; no venereal trouble. Uses alcohol moderately and tobacco in excess.

He worked his way to this country, and attributes his bad teeth to neglect during the voyage. He is a printer by trade, but had been a farmhand for the three months of his residence in America.

Had had toothache for four days prior to his admission to the German Hospital, September 29, 1900, about 8 P.M. At

the time of admission there was some swelling and induration in the left submaxillary region, red and angry looking, very painful to touch, and interfering with the motions of the jaw. Respiration 24, temperature 102°, pulse 86, full and bounding. Three hours after admission he awoke with a marked dyspnea and cyanosis, which partially subsided only to recur again with increased severity. The attacks of dyspnea seemed to come in periods and were relieved by violent voluntary inspiration. He would grasp the porch railing, extend his neck forcibly and thus enable himself to inspire enough oxygen to last for a few minutes. The house surgeon prepared for an immediate tracheotomy, which, however, was deferred from time to time upon the amelioration of the attacks. By 12.30 A.M. the induration and swelling had extended from the angle of the jaw on the left side to that of the right and down the neck to the clavicles. The hyoid bone and Pomum adami could not be made out. The swelling was hard, very painful, dark red, and brawny in character, not unlike that of erysipelas.

The chin was held well advanced and rigid. The jaws were separated about half an inch, and between the teeth the under surface of the tongue could be seen; the latter being pushed upward to the hard palate by the edematous sublingual tissues. The jaws were forced apart, disclosing a general edema of the anterior pillars of the fauces, buccal mucous membrane and the sublingual tissues; the last two molars were carious and an undeveloped wisdom tooth was present.

An incision was made into the edematous sublingual tissue on both sides of the frenum. A considerable amount of bloody serum escaped and in a few minutes his respiration became less labored. Icebags were applied and the patient returned to bed; he slept for some hours. The temperature reached 104° and the pulse 118 by 5 P.M., September 30.

On October 1 the swelling had increased until it extended upward upon the face as far as the zygomatic arches and down upon the chest-wall to midsternum. Fluctuation was now unmistakable for the first time just below the symphysis of the jaw.

A few whiffs of chloroform were administered and the abscess opened by an incision which went through the muscles forming the floor of the mouth. The abscess cavity extended around the entire under side of the jaw from angle to angle. The pus which escaped was extremely fetid. As this stage of the proceeding was reached, the patient ceased breathing, necessitating an immediate tracheotomy, and this in a neck with obliterated landmarks. Respiration being reestablished, the operation was completed by the removal of the offending teeth. A mallet and chisel were necessary for the extraction of the wisdom tooth. The patient reacted promptly. By the fourth day after operation 2 patches of impaired resonance could be made out, one in the right lung in the midaxillary line, the other at the left base. There was, however, no evidence of a frank pneumonia.

On the fifth day a secondary abscess on the right side, extending from the submaxillary region to the zygomatic arch, was opened which allowed a quantity of fetid pus to escape. Prior to the evacuation of this secondary collection deglutition had been impossible and rectal alimentation had been resorted to. In a few hours he was able to swallow liquids freely. The tracheal tube was removed in 36 hours. The convalescence was progressive despite an attack of bronchitis. The after-treatment consisted of iron, quinin and forced nourishment.

As a result of the inflammation of the larynx, aphonia has resulted. The condition of his larynx (as reported by the laryngologist) is as follows: "The larynx shows evidences of an attack of perichondritis. The vocal cords are hidden by the greatly swollen and thickened ventricular bands. The arytenoid cartilages are also obscured by swollen mucous membrane which also involves the interarytenoid space. There appears to be no paralysis of the laryngeal muscles, but their normal action in phonation is prevented by the greatly thickened condition about them. Directly in the center of the laryngeal opening a passage sufficient for respiration leads down to the trachea, between the swollen ventricular bands."

The pathologic report states the bacteriologic findings as follows:

³ Du Phlegmon sublinguel dit Angina. Thèse, Paris, 1893.

Examination was made of the patient's blood and of pus from the wound, both taken October 2, 1900. The blood was removed from the median cephalic vein by means of an aseptic hypodermic needle after aseptic incision of the skin overlying the vein. A moderate quantity of blood was introduced into 6 bouillon tubes and 4 agar tubes. These were examined on several occasions, but all remained sterile at the end of 10 days. From the pus cover-slip preparations were made and several bouillon tubes and agar tubes were inoculated. The cover-slip preparations revealed staphylococci and streptococci. The inoculated tubes also revealed streptococci and staphylococci; the latter by further culture methods proved to be *Staphylococcus pyogenes aureus*. On October 6 another examination was made of the pus from the wound, cover-slip preparations and inoculations again being utilized. These again revealed *Staphylococcus pyogenes aureus* and *Streptococcus pyogenes*. The latter grew both in short chains as well as in long chains, many of them being excessively long.

Blood-count: Hemoglobin, 63%; erythrocytes, 4,630,000; leukocytes, 9,800.

There is another valuable lesson to be learned from Case 2. The character and severity of the symptoms and the destructive tendency of the inflammation lead to the isolation of the patient. The clinical manifestations and pathologic finds so nearly resemble erysipelas that in an active surgical hospital these cases should be isolated.

About 6 weeks after the operation and 2 weeks after reporting Case No. 2, the patient developed a slowly progressive dyspnea and died suddenly on November 21, 1900. The postmortem showed a deep ulceration of the larynx, almost totally destroying the vocal cords. The opening in the larynx was free enough to preclude respiratory failure. The kidneys showed some nephritis; the other organs appeared normal.

A CASE OF DECIDUOMA MALIGNUM.

By JOSEPH McFARLAND, M.D.,

Professor of Pathology in the Medico-Chirurgical College, Philadelphia.

THE following case, although the true diagnosis was only recently made, was observed a number of years ago, and was reported in the *Medical News* for December 8, 1894, as a "Large round-cell sarcoma of the uterus." The morbid specimens only are known to me, the case having occurred in the Kensington Hospital for Women, in charge of Dr. Charles P. Noble, to whom I am indebted for the following clinical memoranda:

Mrs. K., aged 30 years, white, married, mother of 2 children, the youngest of whom is 30 months old. Between the births of the children she had one miscarriage. In September, 1892, when the youngest child was about 21 months old, menstruation became profuse and continuous so that by June, 1893, she was very feeble and anemic, and consulted Dr. Noble, complaining only of the hemorrhage. An examination was made and the uterus found to be much enlarged and discharging a foul-smelling bloody fluid. A clinical diagnosis of sloughing fibroid or cancer of the fundus was made, and on June 23 the organ was curetted, and a large quantity of necrotic tissue removed. The amount of this material led Dr. Noble to believe that the case was one of sarcoma.

A fragment of the tissue was sent to me as pathologist of the hospital, and was subjected to microscopic study with the result that nothing of interest could be determined, as the fragment consisted exclusively of necrotic tissue whose elements were no longer recognizable. I

reported upon the findings and hazarded the opinion that the case was one of necrotic submucous fibroid.

The anxiety which Dr. Noble felt about the case led him to operate more radically without awaiting the result of my examination, and on June 28, 1893, a vaginal hysterectomy was performed. The patient made a good recovery from the operation and remained well until November, 1893, then again called upon Dr. Noble, who found her ill in bed, with profoundly embarrassed respiration, and aspirated about a pint of blood-stained serum from the chest, slightly relieving the symptoms. Several small tumors were pointed out at this time, one under the skin of the breast, another under the skin of the loin, and a third under the skin of the thigh.

When seen later in her illness, the patient was breathing 80 times per minute and the pulse was so rapid that it could scarcely be counted. Respiratory sounds were absent over the front of the chest, and there was evidence of pulmonary consolidation on the



right side posteriorly. The patient died December, 1893.

The extirpated uterus was sent to me for examination. It was enlarged to nearly the size of a small fist, the shape was pyriform, the surface smooth, the cervix normal. I opened the organ by a longitudinal incision on the anterior surface and found a dark-colored, ragged tumor projecting into the cavity of the organ from the posterior superior wall. I did not receive the specimen in the fresh condition, but hardened in Müller's fluid, which prevents me from saying whether the tumor was originally soft or firm. The preservative had made it hard and firm and the appearance was so completely suggestive of a submucous fibroid ulcerated and damaged by the curet, that I wrote to Dr. Noble that the microscopic examination confirmed my original diagnosis and that the tumor was a necrotic fibroid. Some large sections of the tumor, extending entirely through it and through the uterine wall, were made, and a very careful examination made of the cervix. When these sections were examined I found the cervix normal, the uterine wall itself normal, but the supposed necrotic fibroid consist-

ing of a hemorrhagic and necrotic matrix rather irregularly penetrated by areas of peculiar cells irregular in size and of very obscure histogenesis. I was much interested in this discovery, but failed at the time to determine its significance, and the specimens were laid away. After the death of the patient Dr. Noble wrote to me about her and the subsequent events in the course of the case and I studied the sections again very carefully, and on December 8, 1894, published my opinions in the *Medical News*.

The case, therefore, has gone on record as a "Sarcoma (Endothelium?) of the Uterus." I doubt whether anyone would be able from the published description to determine that the case is one of deciduoma, though upon reading them over I find them so accurate that I need not repeat them.

The slides were again laid away for some years and might have remained untouched forever if in rearranging my collection I had not unexpectedly unearthed them. I remembered the peculiar tumor well, but had lost the mental picture of the histologic lesions. Upon again glancing over the slides the true nature of the growth, which in the meantime has become well known, became at once apparent and I find it perfectly corresponding in detail to the numerous cases that have been published and figured since I wrote my original description 6 years ago. The microscopic appearances are well shown in the accompanying illustration.

COMPOSITE TERATOMA OF THE OVARY; PATHOLOGIC REPORT.

By EDGAR ALLEN JONES, A.B., M.D.,
of Birmingham, Ala.

Instructor in Pathology, Birmingham Medical College.

THE following case, which I have the privilege of reporting through the courtesy of Dr. W. E. B. Davis, who performed the operation, is of unusual interest for several reasons which become evident upon a recital of the history of the case, together with the pathologic findings:

Mrs. N., aged 34, married. Mother of three children; had always menstruated regularly (except when pregnant or nursing child). She noticed a growth in the left side (iliac region) 2 years ago; menstruated in January before the growth was noticed, then missed until March, at which time she bled very freely for 2 weeks; missed periods until following October with no untoward symptoms, except an attack of "colic" in August; after October she menstruated regularly until following January, missing from then to October 24, 1899, when she was delivered of a child at full term. She has not menstruated since. After the birth of this child the tumor developed quite rapidly, and on May 7, 1900, she was operated upon at Dr. Davis' private hospital. The diagnosis of an old ectopic pregnancy had been made. The tumor filled up the left side of the pelvis and was attached to the uterus by a large pedicle. The tumor was about the size of an adult head, and was firm in consistency.

Pathologic Description.—Examination reveals a large rounded ovoid mass (about size of adult head), covered by a moderately thin, fibrous capsule. The capsule is continuous on one side with the tumor mass. The weight of the whole tumor is 2,850 grams. Within the capsule are observed numerous sacs of variable size, which are rounded in contour, and are filled with a semifluid, gelatinoalbuminoid tissue. Lying in one side of the mass is part of a fetus. The fetus has the appearance of having reached the sixth or seventh month of fetal development. There are numerous bones of a fetus lying free in the capsule. The upper part of the fetus is embedded in the solid portion of the tumor,

and this part of the fetus is so intimately combined with the tumor that no sharp line of demarcation can be made out,—one tissue gradually passing over into the other. There are numerous nodular and teat like elevations in the tumor. Some of these are covered by smooth skin (?), others by skin (?) provided with fine, silky, brownish hair. Incision of these frequently reveals a whitish, cheesy substance, which very closely resembles sebaceous secretion. The soft parts of the fetus are macerated and quite soft. The bones, such as vertebrae, ribs, tibiae, and metatarsal, are exposed in many places. There are two well-developed scapulae,—right and left, and to the left is attached some slight semblance of an extremity. Lying in a mass of muscular tissue to the left of the vertebral column is a long piece of bone somewhat resembling a humerus. Attached to the lower end, and left side of the vertebral column by means of a flattened piece of bone, is an almost perfect lower extremity. The femur is entirely covered by muscle, but the tibia is exposed at its lower end. Some of the phalanges are missing, but the foot is fairly well formed. Careful dissection of the upper part of the fetus fails to reveal any bones attached to the vertebral column. There are two pieces of jaw bone (inferior maxillae) lying in the mass of tissue at this place. They are well shaped, and dissection of one shows rudimentary teeth, and a piece of nerve. The laminae of the vertebrae have not united, so that the spinal canal is not complete, and the spinal cord is seen lying in this position, with nerves arising regularly from each side. The bones lying free within the capsule are: Two parietal, 1 occipital, 2 pieces of frontal, abnormally united, several well-formed ribs, and 5 or 6 long bones (of extremities). Parts of the lung, liver, the stomach, and about 60 cm. of the intestine are preserved.

Microscopic Examination.—Microscopic examination of sections of tissue, selected from all portions of the tumor, shows a very complex histologic structure. Some portions of the tumor are composed of simple, fully developed, adipose tissue, enclosing occasional bands of unstriped muscular tissue, the whole surrounded by fully developed skin. The skin contains sebaceous and sweat glands, and hair follicles, with hairs in position. The sebaceous glands are larger than those found in normal skin. Sections from other parts of the growth show true myxomatous tissue, still others, cartilage, and early stages of osseous development. Sections from the walls of cysts show the inner surface of some to be lined by true skin; the epithelial layers lie internally—line the cyst cavity—the papillary portions lying externally. Sebaceous and sweat glands occur in these sections, and frequently they may be seen opening into the cysts. Other cysts are lined by a simple layer of low cubical epithelium, either in uniform arrangement or thrown into folds or villi, similar to the formations found in uncomplicated cystic papillomatous adenoma of the ovary. The lining of other cysts is made up in some parts of flat or squamous epithelium, in other parts by columnar or cubical epithelium of the glandular type, and frequently one kind of epithelium passes over into the other.

Anatomic Diagnosis.—Composite teratoma, combined with cystic adenoma of the ovary.

The most interesting feature of this case is the fact that the fetus was so large, and, on casual observation, so well formed, that it could be easily mistaken for an ectopic gestation which had ruptured into the cavity of a preexisting ovarian cystoma. As has been stated above, the diagnosis of ectopic pregnancy had been made from the history of the case.

As to the origin of teratomas, many investigators give many opinions. The origin of the simple epidermoid cysts, and the true dermoids (Orth), is probably correctly explained by the theory that there is an infolding of the skin during fetal development, with ultimate separation of the thus formed cyst from the surface of the body. To account for the origin of the more complex dermoids—the simple and the complex teratomas (Orth)—is not so easy. The facts that these growths occur in children, and in young women (virgins), serves to disprove the theory of ovarian preg-

nancy. The theory of the development of an ovum without impregnation — parthenogenesis — has some supporters. Cohnheim's theory of embryonal remnants, capable of producing different kinds of growths (dependent upon the type of the cell), is reasonable, but it is strange why so many of these growths occur in the ovary. The theory which has the greatest support, by the greatest number of observers, is that of fetal inclusion; *i. e.*, the inclusion within the body of a developing fetus, the remains of an imperfectly developed twin. This, too, is subject to the criticism applied to Cohnheim's theory, but it seems more plausible than any of the others. Finally, it must be admitted that the pathogenesis of the teratomata is very obscure.

I wish to thank Dr. H. T. Brooks, of the Post-Graduate Hospital, New York City, for valuable help in the examination of this specimen.

DERMATOMYCOSIS TONSURANS.

By W. B. REID, M.D.,

of Rome, N. Y.,

Surgeon on the Staff of the Rome Hospital; Member of the Rome Medical Society; the Oneida County Medical Society; Non-Resident Member of the Syracuse Academy of Medicine, and the New York State Medical Association.

THE case here reported, for the purpose of record, is one of dermatomycosis tonsurans. It is of interest first, because of the rare source of the infection; secondly, because of the still more rare form and manner of the attack.

There are three principal varieties of ringworm included under the term *tinea trichophytinea* or *trichophytosis*, but all arise from the one vegetable parasite, the fungus *trichophyton tonsurans*. The division of the subject into *tinea tonsurans*, *tinea sycosis*, and *tinea circinata*, is a rational one, not only on account of facility of description but also because each affection has a specific and distinctive clinical history, and requires varying modifications of treatment. The subject of this report came to my office on November 20, 1899, giving the following history:

M. L., age 18 years, mechanic; work confined to brass and copper. Residence, Rome, N.Y.

Family and personal history negative.

The trouble for which he consulted me began about ten days previous, when he noticed a small, hard, red swelling on the inner side of the right forefinger, close to the root of the nail. The smarting and pruritus were intense, and on this account he visited the family physician, who told him that his trouble was "the effects of taking cold in a bruise." Receiving no benefit after several days' treatment, he came to my office. The inflammation had then extended around the whole base of the finger nail, and caused severe suffering.

On the back of the hand two or three intensely red papules were seen. On the forearm was a larger papule, and starting from it, distributed in a semicircle, several smaller ones. It was the appearance of the latter that aroused my suspicions and led to a more careful inquiry. He then told me that his home was two or three miles from the city, and it was the custom to drive the family horse to and from work; that the horse which he had been driving had a sore on the shoulder, and he had been cleaning the sore by the use of soap. Careful examination revealed no other spots on the patient's body.

A microscopic examination of the skin-scraping with several of the fine hairs from the points of attack on the forearm was then made. *Trichophyton tonsurans* was found in the first specimen.

The following week the patient called my attention to a

"rash" on one of his legs. Examination disclosed the typical lesion of *tinea circinata*. On coming to my office a few days later, the man was accompanied by a child four years of age. He said "that he brought his brother, that he might show me a sore which had been on the little fellow's head for some time and which, of late, was getting larger."

Examining the child's head, a swelling the size of a silver dollar was found. It was markedly elevated, edges abrupt, boggy almost to fluctuation, and the surface covered with pus, through which the lusterless, broken hairs were projecting. These were very loose, pulling out with scarcely any force whatever. We had, in fact, the perfect appearance of a kerion.

Examination of these hairs under the microscope showed mycelium and spores of the infecting parasite. The question then arose, might not the infection on the young man have come from the child, as the sore appeared on his head before his attention was called to his own finger, and the sore on the horse been of some other nature? Questioning the patient gave no positive evidence, so the horse was examined and some of the hairs from the sore taken for a microscopic examination. *Trichophyton tonsurans* was found. The



family are positive the sore appeared on the horse before any of the children were attacked. Therefore I am positive the original infection came from the horse. Most authors state that the parasite may be transmitted from the lower species to the human body, but on reviewing the recent literature on the subject only one authentic case was recorded. This was reported by Wechselmann in the *Berliner klinische Wochenschrift*. He presented a case in which a child became infected with the disease from playing with a dog affected with the same disease. Both in the child's and the dog's hair mycelia of the *trichophytes* fungus were demonstrated.

A few words in regard to the diagnosis. Later in this same family occurred two other cases of the same disease, illustrating the infectiousness of the parasite. The first was in a boy 7 years of age, the second in a girl 14 years old. The father and mother were not attacked. The older children yielded more readily to treatment than the younger. The microscope was resorted to in all the cases for the purpose of a diagnosis. The history of a case in the parasitic forms of skin disease is of great help, but my opinion is, that a positive diag-

nosis cannot be made without resorting to the use of a microscope.

The first case reported, that of the older boy, illustrates the inestimable value of a microscopic examination. The manner of the attack in his case, the tinea unguinum, is considered by all authorities to be the rarest form. Without resorting to the method here suggested, it would have been absolutely impossible to have made an early diagnosis.

A NEW PHOTOGRAPHOMETER.

By JOHN MILTON GARRATT, M.D.,

of Buffalo, N. Y.

To picture a bodily deformity graphically so that the description will be of practical utility in studying the development of a given case is an art in which the



majority of the medical profession are none too proficient, and many who possess the ability are frequently so pressed for time that the description suffers in the loss of many important details which later might assist in a better understanding of the case.

Many instruments have been invented to facilitate the measurement of the degree of deformity; they are, however, more or less complicated and difficult of application, and all time-consuming. Mention may be made of the Scoliosometer of Mikulicz, the Orthopedic Goniometer, and the Beeley's Square and Plumb Line. The measurements thus obtained are usually recorded upon a diagram.

Photography has been resorted to by many and with advantage, for, if the technic has been carefully carried out, a faithful and permanent record is obtained. The objection to an ordinary photograph is the absence of definite measurements.

It is the purpose of this article to introduce a device which will make it possible to include this desirable feature—an addition which will conduce to perfect records, and with an expenditure of a minimum amount of time and energy. I have given it the name photographometer, a term which suggests its use. It consists of threads, black and white, placed equidistant so as to form perfect squares of one inch. The black thread is intended to designate feet; the white, inches. The threads are strung from hooks driven into the vertex of the angle formed by the glass-retaining projection and the inside of a solidly made picture frame. To preserve perfect squares it is of course necessary that the threads be strung all from the same side of the hooks. A frame secured, it is best to measure off the exact center on each of the four sides. Then pin in place a cloth tape measure, and from the center mark the inches with a short stroke of a pencil, the feet with a long stroke. Next the hooks are placed, then the threads strung. Coates' No. 8 in black, and No. 13 in white, will give good results. The black is placed first, beginning from the center; string this to the opposite center hook. Next form the white squares. All squares may be formed without destroying the continuity of the thread. As to the size of the frame, this will depend upon the particular purpose for which it is intended. For general use one 4 by 5 feet will meet requirements. One can be made at but little expense and requires no great amount of mechanical ingenuity. In the practical application of the device the precaution should be taken to have the frame and camera upon the same plane, otherwise the squares are likely to be distorted. It is convenient to suspend the frame by means of rods with hooked ends to a wire,—rod adjustment being allowed for by the use of thumb-screws fastened into the lateral sides of the frame. The wire must be quite taut to prevent vibration. It is of course understood that the apparatus is to be placed in a good light.

The accompanying illustration is intended to elucidate the application of the device.

Phosphorus Poisoning.—Guthrie (*New Orleans Medical and Surgical Journal*, November, 1900) reports a case of phosphorus poisoning occurring in a child 2 years of age. The child had eaten a piece of bread on which was spread a vermin exterminator, in the form of a paste composed mainly of phosphorus. The child vomited and had profuse watery stools. There was stupor, the pulse was rapid, but the rectal temperature was normal. Drugs to combat the effect of the phosphorus were given and lavage employed; but the child died the following day. Necropsy showed the heart and the cells of the liver and pancreas undergoing marked fatty degeneration. The kidneys showed the most marked pathologic changes, cloudy swelling was seen throughout the renal epithelium, in both cortex and medulla. In Bowman's capsule there was a marked separation of the 2 layers of epithelium. The parietal layer of Bowman's capsule showed a desquamation of cells forming it, the cells being degenerated and peeled up from the cavity which they lined. The shrinking of the glomerulus and increased opacity of epithelial layer of cells covering capillary tuft is characteristic of the acute desquamative nephritis of phosphorus and arsenic poisoning, and of yellow fever. Section through secreting tubules, whether in cortex or medullary portion, showed the same granular and hazy condition of all cell-substance and indistinct cell-outline. In some of the tubules the cells lining them were completely broken down and blended. The findings in the urine were such as would be expected from this condition of the kidney. [A.B.C.]

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The relative merits of slow sand-filtration and mechanical filtration are intelligently and dispassionately considered in a report made recently by a special committee of the Medical Society of the District of Columbia and presented to the Senate of the United States by Mr. Gallinger. The necessity for filtration on a large scale of the water of the Potomac River resides in the high death-rate from typhoid fever in the District of Columbia—namely, 221 for the year ended June 30, 1900, with an average of 199 for the preceding 10 years. It may be estimated that for every death from typhoid fever there are 10 cases of the disease, so that on a conservative basis the pecuniary loss to the community may be placed at \$1,000,000 per annum. Now, it has been shown that wherever a proper system of sand-filtration for the water-supply has been installed the mortality from typhoid fever has been reduced from 50 to 75%, while the results from mechanical filtration have not been quite so satisfactory. This is in accord with the demonstrated greater bacterial efficiency of sand-filtration. On the other hand, the water is not improved by the presence of alum, for instance, even should it be shown that this is capable of no harm. It is true that the first cost of a sand-filtration plant is the greater, but the subsequent cost of operation, renewal, etc., is the less. From the foregoing considerations the committee believes it would be an unwise experiment to resort to mechanical filtration, and it earnestly and unhesitatingly recommends the prompt installation of natural sand-filters.

Tenement-House Legislation.—A special report on housing-conditions and tenement-laws in leading American cities, based upon personal observation, investigation by correspondence, and a study of laws and ordinances, has recently been made by Mr. Lawrence Veiller, secretary to the New York Tenement-House Commission. Appended to the report is a comparative table showing the most important provisions of the different tenement-house laws in each of 27 cities, grouped together side by side. It appears that none of these large American cities, excepting New York, Boston, Cincinnati, Jersey City, and Hartford, really has a tenement-house problem, while in the great majority the tenement-house, as known in New York, does not exist, the people of restricted means living generally in small one-story or two-story houses, containing one or at most two families, while in many

cities the houses are owned by the workingmen themselves. A number of cities exhibit bad housing conditions, giving rise to what might be designated a housing problem, but this is in no sense comparable to the tenement-house problem as known in New York and Boston. The laws of Buffalo, Philadelphia, and Washington might, in many respects, well serve as models for New York, especially with regard to the provisions for light and air. The Buffalo law provides that "no court or shaft shall be less than 6 feet wide for one-story or two-story buildings, and at least 8 feet wide for three-story and four-story buildings, and 1 foot wider for each additional story above the fourth story." The law in Philadelphia provides that "no shaft or court shall be less than 8 feet wide in any part, and that any court or shaft between the wings of a tenement-house or between two tenement-houses shall not be less in width than 13 feet; and all such shafts and courts shall be open on one side from the ground to the sky."

If these provisions are contrasted with the present provisions of the New York law, which permit, instead of wide shafts, of mere slits 28 inches wide and 60 feet long, and closed in on all four sides, it will be realized that New York is in some respects far behind many smaller cities in her tenement-house laws.

A Paradise of Spinsters.—The celibate tendency of the modern woman is beginning to worry the vital statistician. The decadence of marriage is threatened, and the gradual extinction of the race. Mr. Carroll D. Wright has been investigating the subject, and finds that of 17,427 representative workingwomen, living in 22 cities, 75% of them being under 25 years of age, 15,337 were single women. These figures are simply appalling. In the good old times, it is claimed, one-half of these young women would already have been married from 3 to 5 years. The fact seems to be that there is a tendency to the postponement of marriage on the part of both sexes. In the case of women this postponement is too often fatal, and in the case of men it gets to be a bad habit. But the evil being recognized, and reduced to figures, the next natural thing to do is to seek for the causes of it.

Several theories have been advanced to account for this increasing unpopularity of marriage. The statement that young men have become more shy and embarrassed in the presence of the modern go-ahead

girl, may have some truth in it. The present tendency is undoubtedly to cultivate self-assurance and independence in young women, and to encourage them to become self-supporting. Many avenues are open to them; they can make a comfortable living and enjoy life. Many a woman, in fact, can make a better living for one than the majority of young men can make for two (with prospects of more). This situation tends to check marriage in two ways: First, it makes the women more independent of men, and therefore, in the second place, perhaps a trifle less attractive to them. Marriage is an odd affair, anyhow. It is largely a psychical business at the start, based upon a delicate emotional instinct; and all the logic and reason of a progressive age cannot alter that fact. The pushing and business-like modern woman is not conducive to it.

The competition and the stress of modern life are deterrent to matrimony. Every one can see this in his daily observation. How few men are able properly to marry before they are 35 or 40. But by this time the girl companions of their youth are almost fitted to become grandmothers. We would suggest to Mr. Wright that he should write up the statistics of bachelors—both young and old (if any of the latter can be found). In France a law has been introduced into the Senate to tax all celibates over the age of 30, and all married couples who remain childless after 5 years. We heartily approve of this plan. Let these people contribute to the support of other people's families if they persist in not having any of their own.

The Pathogenesis of Arthritis Deformans.—Dr. A. O. J. Kelly in a recent paper (*Journal American Medical Association*, December 22, 1900) discusses this subject at considerable length in the light of the latest investigations. After referring to the two chief theories of the disease (the neural and the bacterial) he expresses the opinion that arthritis deformans is an infectious trophoneurosis. Schüller first suggested the infectious nature of the disease, and demonstrated in the diseased joints a bacillus with polar staining, with cultures of which he produced in the joints of animals lesions similar to those observed in the joints of man. Other observers, notably Bannatyne, Wohlmann and Blaxall, Chauffard and Ramond, and von Dungern and Schneider, have also claimed to have found a microorganism, although these bacteria are probably not all identical. The last two observers found a small diplococcus in the gallbladder, which in cultures produced in rabbits lesions identical with those found in human subjects. The development of the chronic polyarthritis deformans is attributed by them to infection from a chronically inflamed gallbladder.

The purely nervous theory of this and allied diseases was held originally by the late Prof. J. K. Mitchell, of Philadelphia, and though in its entirety it cannot be supported in the light of modern bacteriology, it was

yet a remarkable instance of prescience in pathology. This fact, it seems to us, is abundantly shown in Kelly's paper, for although this author does not accept the theory of Mitchell, he yet points out how many of the symptoms of the disease are essentially neurotic in origin. These symptoms are especially the muscular atrophy and the irritation of the nerve-fibrils, as indicated by pain, glossy skin, and edema. Certain trophic lesions also, such as erythema, mottling of the skin, pigmentation, and scleroderma, are identical with those that are observed in peripheral nervous disorders. The spinal cord does not seem to be involved, and here is one of the points of widest divergence from Mitchell's original theory.

According to Kelly, the local habitat of the bacillus is probably in the synovial membrane, and the changes in this membrane are the immediate effects of the specific action of the bacterium. From this seat the production of toxin proceeds, and these toxins are the causes of many of the so-called secondary effects.

The Teaching of Anesthesia.—All experienced surgeons realize the great importance of a careful administration of anesthetics. And all physicians at some time during their professional careers are likely to be called upon to administer anesthetics. In spite of the need of experience and of special knowledge for the successful administration of anesthetics very little attention is paid to the subject in most of our medical schools and in hardly any, if any, is there an opportunity for gaining a practical knowledge of the subject. Even in England, where professional anesthetists are generally employed, it seems that the attention paid to the subject has not been very great in the past. In a letter to the *Lancet*, November 10, 1900, Dudley Buxton, lecturer on anesthetics in the University College Hospital, London, expresses his satisfaction that more attention is being paid to this subject in the English medical schools than formerly, and emphasizes several important points in this connection. He believes that it is absolutely necessary for students actually to give the anesthetic under supervision during their instruction and that physicians and surgeons should recognize the importance of the subject. The students should not only give the anesthetic but should examine their patient before and after its administration; they should study any noteworthy differences from the normal and be taught to make a careful choice of anesthetic.

The skilful anesthetist should have sufficient knowledge of medicine to conduct an accurate physical examination, including that of the blood and secretions. His familiarity with surgery should enable him to know what the operator requires and what will be the effect of the operator's manipulations upon the patient under anesthesia and also the requirements as to relaxation of the patient for special operations. His knowledge of anesthetics should be such that he can adapt

the anesthetic to the necessities of the patient and the requirements of the surgeon. The old days have gone by when anyone from the house-surgeon to the ward-nurse can be considered competent to administer anesthesia, while the operating surgeon "keeps his eye on the patient." The faculties of our medical schools should recognize the tremendous responsibility of the anesthetist and the fact that all graduates are likely to be called upon to use anesthetics and in most cases quite frequently. Lack of knowledge or skill may jeopardize the patient's life and frustrate the surgeon's most skilful endeavors. The facilities for teaching this subject should be increased; it should be made compulsory and the opportunity for hospital training should be given. In this way the students of the future will graduate much better equipped in a very important requisite than their predecessors have been.

The Examination of Public Water-Supplies.—It has not been long since the commonly accepted theory was that the purity of any source of public water-supply might be definitely and finally determined by means of a single chemical analysis. There are not wanting official reports in which after consideration of the probability of water pollution the subject has been set aside with reference to the report of one analysis by some prominent chemist, the results of which have been negative. It may seem a harsh judgment to express, but it is highly probable that in some instances expert chemists, being asked for the results of their examination, have simply given them, without explaining to the official bodies that said results were in no wise valuable in and of themselves, but should be considered as but one link, and an unimportant one at that, in a long chain of necessary evidence.

Gross pollution of a certain sort is certainly discoverable by means of chemical examinations. The chemical examination is a process which should never be omitted in any investigation of a water-supply. It is, however, of much less import than continuous daily examinations of the water by modern bacteriologic methods, and both chemical and bacteriologic methods are of much less value than the naked-eye examination of the original sources of supply and the methods of conduction and distribution.

The reason for the comparative values of these methods is to be found in the fact that the condition of the water-supply on any one day is no index of what it may be upon subsequent days. The daily variation is influenced by conditions existent upon the water-shed, at or adjoining the sources of supply and near or surrounding the system of conduction and distribution. All of these conditions are rarely operative at one time or in any regular sequence. Only the intelligent inspection of the actually existing conditions can give even an approximate idea of when or how these conditions may come into play and so influence the sup-

ply. The bacteriologic daily examination may often succeed in detecting the changes in the purity of the water after the causes have become operative. In this manner this examination may give the clue which will lead to remedial measures after the damage has been done. But perfect knowledge gained by the naked-eye inspection might have prevented the actual occurrence of the pollution.

It seems but a small requirement to put upon those responsible for municipal or private control of water-supplies that the water-sheds should be effectually and continuously policed to prevent gross contamination by drainage, sewage, or by refuse thrown directly into water courses; to add to this the daily bacteriologic examination of the waters as distributed to the general public and the establishment of certain standards above which contamination may not rise without causing public notice and warning to boil the water before it is used. The latter possibility will be practically eliminated in cities that provide efficient filtration through sand filter beds, although these need careful scientific supervision in order that the best results may be obtained.

Mental Sanitation.—Smith (*The Canadian Journal of Medicine and Surgery*, December, 1900) calls attention to the marked influence which heredity has in producing insanity, and charges that much of the so-called literature of the present day conduces to an unsettled mental state. He concludes as follows: 1. The public should be enlightened with regard to the nature of insanity in order that they may properly estimate the influence of heredity as the most potent factor in the causation of disease. 2. As a preventive measure the public should be taught that as the development of the morbid disposition is most insidious and is seldom recognized until late, the consideration of the family and personal history of the individual should demand and receive early and careful attention. 3. There must be full recognition of the invariability of individuals for bearing burdens and enduring strains. 4. Many cases of insanity are justly chargeable to the imposition of burdens beyond the capability of the individual. 5. The prevention of insanity is not promoted by merely studying the phenomena of the disease. 6. Public sentiment must be enlightened before any restrictive measures can be beneficially enforced. 7. If the conditions under which many cases of insanity originate were properly understood, many attacks of the disease might be avoided. 8. The study of child character and the careful consideration of the variability in the development of mental phenomena during the period of growth in the child are all important. 9. The steps necessary to secure the adoption of these and all other precautionary measures must first be taken by the family physician, who in the future must be prepared to advise, caution and restrain in exercising his influence in the prevention of mental diseases. 10. The burden must be adjusted to the capacity of the individual in order that it can always be carried with safety when this is possible; and when it is not possible that the line of descent of every such defection shall terminate with the individual himself. [A B.C.]

Reviews.

Facts, Fads and Fancies About the Teeth. Compiled and edited by HENRY LOVEJOY AMBLER, M.S., D.D.S., M.D., Dean of Dental Department and Professor of Operative Dentistry and Dental Hygiene, Western Reserve University, etc. Pp. 310. Cleveland, Ohio: The Helman-Taylor Co., 1900.

This publication can be said to be at least unique. It is described as "a repository of information and amusement, as it contains many facts, queer and otherwise, concerning the teeth of human beings; also a collection of witty and humorous sayings gathered from all sources, while at home and abroad, during many years of professional life." It should fulfil its purpose of entertaining "some weary brother during a leisure moment."

A Manual of Diseases of the Eye. By CHARLES H. MAY, M.D., of New York. William Wood & Co., Publishers, New York. 1900.

In this manual of 406 16mo pages, the author has endeavored to set forth the fundamental facts of ophthalmology, and to cover all that is essential to the student and general practitioner, for whom the book is primarily intended. A close inspection of the contents has failed to reveal the omissions of any important facts, and in some sections, as, for instance, those upon the examination of the eye, ametropia, ocular therapeutics, and general rules for operations upon the eyes, there is much practical information not always found so clearly stated in more pretentious works. There are 243 original illustrations, including 12 colored plates, a full table of contents, and an excellent index.

Laboratory Directions for Beginners in Bacteriology. By VERANUS A. MOORE, B.S., M.D., Professor of Comparative Pathology and Bacteriology, New York State Veterinary College, and of Bacteriology, Cornell University Medical College, Ithaca, N. Y.

This little volume, which is recommended for beginners in bacteriology, should certainly fill very creditably a need of the teacher and learner. It is an admirable volume not only as the name indicates for beginners, but advanced students in the science will also find it of value for reference upon certain points. It is practically up-to-date as to the technic advised. The minutest details are set forth, even to the wiping clean of tubes after sterilizing, and, as details constitute the science of bacteriology, the book should be of great help to many students and those who have been graduated a few years and come back to take up the study.

A Pocket Textbook of Diseases of the Eye, Ear, Nose and Throat, for Students and Practitioners. By WILLIAM L. BALLINGER, M.D., Assistant Professor of Otology, Rhinology and Laryngology in the College of Physicians and Surgeons, Chicago, etc., and A. G. WIPPERN, M.D., Professor of Ophthalmology and Otology in the Chicago Eye, Ear, Nose and Throat College. Philadelphia and New York: Lea Brothers & Co., Publishers. Cloth, \$2.00, net; flexible red leather, \$2.50, net.

This is a compendious, practical manual of 525 small octavo pages with 150 illustrations and 6 full-page colored plates. The section on the Eye is the work of Dr. A. G. Wipperm, while for the text relative to the ear, nose and throat, Dr. W. L. Ballinger is responsible. An enormous amount of sound, practical, elementary information relative to these subjects has been put in a small space. Long discourses on descriptive anatomy have been wisely omitted, and in their place have been substituted numerous diagrams and anatomic figures from Testut, Merkel, Zuckerkandl, Politzer, Gray, and other well-known authors, with appro-

priate explanatory legends on the plates. In their endeavor to be concise the authors have dwelt too briefly upon several subjects of prime importance to the general practitioner, notably refractive errors, the use of cycloplegics, and the consequences of continued eye-strain. A notice of this book is not complete without mention of the beautiful typography, ideal as to size, of type, black letters, spacing, leading, ink, and printing, and the excellence of the paper and binding.

Öffentliche Massnahmen gegen ansteckende Krankheiten, mit besonderer Rücksicht auf Disinfection. Bearbeitet von DR. TH. WEYL, Privatdozent der Hygiene a. d. kgl. techn. Hochschule, Berlin-Charlottenburg. Mit Beiträgen von Hafenarzt Dr. Nocht, Hamburg, und Direktor Dr. Schwarz, Stolp i. P. Mit 57 Abbildungen im Text.

Public Measures of Protection Against Contagious Diseases, with Especial Reference to Disinfection. Compiled by DR. TH. WEYL. With Contributions by Post-physician, Dr. Nocht, and Director Dr. Schwarz. 8vo, pp. viii, 216, 16. Jena: Gustav Fischer, 1900. Price, 6 marks (\$1.50).

A book of this sort is especially to be welcomed at the present time, when such strenuous efforts are being made everywhere for the repression of disease in all its forms. The promise of success in this direction is naturally greater with reference to those disorders whose exciting agents are known or suspected to consist in minute forms of life which can be destroyed outside the human body or whose access thereto can in one way or another be prevented. Herein reside the essential principles of prophylaxis, namely, isolation and disinfection. Preventive medicine has always been practised in some form, but the end of the nineteenth century marks an era in this department of activity that bids fair to lead in the progress of time to results of immeasurable importance and value.

The volume before us is the thirty-ninth instalment of a *Handbook of Hygiene* by Dr. Weyl. The subject-matter is considered under two headings: Measures for the Prevention of Epidemics and Disinfection. Under the first are discussed (a) general measures, (b) special measures directed against individual diseases; and under the second (1) general considerations, (2) disinfectants, (3) application of disinfectants. The publication is one that should appeal especially to hygienists and to all those interested in the practical prevention of disease.

Uric Acid as a Factor in the Causation of Disease.

A Contribution to the Pathology of High Blood-Pressure, Headache, Epilepsy, Mental Diseases, Paroxysmal Hemoglobinuria and Anemia, Bright's Disease, Diabetes, Gout, Rheumatism, and other Disorders. By ALEXANDER HAIG, M.A., M.D., (Oxon.), F.R.C.P., Physician to the Metropolitan Hospital, and the Royal Hospital for Children and Women, etc. Fifth edition. With 75 illustrations. Pp. xvi, 846. Philadelphia: P. Blakiston's Son and Co., 1900. Price, \$3.

Whatever one may think of Dr. Haig's views he cannot but admire the industry with which he has pursued his inquiries and the persistence with which he has maintained his opinions; and while it is not always easy to follow his argument or to accept his deductions, it must be admitted that he has given a strong impetus and has contributed a general share to the study of metabolic disturbances. Haig was himself for many years a sufferer from migraine, the attacks of which, after trials of many variations in diet, he succeeded in diminishing in both frequency and severity by the avoidance of butcher's meat. As a result of this experience he was at first inclined to attribute the disorder to the generation of some poison, perhaps a ptomain, in the intestines in the process of digestion of butcher's meat, but further study suggested a relationship with gout and then the possibility of uric acid as the noxious material suggested itself. Finally, careful examination of the urine disclosed a

distinct connection between the headache and the excretion of uric acid. It was found further that with the headache there are associated also a slow pulse of high tension, coldness of the surface and extremities, mental depression, and disinclination to activity, mental or bodily, while the urine is scanty and of high color and specific gravity. It is not believed that the uric acid is generated in the body in excess, but that it is derived from the food, while the morbid manifestations due to its retention and use are to be prevented by the avoidance of food containing uric acid in large amount and relieved by favoring elimination. The 18 chapters in which the volume is divided deal successively with the following subjects: I. History. II, III. Formation and Excretion of Uric Acid. IV. Uric Acid and Metabolism. V. Uric Acid and the Circulation. VI. Headache. VII. Epilepsy, Convulsions, and Hysteria. VIII. Mental Disease, Fatigue, and Syncope. IX. Asthma and Bronchitis. X. Dyspepsia and Gout of the Intestines. XI. Raynaud's Disease. XII. Paroxysmal Hemoglobinuria and Anemia. XIII. Albuminuria and Bright's Disease. XIV. Glycosuria and Diabetes Mellitus. XV. Gout. XVI. Rheumatism and Morbus Cordis. XVII. Treatment. XVIII. Instruments and Methods. It need hardly be added that no clinician should be unfamiliar with the work of Haig.

Hand Atlas of Human Anatomy. By WERNER SPALTEHOLTZ, Extraordinary Professor of Anatomy in the University and Custodian of the Anatomical Museum at Leipzig; with the Advice of Wilhelm His, Professor of Anatomy in the University at Leipzig. Translated from the third German edition by Lewellys F. Barker, Professor of Anatomy in the University of Chicago; with a Preface by Franklin P. Mall, Professor of Anatomy in the Johns Hopkins University at Baltimore. Volume I: Bones, Joints, Ligaments. Pp. 235, with 280 illustrations, many of them full page and colored. Leipzig: S. Hirzel; New York: G. E. Stechert, 1900. Price, \$3.50.

An English edition of this splendid atlas which has for the past five years been well known to students of anatomy who are readers of German will be welcomed by students and professors of anatomy and all interested in this important branch. Good atlases of human anatomy published with English descriptive text have been singularly lacking when we consider the large number of such books which are in use by continental students of medicine. Dr. Mall rightly calls attention in his preface to the importance of a mental image of the human body rather than an effort on the part of the student to memorize numerous terms as is too often the case in American medical schools. The importance of this can hardly be overestimated. Of course a complete mental image comes only after numerous careful dissections, but illustrations of the proper character are of the greatest aid. This series of hand atlases is to be published in four volumes and it embraces the entire descriptive anatomy with the exception of histology. The number of drawings for the entire series is roughly estimated at about 800, but judging from the number in this volume (280) it seems likely that this estimate will be considerably exceeded. All the illustrations with few unimportant exceptions are from new original drawings. The text is descriptive of the drawings and occupies about the same amount of space. The new nomenclature which was adopted at the ninth meeting of the German Anatomical Association in Basel, April 19, 1895, is adopted, but in the translation where the terms used are very different from the old nomenclature the latter are inserted in brackets. We believe that the adoption of the new nomenclature is a matter of great importance. There has been considerable confusion of anatomical terms in English texts and many improper and unnecessarily complicated terms are now in use. The fact that it has been adopted by the Germans, who are the most progressive anatomists of the present time, makes it probable that it will soon be generally adopted by all scientific anatomists. For beauty, clearness, and accuracy of illustration we know of nothing which has appeared in so compact a form which in any way compares with this hand atlas. The profusion of illustrations may be shown by referring to the description

of the lower jaw, which is depicted by a full-page cut showing the appearance from below and large cuts showing the outer surface and inner surface, outline cuts with the muscular attachments depicted on the inside and outside of the bone, and four cuts showing the appearance of the bone in the newborn child, the child at seven, the adult, and in old age. The hipjoint is depicted in five cuts nearly life size, from in front with the capsule complete, from behind with the capsule complete, from behind with the superficial layer of the capsule removed, from the medial side with the bottom of the acetabulum chiselled away sufficiently to make the head of the femur visible and in frontal section. The descriptive text will be sufficient to the needs of most students of anatomy and possesses the most important essential, accuracy, although in some cases it lacks somewhat in fulness. The work of translation has been admirably done, and as the cuts are printed in Germany in the same manner as the original, they do not suffer from appearance in the English edition. In making this atlas accessible to English-speaking students who do not read German, Dr. Barker has rendered a valuable service. We feel sure that the atlas will have a large sale, although the expense connected with the preparation of fine cuts and a tariff which discriminates against scholarship and education make the price somewhat high.

A Manual of Otology. By GORHAM BACON, A.B., M.D., Professor of Otology in Cornell University Medical College, New York, etc., with an introductory chapter by CLARENCE JOHN BLAKE, M.D., Professor of Otology in Harvard University. Second edition, revised and enlarged, with 114 illustrations and 3 plates. New York and Philadelphia: Lea Brothers & Co., 1900.

The philosophic as well as very practical introductory chapter by Professor Blake, of the Harvard Medical School, should be carefully read by every general practitioner as well as every aurist in the land. It is here shown that otology like microscopy cannot be taught by lectures, but must be learned by long and patient clinical study of abundant material, and as it were at the elbow of the teacher.

Dr. Bacon has done his part admirably also. He shows the general practitioner and the student of medicine, what ought to be done and how to do it. It is important that the general practitioner should know what ought to be done for ear disease even if he cannot carry out the treatment, and he should remember that he sees cases very often in which hearing and life itself are dependent upon a prompt recognition and treatment of an otitis and its sequels. If he cannot fulfil these demands, he must bear in mind that there are those in every large community who can. The author devotes considerable attention to disease of the nares and nasopharynx in their relation to aural disease. We would be glad to see more stress laid on pneumomassage of the membrana tympani, and less on inflation of the tympana in the treatment of chronic aural catarrh. The latter operation is always in our opinion too much of a shock to the middle, as well as the internal ear, to be of any value. It is always a procedure disagreeable to the patient and may convey septic matter from the nasopharynx to the middle ear. Pneumomassage of the external auditory canal is never disagreeable nor septic, and always gives more or less relief to the ear at once, and finally brings about permanent relief when inflation fails entirely.

Chronic purulent otitis media and its grave intracranial sequelae are given a careful consideration, and the methods for carrying out their rational treatment are set forth in a masterful style. We know of no manual of otology, of equal size and volume, within such easy reach of the practitioner and student of medicine. The publishers have done their part of the work in their usual beautiful and substantial manner.

Influenza in Russia.—The influenza epidemic is reported to be very severe in St. Petersburg, and the changeable weather, snow and slush alternating, conducive to its spread. A meeting of physicians was summoned to discuss remedies, but very few responded to the call, some being overworked and others victims of the malady.

Correspondence.

THE EDUCATED SUICIDE'S BRAIN.

By B. G. WILDER, M.D.,
of Ithaca, N. Y.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:

THE very appreciative Editorial Comment, "The Educated Suicide's Brain," in your issue for November 17, contains two misapprehensions which I will try to correct.

First, the error (as I now regard it) in the original interpretation was due mainly to the unusual length of a fissure resulting from the junction of the postcentral with the subcentral.

Secondly, I avoided committing myself to an acceptance of the two other reported instances of central reduplication. Calori's is known to me only through Giacomini, and the latter's figures are unsatisfactory, especially in that they do not exhibit the topographic relation of the paracentral fissures to the alleged second central.

Upon the whole, with all deference to the anatomists just named, I now think that a genuine case of reduplication of the central fissure is yet to be observed.

NOTE.—After the above was sent the kindness of Dr. D. S. Lamb enabled me to consult the "Nota preventiva" of Leggiardi—Laura, "Duplicata della scissura di Rolando nei criminali," *Arch. Psich. Sc. penali ed Antropol. crimin.*, Torino, xx, 421. Six cases are claimed, but in the absence of figures and detailed descriptions I must refer them to the same category as my own.

DRAINAGE IN APPENDICECTOMY.

By G. S. BROWN, M.D.,
of Birmingham, Ala.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

AS AN excuse for touching upon this apparently threadbare theme, I have to suggest at least one exception to the very good rule of discarding drainage after appendicectomies. To close such a wound without drainage and have the patient out in two weeks with no danger of a hernia or fistula is very satisfactory, but it does not warrant eminent surgical teachers making use of such expressions as, "throw away your gauze drains," and "never use drains after appendicectomies." Such expressions from such sources are capable of, and undoubtedly have, already wrought disaster in more than one instance. Such expressions, like most of the old saws and proverbs, need qualifying; because, as they are often merely products of the phrase-making habit, they may, if not properly qualified, be followed by loss of human life. The following case illustrates how *sometimes*, "the more haste the less speed" may apply in this matter of drainage, and it also represents my nearest approach to a grave disaster, attributable to dispensing with drainage:

Mrs. C., who gave a history of two mild attacks of appendicitis and one severe one during the preceding year, was taken sick at 6 P.M., April 26, with severe colicky pains which lasted all night. A physician was called in at 6 A.M., April 27, and gave her morphia. The symptoms were all much better all day except that she had a little fever and a suspiciously rapid pulse. At 6 A.M. of the second day she had a chill, followed by marked collapse and cyanosis, but from which she quickly rallied. At 3 P.M. she had another similar attack during which her pulse was 160 and temper-

ature 103.5°. She again quickly rallied from the collapse and at 7.30 P.M., when I was called in consultation, the pulse was 120 and temperature 103°. It was thought she had a gangrenous appendix and removal to hospital and operation was at once advised.

This was done at midnight. A somewhat enlarged but nonadherent appendix was removed; there was no localized peritonitis, not even of the serosa of the appendix itself, and although the mucous membrane of the appendix was gangrenous, there seemed no infection on the outside at all, and it was thought safe to close the wound without drainage. After the operation the temperature and pulse remained nearly at the normal point for 5 days. On the sixth day the temperature was 100°, and pulse 100. The seventh day, in the evening, the temperature was 102°, pulse 110, and a stitch-abscess containing foul pus was found at the upper angle of the wound. (Owing to the patient being very fat this was the pendant end of the wound.) A few of the stitches were cut and the next morning the temperature was down, but the evening temperature of the eighth day was 102°; the wound was opened in its upper half, but it did not have any apparent communication with the abdominal cavity. At this time the woman began to complain of a pain under the right costal cartilages, and on the ninth day she had a marked and most alarming collapse, and that evening at 9, with her temperature 104° and pulse near 200, she was put on the table, and while salt-solution was being given under each breast, the original incision was prolonged down through the lumbar muscle until the right kidney was exposed. The peritoneum behind the colon was exposed and opened and several ounces of serum let out; adhesions of greenish lymph were broken up and the track followed up under the liver to the region of the bile-ducts and there a small quantity of foul greenish pus was found, traceable all the way from the iliac fossa.

All the infected region was packed with gauze and the wound dressed, but as the patient was pulseless at the wrist, and the heart beating about 200, she was kept on the table about 2 hours longer while stimulants were administered.

The patient rallied in a few hours and then rapidly convalesced, but it was 2 weeks before the gauze came away. The gauze left a fistula which discharged bile for 3 weeks and then persisted as a mucous fistula for 2 months longer. This infection came, most probably, by the stitch abscess, although it might have been caused by the gravitating of the postoperative fluids along the iliac fossa and a slow growth of the germs. In either case a drain of the smallest size, covered with rubber tissue and reaching down to the iliac fossa, would have carried off the postoperative fluids both of the iliac fossa and of the abdominal wound, and would have prevented all secondary infection.

It would certainly seem rational to leave in such a small drain (removable at the end of 24 hours if deemed advisable) in all cases where either the symptoms or the local signs would indicate any danger of infection; certainly such drainage can only delay convalescence a few days and may, in a few cases, save life.

In the case reported the patient was watched very closely on account of the violence of the early symptoms and the fact that the inside of the appendix was gangrenous. Drainage had been dispensed with because the serosa did not seem to be infected at any point. The infection was probably caused by contamination of the abdominal wound in cutting off the appendix, the formation of a stitch-abscess, and secondary infection of the abdominal cavity by means of the through-and-through stitches used.

Both the early and late symptoms suggested strongly that the streptococcus was the infecting agent, though unfortunately no culture was taken, and it was only by prompt and radical action, justified by our strong conviction as to the nature and seat of the trouble, that the case terminated so fortunately.

However few cases of this kind there may be, they prove exceptions to the rule, viz., "that it is best, as a rule, to dis-

pense with drainage after appendicectomies." It also suggests that this *rendering* of the rule, while less dramatic perhaps, is also less dangerous, than "throw away your gauze drains" and "never use drains after appendicectomies."

GILLIAM'S ROUND LIGAMENT SUSPENSION OF THE UTERUS AS A DISTINCTIVE OPERATION.

By D. TOD GILLIAM, M.D.,
of Columbus, Ohio.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

IN his last communication (November 24, 1900) relative to the question at issue between us, Dr. Carl Beck says: "If he (Dr. Gilliam) intends to convey that this last modification of mine differs from the one which he describes as his own, he is perfectly right, because what he published was not my modification, but my original operation." What Dr. Beck's original operation was, I have no means of knowing, as I have never seen a description of it, and if, as claimed by him in his first communication, my operation tallies with his in every detail of the steps of the operation I will at once renounce all claim to originality so far as this operation is concerned. The only way to determine the matter will be for Dr. Beck to furnish a description of his original operation and place it alongside that of mine and compare them. Dr. Beck may be, and for aught I know is, entitled to priority in the matter of fixation of the round ligament in the anterior abdominal wall, but that does not confer upon him a quit claim for all the variations or improvements that may be evolved thereafter, much less does it justify him in such sweeping assertions as he has made with reference to my operation.

Evidently Dr. Beck read my paper in a mood of mental abstraction, else he could not have made an assertion so palpably incorrect. The dissimilarity of the two operations is clearly manifested in the appended comparison of the successive steps in each:

Beck draws the uterus out of the abdominal cavity.

Gilliam operates with the uterus *in situ*.

Beck dissects the round ligament from its broad-ligament attachment for a distance of 3 inches on either side.

Gilliam make no dissection whatever, but merely places a thread under the round ligament, $1\frac{1}{2}$ inches from the uterus, by which it is to be drawn up through a puncture wound into the abdominal wall.

Beck folds the round ligaments over the fundus uteri and lays them side by side in the median incision and stitches the peritoneum under them. (Incidentally this leave 3 little chinks for nosing intestines to hang themselves in, 1 between the folded ligaments and the fundus and 1 on either side between the round and broad ligaments.)

Gilliam makes a little puncture through the muscle and peritoneum at either side of, and an inch from the margin of the median incision and draws the ligament into it by means of the thread spoken of above. This leaves an opening 6 or 7 inches in circumference which is too large for strangulation, and the laxity of the attachment allows the uterus to rest on the bladder in easy repose.

Beck dissects a strip from the rectus muscle on either side, cuts it loose at one end, runs it through the loop of the ligament and unites the muscle again by suture.

Gilliam cuts no muscle, but simply fixes the ligament in the perforated wound by a single catgut suture.

If Dr. Beck can see a parity in "the details of every step" of the two operations, he is endowed with a keener perception than I can lay claim to. Perhaps Dr. Beck lays claim to my operation on the score of priority in anchoring the round ligament in the anterior abdominal wall. This is very different, but if he had made this claim I still should have contested his right to appropriate to himself all the variations and improvements in technic that might be evolved by his successors. On the same basis he would lay claim to the technic of Ferguson of Chicago, Noble of Atlanta, and perhaps others to come. Following this claim to its legitimate conclusion, the surgeon who first made an abdominal section would be sole claimant to the whole realm of abdominal surgery. There would be no Baer, Goffe, or Kelly in hysterectomy; no Wylie, Mann, or Dudley in internal, nor Edebohls, Kellogg, or Goldspohn, in external shortening of the round ligaments. There would be no way of designating the variations in technic in any operation, except by full description of the same. If a surgeon were to do the Beck operation and claim to have done the Ferguson operation, because the Ferguson operation was the Beck operation, I am sure that Ferguson would repudiate it. The truth is, the operations are distinctive, and no man has the right to claim the product of another's hand or brain because he happened to be first on the ground.

If Dr. Beck can establish priority in the matter of fixing the round ligament in the anterior abdominal wall, it would not be amiss to designate such cases in general as the Beck operation, or to use hyphenated names to designate the modifications of the same, such as the Ferguson-Beck, Gilliam-Beck, but in the absence of positive evidence that Beck was the originator of this basic feature of the operation, no such concession could be expected. In conclusion I will say that the designation: "Round ligament ventrosuspension of the uterus" was of my own coinage, and this is the name by which the operation is generally known in this country.

FOUR CASES OF DEGENERATIVE TISSUE CHANGES FOLLOWING EXPOSURE TO HIGH TENSION ELECTRICAL CURRENTS.

By ARTHUR CONKLIN BRUSH, M.D.,
of Brooklyn, N. Y.

To the Editor of THE PHILADELPHIA MEDICAL JOURNAL:—

THE action of the ordinary low tension electrical currents, such as are employed in medicine, has been known for many years and their power to cause profound tissue changes if long continued either by altering the circulation or causing electrolysis is well established; but the employment of strong high tension currents for various purposes is of such recent date, that our knowledge of even their immediate effect on the tissues of the body is very meagre; and as to their ultimate effects practically none. From a study of a number of cases and of the literature of this subject it would appear that the most frequent result from such exposure is some form of hysteria due to the fright which the mysterious nature and the knowledge of the occasional fatal action of the current engenders. Beyond this result our knowledge of the immediate results may be summed up as follows: that high power currents may produce death, no results, burns, shock, and a variety of functional disturbances of the nervous system; that slight shocks may produce local pain, numbness and paresis of an extremity with headache, ver-

tigo and disturbances of vision; that after slight shocks recovery usually occurs, but deep-seated emotional disturbances of the nervous system may persist; that severe shocks produce coma with dilated irresponsive pupils, stertorous breathing and pallor, followed by tonic and clonic convulsions, fever, and a high tension pulse; that in fatal cases there is found congestion of all the internal organs, echymoses in the skin, a fluid condition of the blood, and echymoses in the floor of the fourth ventricle; that the current kills either by direct action on the tissues or by reflex action on the nerve centers producing cardiac and respiratory arrest, cerebral anemia, and vasomotor paralysis, and that currents of high power cause direct coagulation of the cell constituents of the body. As to the ultimate results of exposure to such currents which do not kill I have been unable to find any literature, but it has been my good fortune to observe the results in four patients who had been so exposed, and in whom the condition followed directly after the exposure, and in whom there was no other discoverable cause.

CASE 1.—Female, aged 20, was admitted to my service in the Kings County Hospital in September, 1898. Three years before admittance she stepped on a car-rail which had become charged from a fallen trolley wire. Previous to that time she had been in very good health. She fell to the ground and was unable to move from the rail. When picked up after several minutes she was found to be much excited, and the next day to have lost the power of motion and sensation in the lower extremities. Six days after the accident the limbs became swollen and edematous, there was complete paralysis below the knees, but there was some power in the quadriceps extensors, and all electric reactions were lost. Both superficial and deep reflexes were absent, and there was complete loss of all forms of sensation even to the faradic brush, in the feet and legs with partial loss of tactile sensation and increased sensitiveness to pain in the thighs. On admission there was found to be marked atrophy of the lower extremities, most marked on the right side, associated with marked loss of power and complete paralysis of the extensors of the feet causing double foot drop. There were no faradic reactions and only slight ones of degeneration to galvanism except in the anterior tibials where it was absent. The deep reflexes were absent. There was decided loss of all forms of sensation in the feet and legs with pain on pressure over the nerve-trunks. Since that time there has been no change in the patient's condition.

CASE 2.—Female, aged 40. She is known to have done hard work until March 17, 1897, when upon that date, it being a rainy day, she attempted to enter a trolley car and upon taking hold of a brass rail she experienced a shock, was unable to unclasp her hand and remembers nothing more until she found herself in a waiting room, the fact being that it was found impossible to release her until the pole was removed from the wire. Since that time she has suffered from screaming attacks at night, dyspnea during the day, headache, vertigo, loss of power, and pain in the right arm and leg, with poor circulation and ulceration on the right ankle. On November 22, 1899, she showed decided loss of power in the right upper extremity and to a less extent in the right lower. The arm was in the condition of flaccid atrophy with flexor contracture. There was absence of reaction to faradism in the arm, and the galvanic current after a few seconds gave rise to a tonic and painful spasm. There was diminished tactile sensibility with increased sensitiveness to pain in the right hand and lower part of the forearm. The skin of the right arm and leg was colder than the left, small punctures bled freely, and there was a small ulcer just above the internal malleolus.

CASE 3.—Male, aged 50. Previous to February 15, 1899, he is said to have been in good health and did heavy work. On that date, it being a wet day, just as he stepped on the iron doorsill of a trolley car and at the same time having hold of the brass side rail, he received a severe shock and was unable to relax his grasp until the current was turned off at the overhead switch. He was then found to be paraplegic and anesthetic, but at the end of 10 days he was able to move

his toes, at the end of the month to walk with a cane, and since that time he has suffered from loss of power and sensation in the lower limbs. Examination on December 6, 1899, showed that he walked with a marked foot-drop, that the muscles of the lower limbs were in a condition of flaccid atrophy, that the faradic reaction was absent and the galvanic that of degeneration, that the kneejerks were diminished and the plantar reflexes absent, and that there was loss of all forms of sensation below the knees.

CASE 4.—Female, aged 28. She was in good health until February, 1899, when she was seated in a trolley car. It was a rainy day, she had no rubbers, and her feet were wet. Suddenly flames came through the floor and she received, in escaping, several shocks, one of which caused her to fall. She was removed in a very excited condition and complained of pain in the lower limbs, and in a few hours she became paraplegic and anesthetic. Since that time she gradually passed into her present condition. In walking there is a marked right foot-drop; the right leg is swollen, its muscles do not react to faradism and show the galvanic reactions of degeneration, the right patellar and plantar reflexes are absent, and the left kneejerk diminished. In Cases 2 and 3 muscular fibers were removed by the harpoon from the right biceps in the second and from the right calf in the third. Both specimens show the same conditions. The muscular fibers are much swollen, their striations are indistinct, and they contain fat and pigment granules.

That these cases are not simply marked hysteria, but that the patients also did suffer from organic changes in their muscles and peripheral portions of their spinal neurons is shown first by the pathologic findings and second from the character of their symptoms. This is shown by the fact that in hysteria the deep reflexes are increased and that when they are absent it is due to involuntary contraction of the opposing muscles; that in hysteria the paralysis is due to involuntary contraction of the opposing muscles; that in hysteria there is no muscular atrophy; that in hysteria the electrical reactions are normal; that in hysteric anesthesia all or one or more forms of sensation are diminished; that in hysteric anesthesia small punctures do not bleed; that in hysteric hemiplegia the leg is more paralyzed than the arm and the leg is dragged; and that trophic cutaneous changes do not occur.

Having established the fact that we are dealing with an organic lesion and not simply with a functional one, it remains to establish its nature and mode of production. If one were to see these cases without knowledge of their etiology, one would be justified in considering them as simply cases of disease of the peripheral portions of the spinal neurons or multiple neuritis, so perfectly do they present the conditions found in that disease, and as this condition is one which is due to degenerative changes in the neuron from the actions of various poisons, it is reasonable to assume that an agent which has been shown to have the power to cause coagulation of the animal cell when of very high tension might, when in less power but continued for several minutes, cause less marked immediate changes but still of sufficient gravity to be followed by secondary degenerative changes.

Another question which arises is, were the muscular changes secondary or were they also directly due to the same cause? From the unusual rapidity with which the paralysis developed it seems rational to conclude that they were directly due to and produced in the same manner as the neurotic ones.

School Hygiene.—The district government of Cologne suggests that the country school boards shall provide an appropriate number of felt and wooden shoes to be placed at the disposal of the children. By this system those who come from a distance with wet footgear will have an opportunity to exchange it for dry shoes.

Special Article.

A SUITABLE DRESS FOR DEFENCE AGAINST INFECTIOUS DISEASE.

By JOHN S. FULTON, M.D.,
of Baltimore.

THE requisites for a defensive dress are, in the order of their importance: (1) That it shall leave exposed only so much of the body as is necessary to the free use of the senses; (2) that it shall not encumber the movements; (3) that it shall be of sterilizable material, and cheap; and (4) that it shall do no needless violence to propriety. So far as I have seen them exemplified, the efforts to meet these requirements have succeeded best as to covering the body, indifferently as to freedom of motion and use of the senses, and poorly or not at all as to conventional ideas of propriety. I have been conducted about one of the best hospitals for infectious disease in this country with no protective clothing whatever, and I have shambled about another enveloped from crown to heel in clothing that would insure speedy death if it were worn upon the street. Between these extremes I have seen, and carried about, and worn, a great variety of costumes intended, if not adapted, to protect against infection. Only occasionally, when I have been called to see cases of smallpox, have I found either local officer or private practitioner provided with any sort of defensive dress.

I have at length hit upon a dress which suits me at least better than any of its predecessors. I have worn this costume, excepting the hat, on the streets of a city, from house to house, without exciting any comment, and in the house, I have been more comfortable and have given less discomfort than I did in any of my previous disguises.

The suit consists of a suit of white pajamas, a baker's hat, a pair of tennis shoes, and four rubber bands.

The pajamas come in four sizes, A, B, C, and D, cost \$1.50 a suit, and will stand considerable wear. The baker's hat costs 15 cents, and the shoes from 50 cents to \$1.50. The rubber shoes will not stand any form of sterilization by heat. For wear in a hospital or in a house, I should suggest felt slippers, made of a single piece of thick felt; they are warm and comfortable, and can be boiled, or autoclaved without injury. A suit with these slippers can be carried in a very small box. The felt slippers cost from 50 cents to a \$1.00.

It matters much how these clothes are put on and taken off. First one removes collar and cuffs, and rolls the shirt sleeves up above the elbows. This is done in preparation for washing hands and face after the visit. The trousers must be turned up five or six inches, and then the shoes are changed. Then the pajamas are put on, trousers first, and blouse outside. The rubber bands are next put on, to confine the sleeves at the wrist and the pants over the shoe tops. The hat is pulled down to the neck behind, and nearly to the eyebrows in front. The ears are half covered. The loose crown of the hat should be so disposed as to give fair warning if the head is about to make a dangerous contact. This is an important point. In examining smallpox cases I have often found that the patient's interest in his eruption has been as great as my own, and when the chest is scrutinized two heads are apt to come into contact.

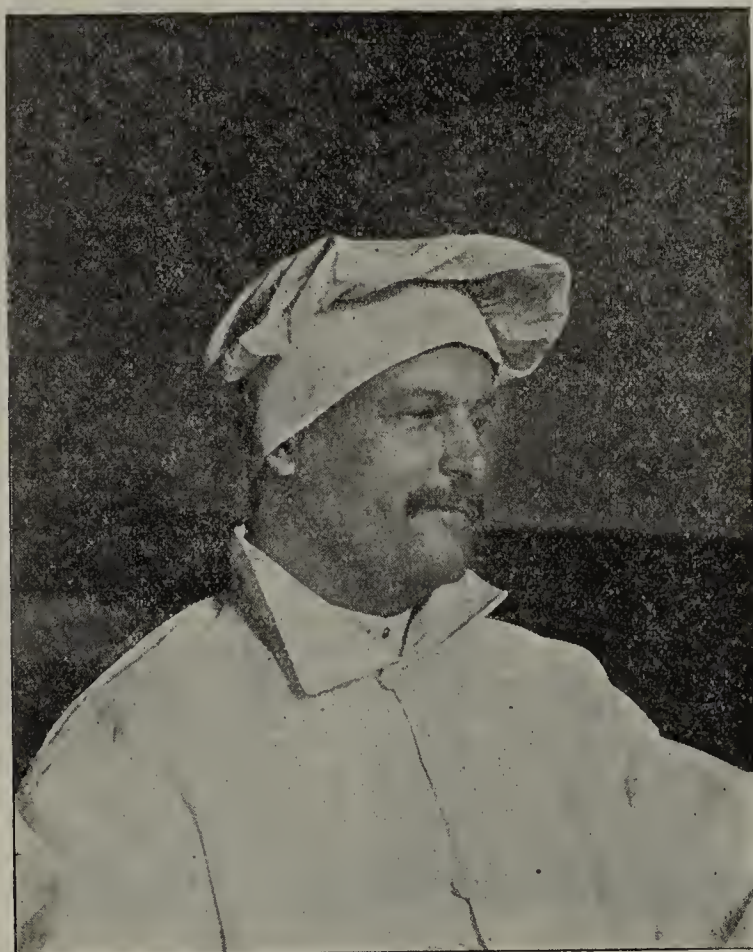
When removing the clothing, be sure not to begin with the rubber bands. The hat naturally comes off first, and is turned inside out. Then remove the jacket, which if the bands remain at the wrists, will come off inverted, that is with the infected side in, as is right. The drawers also will be inverted by the bands at the ankle. When these garments are nearly off, it is necessary to grasp the ends of the legs and of the sleeves, to make sure that the rubber bands come off with the clothes. The shoes are taken off without touching the socks.

Each garment as removed is folded lengthwise and laid upon the fiber-board which is intended to make a tight round package, of a size to slip easily into the metal box. About 2 ounces of formalin may be poured upon the clothing at each end, just before it is slipped into the case. The box being

closed, a strip of adhesive plaster is applied to each joint, making the package air-tight. Then one is ready to bathe and reclothe. This package may be quite safely carried in contact with other clothing, though it cannot be worn again without a long airing. Even if the package should remain closed for a year the odor of the formalin will prove overpowering.

This is not an elaborate technic, and by no means so exact as will one day be required of us. In private houses it might be difficult to make a complete toilet. Whenever there is a bathroom the full toilet, which I have described, can be made, the coat, collars, and cuffs being left down stairs. Where there is no bathroom, one may prefer not to change shoes. If visits are to be repeated at short intervals, it may be permissible to leave a suit at the house, provided always it is kept in the safest convenient place, and in its case. The clothing suggested here is cheap enough to warrant the possession of two suits for each infected house, and a fresh suit per day per house.

When we consider the various infections against which special clothing should afford some defence, considerable dif-



ference of opinion will arise. All are doubtless agreed that in visiting cases of the less common infections, as smallpox, the ordinary clothing should be protected. If the golden rule were applied to the inquiry concerning the commoner infections, it would be agreed that the ordinary clothing should not be exposed to those infections which are thrown off by the skin and easily carried in the air, *e. g.*, scarlet fever and measles.

Of those diseases whose infectious material escapes by an easily defended route, perhaps diphtheria alone seriously endangers the ordinary clothing. A protective dress should be worn because the attendant upon a diphtheria patient usually deals somewhat directly with the infectious material.

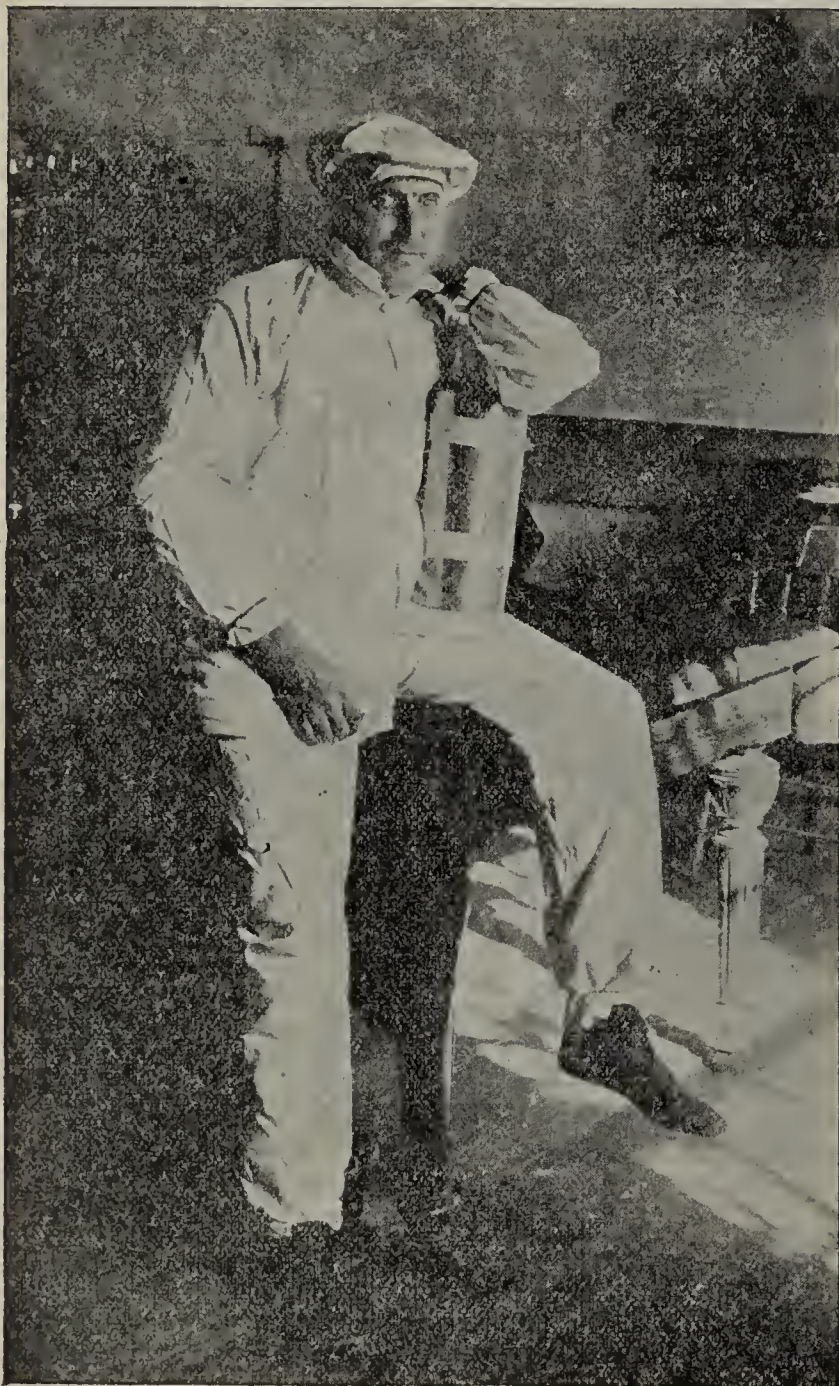
It seems to me that general practitioners have in most respects allowed the specialists to go far ahead of them in the practical hygiene of daily work. In this matter of proper apparel their tardiness is particularly apparent. Those who pursue such subsidiary occupations as nursing and undertaking are more careful. The singular spectacle of the general practitioner standing, thus negligent of dress, between the sensibly clad surgeon on one hand, and the uniformed nurse on the other, may be partly explained by the excess of consideration which the professional hygienist, when discussing this subject, usually gives to the element of personal

¹ Read before the American Public Health Association at Indianapolis, October 25, 1900.

safety. This consideration leads to special clothing of monstrous design, frightful to look at, and to wear, as fretful as a boil or a bustle.

To the average patient more or less befuddled by his disease, a gowned, hooded and gloved specter must be somewhat discouraging, suggesting that the uncouth visitor is more careful of himself than of his patient. Certainly the apparition is fearsome rather than heartening.

No costume which disguises the helpful humanity of its wearer will ever commend itself to the common sense of the profession. Any sacrifice of technical detail is justifiable, provided a just balance be maintained between the safety of the public on the one hand, and the welfare of the infected household on the other. If these two considerations are airily weighed, the attending physician must disregard well-



founded theory and common, though unconfessed, experience in order to determine that he will not protect his clothing.

Most physicians appear to have so determined. While they may try to instruct attendants concerning the avoidance of infection, they exhibit no outward and visible sign of care for themselves as either victims or vehicles of infection. Being without the outward and visible sign, it is, from the layman's viewpoint, reasonable to infer that they lack also the inward grace of antisepsis.

When the rank and file of the profession begin to dress properly for attending infectious cases, they will do so no less for the protection of their business interest than for the sake of personal and public safety. The practice will be certain to receive the stamp of popular approval, and that speedily.

American News and Notes.

PHILADELPHIA, PENNSYLVANIA, ETC.

Calendar of Meetings of Philadelphia Medical Societies for the week ending January 5, 1900:

Wednesday, January 2—College of Physicians.

Thursday, January 3—Obstetrical Society.

Dr. John M. Swan has been appointed demonstrator of osteology in the University of Pennsylvania.

The German Hospital has received a gift of \$1,000 from the Baldwin Locomotive Company and one of \$100 from Henry Disston and Sons.

Dr. T. Hewson Bradford has just been appointed medical director of the Presbyterian Ministers' Fund, to fill the vacancy caused by the death of Dr. George W. Sparks. This institution was organized in the year 1716 and was incorporated by a charter obtained from the Proprietary Government of Pennsylvania in the year 1759, on the petition of the synod of Philadelphia and, it is believed, is the first body incorporated in our country at the instance of any organized representation of the Presbyterian Church.

Vital Statistics of Philadelphia for the week ended December 22, 1900:

Total mortality	463	
	CASES.	DEATHS.
Inflammation of appendix 1, bladder 1, brain 12, bronchi 12, kidneys 15, heart 1, lungs 64, peritoneum 7, stomach and bowels 11, rectum 1, tonsils 1		126
Lungs—tuberculosis of		65
Heart—diseases of 48, fatty degeneration of 3, neuralgia of 2		53
Marasmus 8, inanition 16, debility 2		26
Paralysis 12, apoplexy 11		23
Uremia 10, Bright's disease 8, diabetes 5		23
Carcinoma of breast 5, rectum 1, stomach 3, uterus 7, multiple sarcoma 1, pelvic sarcoma 1, tumor of brain 2, ovarian 1		21
Convulsions 16, puerperal 1		17
Old age		13
Diphtheria	86	10
Typhoid fever	86	10
Burns and scalds		6
Casualties		6
Brain—dropsy of 1, softening of 5		6
Membranous croup		4
Scarlet fever	67	4
Asthma		3
Liver—cirrhosis of 2, sclerosis of 1		3
Cyanosis		3
Bowels—hemorrhage of 1, obstruction of 2		3
Suicide—carbolic acid 1, hanging 1, shooting 1		3
Teething		3
Aneurysm of aorta 1, alcoholism 1, anemia 1, atheroma 1, drowned 1, erysipelas 1, hemorrhage of stomach 1, umbilical 1, hernia 1, influenza 1, intussusception 1, rheumatism 1, septicemia 2, syphilis 1, tetanus 2, ulceration of stomach 1, unknown Coroner's case 1, whooping-cough 2, knife wounds 1		

NEW YORK.

The Erie County Medical Association as a branch of the New York State Medical Association was organized in Buffalo, December 20, 1900. By-laws were adopted and officers were elected.

The New York Orthopedic Dispensary and Hospital will hold its annual meeting January 4, 1901. Addresses will be made by Bishop Potter and Governor Roosevelt, and the hospital will be open for inspection from 3 until 6 P.M.

Medical Department of the University of Buffalo.—The Alumni Association at their quarterly meeting, held December 21, 1900, listened to a paper on "Bacterial Toxins" by Dr. Victor C. Vaughan, of the University of Michigan, in which he discussed the relation of toxins to the germ producing them, their attenuation and their increase of virulence, the character of the cell-wall, and its permeability by the contained toxins. His paper was a resume of his latest work on these important substances.

An epidemic of measles, mostly confined to children, developed on board the steamship *Trojan Prince* on the voyage from Genoa to New York. On the arrival of the ship, December 20, 48 of the passengers were transferred to North Brother Island for treatment and observation.

A Generous Gift.—The Medical Department of the University of Buffalo is in receipt of a gift of \$50,000 for the purpose of erecting a laboratory to be devoted entirely to research work. The gift is from one of Buffalo's wealthy women, and the laboratory is to be known as the Gratwick Research Laboratory. Ground has been broken and the erection of the building has been commenced. The New York State Cancer Laboratory will be moved into this building from its present quarters in the college, as soon as the building is completed.

Buffalo Academy of Medicine.—The Section of Ophthalmology, Otology, and Laryngology at the meeting held December 17, 1900, had a paper presented by DR. A. A. HUBBELL on **The etiology and treatment of concomitant strabismus, a reconsideration.** DR. A. G. BENNETT also presented a paper on **The influence of the vertical muscles in the production of asthenopia.** The Section of Pathology at its meeting December 18, 1900, had a paper presented by Dr. A. L. BENEDICT on **Some notes on globulin and albumose as found in urine.** DR. EUGENE WASDIN read a paper on **Acute infection.**

NEW ENGLAND.

A nursery for blind babies has been established in Boston and will be opened on New Year's Day.

Diphtheria Carried by Cats.—The Hartford, Conn., Board of Health has recently ordered all the sick cats in the neighborhood of Park Terrace to be killed, as there are many cases of diphtheria prevailing there, and the health officials decided that the disease was being spread by these animals. A sick cat caught and inspected was found to have diphtheria.

A hospital for tuberculosis is proposed for Providence, R. I. The State Board of Health has lent its support to the movement for its establishment and proposes to induce the General Assembly to vote it the sum of \$200,000 for its establishment and thereafter to provide the means for its continued support. Committees were appointed by the Providence Medical Society and the Rhode Island Medical Society to further the plans of the State Board of Health.

The Cambridge Medical Improvement Association at a recent meeting discussed the "undrained area between Arlington, Somerville, Belmont, and Cambridge." The principal speaker was W. Lyman Underwood, of the Belmont Board of Health. It was voted that the danger to the public health demanded the immediate reclamation of the district in question. United action on the part of the cities and towns interested was urged. A committee was appointed to concur with one already at work, to bring about the desired result.

The Yale Medical School and the General Hospital Society of Connecticut it is reported are about to be drawn into closer union. Negotiations pending for some months between the university and the society have resulted in an agreement by which the former with university funds, is to erect a medical clinical building on the hospital grounds in this city at a cost of \$3,500. The building is in general to be used by Yale Medical School professors and instructors connected with the hospital. The university will pay a small rent for the running expenses of the building.

Yale Medical School.—The following changes in the medical faculty are announced in the Yale University Catalogue recently issued: Dr. Otto G. Ramsay, of Baltimore, has succeeded the late Professor James Campbell as professor of obstetrics; Russell H. Chittenden, director of the Sheffield Scientific School, has succeeded Professor Benjamin Moore as professor of physiology; F. S. Hollis has succeeded W. H. Parker as instructor in chemistry, and Dr. Percy D. Littlejohn has taken the place of Dr. W. H. Crowe in the medial clinic. The only changes in the courses of instruc-

tion are the additions of recitations and hospital work in Dr. Robert E. Peck's clinical dispensary work in neurology and a series of six lectures by Dr. Shepherd on "Life Insurance Examinations."—[*Boston Medical and Surgical Journal.*]

WESTERN STATES.

Hog cholera is carrying off hundreds of swine in the region about Zion City, Illinois.

The Stormont Hospital, Topeka, Kan., was partially destroyed by fire December 20; the estimated loss is over \$10,000.

A Convict Farm.—The Mississippi State Board of Control has purchased 13,000 acres of land in Sunflower County on which to establish a convict farm.

Agatha Hospital has lately been opened in Clinton, Iowa. It is a charitable institution and \$20,000 was raised by subscription to build the handsome structure.

Pneumonia is reported as epidemic in Chicago, but, like the influenza which has prevailed for the past 2 weeks, is of a milder type compared with epidemics of former years.

Diphtheria is prevalent in Ocean View, California, more than 30 children being affected, and during the past month 30 deaths have resulted from it. There is general complaint of the unsanitary conditions of the place.

The St. Louis District Medical Society at a late meeting appointed a committee to frame a proposed law for the regulation of the practice of medicine in the State, and also regulating the giving of diplomas by unauthorized medical colleges. They will strive to have this legislation enacted at the approaching session of the Legislature.

Evanston Hospital.—Plans for additions and improvements to this hospital, which will entail an outlay of nearly \$50,000, have been completed by a committee who have made thorough investigation in this country and Europe to find the best methods of constructing buildings for hospital uses. The plans include the erection of the new Herman D. Cable memorial building.

Disinfection of Foreign Fruit.—Orders have been issued by the assistant-surgeon in charge of the Columbia River quarantine station at Astoria to the importers and shippers of Portland and to the Northern Pacific Steamship Company relative to the disinfection of fresh products from China and Japan. The following articles require disinfection before they can be admitted, viz., water chestnuts, salt eggs packed in loam, yams, lily bulbs, and similar fresh fruit products from China and Japan, unless the same are accompanied by a certificate from the Marine-Hospital Service officer at the port of departure, stating that these articles do not come from a district where plague is epidemic, and are free from infection.

The plague reports officially made by Dr. Kinyour, federal quarantine officer in San Francisco, are the subject of complaint by the merchants and shippers generally, who charge him with injuring the commerce of that port by unjustified reports of bubonic plague sent to Washington, and a suit has been filed against him in the United States Circuit Court for alleged neglect in the exercise of his official duties to issue and deliver to the Occidental and Oriental Steamship Company some pratique that would enable them to deliver to the complainant Wong Chung, a Chinese, merchant goods to the amount of \$2,000, which the steamship company hold but threaten to throw overboard.

Trichinosis has developed in 4 members of a Milwaukee family, who have indulged freely for 3 weeks in uncooked sausage, made partly from 95 pounds of pork butts obtained from a large packing house in that city, but which was not sold as inspected meat. When ill symptoms became manifest, the family had the sausage inspected, and it was found to be full of *Trichina spiralis*. The United States Government requires an examination of all hogs and cattle before they are killed, to see that they are healthy, and after they are slaughtered a postmortem examination is made, but orders no microscopic examination of meat for home consumption,

the microscopic tests being made only of meat that is to be exported to countries where the eating of raw meat is a common practice. Thus, as a matter of fact, the foreigner is assured of an immunity against trichina that is not enjoyed by meat-eaters in this country.

Bubonic Plague in San Francisco.—W. F. Blunt, the Texas State Health Officer, reported officially, December 20, to Governor Sayres on the plague condition at San Francisco as follows:

"The plague was first officially reported from Bombay in April, 1898, since which time it has made rapid progress. It reached San Francisco last March. It has also reached both coasts of South America, and has appeared in Europe at Oporto, Hamburg, Glasgow, and London. This has made it necessary to maintain an interstate quarantine against that city from May 29 of the present year until now, and I regret to say that the disease continues to spread there.

"Dr. J. J. Kinyoun, Federal quarantine officer at San Francisco, reports officially: 'I would state that it is my belief that the area of infection is gradually growing wider, so that now there are only three blocks of the Chinese quarter proper in which there has not occurred since March last a case of plague. The conditions which will obtain in the next six months will be, in my opinion, conducive to a further spread of the disease. I believe other cases occurring in San Francisco are being reported under another name.'

"On account of the strenuous efforts of the press and certain other interests in San Francisco to suppress the fact of the existence of the disease there, much confusion has existed in the public mind, and the policy of quarantining against that city has been much criticised. I have acted on the fullest and most satisfactory evidence. To this end I have visited San Francisco twice and fully investigated the facts. Briefly stated, they are as follows:

"Twenty-two cases have been officially reported by the City Board of Health of San Francisco, the first case occurring March 6, 1900. With the exception of four cases, they have all been found after death. All but two occurred in the Chinese quarter, and all save three were Chinese. Many of them had been treated during their illness, and death-certificates given by the attending physician for other diseases. Diagnosis was made by postmortem and bacteriologic methods, the most exact methods known to medical science. This diagnosis has been concurred in by every competent authority that has made an examination, among whom I will mention Drs. J. J. Kinyoun, Rosenau, Geddings, Kerr, Lumsden, Gassaway, and Agnes Walker, of the Marine-Hospital service; Dr. Kellogg, pathologist of the Board of Health of San Francisco; Profs. Montgomery, Kerr, Ryfkogel and Taylor, of the University."

SOUTHERN STATES.

The Sewanee Medical School, in Tennessee, has held recently its ninth annual commencement and completed its most successful year. The graduating class numbered 101 men, and the Sewanee School of Pharmacy graduated 40.

The University College of Medicine of Richmond, at a meeting of the Board of Trustees, December 21, 1900, elected Dr. J. A. Hodge as president. He has held successively the positions of professor of anatomy, dean, and proctor, and now succeeds the late Dr. Hunter McGuire.

MISCELLANY.

Sanatorium for Manila.—It is reported that the establishment of a sanatorium convenient to Manila is under consideration at Washington and the selected site is Beago de la Trinidad, about 4,700 feet above sea level.

Sick Soldiers from the Philippines.—More than 1,000 sick soldiers are on their way home from the Philippines. The *Grant* and *Sherman* are now en route with 650 men, and the *Sheridan* with 500 more. This rush will tax the general hospital at the Presidio to its utmost capacity. The convalescents will be mustered out as soon as possible after they arrive, and if the 867 available beds at the hospital become overcrowded a tented annex will be built to accommodate the overflow.

Hospital Ship "Maine" is expected to arrive at Southampton, England, January 10, with 18 sick men on board. After consultation with the naval and military authorities in China, the Government has decided that the *Maine* will not be further needed, so, on her arrival here, the ladies' committee will wind up the business and hand over the ship to its owners.

Dead Soldiers from the East.—It is stated at the War Department that the transport *Grant*, which is due at San Francisco about January 1, brings the remains of 398 officers, soldiers, and civilian employes of the War Department, who died in Hawaii, China, or the Philippines, and that there are 12 dead on the transport *Sherman*, which is due at San Francisco on January 12.

The Sanitary Condition of Cuba.—General Leonard Wood has written a letter to the Adjutant-General of the Army aiming to correct the prevailing public opinion in the United States in regard to the sanitary situation now existing in Cuba, and states that the whole island is free from epidemic or contagious disease with the sole exception of Havana, where there still remain a few cases of yellow fever, though not enough to receive serious consideration. "The total death-rate from all causes in the city of Havana for the month of November was the lowest of any month without regard to season, for 10 years. Inasmuch as apprehension arising out of the yellow-fever situation of the past summer still remains, it may be advisable to give this subject general publication, in order that full commercial and other relations with the island will be resumed."

Starvation in Porto Rico.—The report of A. D. Williams, assistant surgeon of the United States Army, depicts a sorrowful condition of the people in Porto Rico, where he has been detailed to make observation on a march with soldiers across the island. The most appalling conditions were found at Adjuntas, the men, women, and children swollen, bloated, diseased, and emaciated, whose pinched and haggard features appeared weighted with the sorrows of years. The average death-rate of about 52 each week was ascribed by the physician to chronic starvation. Dr. Williams declares that with 14 patients in the hospital at this place and 3 nurses, the municipal authorities allow the steward to draw only \$1 a day in municipal stamps for the subsistence and care of the patients, and that the steward can realize only 50 cents for his stamps, and with that amount daily he has to provide the scanty hospital food.

Obituary.—EPHRAIM INGALIS, of Chicago, December 18, aged 77.—GEORGE H. ELLIOTT, of New York, December 17, aged 55.—CHARLES SABIN TAFT, of Mount Vernon, New York, December 18, aged 65.—ABSALOM J. KALB, of Quincy, Ill., December 16, aged 83.—LEROY J. BROOKS, of Norwich, New York, December 12.—RICHARD A. WISE, of Williamsburg, Va., December 21, aged 57.—WILLIAM P. CALWELL, of White Sulphur Springs, Va., December 8, aged 62.—CASSIUS C. DAVIDSON, of Akron, Ohio, December 9, aged 50.—HENRY T. WOODRUFF, of Harvard, Ill., December 17, aged 61.—WILLIAM H. DAUGHTRY, of Sunbeam, Va., December 14.—A. B. KARTERMAN, of Hepler, Pa.—WINONA JENNINGS, of Cincinnati, December 13.—W. G. BIGELOW, of Stormstown, Pa., November 28, aged 87.—GEORGE C. ROBERTS, of Chattanooga, Tenn., December 3, aged 43.—ORLANDO J. HARRAN, of West Beatrice, Neb., December 10, aged 77.—J. S. ZUKOSKIE, at Ensley, Mich., November 14.—FREDERICK A. HOPKINS, of Montreal, December 1, aged 34.—SAMUEL C. TISDALE, of Port Lavaca, Tex., December 4.—KIRK C. MCKINNEY, of El Paso, Tex., December 8, aged 29.—FRANK S. HARKER, of Richmond, Va., December 8, aged 42.—J. PERRIN JOHNSON, of Sioux City, December 9, aged 72.—JAMES H. MCDANIEL, of Centreville, Tex., November 26.—ADOLF F. KRAUSE, at Bowdle, S. D., December 5.—RANDOLPH N. HOWARD, of Carrington, N. D., December 7.—P. L. HUDSON, of Cochran, Ga., November 30.—JOHN WHEELER, of Pittsfield, N. H., December 20, aged 72.—A. J. SMITH, of Wabash, Ind., December 22, aged 70.—BYRON N. TAYLOR, of Menominee, Mich., December 22, aged 48.—THOMAS O. WALTON, of Annapolis, December 21.—N. M. BURKHOLDER, of Harrisburg, Va., December 8, aged 59.—JAMES F. SMITH, of New Brighton, New York, December 11, aged 24.

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General U. S. Marine-Hospital Service, during the week ended December 21, 1900:

SMALLPOX—UNITED STATES.

DISTRICT OF		CASES.	DEATHS.
COLUMBIA:	Washington . . . Dec. 15	5	
ILLINOIS:	Chicago Dec. 8-15	2	
KANSAS:	Wichita Dec. 8-15	11	
KENTUCKY:	Lexington . . . Dec. 8-15	2	
MICHIGAN:	Detroit Dec. 8-15	2	
MINNESOTA:	Minneapolis . . Dec. 8-15	7	
NEBRASKA:	Omaha Dec. 1-8	3	
N. HAMPSHIRE:	Manchester . . . Dec. 8-15	22	
NEW JERSEY:	Jersey City . . . Dec. 8-16	1	
NEW YORK:	New York Dec. 15	15	
OHIO:	Ashtabula Dec. 8-15	2	
"	Cleveland Dec. 8-15	37	
"	Portsmouth . . . Dec. 8-15	2	
PENNSYLVANIA:	Erie Dec. 15	5	
S. CAROLINA:	Greenville . . . Dec. 8-15	2	
TENNESSEE:	Memphis Dec. 8-15	1	
TEXAS:	Houston Dec. 15	18	
UTAH:	Salt Lake City . Dec. 8-15	40	1
W. VIRGINIA:	Wheeling Dec. 15	8	
WISCONSIN:	Milwaukee Dec. 8-15	1	

SMALLPOX—FOREIGN.

BOHEMIA:	Prague Nov. 24-Dec. 1	46	1
BRAZIL:	Pernambuco . . Nov. 15		16
"	Rio de Janeiro . Oct. 16-31		43
EGYPT:	Alexandria . . . Nov. 27	3	1
ENGLAND:	London Nov. 24-Dec. 1	14	1
"	Sunderland . . . Dec. 1	1	
FRANCE:	Paris Dec. 1		17
GIBRALTAR:	Gibraltar Nov. 25	1	
GREECE:	Athens Dec. 1	2	
INDIA:	Calcutta Nov. 3-15		8
MEXICO:	Mexico Dec. 2	1	
"	Tuxpan Dec. 3-10		3
RUSSIA:	Moscow Nov. 17-24	3	1
"	Odessa Nov. 24	62	15
"	St. Petersburg . Nov. 24	5	2
"	Warsaw Nov. 24		25
SCOTLAND:	Glasgow Dec. 7	45	1
SPAIN:	Corunna Nov. 3		2
"	Valencia Dec. 2	1	

YELLOW FEVER..

BRAZIL:	Rio de Janeiro . Oct. 16-31	2
MEXICO:	Vera Cruz . . . Dec. 8	2
"	Yucatan Nov. 30	1

CHOLERA.

INDIA:	Bombay Nov. 13-20	7
"	Calcutta Nov. 3-15	35
"	Madras Nov. 10-16	2
STRAITS SETTLEMENTS:	Singapore . . . Nov. 3	6

PLAGUE.—FOREIGN.

BRAZIL:	Rio de Janeiro . Oct. 16-31	9
INDIA:	Bombay Nov. 13-20	125
"	Madras Nov. 10-16	1

PLAGUE.—INSULAR.

PHILIPPINE ISLANDS:	Manila Nov. 3	3	1
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Smallpox cases in New York, it is reported, continue to develop at the rate of 3 or 4 a day in localities widely remote from one another, and the hope of stamping it out seems to lie in a continuance of the general movement for vaccination. The health officials say that since the year 1875, when this city suffered from a smallpox scourge that took 1,280 lives, the epidemic has visited New York in waves, the crests of which have been 6 or 7 years apart, and that its increase has always been the accompaniment of a decrease in vaccination, and vice versa. The city now seems to be nearing the crest of the fourth wave since 1872, if it has not already attained it. In Indiana 100 new cases are reported, and it is estimated that there are now 256 cases in the State, 60 of which are in Allen County. In Kansas City the disease is breaking out in unexpected places, and 10 new cases, all among negroes, have been removed to St. George's Hospital, which is rapidly filling up. An appropriation of \$3,000 has been made by the City Council for a smallpox hospital, but there is a dispute as to its location, the people in the

neighborhood of the site selected (East Bottoms), refuse to be subjected to the risk of infection, and threaten to defend their district by force of arms. A student in the Milwaukee Medical College, and a medical student in the University of Michigan have developed smallpox, which created a furor of apprehension in the respective places. It is reported prevalent in Washington among the Indians on the Coeur S. Alene reservation, where in some families the disease has developed into the acute stage. Of the numerous cases developed in Travis County, Texas, there has been but one fatal case among the negroes. At the railroad camp at Pinto, Alleghany County, Md., 14 suspected cases besides 5 genuine cases are reported. A colored physician remains on the ground to take charge of them, and an armed guard has been detailed to prevent the spread of the disease. A report that 60 negroes, who had been exposed to infection, were on their way to Clarksburg, W. Va., caused the local company of the National Guards to be called out and stationed on the roads commanding that city to hold up all negroes until they could prove themselves not infected.

Changes in the Medical Corps of the U. S. Army for the week ended December 22, 1900:

WALE, Captain PHILIP G., assistant surgeon, having been honorably discharged from the Volunteer service, as major and surgeon of the Thirty-ninth Infantry, U. S. Volunteers, is relieved from duty in the division of the Philippines and will proceed to San Francisco, Cal., reporting by telegraph to the Surgeon-General of the Army.

RHOADS, First Lieutenant THOMAS L., assistant surgeon, is relieved from duty at his present station and will accompany the Twenty-first Infantry into the department of Southern Luzon.

SHAW, Captain HENRY A., assistant surgeon, will report to the commanding general, department of Northern Luzon, for assignment to duty.

GILHULEY, JOHN J., acting assistant surgeon, will proceed to his home, Bridgeport, Conn., from where he will report to the Surgeon-General of the Army for annulment of contract.

HALL, ANDY, acting assistant surgeon, will proceed to his home, Mount Vernon, Ill., where he will report to the Surgeon-General of the Army for annulment of contract.

FINKELSTONE, HYMAN, acting assistant surgeon, will proceed to his home, New York City, from where he will report by letter to the Surgeon-General of the Army for annulment of contract.

DRIVER, GERRY S., acting assistant surgeon, will proceed to his home, Chicago, Ill., from where he will report by letter to the Surgeon-General of the Army for annulment of contract.

BYRNE, JOHN G., acting assistant surgeon, will proceed to his home, Chicago, Ill., from where he will report to the Surgeon-General of the Army for annulment of contract.

DISNEY, F. A. E., acting assistant surgeon, will proceed to his home, Waterbury, Conn., from where he will report by letter to the Surgeon-General of the Army for annulment of contract.

BISPHAM, First Lieutenant W. N., assistant surgeon, is granted leave of absence for 1 month, with permission to go beyond the limits of the department of Cuba.

MCCALL, JAMES H., acting assistant surgeon, is relieved from duty at Fort Schuyler, to take effect upon the expiration of the leave of absence granted him November 6, and will then proceed to San Francisco, Cal., and report to the commanding general, department of California for assignment to duty with troops en route to the Philippine Islands, where he will report to the commanding general, division of the Philippines, for assignment to duty.

WILSON, COMPTON, acting assistant surgeon, upon the expiration of the leave of absence granted him December 6, will proceed from London, Ontario, Canada, to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to the Philippine Islands, where he will report to the commanding general, division of the Philippines, for assignment to duty.

FLETCHER, JR., RICHARD M., acting assistant surgeon, extension of leave of absence granted November 19 is further extended 1 month.

ANDREWS, CHARLES H., acting assistant surgeon, leave of absence granted him on December 3 is extended 1 month.

COWPER, HAROLD W., acting assistant surgeon, is relieved from duty at Fort Ontario, to take effect when his services shall be no longer needed at that post, and will then proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty with troops en route to the Philippine Islands, where he will report to the commanding general, division of the Philippines, for assignment to duty.

SARGENT, ERLE H., acting assistant surgeon, is relieved from duty at Fort Casey and will proceed to Camp William H. Osborne, Idaho, to relieve Acting Assistant Surgeon Jesse P. Truax.

TRUAX, JESSE P., acting assistant surgeon, will proceed to Fort Casey for duty.

CARR, Major LAWRENCE C., surgeon, is granted leave of absence for 2 months.

BACON, JOHN E., acting assistant surgeon, is relieved from duty at Fort Duchesne and will proceed to Fort Grant and report by telegraph to the Surgeon-General of the Army for annulment of contract.

GOULDING, TIMOTHY F., acting assistant surgeon, will upon the expiration of his present leave of absence, proceed from Boston, Mass., to San Francisco, Cal., for assignment to duty with troops en route to the Philippine Islands, where he will report to the commanding general, division of the Philippines, for assignment to duty.

Changes in the U. S. Marine-Hospital Service, for the week ended December 20, 1900:

PURVIANCE, GEORGE, surgeon, to report at Washington, D. C., for temporary duty. December 14.

SAWTELLE, H. W., surgeon, granted leave of absence for 30 days from January 20, 1901. December 18.

WHITE, J. H., surgeon, bureau letter of October 11, 1900, granting leave of absence for 30 days, amended so that said leave shall be for 12 days only. December 18.

CARRINGTON, P. M., surgeon, granted leave of absence for 30 days on account of sickness. December 18.

COBB, J. O., passed assistant surgeon, relieved from command of service at Fort Stanton, N. M., and directed to report to medical officer in command for duty. December 20.

ROSENAU, M. J., passed assistant surgeon, upon completion of duty at Paris, France, to rejoin station as director of hygienic laboratory, Washington, D. C. December 19.

McMULLEN, JOHN, assistant surgeon, relieved from duty at Tortugas Quarantine, and directed to proceed to Savannah, Ga., quarantine station for temporary duty. December 15.

KORN, W. A., assistant surgeon, granted leave of absence for 7 days from December 24. December 17.

OLSEN, E. T., junior hospital steward, granted leave of absence for 10 days from December 22. December 7.

APPOINTMENT.

FRASER, A. C., of Wisconsin, appointed acting assistant surgeon, fort duty at the port of Manitowoc, Wisconsin. December 17.

Changes in the Medical Corps of the U. S. Navy, for the week ended December 22, 1900.

LEBRETT, R. E., assistant surgeon, detached from the "Constellation" and to the "Monongahela."

MURPHY, J. A., assistant surgeon, detached from the "Solace" and to the "Don Juan de Austria."

STEFF, JACOB, assistant surgeon, detached from the "Solace" and to the Cavite Naval Station.

STONE, M. V., assistant surgeon, detached from the "Yosemite" and to the "Isla de Luzon."

THOMPSON, J. C., assistant surgeon, detached from the Naval Hospital Cavite, P. I., and to the "Solace."

Cancer of the Esophagus with Perforation into the Left Pleura.—Friedenwald (*The Journal of the Alumni Association of the College of Physicians and Surgeons*, Baltimore, October, 1900), reports a case of carcinoma of the esophagus occurring in a woman of 31. Difficulty in deglutition was experienced in July. The condition gradually grew worse till the following December, when operation was performed. The stomach was opened and graduated bougies were forced past the esophageal stricture which was 10 cm. from the cardiac end; when the second bougie was passed, something was felt to give way. The patient did well for 4 days, when pain in the left side of the chest and a rise of temperature developed. An effusion was found in the left pleura, and tapping and subsequent resection of a rib revealed a pyothorax. A limited autopsy showed the esophagus was perforated, and septic material had passed into the pleural cavity, setting up the secondary condition. [A.B.C.]

Indications for Bleeding.—Hayem (*Treatment*, November, 1900) stated at the recent Congress of Medicine that the cases in which bleeding is indicated are those in which life is immediately endangered, either by circulatory detanglement or by toxemia, in such conditions as the following: In acute edema of the lungs, particularly in diseases of the large vessels or of the kidneys; certain cases of pneumonia of edematous or simply congestive type; certain mechanical troubles of the circulation, due to disease of the heart or great vessels, particularly in high arterial tension, but also in some cases of evident asystole; congestive and hemorrhagic forms of acute nephritis; cerebral congestion, and hemorrhage in the subjects of high arterial tension; recent acute uremia; puerperal eclampsia; intoxication of the blood by certain gases, notably by carbonic oxid.

foreign News and Notes.

GREAT BRITAIN.

Street Cries.—The Middlesex County Council has proclaimed as a nuisance the cries of street hawkers and has already begun prosecutions. The law aims to protect quiet people who need rest, as well as invalids.

Two deaths from septicemia following tooth extraction have occurred at Bow and Manchester. In both cases the operators were unqualified dentists, and it is believed the infection was due to the use of dirty instruments.

Dr. Anton Baron von Eiselsberg, professor of surgery in Königsberg, has been recommended by the Professoren-Collegium as the successor of the late Professor Albert in the chair of surgery in the University of Vienna.—[*British Medical Journal*.]

A memorial to the late Professor A. W. Hughes has taken the form of a medal to be awarded annually in the medical school of the University College, Cardiff, and a fund to endow the anatomical museum which owes its origin to a gift from Professor Hughes.

Bacteriologic examinations by the Health Committee of Edinburgh have been begun. They include sputum, urine, milk, blood for typhoid, and throat cultures. Unnecessary alarm has been caused by reports of an epidemic of diphtheria, which is not warranted by the facts.

Women Health Officers.—A "Lady Sanitary Officer and Health Inspector" has been appointed in Southwark. The homes of the poor are to be visited and efforts made to improve the sanitary conditions with special reference to the care of children. The women are also to be instructed in domestic details.

Homes for the London Poor.—At the recent annual conference of the National Union of Conservative Associations, Lord Salisbury, commenting on the remarkable change of London from a Radical to a Tory stronghold, remarked that the only radicalism remaining was found where the burning question was the housing of the poor. The Conservatives, he added, could not more surely maintain their hold on the public than by devoting their whole power to removing this scandal of civilization—the suffering many working people had to undergo from the pitiable accommodations—and providing adequate, healthful habitations for the poor.

The Vermiform Appendix Not a Vestigial Structure.—Dr. R. J. A. Berry, of Edinburgh, from investigations regarding the comparative anatomy of the appendix, finds that the homolog in animals is the cecum, which contains much lymphoid tissue. His conclusions are; 1. That lymphoid tissue is the characteristic feature of the cecal apex (the vermiform appendix of man was therefore represented in the vertebrate kingdom by a mass of lymphoid tissue situated usually at the cecal apex). 2. That as the vertebrate scale ascended this lymphoid tissue tended to be collected together into a specially differentiated part of the intestinal canal—the vermiform appendix. 3. That the vermiform appendix is therefore not a vestigial structure, but a specialized part of the alimentary canal.

Working-Class Metabolism.—Experiments dealing with the sufficiency of diets of the poor have recently been made in Edinburgh. Working people were divided into 3 groups: (1) Families with an irregular income under 20s. a week; (2) those in receipt of 22s. a week regularly; (3) those earning 30s. or over per week. Articles of diet purchased each week by classes 1 and 2 were analyzed and showed conclusively that either in actual amount or in quality they were incapable of supplying the body with sufficient nutriment. In the production of energy and heat the foodstuffs consumed were 6.8% below the normal, and as much as 15.7% below that needed for the growth and repair of the body. The families in better circumstances maintained metabolic equilibrium fairly well.

An Important "Skim Milk" Case.—A dairyman at Glasgow has been prosecuted for selling as "skim milk" milk which had been separated by mechanical means until only .28% of fat remained. The prosecution claimed that if the fat was below 1% the substance was not of the "nature, substance, and quality of skim milk." The dealer refused to accept this standard and claimed the right to remove the entire fat and still sell the remainder as skim milk. The decision went against the prosecution; the opinion being that "the article of commerce known as skim milk equally answers that description whether the fat in it is 2% or 1% or nothing."

Arsenical Beer.—Inquiry shows that many cases of poisoning date their symptoms as far back as last Easter, though some are now seeking medical aid for the first time. Although Manchester furnishes the most cases the malady has extended over a wide area, some of the worse cases being found in rural districts. As a rule women suffer more severely than men. Persons who use only 1 to 2 pints of beer or stout a day have been badly affected. Psychical derangements have been well marked. Loss of memory is quite common. The epidemic in Liverpool is subsiding. It is likely that a large number of suits for damages will be instituted by relatives of deceased persons. Who are the responsible parties is not so easy to decide. The *Medical Press* observes: "One aspect of the Manchester outbreak is worthy of special attention—namely, the fact that the momentous discovery of this obscure and baffling source of peripheral neuritis was due to skilled medical observation rather than to pure laboratory work."

Isolation of Tuberculosis at Schools.—A pronouncement has been made by the English Board of Education, which, for the present at all events, contravenes the assertion of the ultrasanitarians that, to be effective, isolation of tuberculous cases must be undertaken by the sanitary authority from the first day on which the disease declares itself to the last, when the patient dies or is finally cured. The clerk of the Kingston-on-Thames Union addressed the following letter to the Board of Education: "My School Attendance Committee is much exercised as to what their statutory duties are where children of school age with a tendency to consumption are kept back from school on that account. My committee view with serious alarm compulsory attendance at school of such children, however slightly they may show symptoms of this disease, and I am to ask whether, in the opinion of my Lords of the Privy Council, the several authorities would be justified in creating separate classes for consumptive children to attend, if sufficient were found in the several districts to justify the outlay." In reply, the Department stated: "The Board of Education are advised that a tendency to consumption is itself no bar to attendance at school. But a child suffering from actually developed phthisis ought to stay away as fit only for medical treatment and as infectious and dangerous to the other scholars. In doubtful cases, when no medical certificate is forthcoming from the home, your committee should take steps to obtain one. Special classes for consumptive children do not appear to be desirable."—[*Medical Press*.]

CONTINENTAL EUROPE.

Richet's Cure for Tuberculosis, which consists of an exclusive raw meat diet, it is stated has been tried for 3 months in an institution opened in Belgium for that purpose, and the experiment abandoned as totally inefficient.

A plague laboratory has been established in the Hygienic Institute of Munich, under the direction of the head of the Institute, Professor Hans Buchner, who has named Dr. Hahn his deputy. The laboratory is intended for the examination and diagnosis of suspicious cases of plague.—[*British Medical Journal*.]

Physicians in Germany.—Official statistics recently published exhibit the overcrowding of the medical profession in the large cities and the necessity for the decree to lengthen the term of medical study as a remedy for the overproduction of physicians. Berlin has 1 physician to every 798 of population; Breslau, 1 to every 775; Halle, 1 to every 735; and Königsberg 1 to every 631.

A curious case of loss of memory is reported from Worms. A small landowner was struck by lightning while ploughing, the flash passing through his hat, leaving a hole as large as a fist, then down his neck and through the plough-handle into the ground. The victim, who was ill for several days, finally recovered, but he has entirely lost his memory.

Molten Wood.—The reduction of wood to a molten condition by means of fractional distillation and high pressure to prevent the escape of developing gases—is reported to have been effected by M. de Gall, inspector of forests at Lemur, France. The mass when cool assumes the character of coal, yet without showing any trace of organic structure. It is hard, susceptible to shaping and polish, impervious to water and acids and a complete electrical nonconductor.

Remedy for a Decreasing Birth-Rate.—A bill aiming to provide a remedy for the threatened depopulation of France has been introduced into the French Senate imposing a tax upon the unmarried of both sexes after they reach the age of 30, and upon childless couples who have been married 5 years, the tax to be maintained until a child is born to them. Published official statistics show also a continued decrease in the Berlin birth-rate, which is now only 29 in 1,000.

German Wine Law.—A bill revising the wine law of Germany has just been published which prohibits the addition of sugar water to partly pressed grapes in making wine and the use of decoctions from dried fruits, as well as acids and essences for securing an artificial bouquet. Officials charged with the duty of inspection are authorized to enter vintage rooms, cellars, and stores to examine books and to take samples. The bill provides penalties not to exceed 6 months' imprisonment or a fine of 3,000 marks.

Prevention of Malaria in Italy.—It is said that Prof. Celli, who is a member of the Italian Parliament, will introduce drastic measures for the suppression of malaria in Italy. He would make punishable by law the neglect of landowners and all employers of labor to provide in malarial districts every means of fighting the fever. Boselli and Sonnino have proposed that the Minister of Finance purchase pure quinin and sell it to the public at a slight advance over cost. The profit would be applied to the extermination of malaria.

Surgical Asepsis.—Prof. Terrier, at the Pitié Hospital in Paris, constantly aims to simplify methods of asepsis. For washing the hands or cleaning instruments during an operation sterilized water or saline solution is used. The sodium chlorid is made sterile by melting it in a crucible. The hands are dipped in the solution very often and wiped with a sterile compress. It has been shown that if the hands are not washed during an operation, the sweat glands render them septic. Alcohol and ether are never used. The patient's skin is washed with soap and boiled water, then with saline solution and dried. Silk is used for sutures exclusively, catgut only exceptionally.

Discovery of a Statue of Esculapius in the Roman Forum.—Among the recent interesting finds in the Roman Forum is a statue of Esculapius. It was lying face downwards under the central niche of the large arched space surrounding the Well of Juturna, which has lately been excavated under the direction of Professor Boni. The head of the figure and the middle of the right arm are wanting, but the other parts are well preserved. It represents the god, with a *volumen* (or roll of paper or parchment on a stick) in the left hand, leaning on his staff, round which is coiled the serpent, the symbol of prudence and renovation. Close to the staff is a child, supposed to be Camillus or Telesphorus, the genius of recovery, in the act of bringing the offering of a cock in his left hand and holding in his right hand a small knife with a pointed blade. The well enjoyed a reputation for the salubrity of its water, and this fact explains, no doubt, the presence in its precincts of the statue of the god of medicine, under whose special protection such wells were placed. The worship of Esculapius is said to have been introduced into Rome from Epidaurus about 293 B.C., but this statue, which is of indifferent workmanship, belongs to a much later period, probably the first or second century of the Christian Era.—[*The Lancet*.]

Adulteration of Food in Switzerland.—A communication to the State Department from the American Consul, M. De Boise, at St. Gall, Switzerland, declares the adulteration of food general in Europe and in Switzerland legislation has had to be made against it. The chocolate, the consumption of which the slot machines have increased, is adulterated with mutton-tallow, sawdust and potato meal. The chief ingredients of honey are syrup, meal and cornstarch, Swiss cheese is mixed with potatoes ground to a powder; butter is adulterated with carrot juice. Bread, which furnishes 70% of the nourishment of the people of the Swiss republic, is mixed with potato meal and the dough is soaked heavily with water to add to the weight of each loaf. With coffee, tanbark, sawdust, stove rust and chicory are mixed; and as adulterants for tea, linden, sage and strawberry leaves are used. It is proved by analysis that in beer the following ingredients are added as substitutes for malt and hops: Potash, vitriol of iron, alum, licorice, linseed, solution of tartar, poppy heads, guinea grains, chamomile, pine sprouts, chicory, henbane and wild cherries. Some of the wine which is freely consumed, he declares has never contained a drop of grape juice since potato syrup dissolved in rain water makes a salable beverage and the desired color and bouquet are obtained by mixing wine acids with cream of tartar.

MISCELLANY.

The British Pharmacopeia has been increased by the Indian and Colonial addendums. It contains 54 drugs and 66 preparations and includes drugs which are specially prepared in these places or are substitutes for drugs which would not bear transportation.

Obituary.—JOHN SMITH, of Plumstead, England, December 6, aged 59.—ALEXANDER DEAS DAVIDSON, of Swansea, December 7, aged 51.—GEORGE HUTCHINSON MILNES, of Derby, December 3.—J. W. HESTER, of Newcastle, December 3, aged 35.—EBERHARD REUSCHEL, of Eschenbach, December 2, aged 51.—JAMES IRVING, of Christchurch, New Zealand, October 26, aged 64.—HENRY GREENWOOD RAWDON, of Liverpool, December 4, aged 64.—ALBERT ERNEST ELLIOTT, at Middleburg, South Africa, December 1.—ROGER EDWARDS, of Colwyn Bay, December 20, aged 60.—FREDERICK EDMUND HUBBARD, of Diss, Norfolk, November 25, aged 42.—BERNHARD SPINOLA, of Berlin, aged 64.

Excision of the Knee-joint.—Primrose (*The Montreal Medical Journal*, November, 1900) says we are often incapable of determining beforehand the amount of involvement of the tuberculous knee-joint, and consequently whether excision will be necessary; therefore we should employ that method which will open up for inspection and still stop short of excision if esteemed best. The ordinary methods of opening up the joint are referred to, and then the author describes and advocates the method of Kocher of Bern. The minute details of the method are too lengthy for abstract, but the essential details consist of an incision which starts over the vastus externus, a hand's breadth above the patella, and passes at first perpendicularly downward upon the outer side of the patella, separated from that bone by 2 fingers' breadth; below the patella it is carried with a slight curve inward and ends on the inner surface of the tibia, having passed below the tibial tubercle. The incision is carried to the bone throughout, and by means of a chisel the tibial tubercle, with the periosteum and attached ligamentum patellae, is separated and pushed toward the inner side. This permits the joint to be opened and arthroctomy done if necessary. The author is of opinion that this possesses distinct advantages over the ordinary V-shaped incision which severs the ligamentum patellae—one of which is that in children the epiphyses are more readily preserved from danger. He has not seen this method described in the English journals. It has been employed by him in 2 cases with good results. [A.B.C.]

The Latest Literature.

British Medical Journal.

December 8, 1900. [No. 2084.]

1. On Recent Researches with Regard to the Parasitology of Malaria. The Right Hon. the LORD LISTER.
2. Clinical Lectures on the Causes and Cure of Insomnia. Sir JAMES SAWYER.
3. Remarks on the Diagnosis and Treatment of Arsenical Neuritis. JUDSON S. BURY.
4. The Surgery of Chronic Ulcer of the Stomach and its Sequelae: Being a Series of Cases in which Operations were Performed for Various Nonmalignant Diseases of the Stomach. B. G. A. MOYNIHAN.
5. Case of Hour-Glass Stomach and Pyloric Stenosis: Gastroenterostomy: Death. SIDNEY MARTIN and BILTON POLLARD.
6. Prognosis and Treatment in Pulmonary Tuberculosis. ROBERT MAGUIRE.
7. A Case of Scarlatina Pemphigoides. E. A. C. BAYLOR.
8. Aneurysm Bursting into Pericardial Sac. JOHN WM. TAYLOR.
9. Foreign Body Long Retained in the External Auditory Meatus. WM. L. CULLEN.
10. A Case of Conglutination et Atresia Orificii Uteri during Parturition. P. G. EDGAR.
11. Dislocation of the Styloid Process. WYATT WINGRAVE.
12. A Case of Strangulated Vermiform Appendix Forming a Femoral Hernia: and Ruptured Umbilical Hernia with Extrusion of Intestines. HENRY HEMSTED.

1.—The article is a summary of the recent researches concerning the **parasitology of malaria**. [J.M.S.]

2.—In the treatment of insomnia hypnotics should be given in exceptional cases only. The physician should rely, whenever possible, upon a judicious employment of some of the nonmedicinal helpers of sleep. Although, in the more severe forms of psychic insomnia he must often secure sleep at once by the action of some efficient hypnotic. Sawyer prefers opium or chloral for this purpose. An overworked man or woman must never be permitted to go on with their overwork and must habitually secure sleep by the use of chloral or any other hypnotic. Potassium bromid is by far the best hypnotic in well nourished patients and in the slighter cases generally. In many cases of chronic wakefulness the patient is distinctly anemic and the insomnia cannot be cured unless the anemia is first relieved. A "nightcap" of toddy gives rest and sleep to the worried brain of feeble persons whose blood is poor. Daily bodily exercise in the open air and sunshine, but always short of great fatigue, is often an efficient means of securing sleep. [J.M.S.]

3.—In the differential diagnosis of **peripheral neuritis due to arsenic** rather than to alcohol the following features are of importance: 1. Hyperesthesia of the skin and muscles, which, although common in alcoholic neuritis, is more constant and generally more severe in the cases due to arsenic. 2. Erythromelalgia. The vasomotor phenomena that characterize the condition known by this name, while only occasionally present in alcoholic cases, have been conspicuous features in the present epidemic. 3. Ataxia is rare in cases of alcoholic neuritis, and therefore, Bury has been much struck by its comparative frequency in the present series of cases. In the treatment the first essential is to find out the cause and to remove it. In all except the slightest cases rest in bed is advisable, and the severest cases require a water bed. On no account must the nurse attempt to massage the limbs in the first stage of the disease. For the relief of tender nerves and muscles there is nothing better than warm fomentations. In the early stages of neuritis, sodium salicylate and potassium iodid, either alone or in combination, appear to be of service. Neuralgic pains may be relieved by the administration of antipyrin, phenacetin, or exalgin; but when the suffering is very great the hypodermic injection of morphin becomes necessary. Let it be particularly noted that in the acute stage strychnin must not be given. Of far greater importance than drugs is the regular and careful administration of nourishment, in the forms of boiled milk, beef tea, beef extracts, soups, and broths.

When the acute symptoms have subsided, but not before, recourse may be had to massage, electricity, and tonic treatment. Of all drugs that may be regarded as tending to the restitution of the paralyzed parts, strychnin is unquestionably the most valuable, and it is better to administer it hypodermically than by the mouth. It is advisable to begin with a small dose, say $\frac{1}{30}$ grain, and then gradually to increase the quantity. [J.M.S.]

4.—Moynihan divides the **chronic inflammatory process** in or near the **stomach** that may require surgical interference into the following classes: 1. Temporary intermittent narrowing of the pylorus reflex in character, the result of muscular spasm. This spasmodic contraction is largely or entirely dependent upon chronic ulcer of some portion of the stomach and sometimes resembles a tumor, the cause of which is difficult to determine. After gastroenterostomy it usually disappears, owing no doubt to the rest and subsidence of the hyperacidity. 2. Circumscribed or annular fibrous constriction at or near the pylorus, and it is in this condition that pyloroplasty is attended with its best results. 3. Diffused cicatricial induration at or near the pylorus or the first portion of the duodenum, and in these cases the inflammatory mass often resembles some malignant tumor, and when the ulcer has been healed it breaks down on the most trivial provocation. This condition is best dealt with by a gastroenterostomy. 4. Cicatricial contraction and induration with adhesions between pylorus, duodenum, abdominal wall, liver, gallbladder, etc., are the signs of deep ulcers, where perforation has been threatening. 5. Cicatricial contraction and induration at the site of an ulcer situated in the body of the stomach gives rise to the condition known as "hour-glass contraction." This he again divides. *a* When the ulcer is situated near the middle, and causes a constriction of the organ as if a tape had been tied around it. *b*. When the ulcer is on the anterior surface and adhesions to the abdominal wall cause it to dilate and give it the appearance of an hour-glass. The spot where the adhesion forms causes it to be very tender, and the rigidity of the muscles is often mistaken for a tumor. 6. The last division, includes adhesions external to, and primarily independent of the stomach and duodenum, originating in inflammatory conditions of the gallbladder, bile-ducts, etc., or rarely traumatism. In the surgical treatment of the various conditions, the following procedures are carried out: (1) Pyloroplasty or gastropasty; (2) gastroenterostomy; (3) pylorotomy; and (4) gastrolisis. Pyloroplasty is of limited use, but in selected cases it serves well, but the scar of the ulcer must be small and sharply defined in width as well as being soft and supple, the incision must be carried into healthy tissue and there must be no adhesions even of the most trivial kind. In performing gastroenterostomy he has used the Murphy button, LaPlace's forceps and sutures; the last he prefers, and believes the best results can be obtained by this method by experienced operators. Pylorotomy is rarely ever required, and in cases of malignancy, when the diagnosis has been firmly established, the disease is too widespread for this operation. The regurgitation of bile and pancreatic secretion into the stomach after these operations does not affect the general health, nor cause any local disturbance. [W.S.N.]

5.—Martin and Pollard report a case of **gastroenterostomy** in a young woman suffering from pyloric stenosis of a nonmalignant character, but there was also a second ulcer in the middle of the stomach which caused an hour-glass constriction. The opening made by the operation was in the second compartment, and as sufficient nourishment could not pass the first obstruction, death resulted from exhaustion. [W.S.N.]

6.—In **pulmonary tuberculosis** pyrexia may be absent and this may be a favorable **prognostic sign**, but it is not always so. If with absence of pyrexia there be extreme general weakness and bacilli in the sputum the condition is grave. The higher the pyrexia the worse the prognosis in the first stage of the disease. A morning temperature that is always above normal is unfavorable, whatever be the evening temperature. General weakness is unfavorable, but especially cardiac and vasomotor weakness. Attacks beginning with digestive disturbances as the only sign generally do badly. Hemoptysis in the first stage need not cause great alarm, although repeated copious hemoptysis increases the gravity of the case. One large hemoptysis with pyrexia

carries with it a serious prognosis if the diagnosis of tuberculosis be fully established. In the second stage of the disease, echoing rales indicate softening of inflammatory tissue. If the disease extends by contiguity of tissue, when the lesion has passed the boundaries of the lobe in which it was first developed, the prognosis becomes worse. Lymphatic absorption helps in the spread of tuberculous mischief and is unfavorable. Extension by bronchial insufflation greatly increases the gravity of the prognosis. Arterial conduction produces scattered patches in the lungs, tubercle of the meninges, kidneys, and spleen, and its prognosis is most unfavorable. Tuberculosis of the larynx is always secondary to a lung lesion, no matter how ill marked or undetectable the lung lesion may be. Infection of the intestines is nearly always a precursor of the end. The second stage of pulmonary tuberculosis is never without pyrexia. The higher the fever the worse is the prognosis, but the worst feature is the hectic fever. Hemoptysis is a much graver symptom in the second than in the first stage, and may be dangerous. Its dangers are: (1) Loss of blood, (2) shock with cardiac failure, and (3) fright. If a cavity is present, then the more highly pitched its percussion note and the more resistance there is to the percussing finger, the more favorable is the prognosis, since these conditions indicate that the cavity has a thick fibrous wall. Echoing rales indicate a further progress of the disease, a combination of second and third stages, and are unfavorable. Dyspnea is greater in fibrosis than in cavitation, but carries with it a more favorable prognosis when present in the former condition. Hemoptysis is the great danger of the third stage of pulmonary tuberculosis, and is often fatal. [J.M.S.]

7.—Saylor reports a case of **scarlatina pemphigoides**. The patient was a married man, having a family of 5 young children, whose ages ranged from 12 to 3 years, all of whom were attacked by the disease in a mild form, and recovered with no complication. On the fourth day of the rash the eruption became vesicular and the vesicles rapidly coalesced and formed large bullas, which burst soon after and gave to the skin a badly scalded appearance. The author ascribed the bullous eruption to the fact that the patient did not go to bed during the attack, or even report himself ill. [J.M.S.]

9.—Cullin, while syringing the ear of an old woman 78 years of age, removed a small ball of tortoise-shell which had been lodged there for some 30 years. [W.S.N.]

10.—Edgar describes a case of **atresia of the os uteri** produced by agglutination of the margins of the os, which interfered with labor. By tearing away some of the adherent tissue, the os rapidly dilated, the membranes ruptured, and labor terminated in about 2 hours. [W.K.]

Lancet.

December 8, 1900. [No. 4032]

1. The Harveian Lectures on Prognosis and Treatment in Pulmonary Tuberculosis. ROBERT MAGUIRE.
2. The Operative Treatment of Fibroid Tumors of the Uterus. EDWARD MALINS.
3. The Bowel Lesion of Typhoid Fever. T. J. MACLAGAN.
4. The Treatment of a Case of Acute Dilation of the Stomach. GEORGE COATES.
5. Concerning Certain Apparently Injurious Constituents of Potable Spirits. Sir LAUDER BRUNTON and F. W. TUNNICLIFFE.
6. Suggestions for the Practical Treatment of Typhoid Fever. WILLIAM EWART.
7. A Case of Complete Transverse Septum of the Vagina Impeding Delivery; Urethral Coitus. E. RUMLEY-DAWSON.
8. An Obscure and Complicated Case of Carcinoma of the Stomach. CHARLES FRANCIS STEELE.
9. An Instance of Excessive Enteric Rash in Childhood. ARTHUR MAUDE.
10. Psoriasis with Insanity; Thyroid Treatment; Recovery. H. DE MAINE ALEXANDER.
11. A Peculiar Case of Purpura. HENRY W. SPAIGHT.
12. A Note on Excision of the Wrist-joint by a Transverse Incision. J. CRAWFORD RENTON.
13. A Case of General Cystic Disease of the Kidneys; Necroscopy. LEE DICKINSON.

1.—Maguire, in continuing the discussion of **prognosis in phthisis**, calls attention to the value of **pyrexia, general weakness, digestive disturbances, and hemoptysis**. The higher the fever the graver the probable result. The only pathognomic type of temperature is that in which the morning temperature is higher than the evening temperature; this is exceedingly rare, fails to occur in many cases, and, at most, is only present for a short time. General weakness associated with feebleness of circulation is very serious; or if associated with insufficient nourishment as a result of gastric disturbances, it is also of serious import. Maguire ascribes the gastric disturbances to a reflex produced by the disturbance of the pulmonary fibers of the pneumogastric. Hemoptysis is usually looked upon as more important than it really is; it occurs very frequently in other conditions. Repeated small hemoptyses may be a favorable rather than unfavorable sign in regard to health. Multiple, copious hemoptyses are more serious, but a simple, large hemoptysis without fever and without signs of pulmonary lesions may not mean grave disease. Hemoptysis may be merely the result of high feeding adopted in the treatment of the tuberculous condition. The second stage, or progress, is characterized by the gradual softening of the pulmonary tissues. The most significant sign is the large, bubbling rale indicating some inflammatory products in a cavity. Maguire prefers the name "echoing rale," and it is really more descriptive of its nature. The lesions may extend either by contiguity, by inspiration along the bronchus, or by extension along some of the vessels in the lung. From the lungs they may extend in various directions chiefly to the larynx and the intestines. Primary laryngeal tuberculosis is probably exceedingly rare. In the intestinal tract the appendix is probably more frequently involved than the other portions, because the bacilli remain in contact with its mucous membrane a longer period. Hemoptysis is now a grave symptom, and may be so profuse as to produce shock. In the third stage the serious symptoms are: dyspnea, which is due usually to the loss of lung tissue; heart-failure, characterized by blueness and coldness of the extremities; and pneumothorax. The latter condition is chiefly serious because of the shock at the time of occurrence. Hemorrhage is almost invariably due to aneurysm in a cavity. These aneurysms are probably produced by aspiration of the arteries during attacks of coughing. [J.S.]

2.—Malins describes his method of **operative treatment for fibroid tumors of the uterus**, reports 6 cases successfully treated, and gives the following indications for operation: 1. Social position is to some extent a guide, since the wealthy can afford to be invalids, while the poor must have relief that they may be enabled to perform their daily labor. 2. Excessive and persistent hemorrhage. 3. Occasionally the pain and discomfort due to pressure symptoms. 4. Rapid growth of the tumor, particularly if there are signs of associated complications. [W.K.]

3.—MacLagan discusses **intestinal lesions**, describing the various typical stages and suggesting that the lesions are more severe near the ileum on account of the greater quantity of lymphatic tissues there present. He dismisses the **toxin theory**, claiming that the bacilli act directly, and the symptoms are due to secondary infection by various forms of cocci. When the process of sloughing sets in the symptoms are more severe. When this sloughing process causes diarrhea, hemorrhage, peritonitis, etc., life becomes seriously threatened. He discusses a few of the symptoms, mentions the fact that the diarrhea may not occur, that hemorrhage is not necessarily fatal, but that peritonitis almost invariably is. He argues that a toxin cannot be present because all the glands are not equally affected, as would be the case if it circulated in the blood. [It is generally held, and we think with some justice, that the changes in the lymphoid glands are due to the direct action of the bacilli, and that the general symptoms of the disease, fever, etc., are due to the action of the toxin. As a matter of fact, filtered cultures of the typhoid bacillus produce definite symptoms when injected into animals, and this could hardly be a result of anything but the products of their activity. J.S.]

4.—Coates describes a curious case of **dilation of the stomach** occurring in an infant about 3 weeks old. The stomach was enormously distended, the urine scanty, the skin dry and shriveled, and the child badly emaciated. About 3 hours after taking food she manifested hunger.

Finally, after various forms of diet had been unavailing, the stomach was washed out daily, on each occasion considerable air, thick mucus, and curdled milk being removed. The child was also fed upon human milk, and gradually recovered. Various drugs were introduced after washing, but Coates ascribes the general benefit to the latter procedure. [J.S.]

5.—Brunton and Tunnicliffe have made some investigations upon the presence of **aldehyds in whisky**, particularly **furfural**. This can be recognized by diluting the same quantity of whisky with an equal volume of water, and adding a few drops of sodium carbonate solution, and then a few drops of anilin acetate solution. A rose-color develops on shaking. Injected into animals in doses of 0.10 to 0.05 gm. it caused paralysis of the voluntary muscles, then clonic and tonic convulsions, and rapid and irregular breathing. All symptoms were very transient, usually lasting about $\frac{1}{2}$ hour. Large doses caused death by paralysis of the respiratory muscles. The substance was apparently excreted through the kidneys. Animals were then infected with spirit containing furfural, and spirit free from it; the differences were apparently not great, but the postintoxication symptoms were more severe in the former group. [J.S.]

6.—Ewart calls attention to some of the symptoms of **typhoid fever**. Stagnant or putrid feces are particularly dangerous when they are liquid; slight astringent treatment therefore seems to be indicated. Inactivity of the liver as a result of pyrexia and prolonged rest, may be best relieved by mercury. Tympanites is dangerous on account of the tendency to perforate, therefore active peristalsis is to be avoided. When there is fulness and tension and extensive dulness over the right iliac fossa it may be relieved by placing the patient for a few minutes, on the left side. The best medicinal treatment is that suggested by Wedgewood; it consists in the administration of 20 min. of the liquor of the bichlorid of mercury, and 15 to 20 min. of the tincture of bichlorid of lime every $\frac{1}{2}$ hour throughout the attack. The constipation produced by this method is relieved by daily injections of glycerin. Cold baths are rendered unnecessary. [J.S.]

7.—Rumley-Dawson reports a case of **complete transverse septum of the vagina impeding delivery** in a primipara aged 21. The dilation of the urethra indicated **urethral coitus**. After the incision of the septum the child was soon delivered quite easily and naturally. [W.K.]

9.—Maude mentions a case of **typhoid fever** in a boy 12 years of age. He had a most copious eruption of rose-colored spots. It was impossible to count them, as they covered every part of the body. They reached their maximum extent on the fifteenth day. [J.S.]

10.—Alexander reports the following case: A man 33 years old developed **psoriasis**. He was taunted by his fellow-servants, became depressed and suspicious, and finally required commitment to an asylum. He was given 15 gr. of thyroid extract, 3 times a day, and a farinaceous diet. In 3 days his mental condition was better, and in the course of time he recovered from the psoriasis. [J.S.]

11.—Spaight reports a case of **purpura** occurring in a girl of 9 years, without any other symptoms. The following day there were hemorrhages from all the mucous membranes, but 4 days after the onset the hemorrhages ceased, the patches began to fade, and 5 days later the patient had recovered completely. [J.S.]

New York Medical Journal.

December 22, 1900. [Vol. lxvii, No. 25.]

1. The Treatment of Supracondyloid Fracture of the Humerus. A. R. SHANDS.
2. A Case of Superimposed Uvula. THOMAS AMORY DEBLOIS.
3. The Combination of a Plaster-of-Paris Jacket with a Brace to Correct and Retain Correction of the Kyphosis of Pott's Disease of the Spine. A. MACKENZIE FORBES.
4. Recrudescing Angina due to Friedländer's Bacillus. EMIL MAYER.
5. Intraspinal Cocainization from the Anesthetist's Standpoint. S. ORMOND GOLDAN.
6. The Diagnosis of Empyema in Children. F. L. WACHENHEIM.

7. A Report upon 170 Cases of Appendicitis. ROBERT T. MORRIS.

1.—Shands in the **treatment of supracondyloid fracture of the humerus**, especially when it is oblique and there is a constant danger of slipping, cuts down upon it and brings the ends of the bone together with kangaroo tendon, or sometimes he allows the drill to remain in position and act as a pin, and at the end of 2 weeks removes it; the drill in this case is long enough to project through the dressings. By this method the bone can be brought into better position, and one can feel more comfortable about its retention. In these days of antiseptic surgery there should not be the least hesitation about making a simple fracture, a compound one, as the incision allows the escape of the effused blood, and the surrounding tissue regains its normal condition quicker than before. When this method becomes more general stiff elbows from deformity will be fewer. [W.S.N.]

3.—Forbes has devised a **brace to be used in combination with a plaster jacket to correct and retain correction of kyphosis of Pott's disease of the spine**. The main dependence for the ultimate success remains in the surgeon's careful, continued, and thorough employment of retention appliances which hold the spine in the straightest possible position for a sufficient length of time for consolidation of the diseased bony structures. The brace consists of 2 strips of steel about 1 inch wide, the thickness depending upon the length, size, and weight of the patient. These are carefully adjusted while the patient lies on his back and extend from the pelvis on each side of the spine to the shoulders where they curve outward toward the arms; at the bottom they are joined by a heavy piece of steel which extends outward to get a good hold of the plaster and act as a fulcrum; further up at different levels the 2 lateral strips are joined by smaller pieces of steel, and the one at the level of the posterior axillary fold is longer and extended outward to receive straps which extend from the lateral strips over the shoulders and under the arms to meet them. The advantages of this are, it gives greater and surer leverage than others, and it retains the correct position of the spine better. A head brace can easily be adjusted to it, the cast lasts longer and can be made lighter, at the same time it retains its efficiency until removed. [W.S.N.]

4.—E. Mayer reports a case of **recrudescing angina due to Bacillus pneumoniae of Friedländer**. This microbe, a saprophyte, occurs frequently in the mucous membrane of the bronchi, rarely invading the lung; also, it manifests itself locally in stomatitis, ozena, rhinoscleroma, acute suppurative rhinitis, and, by extension, in parotiditis, otitis, bronchopneumonia, purulent pleurisy, pericarditis, pyelonephritis, meningitis, and in pyemic and septicemic conditions generally. It was first noted in pharyngitis in 1895, but few reported cases are on record. Out of 1,600 cultures from diseased throats it was but 8 times discovered. This affection with minute bacteriologic notes and the clinical reports of 5 cases is the basis of a Thèse de Paris (1895) by Hebert, M. Nicolle in conjunction publishing results in the Annals of the Pasteur Institute (vol. xi, 1897). Further, 5 cases are noted by W. C. C. Pakes, and 2 by A. Billet. With the case under consideration this completes the known literature on the subject. This case was first considered as a chronic diphtheria, later chronic recurring membranous pharyngitis, yet, though the patient, aged 19 years, previously had had a genuine diphtheria, at no time in the present illness was Bacillus diphtheriae of Klebs-Löffler found. In common with the other cases of this form of angina, there is thus a history of previous acute disease (scarlatina in one, amygdalitis, acute articular rheumatism, simple angina, in others), but the bacteriologic examination gives nothing but streptococci, staphylococci, and on further tests at times other microbes, as Micrococcus tetragenus, and in all cases Bacillus pneumoniae of Friedländer. One connection of these former ones is relative, but careful investigation, as in the present case, by A. J. Lartigan, must be convincing as to the pathogenesis of this angina being due to the bacillus of Friedländer. [J.M.S.]

5.—Goldan condemns the reckless way in which **intra-spinal cocainization** is used, and from the **anesthetist's standpoint** believes the range of its usefulness is limited to cases in which a general anesthetic is contraindicated. When

cocain is injected into the spinal canal it acts with the same uncertainty as it does when administered otherwise, and there is great danger of injury to the cord by accident, as in a case of a nervous man to whom he was giving an injection, who without warning jumped up and bent the needle at a right angle, but fortunately no bad result followed. In regard to some of his failures, if the injection had not been prepared and given by himself he would have thought that they were due to improper application, but the same care was used in all cases. In regard to the amount of fluid to be injected into the spinal canal, it is best to inject more than the amount lost, as the tension is equalized quicker than if the amount is less. As a general anesthetic he does not regard it as good as ether or chloroform, and its general employment would be a step backward rather than forward. [W.S.N.]

6.—Wachenheim discusses the **diagnosis of empyema in children**, with reference to the clinical standpoint, since in infants when pyema is not traumatic in origin the recognition of the process is not easy. A history of steady loss of flesh and strength attended by irregular fever is usual, possibly preceded by some infectious disease. Chronicity is marked, but unresolved pneumonia must be differentiated. Neither side is preferred and bilateral empyema is not rare. The general appearance of the patient is suggestive; prostration and emaciation, though present in other intrathoracic affections, are valuable in completing the diagnosis. Local inspection shows relative retardation and diminution of the respiratory excursion on the affected side, and occasionally obliteration or even bulging of the intercostal spaces. The apex beat may be displaced. The pulse is disproportionately rapid and the respirations shallow, accelerated, and with effort, though not grasping as in bronchopneumonia. The use of the pleximeter is denied, the most gentle percussion being the most effective. The note of dulness over the affected side increases downward; above, there may be resonance or tympany. In empyema of the left side dulness over Traube's space is very characteristic. Auscultation is not as valuable as in adults. Friction sounds are rare, and rales over the dull areas are decidedly against exudation. Egophony is too frequently present in pneumonia and too little in empyema to be of use. If both pneumonia and empyema exist there is dulness laterally, but respiration is more bronchial on the side where dulness is less pronounced, and the rales, present elsewhere, are absent over the most resistant and least resonant area. When hepatic or other abscesses are in question the most skilful may be puzzled. Exploratory puncture is of most value and since no harm comes if used with proper care in any case. This method of diagnosis is recommended. It must be noted that the leukocytes gravitate to a depth undesirable for puncture, so that the removal of a clear serum does not militate against the existence of empyema. Sacculation is rare, as is also an excessively thickened pleura in infants. If an exudate is present, puncture of the lung is usually avoided by choosing the area of greatest dulness and feeblest respiratory murmur, and by using a not too long needle. In pneumonia, puncture of the lung unintended may, however, prove of advantage, the slight traumatism seeming to start resolution, and the author has never seen ill effects result from it. [T.H.E.]

7.—Morris, out of a series of 170 cases of **appendicitis**, removed the appendix in 120, through an incision $1\frac{1}{2}$ inches in length; 59 of these were at the acute stage and 61 were interval cases. [W.S.N.]

Medical Record.

December 22, 1900. [Vol. 58, No. 25.]

1. On a Case which Illustrated Conservatism in Surgery—The Liability of an Ancient Cicatrix to Cancerous Degeneration—A New Method of Amputation at the Knee when the Arterial Circulation of that Region is Impaired. STEPHEN SMITH.
2. The Neuron Doctrine: Its Present Status. CHARLES LEWIS ALLEN.
3. A Few Remarks on the Use of Medullary Narcosis in Obstetrical Cases. HUGO EHRENFEST.
4. Perforation of a Typhoid Ulcer without Fecal Extravasation; Operation Four Hours after the First Symptom; Recovery. E. G. CUTLER and JOHN W. ELLIOT.

5. On the Treatment of Laryngeal Tuberculosis. ROBERT D. COHN.

6. Local Anesthesia in the Radical Operation for Inguinal Hernia. LEO B. MEYER.

1.—Smith in **amputating a leg** in which the **circulation is impaired**, as often exists in cases of senile gangrene, finds that the knee offers the best place of operation, and by making lateral flaps instead of anteroposterior ones, the likelihood of dividing the arterial supply near its origin is thus avoided. [W.S.N.]

2.—Allen concludes his paper on **the neuron doctrine** as follows: It has long been known that an injury to a nerve cell or nerve fiber is followed by degeneration which is sharply limited in extent. The application of the Golgi method shows that each nerve-cell (and its processes) is developed from a primitive cell, the neuroblast; hence it forms an embryologic unit. Moreover, to all appearances the separation of these units, one from the other, always remains complete. The neuron conception appears logically to follow. So far, it appears no more proved that the Golgi and vital methylene-blue methods give deceptive results, than the methods of Apáthy and Bethe do. The latter have had nothing like so wide an application as the former, and more extended investigation seems to be needed before we throw a servant apparently so faithful overboard. There seems a good deal of difference in the conceptions of different authors as to just what the neuron means. It will be remembered that the idea of continuity between neuron and neuron has never been without supporters. Even if the views of Apáthy are confirmed, and we have to admit the continuity of the neuro fibrils, it does not seem to follow necessarily that we must abandon our idea of the neuron as a functional unit. Its embryologic unity is not affected. It may be necessary to modify our views, but our conception of the existence of the neuron, as a means of explaining certain facts, we are as yet hardly called upon to give up. [A.B.C.]

3.—Ehrenfest says that to **produce painless labor** seems to have been the predominant idea in the experiments so far made in the use of **medullary narcosis** in obstetrical cases. To accomplish this we must make use only of a method: 1. Which does not carry with it too great danger for either mother or child and an exact opinion with reference to this point can be arrived at only after the statistics of morbidity and mortality resulting from medullary narcosis are established. 2. Which does not produce conditions more disagreeable than the pain we are endeavoring to assuage; and all the reports tell us of disagreeable symptoms following these injections, sometimes lasting longer than after the usual chloroform or ether narcosis. Cases of immediate high elevation of temperature with deep collapse are on record; such a great risk, indeed, does a woman take in exchange for labor pain. 3. Which does not produce complications during parturition; that is, does not change a birth, which under ordinary circumstances would be normal, into instrumental delivery. This point is by far the most important, since, notwithstanding the best antisepsis and asepsis, subsequent puerperal or gynecologic diseases are invariably more frequent after delivery by operative procedures. The statistics at present accessible seem to show a very high percentage of forceps delivery under medullary narcosis, probably due to the deficiency of a normal automatic help of the abdominal muscles, and this condition alone would contraindicate the use of medullary narcosis as a means of making a normal labor painless. In considering the use of medullary narcosis for purposes of examination or required operative work, Ehrenfest adds to the considerations already mentioned only the statement of Marx that, "explorations, versions, extractions, placental removal, were readily done with not quite as much ease as under chloroform." Hence he concludes that it seems more than doubtful whether we are justified at the present time in recommending medullary narcosis as a substitute for chloroform in obstetrics. [W.K.]

4.—Cutler and Elliott report a case of **perforation of a typhoid ulcer without fecal extravasation**. The patient was in the third week of an attack of typhoid fever, and was seized by a sudden, severe attack of abdominal pain. The abdomen was moderately distended, rigid, and tympanitic. Nothing abnormal by palpation except tenderness. The leukocytes had increased from 8,000 on the day before to 17,000. The pulse was 110; temperature, 103.8°. Perforation was suspected, and a laparotomy was at once per-

formed. The abdominal cavity was filled with a turbid fluid containing fibrinous flakes. Peritonitis was evident. No perforation was found, but 4 feet above the cecum a grayish-white mass was found on the inflamed gut. The outlines of an ulcer the size of a quarter of a dollar could be plainly made out. It was just ready to slough. The affected area was turned in, Lembert sutures applied, and the patient made a good recovery. [A.B.C.]

5.—Cohn, in the **treatment of laryngeal tuberculosis**, divides it into 3 stages: The first, where infiltration is localized and has not as yet broken down, curetage and cauterization is of value. When lactic acid is used it should be applied directly to the affected spot, until a brownish or blackish slough is produced, as the use of this acid in a spray is of little value. Several applications may be necessary, and cocain should be used before each. In the second stage antiseptic treatment will make the patient more comfortable by reducing the inflammation set up by infection of other germs, but it has little effect upon the tuberculous process. In the third stage relief by the use of morphia and cocain is all that can be done. The process of infection by invasion of the disease through the epithelium is open to doubt, as the disease usually begins in the submucous tissue and the epithelium covering it remains healthy until ulceration occurs. This condition often deceives the patient, as in the first stage the swelling causes an impairment of phonation, while in the stage of ulceration this swelling subsides and the patient finds that he is once more able to talk, and at the same time feels more comfortable, whereas the disease has caused decidedly more damage to the larynx. [W.S.N.]

6.—Meyer performed a **radical operation for an inguinal hernia** on a fellow physician, and employed, **locally**, a 6% solution of B-eucain to produce **anesthesia**. The operation for the first minute was painless, but afterwards a sensation as if someone was squeezing the testicle was felt. This caused considerable distress as well as a nausea produced when the omentum was handled. It left the patient in a generally nervous condition for some time afterward, and from this case he believes it better to employ a general anesthetic. [W.S.N.]

Medical News.

December 22, 1900. [Vol. lxxvii, No. 25.]

1. A Rapid and Simple Operation for Gallstones Found by Exploring the Abdomen in the Course of a Lower Abdominal Operation. HOWARD A. KELLY.
2. Some Notes on the Treatment of Rheumatism. ALFRED STENGEL.
3. Report of Two Cases of Sporadic or Family Trichinosis; With Remarks on the Importance of Eosinophilia in the Peripheral Circulation as an Aid to Diagnosis. HERMAN C. GORDINIER.
4. The Surgery of the Gasserian Ganglion. WALLACE NEFF.
5. The Treatment of Bronchitis in Infants and Young Children. SAMUEL S. ADAMS.

1.—When Kelly opens the abdomen for investigation, he makes an incision about 8 cm. long, and if the operation is for appendicitis or some pelvic disturbance, if the patient's condition permits he explores the region of the **gallbladder** and if a **stone** is found, performs a **rapid and simple operation** as follows: The hand is placed in the incision and runs along the abdominal wall until successively the crease in the liver that leads to the gallbladder and the gallbladder itself is found, when it is gently pressed between the finger and thumb until all the bile is squeezed out; if a stone is felt it is pressed against the abdominal wall, while with the free hand he cuts down to the peritoneum, making an incision about 4 or 5 cm. in length. A small nick is made in the peritoneum, the edges are then caught with mosquito forceps and the opening is enlarged. The gallbladder is then pressed into the incision, opened, and the stone removed. If the gallbladder is healthy he hesitates to drop it; after closing it with buried quilted sutures, he closes up the wound without drainage. On account of the distressing conditions caused by these foreign bodies he believes it better to remove them as long as the abdomen has been already opened and there is very little additional risk. [W.S.N.]

2.—Stengel says it is likely that in rheumatism, as in

pneumonia, a variety of microorganisms of moderate virulence may operate to produce a similar pathologic result. The result is a serous or serofibrinous inflammation of the joints, the pleura, the pericardium, endocardium, etc., with as a rule a moderate systemic infection or intoxication. In regard to the **treatment of rheumatism** we should remember that many cases tend to spontaneous recovery; that complications are frequent and more likely to occur in protracted cases; that probably as a rule the complications are secondary to the joint disease and not to the primary lesion that was the infective focus. Aside from the use of sodium salicylate, the author speaks highly of the local application of a 10% or 20% ointment of salicylate of methyl covered with lint or oiled silk. It both relieves pain and combats the disease. In gonorrheal rheumatism he secures rest with a plaster-cast. In 3 cases of obstinate rheumatism he used antistreptococcus serum with encouraging results. [A.B.C.]

3.—Gordinier reports 2 cases of **sporadic trichinosis**. He speaks of the former difficulty in diagnosing these cases, and thinks many cases have been overlooked and incorrectly diagnosed. Reference is made to the discovery by Brown, of Johns Hopkins Hospital, that in trichinosis there is an enormous increase in the eosinophiles in the blood. This now enables us in most cases to make a proper diagnosis. In the author's first case the eosinophiles composed 77% of leukocytes, and there was a remarkable reduction in the polymorphonuclears. In the second case the eosinophiles composed 31.9%, and the polymorphonuclears 49% of the leukocytes. In all, there have been 20 cases of trichinosis reported since Brown's original paper on the subject, and in 19 of these the presumptive diagnosis was made from a pronounced eosinophilia, which was subsequently confirmed. [A.B.C.]

4.—Neff, in the prognosis of **excision of the Gasserian ganglion for trigeminal neuralgia**, states the immediate result is either relief or death; the latter may be caused by hemorrhage (uncontrollable), shock or sepsis; while the unpleasant remote results are recurrence, due to an incomplete operation, destruction of the eye, paralysis of the muscles of mastication, or an abscess of the brain may develop later, but usually the patient is willing to take these risks for the sake of relief from the intense pain. In these cases medical treatment affords but little ease, while electricity sometimes palliates; this leaves some surgical procedure the only course open. The simplest form of operation is a neurotomy, then neurectomy, and neurexeresis, but these only give temporary results, and when the nerve has been repaired, the pain returns; the same may be said of dividing the nerve near its central origin, therefore most of these operations have been abandoned in favor of extirpation of the Gasserian ganglion, and of the numerous methods he prefers the temporal route, and his conclusions are as follows: 1. Trigeminal neuralgia is an ascending neuritis, peripheral in origin. The second and third branches, rather than the first, are the ones most likely to be involved. 2. If the disease persists after several months' trial with drugs, electricity, etc., surgical intervention is indicated. 3. If only one branch is involved and the disease is not of long standing, as much as possible of the affected branch should be removed with a view of relieving pain and preventing the upward progress of the disease. 4. If more than one branch is involved, and the pain is severe, and has persisted for a long time, the ganglion should be extirpated, all other means having failed. 5. The temporal route should be followed, the Hartley-Krause, or preferably, Cushing's modification of it, being the most rational procedure. 6. Pain will not recur with original severity in more than 1 or 2% of the cases operated upon, or in any degree in more than 4 or 5%, and is invariably due to an incomplete operation. 7. It is important to remove the ganglion and its branches intact in order to be certain of the completeness of the operation, and to insure a careful and thorough microscopic examination of the specimen. 8. The present mortality is about 10%. Increased experience and an improved technic will undoubtedly diminish this mortality, and dissipate the risks of this hitherto most formidable, difficult, and dangerous operation. [W.S.N.]

5.—Adams discusses the **treatment of bronchitis in children**. The most important prophylactic treatment is a daily bath with water at a temperature of 80° to 90° F., fol-

lowed by gentle rubbing. The child should not be confined too rigidly to the house. A dry and cold atmosphere is wholesome. The sleeping-room should not be warmer than 65° F. The direct treatment of the disease involves local applications, such as a cotton jacket, inhalations of various substances, such as a compound tincture of benzoin, creasote, etc.; the administration of expectorants, such as ammonium iodid, although this should be used with great caution; and general rest. Opium should not be given unless the cough disturbs sleep. Emetics should be given only when there are some gastric symptoms, and stimulants of various kinds only when indicated. Blisters should never be used. In cases of passive pulmonary congestion, either flagellation or a hot bath may relieve the symptoms. [J.S.]

Boston Medical and Surgical Journal.

December, 20. [Vol. cxliii, No. 25.]

1. Remarks Upon Questions Arising During the Removal of Fibroids, with Especial Reference to the Technic of the Operation. MAURICE H. RICHARDSON.
2. The Value of the Hot-Water Immersion Bath in the Treatment of Threatening Puerperal Eclampsia. CHARLES M. GREEN.
3. A Plea for Larger Doses of Antitoxin in the Treatment of Diphtheria. JOHN H. MCCOLLOM.

3.—In 1881 the mortality from **diphtheria** in Boston was 35.7%. In 1899 it was 9.76%. This diminution in mortality is principally due to the use of **antitoxin** and to the treatment of the patients in hospitals. There has been a marked reduction in the death-rate following tracheotomy and intubation since the introduction of antitoxin. No hard and fast rule can be made regarding the use of the serum; the agent must be given until the characteristic effect is produced on the diphtheric membrane; in some cases 4,000 units will accomplish this, in other instances 60,000 or 70,000 units may be required. In operative cases the beneficial effect of large doses of antitoxin has been marked, preventing, in many cases, the extension of the membrane to the smaller ramifications of the bronchi. No case of diphtheria in the acute stage should be considered hopeless. Antitoxin should be administered in each and every instance. In many cases the large doses of antitoxin mentioned above are essential, but if the patient is seen early enough smaller doses of 4,000 to 6,000 units suffice. Notes of 11 cases form a part of the paper. [J.M.S.]

Journal of the American Medical Association.

December 22, 1900. [Vol. xxxv, No. 25.]

1. Treatment of Hernia in Children. A. J. OSCHSNER.
2. Improved Technic for the Cure of Ventral Hernia. M. M. JOHNSON.
3. The Essential Factors for the Cure of Hernia in the Male. HENRY O. MARCY.
4. Hydrencephalocoele. CARL BECK.
5. Symmetrical Development. E. STUVER.
6. The Control and Prevention of Ear Diseases Among School Children. LOUIS J. LAUTENBACH.
7. The Antecedents of Organic Heart Disease in Children. FREDERICK A. PACKARD.
8. Arthritis Deformans. ALOYSIUS O. J. KELLY.
9. Separation of the Rectiabdominis Muscles and Stretching of the Linea Alba. J. CLARENCE WEBSTER.

- 1.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1272.
- 2.—" " " " 1272.
- 3.—" " " " 1273.
- 4.—" " " " 1285.
- 5.—" " " " 1285.
- 6.—" " " " 1285.
- 7.—" " " " 1285.
- 8.—" " " " 1265.

9.—Webster finds that the **separation of the recti-abdominis and stretching of the linea alba** is more common in hard-working women, and especially those who work hard during the last half of pregnancy and too soon

after labor, while it is often found in those subjected to tight lacing, and a larger proportion of women suffer from this trouble than is usually supposed. The examination of a large number of primigravidae demonstrated that the majority had some separation of the muscles. The symptoms produced by the displacement of the viscera varies, no set being typical, but in all his 51 cases in which he **stitched the muscles together**, the general condition was improved; in several where coexisting displacement of the kidney and uterus was found, it too was corrected. In those refusing operation, loose garments, with a silk-elastic abdominal binder gives some relief, but at the same time causes more or less discomfort, and weakens the muscles still more. [W.S.N.]

Archives of Pediatrics.

November, 1900. [Vol. xvii, No. 4]

1. Cough in Influenza Simulating Whooping-Cough. F. FORCHHEIMER.
2. Epidemic Paralysis in Children. HENRY DWIGHT CHAPIN.
3. Malarial Coma in Children. GEO. N. ACKER.
4. The Quantity of Diphtheria Antitoxin Required in the Treatment of Diphtheria. WM. H. PARK.
5. The Possibility of Eliminating the Deleterious While Retaining the Antitoxic Effects of Antitoxic Sera. WM. H. PARK.
6. The New York Academy of Medicine. Artificial Infant Feeding. A. JACOBI.

1.—Forchheimer contributes an article on **cough, simulating whooping-cough, in influenza**. The peculiarities of the cough were that it always moved in epidemics; it was decidedly contagious; it usually developed at night; it was like that of whooping-cough except that the peculiar whoop was not so characteristic; it was accompanied by the ordinary congestive symptoms of whooping-cough; and it was followed by vomiting and expectoration. On the other hand, the peculiar blue color of the mucous membrane and of the tongue was absent. The ulcer of the frenulum was present and if anything better marked than in whooping-cough. The involvement of the bronchial tree varied with the individual and with the epidemic. If the original attack of influenza was of the respiratory form, the chances of the development of a bronchitis or a pneumonia were greater than in those cases in which the original attack was confined to the gastrointestinal tract. If left to itself the disease lasted as long as 6 or 8 weeks, but in the majority of instances the symptoms can be aborted in about a week or 10 days. It seems to the author that in order to produce the symptoms of whooping-cough there must be a certain anatomic location of the cause, and this cause need not of necessity be the specific cause of whooping-cough; but any irritant localizing itself in or upon a certain part of the respiratory apparatus. Full doses of quinin materially reduced the duration of the disease. It was given by Forchheimer in the following doses: 1 decigram less than the age in years and 1 centigram less than the age in months. When the cough had developed thoroughly, phenacetin or antipyrin gave great relief. In very bad cases codein was required in full doses and sometimes it became necessary to give chloral at night in order to insure sleep. Belladonna was a disappointment as a rule, but in some cases its effects were very gratifying. [J.M.S.]

2.—See PHILADELPHIA MEDICAL JOURNAL, Vol. V, p. 1000.

3.—Acker reports the case of a boy, aged 11 years, who had been unconscious for 3 days. The child was in a comatose condition, with tonic spasms when first seen. Lumbar puncture was done at 4.30 P.M., and though no fluid came away, in an hour the patient began to speak and take nourishment and at the same time the muscular spasms relaxed. Examination of the blood showed a large number of estivo-autumnal organisms. He also reported the case of a girl, aged 8 years, who was taken ill 3 weeks before she was first seen with coughing spells and high fever at night. This was followed by swelling of the lower eyelids and of the extremities, accompanied by great shortness of breath. The patient had two severe convulsions just before being admitted to the hospital. The urine contained a few epithelial, granular, and hyalin casts with a few blood-corpuscles and many leu-

kocytes. While in the hospital the patient had severe clonic convulsions that lasted about 10 minutes. The blood contained numerous estivoautumnal organisms. The patient was cured after an attack of typhoid fever. On account of the nephritis that complicated this case, there is some doubt whether the convulsions and coma were directly produced by the malarial organism. It is reasonable to take the view that both the kidney disease and **coma were caused by the malarial parasite**. [J.M.S.]

4.—Park has analyzed 93 cases of diphtheria that were treated in the Willard Parker Hospital in 2 months. Of these 14 died, or 15%. Forty-two of the patients received 1,000 antitoxin units; and 7 of these died, or 16.6%. In this group there were 7 intubations, of which 4 recovered, and 2 laryngeal cases that did not require intubation, both of which recovered. Fifteen patients received 2,000 antitoxic units, and 7 died, or 13.7%. Of this group there were 6 intubations, 4 of which recovered, and 4 laryngeal cases not requiring intubation, all of which recovered. In the **treatment of diphtheria the dose of antitoxin** may be formulated as follows: In very mild cases, 1,000 to 1,500 units for the first dose. In moderately severe cases, 2,000 to 3,000 units for the first dose. In very severe cases 4,000 to 5,000 units for the first dose. In laryngeal cases, 2,000 to 5,000 units, according to their severity. For children under 1 year the author recommends about $\frac{1}{2}$ less than for older children and adults. He believes that the amount of swelling of the throat and the extent and nature of the membrane are better guides to antitoxin dosage than the general condition of the patient. If at the end of 12 hours after the injection the inflammation is advancing, or if at the end of 18 hours the inflammation has not clearly begun to subside, as shown by lessened congestion and swelling, a second dose of antitoxin should be injected. In a few cases a third dose is required at the end of 24 to 36 hours. For the bronchopneumonia and sepsis complicating some of the worst cases of diphtheria, antitoxin is generally of no avail. It is better to give too much antitoxin than too little, although moderate doses seem to accomplish as good results as very large ones. [J.M.S.]

5.—After a study of the **chemic compositions of antitoxic serums** Park is of the opinion that antitoxins are, in all probability, substances having the properties of globulin. They cannot with our present knowledge be separated from that portion of the blood-serum which, in susceptible persons, produces disagreeable effects. The fact, however, that the antitoxic serum from some horses is scarcely at all deleterious, leads us not to give up the **attempt of procuring a serum** either by selection of animals or by the treatment of the serum itself which, while antitoxic, is **not to any important degree deleterious**. [J.M.S.]

6.—Jacobi reports the case of a baby who was suffering from **rachitis**. The **spleen** was so much **enlarged** that it filled $\frac{1}{2}$ the abdominal cavity. The child had been breast-fed. [J.M.S.]

The Journal of Mental and Nervous Diseases.

November, 1900. [Vol. xxvii, No. 11.]

1. Summary of the Results Obtained in 114 Miscellaneous Cases of Nervous Disease. F. X. DERCUM.
2. Two Cases of Tumor of the Spinal Cord. JOHN JENKS THOMAS.
3. Reconstruction of Serial Sections of Brains. ADOLF MEYER.
4. Experimental Work on Brain Pressure Following Injury. WILLIAM N. BULLARD.
5. A Form of Subacute Pressure-Neuritis. THEO. H. KELLOGG.
6. A Case of Multiple Neuritis with Atrophy; Fibrillary Twitchings, Cramps, and Exaggerated Reflexes; Two Years' Duration and Recovery. WILLIAM JAMES MORTON.

1.—Dercum has made some careful studies upon the **ability to recognize objects by handling them**. In 41 cases of hemiplegia astereognosis was complete in 13 and partial in 7. In three of the 13 cases tactile sense was lost; in 10 it was present; completely in 6, and partially in 4.

Pain, temperature, and pressure sense were sometimes preserved and sometimes lost; the spacing sense was lost in 10 cases, diminished in 1, and present in only 1. In 4 of the cases in which it was lost all the other forms of sensation were preserved. In the 1 case in which the spacing sense was preserved, the localizing sense was deficient. The muscular sense, that is, the ability to describe correctly the position of the fingers, was present in only 1 of 9 cases in which it was tested. Stereognosis was present in a case in which there were pronounced secondary contractions, and in another in which there were ceaseless athetoid movements. Dercum studied various other morbid conditions with the following results: In 5 cases of diplegia, 2 exhibited stereognosis on both sides, and 3 on one sides. In 16 cases of locomotor ataxia total **astereognosis** was present in both hands in 3, and partial astereognosis in 2 cases. In 3 of these there was loss of muscular sense, and in none loss of localizing sense. In 3 cases of ataxic paraplegia astereognosis was present in 2; spacing sense was lost in both and muscular sense diminished or lost, and localization preserved. In 2 cases of multiple neuritis astereognosis was present in both hands of one. Various other conditions were also studied, such as myelitis, multiple sclerosis, syringomyelia, etc., but all were normal in this respect. Dercum concludes that the most important factor in determining astereognosis is the loss of the spacing sense, whilst preservation of the other senses is insufficient to enable the subject to recognize objects. [The author is in error in stating that he first used the words "stereognosis" and "astereognosis"; both have been employed in current medical literature for several years by authors whose articles he quotes. J.S.]

2.—Thomas reports the case of a young woman who gradually became paraplegic. At the end of 10 months there was sensory and motor paralysis and loss of control over the sphincters. Up to this time she had suffered considerably, but after this there was no pain. For 13 years she remained in this condition, contractures and bedsores appearing in the lower half of the body and then death occurred. There was an **endothelioma of the dura** of the cord just below the cervical enlargement; this contained true bone, and presented, in many respects, the characteristics of **psammoma**. It is probable that an early operation would have cured the patient. The second patient developed at the age of 6 years, after a slight injury, some weakness in the right upper extremity. This was followed by spasm and later, by complete paralysis of the arm and paresis of the leg. The tendon reflexes were increased. Fifteen days later the child died suddenly as a result of hemorrhage into a glioma that had invaded the cervical enlargement. The case is interesting particularly in reference to the etiology of the tumor. The symptoms first developed immediately after the injury. Thomas, however, believes that this was due not so much to the growth of the tumor at this time, as to the production of a slight hemorrhage into its substance. [J.S.]

3.—Meyer suggests the **reconstruction of serial sections of the brain** by drawing them on glass plates which are then superimposed. The method is rapid and satisfactory and makes it possible to take apart the plates for future study. [J.S.]

4.—Bullard has had a series of experiments performed upon cats in order to determine the **effect of intracerebral pressure**. The brain of a cat under ether will bulge through a trephine opening, and requires from 8 cc. to 17 cc. of water to maintain it in its normal position. Any external factor increasing blood-pressure will cause greater bulging of the brain. Heavy blows upon the skull also increase the cerebral pressure, the maximum observed being 47 ccm. This rise is apparently independent of the general arterial pressure. [J.S.]

5.—Kellogg describes a form of **subacute pressure neuritis** caused by slight trauma to the nerve. The symptoms are, tingling, or numbness in the little and ring fingers, followed by paresthesia in the ulnar distribution, and finally, well-marked anesthesia with vasomotor contraction in the fingers. There may be some disturbance of motion. The cases last for weeks, or even months, but complete recovery usually ensues. Treatment consists of removal of the cause, hot-air, massage, electricity, exercise, etc. [J.S.]

6.—Morton reports a remarkable case in which apparently contradictory symptoms were present. The patient, a man, at the age of 32, contracted a **severe fever** in Africa,

characterized by chills affecting the left half of the body. About two weeks after the onset there were pains in the left shoulder passing into the arm, and accompanied by swelling of the fingers and shiny skin. Later the calves of the legs became readily fatigued, there was weakness in both arms, and atrophy in the muscles of the left. The nerve-trunks of the left arm were very sensitive; the reflexes were greatly exaggerated. This exaggeration was variable from time to time. Later he developed severe cramps, and then atrophy of the muscles of the left shoulder, accompanied by fibrillary twitchings. There was typical reaction of degeneration in these muscles, but ultimately complete recovery occurred. Treatment was **antimalarial** and the application of static electricity in various forms to the affected muscles. [J.S.]

Edinburgh Medical Journal.

November, 1900. [N. S., Vol. viii, No. 5.]

1. Observations Upon General Paralysis and Its Occurrence in the Royal Navy. F. H. A. CLAYTON.
2. A St. Andrews Physiologist of the Past. FRASER D. HARRIS.
3. A Contribution to the Mechanism of Articulate Speech. S. W. CARRUTHERS.
4. Clinical Lectures on Circulatory Affections. Lecture III. On Acute Endocarditis. G. A. GIBSON.
5. Postoperative Pulmonary Embolism, Simulating Pneumonia. ALEX. MACLENNAN.

1.—Clayton has studied **general paralysis as it occurs in the Royal Navy**. He concludes that: 1. There is no one factor, invariably antecedent and connected directly with the disease. 2. That the influences that act remotely are usually conditions tending to interference with nutrition, and to promoting the growth of less highly organized tissues, while the proximate influences probably act by lowering vitality. 3. That the infrequency of nervous heredity argues against the disease being a mere wearing out of the highest nerve-tissue, as these persons, the nutrition of whose nervous system is so readily disturbed, would otherwise be the chief sufferers. 4. That a "specific" cause as yet unknown, capable of developing the disease *per se*, though often aided by various factors, and which usually selects those apparently most healthy and vigorous, both in mind and body, seems to be indicated by all the evidence. Assuming the morbid condition to be a parenchymatous degeneration there seems justification for considering the possibility, either of the elaboration within the body of some material, toxic to the highest tissues, or the failure to form something necessary for their nutrition. Though the nervous system is chiefly affected, a general malnutrition is evident. It was found that the use of alcohol, as a remedy, increased the number of seizures, and it was also noted that the seizures were more frequent when there was a change to a southerly wind. The indications for the treatment of the seizures are: (1) To assist in the destruction and the elimination of toxins by improving the condition of the blood, as by oxygen and by acting, as in uremia, upon the various excretory organs; (2) to relieve cerebral congestion by the use of the ice cap and ergot; (3) to check the explosiveness of the neuron by the administration of chloral in 15 to 20 grain doses. An equal amount of ammonium bromid perhaps prolongs the action of the former drug; (4) to maintain the strength of the patient and to avoid complications, such as hypostasis, inhalation of food and its results, diarrhea, and bedsores. In a suspected case a system of life in a warm climate with almost vegetarian diet seems worthy of trial. These requirements should be combined with absolute rest, attention to the excretory organs, and abstinence from alcohol. In the management of the established disease, the prevention of bedsores is of great importance. In order to accomplish this object, confinement to bed when the patient becomes liable to fall about or is constantly wet and dirty is essential. [J.M.]

4.—Gibson reports a case of **diplococcic infection**, resulting in **pleuropneumonia**, accompanied by great constitutional disturbance. In spite of treatment the patient steadily became worse and died. At the necropsy it was found that the aortic segments were ulcerated and extensively destroyed. On microscopic examination, the thrombus ad-

herent to the ulcerated aortic valves, was found to consist of diplococci with leukocytes and fibrin. It is highly probable that all cases of acute and subacute endocarditis are of microbic origin, and all may be therefore termed **infective**. The recognition of cases of the disease is undeniably difficult, because we find that not infrequently there is a total absence of any characteristic physical signs. [J.M.S.]

5.—MacLennan reports a case of **postoperative pulmonary embolisms, simulating pneumonia** after an operation upon a carcinoma of the breast. Usually emboli cause sudden death, and are due to sepsis, but in this case the patient lived 6 days, and the wound was found in normal condition at the necropsy. No embolus was found, but some of the branches of the axillary vein showed signs of thrombi. [W.S.N.]

Berliner klinische Wochenschrift.

September 10, 1900. [37. Jahrg., No. 37.]

1. Injurious Suggestions in Cases of Injury. W. SEIFFER.
2. Polyneuritis After Malaria and Landry's Paralysis. R. BAUMSTARK.
3. Experimental Investigations in Catheter Sterilization. M. KATZENSTEIN.

1.—Seiffer cites a number of instances showing the **baneful effects of inconsiderate suggestion**. The patients who had received trifling injuries were examined by physicians, and the latter, in stating the diagnosis, gave a gloomy prognosis. As a result some of the patients developed hysteria, others traumatic neurasthenia. [These things are not so likely to occur in this country: First, because our medical terms are not to any large extent taken from the vernacular and are hence unintelligible to the patient; and second, physicians are more cautious or more reluctant in giving a hopeless prognosis directly to the patient. D.R.]

2.—A case of **multiple neuritis due to malaria** in a German who for a comparatively short time resided in the tropics (Kamerun). [D.R.]

3.—Katzenstein reports a series of experiments which he undertook to determine the best method of **sterilizing catheters**. He found that by washing in soap and sterile water and allowing catheters to remain in 1:1000 mercuric chlorid the results by bacteriologic investigation were not satisfactory. The disinfection with formol vapor according to the usual methods is also unsatisfactory. He describes an apparatus which he devised for the sterilization of catheters by means of which it can be accomplished satisfactorily in 10 minutes. The formol vapor is developed from trioxymethylen, heated to a sufficiently high temperature to cause the vapor to stream through the catheters. Because of its affinity for formol, dehydrated phenylhydrazin is used at the other end to help draw the vapor through. [M.B.T.]

September 17, 1900. [37. Jahrg., No. 38.]

1. A Case of Diffuse Chronic Skin Edema. HEINRICH ROSIN.
2. A Reduplication of the Left Index Finger and a Triple Right Thumb. JOACHIMSTHAL.
3. The Amount of Eye Disturbance in Hemianopsia.
4. Polyneuritis after Malaria and Landry's Paralysis. R. BAUMSTARK.
5. Another Case of Polyneuritis Following Malaria. C. A. EWALD.

1.—Rosin's patient was a woman, 42 years of age, in whom an **edematous swelling** developed, beginning in the face and extending down on to the chest, over the back of the hands, the neck, the shoulders, the forearms, and the back, and later also to the legs. Excepting a functional murmur over the heart, all other signs of disease were absent. There was no albumin in the urine and no casts. The condition did not resemble myxedema and there was a normal thyroid. The edema being chronic, it could not be placed in the category of ordinary angioneurotic edema, and the author felt he could do nothing more than call it a **diffuse chronic edema of the skin**, probably dependent upon some circulatory disturbance of unknown nature. [D.R.]

2.—The case of a girl 9 years old is reported who had a **double index finger** of the left hand and 3 thumbs of

the right hand. The parents and a younger brother were normally developed. The anomaly is carefully described and photographs and x-ray pictures are given. [M.B.T.]

5.—The patient was a man 31 years old, who had lived in the Camaroons and had had a mild attack of malaria during which, however, the parasites were not found in the blood. Thereafter he developed girdle sensation, weakness in the legs, impairment of memory, loss of appetite, and nausea. During the sea voyage the symptoms became aggravated, and there were involuntary discharges of urine. After his arrival at Berlin it was discovered that he had paralysis of the lower extremities, loss of patellar and skin reflexes, and tenderness of the calves to pressure. Speech was hasty and the patient often lost the thread of conversation. Later Romberg's symptom developed. The pupils reacted sluggishly in accommodation, but properly to light. The man improved gradually, and nothing remained except the paralysis of the extensors of both great toes. Ewald believes that the case was one of **multiple neuritis due to malaria**. He also relates another interesting case in which the diagnosis was difficult. A man who, with the exception of a short journey to Wiesbaden, had never left Berlin, and had lived in a healthy part of the capital, developed a tertian intermittent fever lasting 8 months, and resisting all forms of treatment. The blood examination gave negative results. There was a suspicion of syphilis, but the patient did not improve under antisyphilitic treatment. Ewald was unable to come to a conclusion, except that the man may have been a **malingerer**, since he had become a pensioner and was not inclined to resume work. One day, shortly before his expected dismissal from the hospital, the temperature suddenly became normal and remained so. Of course, as Ewald admits, it is difficult to conceive how a man could simulate a tertian intermittent fever during such a long period of observation. [D.R.]

September 24, 1900. [37. Jahrg., No. 39.]

1. The Role of Fixed Cells in Inflammations. P. BAUMGARTEN.
2. Symptomatology of Facial Paralysis. L. MOHR.
3. The Medical Supervision of the Cure of Obesity. E. H. KISCH.
4. The Treatment of Dropsy of the Skin by Means of a Cupping Siphon Apparatus. K. MIURA.
5. The Physiology and Pathology of Bile-Secretion. ALBU.

1.—Will be abstracted when finished. [See PHILADELPHIA MEDICAL JOURNAL, July 29, 1900.]

2.—Oppenheim last year described a case of **facial palsy** developed in childhood in which a current applied to the facial nerve in the healthy side too weak to produce a noteworthy contraction on that side, brought about a contraction of the muscles of the chin and lower jaw on the paralyzed side. He explained this on the basis of a **passage of fibers** from the healthy facial nerve **across the median line** into the adjacent muscles. Bernhardt took issue with him, and attributed the phenomena to an interlacing of the muscles. Mohr, in the present paper, proves that Oppenheim's view is the correct one. [D.R.]

3.—In his treatment of **obesity**, Kisch allows the patient 160 grams albumin, 80 grams carbohydrate, and 11 grams fat per day. As to **fluids**, the plethoric obese may drink according to desire. In the anemic obese, the quantity is restricted. In order to regulate walking exercise, the patients are advised to employ a **pedometer** which, when placed in the pocket, registers the number of steps taken. Daily **weighing** is important, but, to be of value, it must be associated with various bodily measurements. The **dynamometer** is employed to control the strength—if there is a loss of strength, the treatment is too intensive; the **sphygmograph** should also be called into use, as it affords a check on the heart-action. It is likewise important, especially in fat anemics, to determine the difference between the water ingested and that eliminated in the urine. The quantity of water allowed should be just that which is quickly eliminated from the body. The patient in whom the occurrence of debility is to be feared during the course of treatment, careful metabolic studies are necessary. They are, however, difficult. [D.R.]

4.—Miura recommends a **suction cup**, provided with attachment for a rubber tube in the **treatment of anasarca**. The apparatus is filled with saline solution and in-

verted over a tense area that has been sterilized and incised in several places. In the course of a few hours 1 or more liters of fluid can thus be drawn off. [D.R.]

5.—Will be abstracted when finished.

Münchener medicinische Wochenschrift.

September 25, 1900. [47. Jahrg., No. 39.]

1. The Present Standpoint in the Question of the Therapy of Chronic Suppuration of the Middle Ear and the Formation of Cholesteatoma. ERNEST LEUTERT.
2. Ankylosing Inflammation of the Vertebral Column. A. KUHN.
3. The Dissemination of Carcinoma. F. REICHE.
4. The Albumin Food-Material "Roborat" and its Behavior in the Organism, Combined with Similar Preparations. E. LAVES.
5. Eight Cases of Sausage Poisoning. LAUK.
6. The Question of Traumatic Spinal Diseases. M. OBERST.
7. The Diagnosis of Death from Starvation.

1.—Leutert has written an elaborate article on **suppuration of the middle ear**, and in it he discusses thoroughly the formation of cholesteatoma. Speaking first as regards the diagnosis of the original focus of pus formation in the ear, he says that the diagnosis is greatly helped by noticing the position of the perforation in the drum. It is, however, possible to have a perforation in the attic without extension into the lower part of the tympanic cavity, and in these cases the drum membrane is not perforated; indeed, sometimes is even of a normal color. If the perforation is seated in the lower portion of the drum, especially in the anterior part, it is most likely that the pus comes from the eustachian tube. A large perforation near the middle of the drum indicates the involvement of the tympanic cavity alone. When the attic is involved the perforation is found in Shrapnell's membrane and does not extend to the bony margin. If the perforation does extend to the margin and is located in the posterior portion, it is an indication that the antrum is the seat of the disease. Involvement of the attic alone is a very rare condition. As to the formation of cholesteatoma, it is a noteworthy fact, that in order for the pavement epithelium to proliferate and form the horny mass, there must be destruction of the already existing cuboidal epithelium. The growth of the cholesteatoma is favored by what might be termed a middle grade of inflammation, and when the degree of inflammation extends above this, the chances for the proliferation of the epithelium is unfavorable, even to a cessation of its growth. If the degree of inflammation is too slight, the growth is slow and the resulting mass only becomes of importance after adult life has been reached. Koerner says that one should distinguish between the formation of true cholesteatoma and the formation of a mass of proliferated epithelium. He says that true cholesteatoma is a fairly frequent disorder and exists only where there is no perforation of the drum. He goes on to recite a number of instances in which this may be noted. [G.B.W.]

2.—After a brief review of the literature on **ankylosis of the spinal column**, including rhizomelic spondylosis, Kuhn reports his own case—a girl of 12, of rheumatic ancestry, who began to have pains in the ankle at the age of 8; the right knee also became painful and enlarged, and later the hands were involved. The spine became distorted and the head deflected toward the right, and eventually the hip-joints were involved. The knees assumed the genu valgum position, the movements of the spine were much limited, and the patient could lift herself from the bed only to a slight degree. She could not stoop to pick up anything from the floor. The shoulder joints were free, but the elbows could not be fully extended. The author looks upon the case as one of **arthritis deformans**; it was somewhat atypical, in that the small joints were still movable, although they were decidedly swollen. In typical **rhizomelic spondylosis** the small joints escape. The x-ray pictures gave a good view of the deflection of the spinal column. [D.R.]

3.—There has been a marked increase in the **frequency of cancer in Hamburg**, affecting both sexes, but especially the male. Thus, in 1873 there were 65 deaths from carcinoma for each 100,000 of living inhabitants; in 1899

there were 100; 8 for each 100,000 living. Roger Williams, who had also noticed an increase in the mortality from cancer, believed that it was attributable to an improper mode of living, and he accused particularly excessive meat diet with insufficient bodily exercise. A statistical study of the different strata of the population of Hamburg and their liability to cancer shows that the mortality from the disease is **independent of the water-supply, the density of population, wealth and poverty, altitude, or sub-soil**. A very striking result shown by Reiche's study is the enormous preponderance of carcinoma of the digestive tract. There has been a particular increase in carcinoma of the esophagus, to which the male sex is far more liable than the female. The author does not offer any explanation of the spread of cancerous disease, simply giving the facts without comment. [D.R.]

4.—**Roborat** is a white, almost tasteless, impalpable powder, prepared from grain; it is easily borne and nearly completely utilized in the system. Uric acid, creatinin, and phosphates are diminished in the urine under its use, and it is capable of increasing the body weight. It also contains an abundance of lecithin and glycerin-phosphoric acid, and the author recommends it as a valuable nutritive substance. [D.R.]

5.—The symptoms of **sausage poisoning (botulismus or allantiasis)**, which must be separated from those of meat poisoning, are usually severe and of long duration. They set in from 12 to 24 hours after the ingestion of the sausage, and consist of malaise, and feeling of pressure in the stomach, and nausea, and sometimes vomiting; diarrhea may be present, and also dyspnea and a sense of suffocation. The prostration is generally well marked and, as a rather characteristic phenomenon, there is a diminution of all secretions and a consequent dryness of the skin and mucous membranes. Frequently there is an inflammatory process, with membranous deposits in the throat resembling diphtheria. Nervous disturbances, particularly of the eyes, are common; foggy or color vision, transitory blindness, and sometimes diplopia, are noticed. The pupils are usually dilated, and react to light sluggishly or not at all. Ptosis is a frequent, and by some considered a pathognomonic symptom. There is dysphagia and sometime severe cough on swallowing, and eventually an inspiration pneumonia. The voice is hoarse and toneless. Fever is usually absent, unless there are complications. The pulse is small and feeble. Strangury and ischuria may be present. Death occurs in from 8 to 10 days in consequence of respiratory paralysis. Examination at autopsy reveals no pathognomonic features. The author reports 8 cases of this affection produced by eating improperly smoked pork sausage. No examination of the sausage was made, as none could be obtained. Of these 8 persons, 1 died. [D.R.]

6.—It is undoubtedly true, that in many cases a rarefying **osteitis of the spine** will develop several weeks or months after an important injury, and finally the disease may progress until considerable destruction of tissue has taken place. Some authors have applied the name "Spondylitis traumatica" to this condition, but this is a misnomer, as the lesion is not of an inflammatory nature. Rather it resembles such cases as fracture of the neck of the femur, in which, owing to early use of the part, a bending of the neck occurs, causing a condition very closely allied to coxa vara. [G.B.W.]

7.—The author takes issue with Hartmann (PHILADELPHIA MEDICAL JOURNAL, October 20, 1900, p. 747) in his statement that there are no characteristic signs of death from **starvation**. He believes that an examination of the urine may sometimes be possible, and in that case the presence of **acetone or diacetic acid** shown with the ferric chlorid test would be diagnostic. [D.R.]

Wiener klinische Wochenschrift.

September 27, 1900. [13. Jahrg., No. 39.]

1. The Neutral-Red Staining of Leukocytes. HUGO MARCUS.
2. Acetopyrin a new Antipyretic. JOSEF WINTERBERG and ROBERT BRAUN.
3. A Case of Elevation of the Uterus with Separation of its Body from the Vaginal Position. H. LUDWIG.
4. Hyperglobulia and Enlarged Spleen. Hyperglobulia and Splenectomy. V. COMINOTTI.

1.—Marcus has carried out experiments similar to those reported by Plato (PHILADELPHIA MEDICAL JOURNAL, November 24, 1900) and has found that **normal leukocytes** are stained in the fresh state by a **neutral-red**, while those that are damaged do not stain. [D.R.]

2.—**Acetopyrin** is a compound of acetyl-salicylic acid and antipyrin. It is a crystalline powder, soluble with difficulty in cold water, but more readily soluble in warm water, and easily soluble in alcohol, chloroform, and warm toluol, and with difficulty in ether and petroleum ether. The authors have experimented with it in about 100 cases and have found that it has advantages which render it superior in rheumatism to sodium salicylate and other derivatives of salicylic acid. It does not depress the heart. [D.R.]

3.—Of all the changes in the position of the **uterus**, its **elevation** is the most rare. It may be caused by adhesions to adjacent organs above, drawing the uterus upward, as has been observed after cesarean section; or it may result from a tumor developing in the small pelvis, pushing the uterus upward; or a tumor above, as of the ovary, by its upward tension, may lead to elevation of the uterus. The changes in position of the uterus often lead to changes in the form of the organ itself, increasing its length and sometimes so distending the cervix as to entirely obliterate the cervical canals, and even to sunder it from the body of the organ. The writer has never seen a case of this kind, but Iversen reports one occurring in a patient aged 3½ years. The writer reports the case of a patient aged 15 in which the upward tension, produced by an ovarian tumor, had raised the uterus until the cervix appeared as an elongated fibrous cord, scarcely recognizable. [W.K.]

4.—After briefly discussing the conditions under which **hyperglobulia** (an excessive number of red corpuscles) occurs, Cominotti reports the case of a woman, 33 years old, in whom, on account of an enormous enlargement of the spleen of obscure causation, a **splenectomy** was performed. The spleen weighed 4½ kilograms (about 9 pounds). Several blood examinations before the operation showed from 7,000,000 to 7,500,000 red corpuscles, 6,000 to 6,300 white cells, and 75 to 80% hemoglobin. Five days after the splenectomy the red corpuscles were 6,500,000, the white 7,200, and hemoglobin 70%. Two days before the patient's death of sepsis, about a month and a half after the operation, there were 5,300,000 red cells. No microscopic examination of the organs was made. The occurrence of hyperglobulia in cases of disease of the spleen or after splenectomy has been attributed to the failure of the blood-destroying action of the spleen; but as in some cases of splenectomy there is hypoglobulia, a satisfactory explanation of the relation of the spleen to the red corpuscles is still wanting. The author reports a second case of **splenectomy**—in this instance for **malaria**. The patient was a woman, 34 years old. About 90 days after the operation she again had intermittent fever, which yielded to quinin. In her case there was a moderate hyperglobulia, 5,500,000, several years after the operation. The white corpuscles were not increased. A differential account gave 40% polynuclear cells, 1% large mononuclear, 47% small mononuclear, 2% transitional, and 10% eosinophile cells. [D.R.]

Deutsche medicinische Wochenschrift.

November 1, 1900. [26. Jahrg., No. 44.]

1. Concerning Functional Heart Diseases. HOCHHAUS.
2. The Selection of Suture Material. KRÖNIG.
3. Concerning Phloridzin Diabetes. A. SEELIG.
4. Subphrenic Abscess. O. KROHNE.
5. Are there some Genetic Relations Between General Neuroses and Appendicitis? O. SCHAUMANN.

1.—Hochhaus first gives a more or less general discussion of **functional cardiac disease**, stating as the chief symptoms first, subjective, consisting of a feeling of pressure or even of pain in the region of the heart with sensory symptoms elsewhere in the nervous system; and secondly, objective, consisting chiefly of consciousness of changes in the cardiac action. He has made a study of the blood-pressure with the instruments of Gärtner and Riva-Rocci in order to determine whether these show any characteristic changes. He found the pressure in 36 cases of cardiac neuro-

ses almost constantly high, varying usually between 160 and 190 mm. of mercury in men, and in women between 150 and 170; the normal is commonly between 100 and 160. Hochhaus admits that excitement in these nervous people is likely to raise the pressure considerably, but he has never drawn conclusions from the first examination. The result of repeated examination showed almost always that the pressure subsequently was 10 to 15 mm. lower than at the first examination. This increase in blood-pressure is not absolutely distinctive of **cardiac neuroses**, of course, but in most cases of organic disease the pressure will be found not more than 140 mm.; if the pressure is found constantly high it points toward a cardiac neuroses. A more important point is that if blood-pressure is constantly high in cardiac neuroses it points toward almost unavoidable ultimate damage to the heart and arteries because of this continued high pressure; several authors have already pointed out that arteriosclerosis is a common result of cardiac neuroses. The causes of increased pressure may be increased cardiac action, or abnormal contraction of the peripheral arteries; probably both are active, but in most cases Hochhaus thinks that the chief cause is increased energy of the cardiac action. He has strengthened this belief by observing these patients with the fluoroscope. He found that there was quick, energetic cardiac contraction, the shadow produced by the heart becoming suddenly decidedly smaller than is observed in normal hearts during contraction, hence indicating that the contraction was more complete. Hoffmann has stated that there is an abnormal movability of the heart in cardiac neurosis. Hochhaus has been unable to observe this. As to treatment he recommends small doses of digitalis, about ½ of a grain, in combination with quinin. [D.L.E.]

November 8, 1900. [26. Jahrg., No. 45.]

1. A Case of Aneurysm of the External Iliac Artery with Rupture and Subsequent Ligature of the Common Iliac Artery and Aorta. W. KÖRTE.
2. Bacteriology of the Lymph. CZAPLEWSKI.
3. Dermatitis from Primrose Poisoning. A. PIZA.
4. Selection of Suture Material. KRÖNIG.

1.—Körte found an **aneurysm** of the right **external iliac artery** in a young man, 29 years of age, robust, and otherwise healthy, with no specific history. The cause was supposed to be the effort in mountain climbing. Körte **ligated** the right **common iliac** with one catgut and one silk ligature; the patient reacted well from the operation with only slight symptoms, tympanites, hiccup, paralysis of the bowel, etc. In 3 days all had disappeared. The leg, which was pale, regained its normal color in about an hour. The tumor stopped pulsating but did not decrease in size, and 37 days afterward it still remained. Fearing a hematoma which would develop into an abscess, a small trocar was passed into it. A quantity of dark red blood escaped, followed by arterial bleeding, which could not be controlled. The **aorta** was then **tied** above the inferior mesenteric, but the patient never reacted from the shock. Stimulants and normal salt-solution had no effect and death followed 1 hour afterwards. The failure to form a hard clot in the aneurysmal sac was due to the free anastomoses (1) the inferior epigastric and the internal mammary; (2) the circumflex iliac with the lumbar branches; (3) the superior and inferior mesenteric with the hemorrhoidal and pudendal arteries; (4) the spermatic with epigastric and hypogastric; (5) the vaso vasorum. The necropsy also showed that the common iliac had been obliterated by the first ligature. [W.S.N.]

2.—Czaplewski discusses the paper presented some time before by Nakanishi, in which the latter author described a **bacillus** as a constant finding in **vaccine pustules**. He claims in the first place that Nakanishi has misrepresented the statements made by Czaplewski concerning *Staphylococcus quadrigenus*, because the latter author never stated positively that the latter organism was the cause of vaccinia. He stated, however, that this organism can be found in fresh calf lymph. It can be found in sections made from the vaccine pustules from the first day on and always in increasing number, and it has been found possible by inoculating this organism to produce pocks and pustules in calves which when further inoculated into calves and children caused indubitable vaccinia. But he stated on the other hand that there were certain objections to the acceptance of the

staphylococcus as the cause of vaccinia. One point of importance is that this staphylococcus was found as a regular saprophyte on the skin of healthy calves, and for this reason and others it was decided that the positive results obtained in the transmission experiments were due merely to some form of stable infection which was transmitted in the experimental work. Czaplewski therefore decided that no etiologic importance could be given to Staphylococcus quadrigeminus, but he does consider that this staphylococcus is of importance in that it is a new variety of organism differing from Staphylococcus aureus and Staphylococcus albus. As to the bacillus described by Nakanishi, Czaplewski states that this bacillus has been repeatedly observed by other authors, and it is generally admitted that it belongs to the class of pseudodiphtheria bacilli and has nothing to do with the production of vaccinia. In a note Czaplewski states that Nakanishi has himself recently stated that the bacillus which he described has no etiologic relation to vaccinia. [D.L.E.]

3.—Piza directs the attention of the general profession to the fact that the **primrose** may cause a **serious dermatitis**. This fact is well recognized by dermatologists and most of his statements are derived from their previous writings. The chief symptoms produced are, general nervousness, sleeplessness, loss of appetite, some weakness, reddening of the skin, and the development of papules and vesicles. [D.L.E.]

November 15, 1900. [26. Jahrg., No. 46.]

1. Final Report of the Doings of Professor Koch's Malaria Expedition.
2. Specific Identification of Egg-Albumin by a Biologic Method. ULENHUTH.
3. The Phenomenon of the Freezing Point of Blood in Typhus Abdominalis. WALDVOGEL.
4. The Use of Hydrogen Peroxid in the Treatment of Wounds. O. MÜLLER.
5. The Pathogenesis and Therapy of Asthma. COHEN-KYSPER.
6. Sympathetic Ear Diseases. RHESE.

1.—Koch states that at Ponape he made investigations of 79 children, and in no case were the characteristic **clinical signs of malaria** found, nor were the parasites seen in the blood; hence this region seemed to be free of **malaria**. There were in this region also but very few cases of yaws. In Seipan, 24 children and a number of adults with various affections were investigated, and parasites and clinical symptoms of malaria were always absent. It was decided, therefore, that in this region also malaria was absent. Yaws was frequent and Koch thinks that it is very often called syphilis, and that the general acceptance of the belief that syphilis is very common in the South Sea, and particularly in the German colonies, is largely due to confusing yaws with syphilis. In Seipan he observed a peculiar affection which reminded one of beriberi. It ran a course with fever and with permanent paralysis. One case with this affection showed a hemiplegia, and others a rheumatic condition of the joints and muscles. There was, however no distinct case of beriberi. In Egypt, particularly in the region about Cairo, he considers that malaria is undoubtedly prevalent, since a number of cases were observed. [D.L.E.]

2.—Ulenhuth describes some very interesting results from the injection of **egg albumin** into rabbits, and the subsequent testing of their **blood-serum** concerning its **influence upon solutions of albumin**. His results were as follows: Repeated intraperitoneal injection or intrastomachal ingestion of the albumin of hens' eggs produced some substance in the serum of rabbits so treated which, when the serum was added to a solution of hens' egg albumin caused either cloudiness or precipitate in the solution. The same occurred in a solution of albumin of pigeons' eggs. The serum of the rabbit treated with doves' egg albumin had the same influence noted above upon solutions of albumin from doves' eggs. This reaction with the serum occurred only with solutions of egg albumin, and not with solutions of various other forms of albumin. The delicacy of this test for egg albumin is much greater than that of ordinary chemical methods. It showed less than one part in 100,000. The serum could be heated to as high as 60° for over an hour without in any way interfering with the reaction. [D.L.E.]

3.—Waldvogel in determining the **freezing point of the blood** used the clinical method described by Drazer. It consists in placing a wide test tube in the freezing mixture, hanging in this test tube a narrower one which contains the fluid to be investigated, and in which also a narrow thermometer graduated to $\frac{1}{100}$ of a degree is so placed that it does not touch the sides of the tube. The blood was taken from the arm vein by means of a canula, then placed on ice for about 48 hours, and the serum pressed out and used in the test. The normal varied from 0.54 to 0.58. The most important part of his investigations was the observation that the highest freezing points were found in convalescents, the lowest in the fatal cases. Most of the cases with extremely low freezing points died. One is still living and free from fever, but is in extremely bad condition. The investigations of the urine for albumin and casts, the mental conditions, and other symptoms, indicated that uremia was not the cause of the high results obtained in most of these cases of typhoid, and Waldvogel believes that there is no good evidence that high values are found in uremia. He thinks uremia is to be attributed rather to the quality of the substances found in the blood than to the quantity; in other words, that it is not the accumulation of large amounts of poisonous matter in the blood, but the accumulation of very poisonous substances. His investigations of the freezing point of the urine, the amount of sodium chlorid in the urine, the amount of nitrogen, and the total amount of the urine also speaks decidedly against the possible belief that the high values were due to poor kidney function. The freezing point of the urine was about normal in all except one case. The diazo reaction was also tested. Waldvogel expresses himself as convinced that this reaction is of little or no value in diagnosis. There was no direct relation between the activity of the agglutination reaction, and the freezing point of the blood. The explanation of the high values for the freezing point of the blood was not to be found in the loss of water and thickening of the blood. The estimation of the salts of the blood showed that there was no definite increase in them, and the alkalinity was somewhat reduced, hence the salts were not increased. He believes that the increase was due to an increase in the albuminous bodies. The same thing has been observed in diphtheria antitoxin, and it is possible that the increase in albuminous bodies is really an increase in antitoxin; but this is an unsettled question, and Waldvogel does not insist that the increased values in the freezing point indicate an increased amount of antitoxin. [D.L.E.]

4.—Müller believes that **hydrogen dioxid** is one of the best solutions for **washing out a wound**; it cleans the wound of pus and detritus as well as destroys the bacteria by its antiseptic action. It is also a deodorizant and is itself odorless; when applied it causes no pain and these properties make it especially valuable. These conclusions have been reached both by its practical application and experiment; the latter consisted of different bacteria cultures being rendered sterile when mixed with hydrogen peroxid and these compared with control cultures and with other antiseptics. [W.S.N.]

5.—The theory put forward in a somewhat theoretical article is this: He admits the reflex origin of asthma, but he does not place the hyperesthetic zone in the terminal branches of the trigeminal nerve, but in the central nervous system; that is, the **hyperesthesia in cases of asthma is chiefly of a psychic character**. He admits the presence of other hyperesthetic areas, however, and his theory of asthma is chiefly that there is, owing to more or less stenosis in the nose or nasopharynx, or to chronic bronchitis, an almost unnoticed but practically constant shortness of breath, which is scarcely appreciated by the patient himself, but which excites an abnormal sensitiveness of one's appreciation of dyspnea. The onset of a little more swelling of the bronchial mucous membrane, of a slightly greater stenosis along the upper air-passages, the exposure to irritating dust, vapor, or other substances, and similar conditions, are sufficient to increase this half-unnoticed feeling of dyspnea to the point which brings on spasm of the bronchial tubes and asthma. The author lays great stress upon the importance of the local conditions, however, such as slight nasal stenosis, in causing asthmatic attacks through the production of this constant subconscious feeling of dyspnea, and he advises in all cases in which

there seems to be any stenosis in the nose, total or partial resection. [D.L.E.]

6.—Rhese believes there is a low grade inflammation of the middle ear, which may be due to irritation from the trigeminal nerve or extension of inflammation from surrounding parts; great benefit will be noticed by **removing the hammer**; this allows the parts to rest and the inflammation usually subsides and the hearing improves. In cases of long standing, when both ears are affected and the hearing is very defective, this operation is not to be recommended. [W.S.N.]

Centralblatt für innere Medicin.

November 10, 1900. [24. Jahrg., No. 45]

1. Eupyrin. OVERLACH.

1.—Overlach was led to the production of **eupyrin** by his search for an antipyretic that had no depressing effect upon the circulation. Eupyrin is the ethyl-carbonate of vanillum in combination with P-phetidin. It is said to be without unpleasant taste or odor; to have definite antipyretic effects without any depressing influence; contrary to phenacetin it does not produce any spectral evidence of the presence of methemoglobin except when given in very large doses, and even then the spectrum of methemoglobin is exceedingly weak. It has decidedly stimulating instead of depressing effects. The patients have some tendency to habituate themselves to the use of the drug, however, because of the pleasant stimulation which they themselves observe. It does not seem to have any special value as an antineuralgic. It is, however, a useful antipyretic, and is most important in children and old people as a mild and apparently non-poisonous antipyretic. [D.L.E.]

November 17, 1900. [24. Jahrg., No. 46]

1. Bacteriological Investigations of the Blood in Pneumonia. A. PROCHASKA.

1.—The investigations were carried out by making direct preparations from the blood by cultures and animal experiments. Prochaska found that by the use of small quantities of blood the results were very variable, hence he used larger amounts, taking the blood from an arm vein with a syringe, and inoculating 4 or 5 cc. on bouillon. As controls he inoculated a few drops on bouillon and on agar slants. The results were practically constant in the cultures in which large amounts were used, but were variable in the other cases. Ten cases are reported which were of moderate severity on the average; 6 of them recovered without any marked signs of severe infection, while 4 ended in death. In all of these cases the large amount of blood gave regularly cultures of the pneumococci. Prochaska thinks that the use of large amounts of blood will practically result regularly in the discovery of the pneumococcus during life. [D.L.E.]

November 24, 1900. [24. Jahrg., No. 47.]

1. The Effect of the Distillate of Coffee and Tea Upon the Respiration and the Heart. C. BINZ.

1.—There is a brief review of the previous literature upon this subject, then a report of a series of experiments, the results of which are summarized as follows: The caffeine-free distillate of roasted coffee increased the respiration, particularly after abstinence from food. This was not of long duration, and was the result of an increase in the number of respirations, not in their amplitude. Some effect was seen even in dogs who had been completely paralyzed with alcohol. There was some slight muscular irritability and slight psychic excitement after taking the distillate. The frequency of the pulse was not changed. The distillate of a good Chinese tea gave the same results, though less marked. These results are against the statement of Lehmann that the aromatic substances contained in a coffee distillate have no notable effect upon the brain or muscles even in large doses. As a general result Binz states that we may consider that the chief effect of coffee and tea is due to caffeine. He refers to legends which indicate the effect of coffee and tea. One story is that a poor dervish in the valley of Yemen frequently noticed that his goats were particularly lively on

their homeward way in the evening. He saw that they ate the leaves, blossoms and branches of a plant, and when he himself took this he found that he became so happy that his neighbors considered that he was drunk with wine. This he explained to them was an error, and showed them the plant, and it was then clear to them all that Allah had given coffee to believers to guard them from the dangerous juice of the grape. Another story stated that a friar having learned that the goats who ate coffee leaves were exceedingly lively gave the leaves and fruit to his monks with the result that while the monks had previously been lazy and sleepy in their nightly duties they became active and happy in the discharge of them. A third story was that a priest of Buddha went from Japan to China in order to spread his religion. Since sleep overtook him at night he was unable to carry on his work excepting during the day. In his religious frenzy he cut off his eyelids and threw them from him. Where they fell upon the earth there sprang up the tea plant, and thus the religious frenzy of the priest provided for believers a goodly drink. [D.L.E.]

Centralblatt für Gynäkologie.

November 3, 1900. [24. Jahrg., No. 44.]

1. The Pathology of the Placenta. E. MARTIN.
2. Upon Spontaneous Gangrene of the Bone in the Puerperium. E. WORMSER.
3. Upon Treatment of Puerperal Fever. VICTOR STEINER.

1.—Martin, in the spring of 1899, began his examinations to prove the existence of **syncytical growths in the eclamptic placenta**, and he now confirms the opinion of Bulius and Fink that these growths begin about the seventh month of pregnancy. Their frequency and strength vary, often being small in eclamptic and nephritic placenta. He concludes, therefore, that these syncytical growths are typical neither of eclampsia nor nephritis, but are the normal condition at the end of pregnancy. [W.K.]

2.—Wormser gives a detailed report of a case of gangrene of the bone of the foot during the puerperium, occurring in a healthy woman, aged 23. Six days after a normal delivery, she complained of pain in the left leg, which on the twelfth day became localized in the left foot. The disease advanced rapidly, and on the thirty-ninth day the foot was amputated, with recovery of the patient. The direct cause in this case seemed to be the entire cessation of circulation, owing to an extended thrombus in the veins, probably due to an embolism in the arteria tibialis antica. A symptomless endocarditis had developed during the puerperium, which must come into consideration as a cause of the embolism. Wormser quotes a number of cases of this rare condition collected from literature. One characteristic sign is a dry burning, though in cases of general sepsis with putrefaction of the thrombus there comes a moist gangrene. Other signs are severe pain and the presence of dead tissue, with, in most cases, a distinct demarcation. Accompanying symptoms are fever and rapid pulse, due partially to the thrombosis or endocarditis, and partly to the absorption of the decaying tissue. The diagnosis is not difficult, and rests upon the discoloration and coldness of the skin, loss of sensibility, etc. The prognosis is difficult. To foresee the result is as impossible as to hinder it. It remains for us only, as soon as signs of obstructed circulation are evident, to secure, as far as possible, conditions favorable to circulation, the accomplishment of venous reflux, and increase of heart action. Perhaps the use of leeches would be justified in order to prevent further formation of blood-clot. [W.K.]

3.—Steiner emphasizes the fact that in the hospital at Hagenau, in cases of puerperal fever, Baidert before all requires the cleansing of vagina and uterus through irrigation and disinfection; of the former with lysol solution (1:1000), the latter by means of a thick male catheter with $\frac{1}{2}\%$ kresol on account of its nonpoisonous properties and transparency. When any abdominal inflammation is present an icebag should be used. It is also considered of extreme importance to keep the intestines in a quiet condition if there are signs of peritoneal inflammation due to pain in uterus or adjacent organs or an existing parametritis or perimetritis; and he refers to a case in which after 8 days' fever the temperature at once sank to normal when

the evacuation of the bowels ceased and a rapid recovery followed. He reports 2 cases in which serum was used in the treatment of puerperal fever, but reaches no definite conclusion as to its value. [W K.]

Neurologisches Centralblatt.

November 1, 1900. [19. Jahrg., No. 21.]

1. Further Communications Upon the Electric Irritability of the Spinal Cord in Decapitated Persons. A. HOCHÉ.
2. Progressive Hemiatrophy of the Face. A. HOFFMANN.
3. The Conduction of Sound by the Cranial Bones in Disease of the Brain and its Membranes. F. WANNER and H. GUDDEN.

1.—As a result of the active interest and participation of the authorities, Hoche was able to study the **spinal cords** of 2 men in less than 3 minutes **after their decapitation**. These, in connection with 2 cases already studied, have led to various interesting results. The first patient for the first 8 minutes of the investigation showed active, quick, muscular contractions. If the electrodes were placed near the anterior columns, the arm on the same side moved; if near its posterior columns, both arms moved; if very strong currents were employed, and the electrodes placed near the anterior columns, both arms moved, and the leg on the same side. At the end of 8 minutes the contractions became slow and worm-like, resembling those of muscular degeneration; nevertheless, if the needle was plunged into the tissue for a distance of $\frac{1}{2}$ to 1 cm. so that portions of the spinal cord not exposed to the air were touched, the contractions again became active. The second case was obtained 3 minutes after execution, and practically the same phenomenon observed. The diminution in the activity in the exposed cross-section occurred 15 minutes after death. If the left posterior root was stimulated, the left arm moved; increase in the amount of electricity caused movement also of the right arm, showing that the first phenomenon was not due merely to fibers passing directly from the posterior root to the anterior horn on the same side. Nor can the fact be ascribed to the irritation of the fibers, because if such were the case the limbs would be more frequently stimulated. Hoche concludes that the human spinal cord maintains its vitality for about $\frac{1}{4}$ of an hour after decapitation; that the movements were due to the stimulation of the internal spinal portions of the roots. As the stimulation only involves the segments to which the electrode is applied, it will be possible to obtain quite accurate results regarding the motor innervation of the cervical segments. He notes, also, that in both cases the patellar reflexes were lost immediately after decapitation; unfortunately it had not been possible to determine their presence during life, nor was it possible to exclude the influence of shock. [J.S.]

2.—The first patient was a boy who, at the age of 5, had struck the right cheek against the edge of a paving-stone. A few months later, the skin in this region became pale, and this area gradually extended. The skin became thinner, and the whole **right side of the face developed less rapidly** than the other. There were no other disturbances; the tongue was not atrophied, and the pharyngeal reflexes were normal. As a result of the prolonged action of the anode of the galvanic current ($\frac{1}{2}$ hour and more), considerable improvement has occurred. The second case, a woman of 42, had suffered for 17 years with severe attacks of facial neuralgia. Only within the last 6 months has any change been observable in the face. The left side has become smaller, the skin paler, and the bones more prominent. The 2 cases are interesting because in the first the traumatic involvement is apparently very clear, and in the second the fact that the neuralgic pains preceded the atrophy for such a long period, is sufficient proof that they were not secondary, and that the disease is rather a trophoneurosis than a form of skin disease. [J.S.]

3.—Wanner and Gudden continue their description of the results of investigations on patients. They conclude as follows: In cases of **doubtful diseases of the central nervous system**, a distinct shortening of bone conduction without the characteristic accompanying symptoms of disturbance of the hearing, even when normal hearing persists, it is justifiable to diagnose **organic changes in the skull**. This symptom is more valuable because it is practi-

cally impossible for a person to simulate it. Unfortunately the presence of normal bone contraction does not justify the exclusion of organic disease, it is probable that some alteration takes place in the bone, which allows the sound-waves to become more rapidly dissipated. Experimentally it has been found that hard substances, such as dry, macerated bone, do not diminish the period of contraction in normal persons, but soft substances do diminish it very considerably. Sound may also be conducted from one living head to another until 6 have been placed in line. In old age a certain amount of diminution in bone conduction occurs. [J.S.]

Revue de Médecine.

August 10, 1900. [20me Année, No. 8.]

1. Sadism Produced by a Bull-Fight. CH. FÉRÉ.
2. On the Hereditary Syphilitic Diseases of the Spinal Cord in Newborn Children and in Infants at the Breast. DE PÉTERS.
3. Persistence of the Ductus Arteriosus. G. GÉRARD.
4. Acute Dysenteric Hepatitis and Its Treatment by Bleeding the Liver. PAUL REMLINGER.

2.—De Péters has studied the **hereditary syphilitic diseases of the spinal cord in newborn children and in nursing-infants**. He reports 5 illustrative cases. As a result of his studies he concludes that the fact of the participation of the spinal cord in newborn children and of infants at the breast in the hereditary syphilitic process is equal to that of the other tissues has not only a considerable theoretic significance but also much practical importance. The paralysis that results from this specific affection of the spinal cord presents a new pathologic symptom that in itself gives the possibility of diagnosing syphilis in cases that present nothing else suspicious, either in the way of clinical signs or in the facts obtained from the history, and where all the classical symptoms of syphilis are wanting. The floating motion "*flossenstellung*" of the hands, an isolated paralysis of the muscles of the shoulder-girdle, an isolated paralysis of the leg, an isolated contracture of one group of muscles; for example, the iliopsoas muscle or the muscles of the neck, coexisting with paralysis in other muscles, or even the symptom of Dejerine-Klumpke itself have the same decisive importance for therapeutics that a palmar psoriasis, a cutaneous syphilid, or a condylomatous condition of the skin or of the mucous membranes formerly had. Certainly in the cases in which one of the stigmata that have just been enumerated exists, the nervous symptoms have no especial diagnostic significance, but these cases are far from being the most frequent. It is more difficult to prepare a clear table of the disease and to decide on the necessary treatment when cutaneous eruptions and affections of the mucous membranes are discrete or wanting and when the history presents nothing suspicious. In such cases the paralyzes in question have great diagnostic value. [J.M.S.]

4.—Remlinger contributes a paper on **acute hepatitis following dysentery**. He reports 4 cases. In the first case the patient was a young soldier who contracted dysentery a short time after his arrival in Tunis. As a result of this attack the patient had a tendency to diarrhea, and 18 months later he was taken with symptoms of acute suppurative hepatitis. Exploratory puncture did not discover any pus, although several spoonfuls of blood issued from the point of puncture. The next day the condition was much better, and convalescence was rapidly accomplished. In the second case, the patient was a young man without antecedent history, who was suddenly seized, in the course of a dysenteriform diarrhea that he had neglected for a month, with violent hepatic pain that radiated to the left shoulder. The liver was markedly increased in volume. There was fever, and the condition looked very much like that of suppurative hepatitis. Puncture, however, did not show the presence of pus, although a small quantity of blood was withdrawn by the needle. The next day a very marked amelioration of the symptoms was noted, which, in the following days, went on to complete cure; although the convalescence was interrupted by a right-sided serous pleuritis. The third case was that of a man of 39, who entered the hospital with all the signs of extremely grave hepatitis following an attack of dysentery. The symptoms were ameliorated by bleeding

from the liver, but the patient died from an unknown cause 25 days after leaving the hospital. The fourth patient was a man of 35, who had had dysentery that was followed by diarrhea and repeated attacks of hepatic pain which radiated to the right shoulder. The author saw him in one of his attacks. As a result of his studies, Remlinger concludes that dysentery is capable of producing two kinds of complicating lesions in the liver—acute hepatitis and abscess. The differential diagnosis of these two affections is possible, although difficult. In obscure cases, puncture will remove the doubts. Puncture is the first step in the surgical treatment of an abscess, and if the condition is one of acute hepatitis, it is the first step in the **bleeding of the liver**. It is without danger and without inconvenience of any sort. Whether the bleeding of the liver acts as relieving congestion simply, or in subtracting from the gland a certain quantity of microorganisms and in favoring leukocytosis, it is followed, in the case of acute hepatitis, by an amelioration of the local and a general condition so rapid, and soon by a cure so complete that any other therapeutic procedure cannot be compared to it. [J M S.]

II Policlinico.

(Sezione Pratica.)

November 3, 1900. [Anno vii, Fasc. 1.]

1. On the Cocainizing of the Spinal Cord. G. DOMENICHINI.
2. Transactions of Congresses.
3. A Case of Cerebral Tumor. SALVOLINI.

1.—An account of 3 cases, 2 of colporrhaphy and 1 of resection of the saphena vein, operated on by Domenichini by **Bier's method**. Advantages are claimed for the injection of the cocain-solution with an admixture of morphia and trinitrin, the patient lying prone with a support to raise the lumbar region. [G S B]

2.—At the Congress of the Italian Surgical Society held at Rome on the 27th to the 30th of October, Biondi described the results of 8 **operations on the vertebral column**, of which 4 were for tuberculosis, 3 for fracture, and 1 for dislocation. Six of the cases recovered, 4 completely, 2 partially, and 2 had recurrence of the disease. Caccereilli, speaking of vertebral tuberculosis, deprecated operative treatment as tending to weaken the vertebral column and recommended rest rather than massage and movements, condemning likewise Calot's method as irrational and dangerous. Durante referred to 2 cases of operation for cerebral tumor, one involving the right anterior frontal lobe, the other pressing upon the right postrolandic region. The clinical manifestations in the first case showed the importance of the anterior frontal lobes in relation to the moral character, the symptoms in the other proved that the centers of sensibility are in great part situated in the postrolandic region. Roncali had examined the tumor, a fibrosarcoma, removed from Durante's second case. It contained blastomycetes in the form of Russell's bodies, so situated in the neoplasm as to indicate a casual relationship between them and the growth. Bastianelli, Durante, and others expressed scepticism as to their parasitic nature, holding that the proofs hitherto supplied have not been demonstrative. At the Congress of the Italian Obstetrical and Gynecological Society, held at Naples on the 20th to the 23d of October, 1900, Cosentino noted the rarity of **inversion of uterus in labor**, ascribing its occurrence as due mostly to imprudent efforts to remove the placenta. In nonpuerperal conditions it follows the expulsion of tumors. In recording various methods of treatment by taxis and by surgical intervention, he referred to his own method of gentle dilation of the cervix through the opened abdomen, and those of Kustner and of Piccoli by incision of the posterior wall of the uterus and reduction of the uterus by the vaginal operation. [G.S.B.]

3.—For two or three months the patient had suffered from headache associated with general weakness; later his moral character had changed, the pulse was slow, and ptosis of the left upper eyelid, paralysis of the left lower side of the face, clonic spasms in the left arm, efforts at vomiting, and paresis and then paralysis of the tongue developed. A fortnight after admission coma supervened and death. The syndrome indicated a localization of the lesion to lower part of the right parolandic region, and, in fact, at the autopsy a **gliosarcoma** was found in the white matter in that situation. [G.S.B.]

November 10, 1900. [Anno vii, Fasc. 2.]

1. Histogenetic Researches on Primary Epitheliomata and Endotheliomata of the Liver. A. PEPERE.
2. On the Treatment of Obstinate Neuritis of the Great Sciatic Nerve by Stretching. D. B. RONCALI.
3. Importance of Raw Vegetables in the Diffusion of Infection and Parasitic Diseases. G. CERESOLE.
4. Transactions of Congresses.

1.—Peperé has examined 10 cases of **primary tumors of the liver**, 6 epitheliomata and 4 endotheliomata. He enumerates their various distinguishing characters both clinical and histological, and tabulates a series of conclusions regarding them founded upon his observations. One striking difference was the presence of hepatic cirrhosis in epithelioma and its absence in endothelioma. What has hitherto been described as medullary or soft cancer of the liver he holds to be in reality endothelial sarcomata. One of the cases, he thinks, confirms the theory of the congenital origin of solitary adenomata of the liver. [G S B]

2.—Roncali reviews the history of the operation and relates a case of **sciatica of rheumatic origin** of 10 years' standing in a peasant, 30 years of age, in which he treated the disease successfully by stretching. He counsels a resort to this measure in the sciatic neuralgia of various origins—traumatic, rheumatic, and infective—whenever it resists ordinary treatment; in spasms and paralyses of traumatic origin it is less successful; whilst in epilepsy, tabes, tetanus, myelosclerosis, and transverse myelitis, its benefit is nil or doubtful. In tetanus he does not consider it a measure to be recommended. [G S B.]

3.—A very interesting article illustrating the **dangers of eating salads** in Italian cities. The vegetables which were examined were of the varieties so largely consumed in the raw state by the poorer classes in Italy and were bought on the market at Padua. After being washed in the same way as if for domestic use, they were subjected by Ceresole to a direct microscopic and to a bacteriologic examination. Under the microscope some 52 species of various animalculae were recognized, including *Ameba coli*, *Balantidium coli*, *Isotrica prostoma*, and *Anguillula stercoralis*, together with eggs of different varieties of worms, some of them pathogenic, namely, *Tenia echinococcus*, *Oxyuris vermicularis*, *Ascaris lumbricoides*, *Tricocephalus dispar*, and *Anchylostoma duodenalis*. Bacteriologically myriads of forms were found, mostly harmless, but among them were *B. coli communis*, a bacillus with all the characters of *B. typhosus*, *B. septicus*, and *B. tetani*. The probable sources of these impurities are indicated and the danger of their spreading disease pointed out. For disinfection of the vegetables it is said to be sufficient to soak them for half an hour in a 3% solution of tartaric acid. [S G B.]

4.—At the third sitting of the Congress of the Italian Surgical Society (October 28, 1900) Nannotti recalled experimental researches on the exclusion of the colon, complete and incomplete, made by him on dogs, and described 2 cases in the human subject where he had confirmed the favorable results then obtained. In one case of enterocolitis an ileo-rectostomy was performed by laterolateral anastomosis, and a perfect recovery resulted. Ottaviano communicated a case of actinomycosis of the appendix, Gangitano one of terminal colapexy, and Jacobelli a paper on the possibility of the reflux of urine from the urinary bladder into the ureters.

At the Congress of Italian Obstetrical and Gynecological Society (Naples, 20–23 October, 1900), Mangiagalli stated his experience of the method of combining vaginal hysterectomy with colporrhaphy for the cure of uterovaginal prolapse, describing the technic of the operation as practised by surgeons from Fritsch onwards, as well as his own modification of it. Both procedures, he thinks, should be carried out at one sitting. He has seen some of his cases operated upon 5 years ago, and the results have been excellent. [G.S.B.]

Hernia Into the Foramen of Winslow.—A case of this nature is reported from Australia. The gut was reduced and a double enterotomy performed. An artificial anus has formed at the opening made in the cecum and this has been left permanent at the request of the patient, to act as a safety valve in case of recurrence of obstruction.

Practical Therapeutics.

Under the charge of

A. A. STEVENS, A.M., M.D.

On the Use and Abuse of Lavage.—Musser (*Therapeutic Gazette*, November 15, 1900), believes that not 5% of the cases of gastric disease or of patients suffering from symptoms suggestive of gastric disease that are under his care have required lavage in their treatment. He employs lavage in cases of atonic dilation, when retention is extreme; in cases of organic pyloric obstruction; in cases of gastric neurasthenia and in certain cases of hysteria; in some cases of chronic gastritis with subacidity. This limits its practice to a small number of cases only. In some cases of hysteria he employs lavage once a week or ten days for reasons readily appreciated. In his earlier practice, the author states that he employed lavage more frequently, but he has found that he can obtain as good results with other means. He can do more with a carefully regulated diet, with massage, physical culture, outdoor life, mental occupation and cold baths than with local gastric treatment. The most useful mechanical gastric management in selected cases is a properly fitting abdominal belt. The truth of the matter is that most so-called gastric cases are not of stomach origin. The nervous system, the blood, the general and local musculature are at fault. Hence, more gastric cases are cured by iron than by pepsin; by nuxvomica than by specific aids to digestion. When the author employs lavage he does it himself or has a medical man do it at stated intervals. To allow patients to do it soon develops in them a habit, which cannot be too strongly condemned.

Thyroid and Ovarian Extracts in Gynecologic Practice.—E. E. Montgomery (*International Medical Magazine*, November, 1900) states that he has never seen the slightest influence in any way through the use of ovarian extract. Thyroid extract he has found especially valuable in the treatment of myxedema, obesity, and particularly in the treatment of some forms of sterility. That it has a marked influence upon the mucous membrane of the uterus is evident from its effect upon uterine hemorrhage. In cases of hemorrhage from nonmalignant conditions, near the climacteric, thyroid extract is especially efficacious. It also has an influence in arresting the growth and promoting the absorption of fibroid growths. The author was led to employ the drug in the treatment of sterility after having seen some cases in which women became pregnant after its use for the treatment of obesity. One patient lost 70 pounds under the use of the drug and immediately became pregnant. In another patient who had never menstruated, been married 8 years, the surgeon found that she had an enlarged ovary, removed it and punctured a number of cysts in the other ovary. Following this operation she began to menstruate regularly. She was desirous to have children, and after menstruating for a year, she began the use of thyroid extract and became pregnant. She gave birth to a child at full term and is again pregnant.

Treatment of Aneurysm of the Aorta.—In the Section of Therapeutics at the recent International Congress of Medicine, Golubinin, of Moscow (*Medical Age*), said he had employed in 8 cases the method of treating aortic aneurysms by injection of gelatinized serum recommended by Lance-reaux and Paulesco. The number of injections varied, according to the case, from 2 to 15. Of the 8 patients 4 died in a short time, and the other 4 were lost sight of; in 3 of the cases belonging to the latter group the injections produced no effect. In the remaining one they were followed by slight improvement in the subjective symptoms without modification of the objective signs. Golubinin had come to the conclusion that the method did not fulfil the expectations that had been founded on it. Huchard said that in the treatment of aortic aneurysms it is a mistake to allow oneself to be hypnotized by the changes to be brought about in the contents of the sac—that is to say, in the blood—and to take no account of the containing structure. The method of gelatinized injections, which is useful, although insufficient, is open to this criticism. To complete its action, especially in persons

with large heart and increased arterial tension—they are almost always at the same time subjects of Bright's disease—medicaments should be chosen which diminish arterial tension, such as potassium iodid, trinitrin, nitrite of amyl, and especially tetranitrate of ethylol, or tetranitrol, which Huchard has now used for a considerable time, and which, as compared with trinitrin, has the advantage of a more durable action. Moreover, an essential point is to supervise the diet, not in regard to quantity, as in Valsalva's method, but in regard to quality. Meat, which holds too large a place in our food, contains toxins which have an excessively powerful vasoconstrictor action. The best treatment of aortic aneurysm is still absolute milk diet regularly adhered to.

Arsenical Sodium Phosphate.—Tichborne (*Medical Press and Circular*, June 11, 1900) states that it is difficult to find a sample of sodium phosphate that is not contaminated with arsenic. This arsenic does readily come down as a sulphide, and many specimens, if hurriedly tested, might appear as only slightly impure, whilst in reality they may be loaded with arsenic. The author purchased specimens of sodium phosphate in several important shops of Dublin, and not one of them was free from arsenic. Three of them showed respectively .033%, .024% and .028% of arsenous acid. In 2 samples since obtained there was still a higher percentage of arsenic. Calculating the maximum dose of sodium phosphate at $\frac{1}{2}$ ounce and arsenate of sodium as $\frac{1}{10}$ grain, it would appear that the most arsenical of the samples would contain in a maximum dose .134 grain of arsenate of sodium, or .034 grain in excess of the maximum. The author holds that only a salt should be used for medicinal purposes that is made by the interaction of phosphoric acid and pure sodium carbonate.

Perforation in Typhoid Fever from an Operative Standpoint.—G. G. Davis (*American Journal of Surgery and Gynecology*, September, 1900) reports 3 cases of typhoid fever operated upon for perforation peritonitis. The first patient had mild peritonitis, but no perforation, and recovery followed the operation. The second patient had a perforation on the forty-fifth day of his disease, and operation 10½ hours after the first symptom appeared was followed by recovery. The third patient had 2 perforations, and died 36 hours after the operation. The author believes that decided and sudden increase of abdominal pain with abrupt fall of temperature is diagnostic of perforation. Leukocytosis is confirmatory. Dulness in the right iliac region is not to be expected. It is not necessary to operate before perforation occurs, but it is necessary to operate before collapse is marked. Typhoid patients, when not in collapse, bear operation much better than was formerly supposed. Washing out the abdominal cavity with hot normal salt-solution, even if no perforation is present, seems to improve the condition at the time of operation, and favorably influences the course of the disease. Operation should be done as soon as the diagnosis of perforation is made.

Gastroenterostomy.—Carless (*Practitioner*, November, 1900) states that this operation may be advisably recommended under the following conditions: 1. When a patient with gastric ulcer has been carefully dieted and given every chance to recover, and yet the symptoms persist. 2. It may be utilized in the treatment of hemorrhage, in connection with gastric ulcer, which occurs either as an acute or as a chronic complication. 3. It is probably the best operation in all cases of pyloric stenosis due to gastric ulcer, and possibly the only feasible proceeding when stenosis of that orifice arises from extrinsic causes, such as the contraction of adhesions formed in connection with an inflamed gallbladder. 4. In pyloric cancer the same limitations are frequently present, the growth having early contracted adhesions to surrounding parts. 5. There are not a few cases of atonic dilation that are best treated by gastroenterostomy, though not until a thorough course of lavage and medicinal treatment has been undertaken. 6. In the condition known as hyperchlorhydria, or gastric succorhea, in which the patient is tormented with acid eructations and heartburn, to say nothing of pain and distention, the rapid emptying of the viscus is most desirable, and in no way can this be better accomplished than by the formation of an artificial opening in the jejunum.

Nephritis of Scarlet Fever.—Kemp (*Archives of Pediatrics*, July, 1900) recommends the use of oxygen inhalations, because they stimulate the heart and aid in the elimination of toxins. Another useful measure is enteroclysis, using a saline solution (110° to 120°F.) for 15 to 20 minutes at a time as often as 2 or 4 times a day. Experience shows that 3 to 5 times as much urine is secreted as the quantity of saline solution introduced. Warm carbonated baths (98° to 100°F.) are also useful.

Myrtol in Affections of the Respiratory Tract.—S. Solis-Cohen (*Merck's Archives*, November, 1900) states that the action of this drug is much like that of its congeners of the terebinthinate and balsamic groups. It is an oily liquid, of slightly yellow tint, pungent taste, and characteristic odor. It is eliminated chiefly by the mucous membrane of the respiratory and genitourinary tracts. The author's experience with myrtol has been limited to affections of the bronchi and lungs. He has had excellent results in some cases, and failure in others. The happiest results were in obstinate cases of bronchorrhea, dilated bronchi, fibroid phthisis, and bronchitic asthma. In some cases of asthma in which the paroxysms seemed to have been brought about by the effort to dislodge tenacious secretions, the use of myrtol seemed to increase the ease of expectoration, while later diminishing the frequency of expectoration and lessening the quantity of sputum. In fetid expectoration it seemed to diminish secretion. Eichhorst has used it with satisfaction in pulmonary gangrene. The author does not contend that myrtol is a miracle-working substance, but one marked in its influence in checking useless, annoying, unproductive cough. In his experience myrtol never tended to produce strangury. The dose is 5 to 15 minims, given from 2 to 5 times in 24 hours. When uncombined it may be given in emulsion, or dropped upon sugar, or placed in capsules, and if given in capsules it is well to have the patient take a little milk afterwards. It may be used likewise for inhalation.

Pichi.—Aronson (*Physician and Surgeon*, August, 1900) states that the drug is very efficient in hemorrhage from the kidney or bladder, in prostatitis, in seminal vesiculitis, and in the subsidiary stages of orchitis and epididymitis in combination with potassium iodid. In subacute urethritis he has used the following combination with gratifying results:

R.—Fluid extract of pichi.....4 drams.
Potassium citrate.....3 drams.
Tincture of hyoscyamus 2 drams.
Spirit of nitrous ether.....3 drams.
Elixir of orange to make 2 ounces.

One teaspoonful in water one and a half hours after meals.

The Therapeutics and Hygiene of Obesity.—Deschamps (*Treatment*, November, 1900) at the Congress of Medicine, 1900, stated that the treatment of obesity should not have for its end merely a temporary reduction in the weight of the patient, but attention should be given to a radical change in metabolism, whereby a proper balance between receipt and expenditure should be maintained. The effects of diet, temperature, and muscular exercise were the most important, and their regulation was the basis of treatment. The regime imposed upon the subjects of obesity should always be sufficient to satisfy and to assure the soundness of the gastrointestinal functions. The best dietary is one in which vegetables predominate. For beverage, pure or slightly alkaline water should alone be taken, and that never in excess of what is required to satisfy thirst. The chief means of reducing weight is the employment of hot baths at a temperature rather above that of the body, and lasting one to two hours. Static electricity is useful in assisting the training of the cardiovascular system, and in favoring organic combustion. Muscular exercise requires to be carefully regulated, and should be kept within limits short of producing fatigue.

Treatment of Tuberculous Peritonitis by Puncture, followed by Lavage with Sterilized Hot Water.—According to *Treatment*, November, 1900, Baylac stated at the Congress of Medicine, 1900, that the usual mildness of the ascitic form of tuberculous peritonitis, its frequent cure after laparotomy, and the many instances in surgery of the efficacy of hot water, gave him the idea of treating this affection by puncture, followed by lavage with sterilized water

at a temperature of 45° C. Lavage, without free opening of the peritoneal cavity, secures to the patient nearly all the advantages of laparotomy without exposing him to the dangers inseparable from the latter proceeding. The injection, also, of antiseptic liquids into the cavity of the peritoneum is not always free from peril. With sterilized hot water there is no accident to fear, no intoxication possible. Plain hot water appears to be as effective as the divers antiseptic solutions sometimes employed; and it puts the serous membrane, freed from its septic lining, in the most favorable condition for healing. Baylac has so treated 8 cases of ascitic tuberculous peritonitis; 5 times the cure was complete, in 3 others there was only temporary improvement. In the 3 last cases, certainly, the lavage was only practised after previous interference, such as punctures and laparotomy, so that the peritoneum had already lost its extreme delicacy, and could not be sufficiently affected by the hot water. The author considered sterilized water raised to a temperature of 45° C. an excellent agent for influencing the peritoneum in tuberculous inflammation, having these advantages: (1) In clearing the cavity of ascitic liquid, "a veritable culture bouillon in which the microorganisms thrive;" (2) in bringing about an increase in the number of leukocytes; (3) in increasing the activity of leukocytes and diminishing the virulence of Koch's bacillus.

Treatment of Locomotor Ataxia.—Allan McLane Hamilton (*Montreal Medical Journal*, October, 1900) states that the experience of many years convinces him that most tabetics are favorable subjects for "expectant attention," and clutch at any straw that may be thrown to them, and say they feel better for a time. In the disease known as pseudotabes in which there is often a somewhat rapid posterior spinal deposit or acute pathologic progress, enormous doses of iodid are useful, but in more advanced or slowly developing tabes the author believes this drug to be worthless. Looking back over a number of years he finds that the most good has been accomplished in the cases in which little or no medicine has been given, but which have been managed by *absolute rest*, occasionally by the *suspension treatment*, and, finally, by the systematic and persistent *cauterizing of the back*. So prompt have been the benefits of rest that, when possible, the patient should be ordered to his bed, or when this is impossible, to be completely inactive. No agent can be relied upon to relieve pain but opium or its alkaloid, but in some cases phenacetin, antipyrin, or bromate of phenol (10 grains every 2 hours) prove useful. The method of de la Tourette is recommended. This neurologist gives from 20 to 30 grains of phenacetin in 24 hours (in 8-grain doses), combining it, in the event of violent pain, with laudanum (10 drop). In the gastric crises, sulfuric ether, either as Hoffmann's anodyne or in pearl form, or the spirits of chloroform, will often break up a paroxysm of pain. For many years the author has employed suspension in those cases in which there was no optic-nerve atrophy and no symptoms indicating coarse disease, and believes that it is worthy of careful trial. The actual cautery has, perhaps, proved of the greatest use, not only for the relief of pain in the largest number of cases, but it has a revulsive effect of its own, the exact nature of which cannot be determined. Certainly its application over areas of nervous distribution, which are the seat of pain, and where a kind of neuritis sometimes exists, is to be recommended. In many apparently intractable cases, the author has been in the habit of using it once or twice a week over the spinal column, and so often has a decided and lasting improvement taken place, that he unhesitatingly recommends it as a routine agent.

Empyema in Children.—Crandall (*International Medical Magazine*, October, 1900) states that aspiration and other temporizing methods of treatment are absolutely futile. Free incision with drainage is universally regarded as the only efficient treatment. Differences of opinion are confined chiefly to the extent of operation required. If performed early, simple incision has proved, in the experience of many competent operators, a perfectly efficient means of effecting a cure. If performed late, ribs should certainly be excised. The incision should be free; the drainage tube should be of good size; the cavity should not be irrigated; and every effort should be made to keep the wound in an aseptic condition.

Original Articles.

ROTARY LATERAL CURVATURE AND POTT'S DISEASE OF THE SPINE; THEIR DIAGNOSES AND TREATMENT.

By A. M. PHELPS, A.M, M.D.,

AND

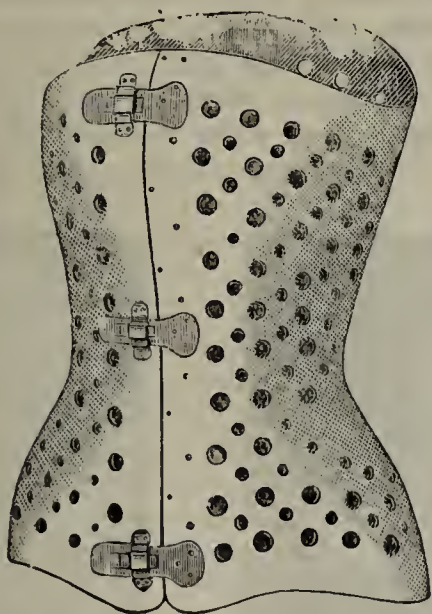
D. W. MANTON, M.D.,

of New York, N.Y.

WITH the possible exception of the treatment of appendicitis, there is probably not in all medical literature any topic on which our profession has held as many different and diametrically opposed opinions as has been the case with rotary lateral curvature and tuberculosis of the spine. Within the memory of men yet young, certain members of the profession in this country, as well as across the water, have claimed it to be possible to cure cases of later curvature of the spine after extensive bone changes had taken place. Nor is it more difficult to find writings in which all cases with marked kyphosis, even rapidly increasing, attended or unattended with abscess, were classed indiscriminately as "Pott's disease."

It is scarcely necessary for me to say here that these views are not now endorsed by representative surgeons. New ideas, however, even when sustained by unlimited pathologic and bacteriologic research and clinical experience are often slow of adoption, and it is on this account that I purpose here to briefly differentiate not only in the etiology and pathology, but also in the treatment of these two time-honored bugbears of the profession.

Not all cases supposed to be such are always Pott's disease. Deformity similar to that caused by tuberculosis of the spine is seen following absorption from the peyerian patches of the intestines in typhoid fever. This condition would be readily discovered in connection with a history of other typhoid symptoms. Another rare affection of the spine resulting in kyphosis is caused



by the inoculation of the germs of actinomycosis. We also recognize another condition closely simulating tuberculous infection, in acute osteomyelitis. This, however, differs from the more common condition by its rapid onset and virulent and destructive course, in marked contrast to the insidious approach of tuberculosis, sometimes covering months and months.

The germs of osteomyelitis will do in a few days what

tuberculosis as a rule will not accomplish in many months.

These four conditions, each distinct, yet resembling one another in a few general symptoms are commonly classed together as "Pott's disease."

The etiology of true tuberculous spondylitis is due to an infection of *Bacillus tuberculosis* into an area of previous inflammatory action. This theory was taught



by Phelps in this country and by Billroth on the Continent some years ago, and is now the one generally accepted the world over. That the bacilli inoculate tissue not embryonic is impossible. The result is a slow growth of tuberculous tissue. As the area of inflammation extends, inoculation takes place with destruction of bone. This was formerly known as caries, which is a term that means nothing and will eventually be dropped from the nomenclature of the subject.

The germs of tuberculosis enter the system primarily, as a rule, through the lymphatics. A child playing in the back yard of a tenement house, in an atmosphere contaminated by germ life caused by the old woman beating the carpets from an infected room, where an individual has died of tuberculosis or osteomyelitis, inhales the spores of the germ.

These spores are immediately absorbed by the lymphatics from the mucous membrane of the pharynx and the trachea and carried to the neighboring lymphatic glands. The lymphatic glands are rich with cells, and are a good soil for the reception and growth of the germs. The cells or phagocytes of the lymphatic glands are at once attacked by the germs and destroyed, until the entire gland is converted into a pus or tuberculous cavity, depending upon the kind of germ absorbed. These are the large glands seen in the necks of children and called by the older authors "strumous or scrofulous gland." Ulceration now commences in the gland, burrowing takes place in the direction of least resistance. The gland is surrounded by a vascular network of veins and arteries. When perforation of the gland takes place from ulceration, its contents may discharge directly into the vein; thus it can be readily seen how the circulation becomes contaminated with germ life from the reservoir which is constantly

discharging into it. Now, if the child playing in the back yard receives a slight injury of the spine, at once inflammatory action begins at the point of lesion already described. The blood being loaded with germs of infection carries them to the point of injury. The pathogenic germs finding a fit soil for their reception and growth attack the normal new inflammatory material and convert it into a diseased condition, with a formation of pus or a tuberculous abscess. From this point of local infection the pathogenic germs find their way into adjacent tissues, destroying them as they advance and enlarging the diseased area. Should the body of the vertebra be involved, as is the rule, in the majority of cases, its partial destruction is simply a matter of time, *unless* the destructive process is checked by appropriate treatment, the focus of disease circumscribed, and ankylosis of the affected vertebrae accomplished.

Why it is that one child may receive a blow, but will not develop the disease, while a second child also receiving an injury will develop it, is an interesting question. It depends on the relative disease-resisting power of the cell life of the individual. In the one child the



embryonic cells resist the attack of germ life, while in the other they succumb to the invasion of disease.

Rotary lateral curvature differs from tuberculosis of the spine. It is never produced by inflammation or disease of the spinal column. The etiology of these curves occurring high in the vertebral column, either in the dorsal or cervical region, is, I believe, nearly always congenital or rachitic. A rapidly growing child who sits in a faulty attitude, or stands in such a position as to constantly curve the spine, will often develop rotary lateral curvature.

Curves that occur in the lumbar region are usually due to such a cause as this or to a shortened limb, or tilted pelvis. Paralysis of certain muscles may also be an important factor in the etiology of these deformities. I have known cases where great deformity resulted from the intercostal adhesions following the absorption of a pleuritic effusion. Deformity of this kind is seen in the dorsal vertebrae for the reason that the spine bends where there is a change in the ribs and in the muscles between the ribs.

The deformity in lateral curvature is produced by absorption of the vertebra from pressure. As the spine bends, rotation always takes place in the direction of curves. The body of the vertebrae always rotate toward the convexity of the curve. Then we say that nearly

all cases of lateral curvature are to be considered as cases of lateral rotary spinal curvature. When more than one curve occurs it is then called double lateral rotary spinal curvature. One of the most common symptoms of lateral curvature is the projecting shoul-



der-blade and the drooping shoulder. These are cases that find their way to various bandagers, who adjust worthless appliances, and the apprehensions of the mother are put at ease by such charlatans until after a year or two when the orthopedist is consulted, he finds an incurable curve in the vertebra produced by absorption. Then the projecting shoulder-blade, the drooping shoulder, the prominence of the ribs on one side of the vertebra—as the patient is bent forward—the absence of pain and spasm of the muscles, the general good health of the patient, are symptomatic of curvature.

In case of tuberculosis of the spine the surgeon should always make a diagnosis before deformity occurs. To do this in a child only a year and a half old is sometimes difficult.

In these cases, as a rule, there will be the night cries; screaming of the child when the mother lifts it; bending forward of the body elicits pain anteriorly from the point of disease; the patient placed upon its back when lifted to an upright position with the hand under the head rises with a rigid spine; patient in the sitting position, you standing behind it, will present a rigid spine when bent from side to side; if the disease is located in the lumbar region the good old doctor has



probably treated the case for worms; if in the dorsal region, for asthma. But when the symptoms which I have enumerated are present, although there is no deformity as yet of the spine, you would be quite certain of making a diagnosis of Pott's disease.

If the spine is flexible in its continuity there is no Pott's disease; if rigid it is certain to be present.

Bone Changes.—On one side, the bodies of the vertebrae become absorbed by pressure, but on the opposite side they are normal. As Phelps has said, there is not a single straight spine in the world. If there were the person would break his head every time he jumped six



feet. Every lateral curvature, to be cured, must have compensating curves so as to allow a vertical line to fall through the center of the curves and to fall inside of the base formed by the feet. In some lateral curvatures, as in rickets, the deformity is due to pressure. Ossification, as in the ossified man, is produced by central nerve-lesions.

Treatment must be based on rational principles. I would treat lateral curvature with gymnastics and a support to relieve pressure; and Pott's disease by fixation to give nature a chance to repair.

Lateral Curvature. — Some orthopedists say every brace produces atrophy. Others that bracing is all that is required to remove pressure and prevent absorption. Bracing properly done does not produce absorption. I know of a gymnasium professor who relieved one patient and made an athlete of him. Of course, the curvature still remains. It is a very good plan to always determine the extent of bone changes before beginning treatment. Bending forward shows it. A straight line along the back demonstrates the extent of deviation. The diameter of the vertebral column is two inches. If a displacement of one-half of this occurs to either side, there is unstable equilibrium and exercise cannot correct. The patient must be braced so as to produce stable equilibrium. A child of 3 years cannot be properly braced, because the pelvis is too small as compared with the thorax, and the brace will slip. Put on a Bonnet's cuirass, or better, Phelps' plaster-of-paris portable bed which is good also in Pott's disease and hip-disease. Dr. Phelps got the idea from observing an Indian squaw carrying her baby. In spinal braces, when the band around the pelvis is narrow and small, the appliance will tilt. I believe

suspension and then fixation is necessary. This is the principle of one brace invented in 1754. The Hessian corset was invented in 1764. Many apparatuses modernized were used more than a century ago. Sayre was the first man in this country to make a suitable apparatus for Pott's disease or lateral curvatures—the plaster-of-paris corset. It is good, but to its routine use in all cases of spinal disease, of all kinds, I have objections—it is heavy, cumbersome, unclean, and it wears out and so changes have to be made; but it is the best of all braces. Then there is the substitution of other materials for plaster-of-paris, such as leather, and cowhide which proved nonavailable, and wood, wire, celluloid and paper, none of which are of any value in these cases. A spinal support must be *absolutely unyielding*, or it is entirely useless.

If the disease is located above the third dorsal vertebrae, no corset or brace without the aid of the jury-mast can be adjusted so as to be a support, owing to the fact that the weight of the head and shoulders operate upon the point of disease or curve. In such cases the jury-mast should always be so adjusted as to transmit the weight of the head through the corset to the hips. All of the arguments which have ever been advanced against the use of the corset amount to nothing in the presence of an established fact. You will observe that a child with lateral curvature, after the corset is adjusted is $2\frac{1}{2}$ inches taller than without the corset. If anybody can explain to me what makes the child taller, outside of the support he is given by the corset, I will concede that the corset does not support. Until this question is answered I will continue to believe that the arguments advanced against the support of the corset are all fallacious.

To make proper corsets from plaster-of-Paris, suitable material must be used. H. B. Claflin & Co. make for me a special crinoline known as No. 100



hospital crinoline. It has the proper amount of sizing and material and a total absence of indigo. The plaster-of-paris I have had the White Dental Manufacturing Company, of New York, put up in 50-pound tin packages, fresh from the oven. This cloth and plaster-of-paris, when properly united, makes a perfect

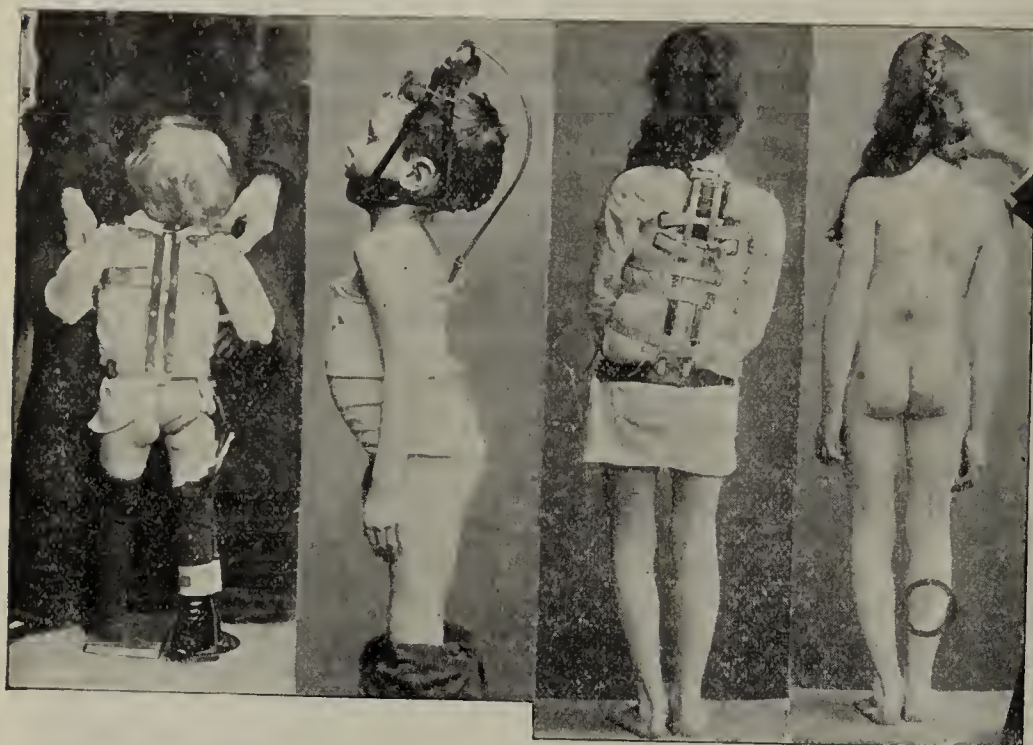
plaster-bandage. Tear the crinoline into strips 6 inches wide and 6 yards in length, draw the cloth over a pile of plaster-of-Paris on a table, and with the hand rub off all excepting enough to simply fill the mesh of the cloth; roll the bandage loosely, that it may take water quickly, and it is simply perfection. A

than the steel brace, and it supports as the steel brace cannot.

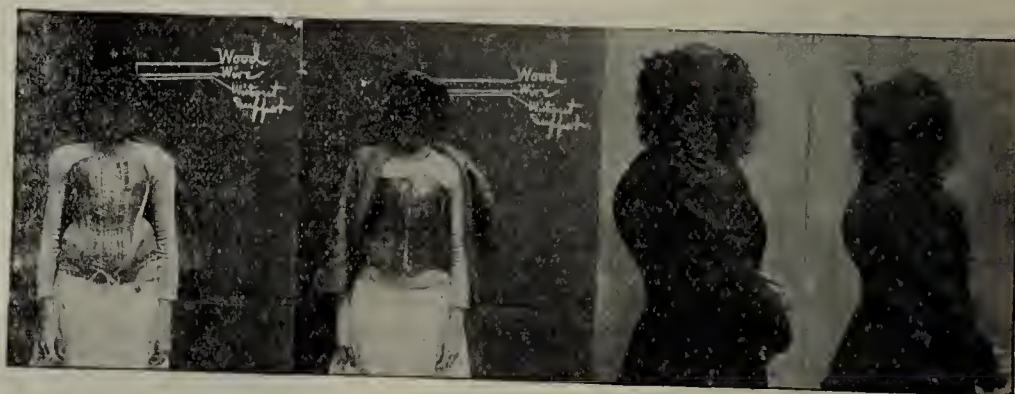
When a patient is suspended in Pott's disease of the spine, and a jacket properly adjusted, he is at once relieved from a condition of pain and suffering, and to such an extent that any amount of pressure upon the shoulders does not produce pain. In rotary lateral curvature of the spine, a plaster-corset with lacings is made to fit this suspended and straightened position. After the corset has been adjusted the patient is 3 inches taller than before its application.

To make a good jacket, or corset, good materials must be used. In addition to these, as Phelps has so truthfully and forcefully stated, the whole appliance is worthless "unless the plaster is mixed with a proper amount of gray cerebral matter." In the absence of the latter it is worthless.

If the patient can afford the greater expense, I always advise the aluminum corset, for although the first cost is greater than for the plaster-of-paris support, yet before treatment is completed the metal appliance will have proven the cheaper, for it is practically indestructible. Phelps calls it "the end of the law in spinal bracing" and I believe his statement to be correct. I do not suggest the alumi-



tight-fitting shirt must now be adjusted to the patient. The shirt which we now use is a long stocking, and costs about 25 cents a yard. Mr. Ford, of Thirty-second Street and Fifth Avenue, New York, furnishes it to us. It fits perfectly. The life of an ordinary jacket made of plaster-of-paris is about 3 or 4 months. They last longer in cool weather than when the patient is freely perspiring in summer. Rapid setting of the plaster is necessary because the hand holds it to the corrected position of the deformity. This material, with the stockinet sold by



Ford, completes the materials necessary to make a perfect corset. The crinoline costs 6 cents a yard, the plaster-of-paris 3 cents a pound, and the stockinet 30 cents a yard. A corset for a child 6 years old should weigh not to exceed $1\frac{1}{4}$ pounds, and for an adult $2\frac{3}{4}$ pounds. This makes a support as light or lighter

num corset as a substitute for plaster-of-paris in acute Pott's disease and lateral curvature. I suggest it rather to take the place of such braces in cases requiring permanent bracing, or in individuals who are desirous of securing a support at any time which combines durability with lightness and comfort. So soon as a case of lateral curvature has been arrested, or the greatest amount of benefit has been derived from treatment, the aluminum corset will then be found a most agreeable permanent support. The aluminum corset has these qualities to recommend it to the patient:

1. Lightness.
2. Durability.
3. It is thin and does not interfere with the form and clothing.
4. Being extensively perforated makes it the coolest and most agreeable of supports.
5. The patient can wear it during bathing.

An ordinary corset weighs from one to two pounds, depending upon the size. To prevent cracking and to protect it from perspiration it is covered with a waterproof enamel, which is applied by heat.

Phelps invented the duplex hinge in this corset by

means of which the unequal planes of it can be perfectly hinged.

To make an aluminum corset, first make a plaster-mold of the body. Fill this and from the cast thus obtained an anvil of iron is made. Over the metal anvil the aluminum is hammered into shape. It takes 2 skilled workmen 2 weeks to make one of these corsets. When fitted to the body the corset is shellacked with a preparation that makes it impervious to perspiration. With an apparatus of this kind the patient can go in bathing. In Pott's disease the same kind of a corset can be used if it is put on with wire lacing and kept on. In lateral curvature cases the corset is to be taken off daily and the patient instructed in proper gymnastic exercises. In Pott's disease the spinal support is not to be removed except at the surgeon's directions.

The new operation of forcible replacement by Calot, of France, was done by Hippocrates, 500 years B.C.; was revived in the time of Ambrose Pare, in the fifteenth century, and again in this generation by Harda, of Texas. This is a procedure adaptable only for selected cases, and at the hands of experienced operators. Long ankylosed cases, or cases in which abscess with much deformity exists, should not be broken up. In the early history of some cases forcible reduction has been of much benefit, but it is an operation attended with great risk.

FRACTURE OF THE EXTREMITIES.

A Report of a Second Series of 500 Consecutive Cases, Verified by Radiographs.

By G. G. ROSS, M.D.,

of Philadelphia, Pa.,

Assistant-Surgeon to the German Hospital,

AND

M. I. WILBERT, PH.G.,

of Philadelphia, Pa.,

Director of the Radiographic Laboratory at the German Hospital.

In reporting this second series of cases of fractures of the extremities, we have in mind the value of accurately compiled statistics, as stepping-stones for the advancement of medicine along scientific lines.

It is generally conceded that the existing treatises on fractures and luxations will require a thorough revision within the next decade. The rewriting of these books should be done with extreme caution, and the material presented as facts should be based on a large and varied number of cases, the diagnosis of which have been verified by means of the Röntgen-rays. We fully realize that the statistics presented here, while they are based on the practice in a large general hospital, are still apt to be somewhat influenced by more or less local conditions, such as the class of industrial plants from which a large proportion of the accidents would naturally be derived, and for this reason we should like to induce other operators to collect their data in a methodic and scientific way, with the ultimate object of contributing such observations to the better understanding of this class of injuries.

Our methods of procedure were quite fully defined in a paper reporting the first series of "Fractures of the Extremities" and published in the PHILADELPHIA

MONTHLY MEDICAL JOURNAL for June, 1899. In addition to what we have said there we should like to say a few words about the use of the fluoroscope. This instrument, while of great interest and of undoubted utility in the examination of the various organs of the body, is of little or no use in the routine practice of discovering fractures. In our estimation the fluoroscope will not give more or better information than will a careful clinical examination, and to do this it usually requires the placing of the part to be examined in an awkward position, and its being held there, or even rotated, causing the patient an unnecessary amount of pain and inconvenience. Then, again, the operation, to be conducted satisfactorily, must be done in a dark room so as to allow the observer to have his eyes properly adjusted to the comparatively small amount of light usually furnished by the fluorescent screen. If we bear in mind that a very large proportion of our patients are liable to be somewhat nervous and excited, after meeting with an accident, we will readily appreciate why so many become restive when placed in a dark room with a buzzing, spluttering induction coil, that not only sounds uncanny and looks weird, but in a short time imparts to the atmosphere, in a confined space, the odor of a good old-time sulfur-match.

In the photographic plate, on the other hand, we have a means of showing all the details of a fracture, and when properly interpreted we are in a position to say exactly the direction and extent of the lesion, and in addition to this, we have a complete and correct record of the injury for future reference. By taking two pictures, at right angles to each other, it is practically impossible for a fracture, even the slightest *infracture*, to escape us, taking for granted of course that our technic is not at fault.

The practice of taking all fractures at two separate angles is one that should be followed regularly, as it is possible to have a fracture of such a nature that in one direction it would show little or no deformity, while a view in an opposite direction will show extensive injury or a marked deformity. Attention has been called to this fact repeatedly. Among the first was a contribution from the Radiographic Laboratory of the German Hospital, reported by Dr. J. B. Deaver, before the Academy of Surgery of Philadelphia, December 2, 1897, and again in the paper reporting the first series of fractures, as quoted above. Another great advantage of the photographic plate is the fact that the examination may be conducted in a well-lighted room and consequently there is little or no necessity of exciting the patient. In addition to this the part to be examined may be placed in a comfortable position for the patient, and in this way the examination can be made with a minimum of pain or discomfort, and a maximum of information, a matter of satisfaction to the physician who is to treat the injury.

Much has been said and written for and against the accuracy and value of the information obtained by means of the Röntgen-rays. We may be pardoned therefore for offering the following opinions.

When making use of the x-rays, as in making a radiograph, we employ a purely mechanical process that, when properly carried out, must give us mathematically correct results. The one important point to remember, in this connection, is that a radiograph is a fixed shadow, the result of interference in a cone of light or energy emanating from a fixed point. This shadow, therefore, depends on the relative positions of

the source of energy, the body casting the shadow, and the screen or photographic plate on which the shadow is cast. It is obvious, then, that unless we are in possession of all the facts and factors that have entered into the making of any particular radiograph, we cannot conceive of an absolutely correct impression of what it actually represents.

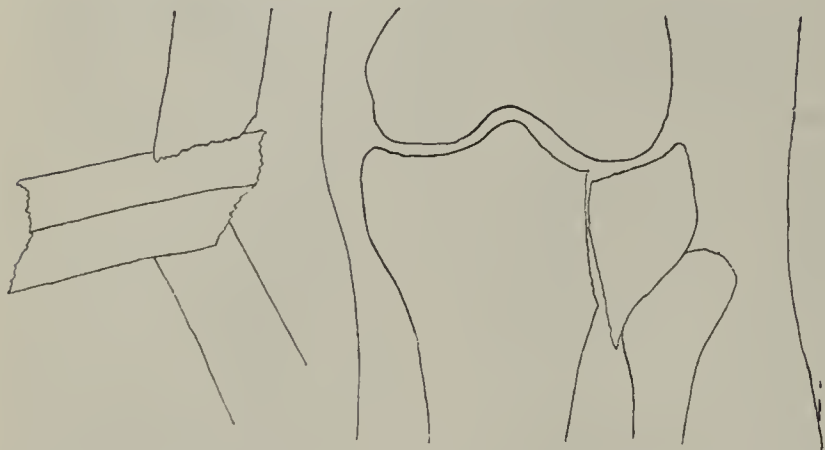


FIG. 1.—An outline drawing of femur from plate No. 2247, shows position of small fragment and longitudinal crack.

FIG. 2.—Outline drawing from No. 2155, shows fracture through outer portion of head of tibia. Patella not shown.

The possible deception and abuse that might arise from the indiscriminate use of radiographs as evidence in a court of law has prejudiced many surgeons and medical practitioners against the routine use of the x-rays as an aid in the diagnosis and treatment of fractures. There seems to be little or no difference of opinion as to the scientific value of these rays as an aid to the surgeon. But there is considerable doubt as to the advisability of admitting radiographs as evidence in a trial at court, especially at the present time. For while the x-rays have been known and used for upward of 5 years, their use has necessarily been restricted by various causes; among these being the cost of suitable apparatus and the requisite knowledge and technical skill that is necessary to operate the apparatus after it is installed. It might be safely said that out-



FIG. 3.—Outline drawing from Case No. 3169 shows extensive fracture of inner portion of head of tibia; patella not shown.

side of the work done in the radiographic laboratories connected with the larger hospitals comparatively few operators have had the necessary experience to make a satisfactory interpretation of a radiograph, and until it has been found feasible to properly standardize the making, and consequently the interpretation of a radiograph the medical profession should not urge or advise the admission of the x-ray picture as evidence *per se* in a court of law. In the present series of cases we have included some additional data that we trust may be of interest especially to the statistician, or the author of a textbook on this subject. Of the 500 cases

reported here 304, or nearly 61%, were fractures of the upper, while 196 were fractures of some portion of the lower extremity.

There were 53 fractures of the hand. Of these one or more of the phalanges were involved in 12, and the metacarpal bones in 41 of the cases.

Of the 114 fractures about the wrist joint, 28 involved the radius and the styloid process of the ulna, and in 4 the injury to the radius was accompanied by a fracture of the ulna higher up, or distinctly above the articulating surface of this bone.

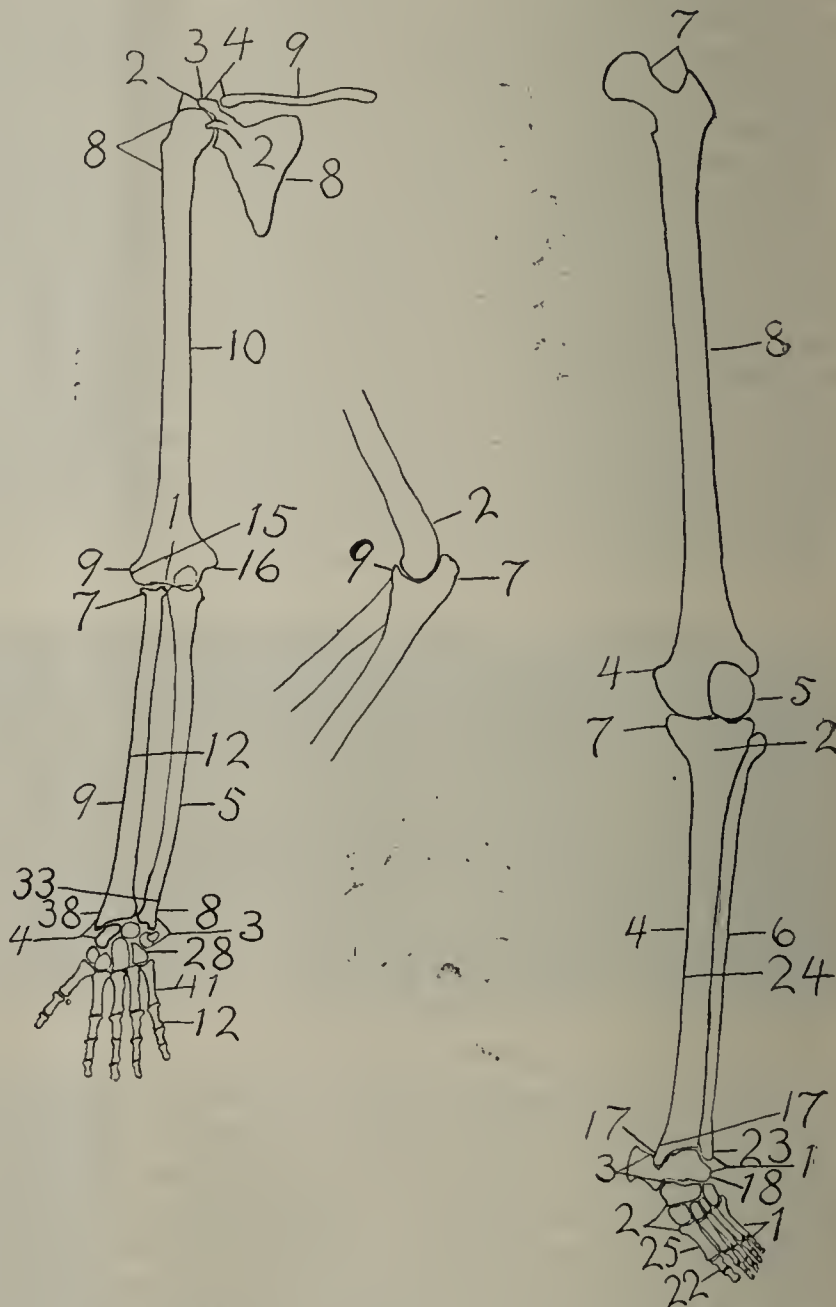


FIG. 4.

FIG. 5.

FIG. 6.

FIG. 4.—Diagram to illustrate location and frequency of fractures of the extremities.

The radius alone was found fractured in 38 cases, one being multiple; 8 of the cases had a fracture of the ulna alone, and 36 included one or more of the carpal bones; in 4 of these latter cases the carpal fracture was accompanied by a fracture of the radius, in 3 by a fracture of the ulna, and in 1 by a fracture of both radius and ulna.

Fractures of the carpal bones, when not accompanied by extensive laceration of the soft parts, are very apt to be overlooked, and although the figures given here may seem excessive we ourselves feel that they represent a fair average of the cases that would ordinarily be encountered. In this connection we would like to call attention to a paper on this subject published in the PHILADELPHIA MEDICAL JOURNAL for October 13.

The bones of the forearm were involved in 26 of the cases, of these 12 were fractures of both bones, while in 9 the radius, and in 5 the ulna alone were found broken.

Of the 65 fractures into or near the elbow joint, 5 were of the olecranon, and 7 of the coronoid process, and 2 included both the olecranon and the coronoid processes; one was a fracture of the coronoid with involvement of the head of the radius, while another had a fracture of the coronoid with an extensive injury to the lower end of the humerus.

Fractures of the coronoid are somewhat difficult to recognize from clinical data alone, and formerly they were thought extremely rare; in this series we have a total of 12 cases, making an average of 2.4% of the fractures—a rather high percentage for what was supposed to be a rare fracture.

The head of the radius was found fractured in 5 cases, while the same injury accompanied by a fracture of the outer condyle was found in 2 more. The condyles of the humerus were found injured in 41 cases, as follows: 9 of the inner, 16 of the outer, and 15 of both, and in one case a longitudinal fracture into the lower end of the humerus was found.

rather out of the average, and also as illustrating the value of Röntgen-ray information. L. K., a sailor, 19 years of age, was injured one week prior to admission to the hospital, by falling from a yardarm of a ship while at sea. When admitted to the hospital it was found that he had sustained a fracture of the right femur; he was referred to the radiographic laboratory to find the exact condition of the fragments. This is well illustrated in the tracing. The loose fragment of bone had become displaced in a transverse position to the shaft, and, in addition to this, it was found to be cracked longitudinally. Operation was thought advisable; the patient was etherized and the loose fragments of bone removed; the ends of the bone were then brought in apposition and fixed by silver-wire sutures. Recovery was uneventful, with perfect union.

Of the 18 fractures at or about the knee, 5 involved the patella, 4 the femur, 2 both the tibia and fibula, and 7 the tibia alone. Several of these latter cases were quite interesting, and as they seem to be of a rather unusual type we have decided to describe them more fully. Fig. 2 is from the knee of Mr. J., 44 years of age, who was pushed or fell from a moving trolley car. He landed on his feet, but on attempting to walk his left

TABLE OF SEX AND AGE OF PATIENTS, AND OF SIDE INVOLVED.

Fracture of	No.	SEX.		SIDE.		AGE.								Total No.	Per-cent.
		M.	F.	Right.	Left.	1-10	11-20	21-30	31-40	41-50	51-60	61-70	Over 70		
Hand	53	51	2	35	18	3	16	16	10	6	2	..	..	53	10.6
Wrist	114	93	21	55	59	2	28	30	14	18	14	8	..	114	22.8
Arm	26	21	5	11	15	7	10	3	3	..	2	1	..	26	5.2
Elbow	65	52	13	28	37	19	16	10	8	8	3	..	1	65	13.
Humerus	10	8	2	5	5	1	2	1	3	2	1	..	..	10	2.
Shoulder	36	33	3	25	11	4	3	9	8	3	7	..	2	36	7.2
Thigh and hip	15	13	2	10	5	1	4	1	..	3	4	2	..	15	3.
Knee	18	15	3	10	8	2	3	5	3	2	2	1	..	18	3.6
Leg	34	30	4	21	13	7	4	7	7	6	2	1	..	34	6.8
Ankle	76	66	10	36	40	1	13	19	19	12	8	4	..	76	15.2
Foot	53	52	1	35	18	..	4	18	12	13	5	..	1	53	10.6
Total	500	434	66	271	229	47	103	119	87	73	50	17	4	500	100

The shaft of the humerus was found broken in 10 cases, while the same bone at or near the head was found fractured in 8 of the 36 injuries about the shoulder joint. In addition to the 8 mentioned above, the humerus was involved in 2 cases of fracture of the acromion. There were 13 fractures of the clavicle, 4 of these were accompanied by more or less extensive injury to the acromion. The scapula alone was broken in 13 cases, 3 of these fractures were confined to the acromion, and 2 to the coracoid process.

The above figures would seem to indicate that a so-called sprain of the shoulder, like the corresponding injury at the elbow or wrist, is liable to be a more or less extensive fracture, as a result of unrecognized and untreated fracture at or near the shoulder joint, as at other joints we are liable to have excessive callous formation which interferes with the function or free use of the joint, and causes persistent pain; this condition is liable to be mistaken for chronic rheumatism.

The hip and thigh were involved in 15 cases, of these 8 were fractures of the shaft of the femur, while the upper portion of the bone including the neck was found broken in 7 cases.

Fig. 1 illustrates a case that is interesting in being

leg gave way under him and he found that he was unable to place any weight on it. There was evidently some severe injury about the knee-joint. The radiograph made after his admission to the hospital showed a longitudinal fracture of the head of the tibia completely separating the outer portion of that bone. This is well shown in the diagram, which is an outline drawing from the original radiograph.

A somewhat similar case, but involving the opposite side of the head of the tibia, is illustrated in Fig. 3. This is from a radiograph of the right knee of ———, who was thrown from a bicycle and sustained a fracture of the inner portion of the head of the tibia. In two other cases there was a fracture of the upper and outer edge of the tibia, accompanying a luxation of the head of the fibula and probably caused by the tearing away of one or more of the ligaments connecting these two bones.

The leg was found broken in 34 cases. Of these both bones were fractured in 24, the tibia in 4, and the fibula alone in 6 of the cases. Here, as in the case of the other long bones, the tendency of the line of fracture, especially when at or near the middle of a shaft, seems to be rather more transverse than oblique.

There were 76 fractures at or about the ankle. Of these 17 involved the inner, and 23 the outer malleolus, while 17 included both malleoli; one or more tarsal bones were involved in 19 cases, 1 of these was accompanied by a fracture of the fibula, and 3 by fractures of the tibia.

The foot was injured in 33 cases, including 25 fractures of the metatarsal bones, 5 of the tarsal and metatarsal, 1 of the metatarsal bones and phalanges, and 22 of the phalanges alone.

A survey of the accompanying table may be of interest. Of the cases enumerated here, 434 were males and only 66 females. This is probably not a correct ratio of the total number of injuries sustained by the sexes, as it is generally supposed that women are not so likely to seek hospital treatment as men, and if this be so the proportionate number of women would, of course, be greater. In many cases this apparent difference is readily explained; for instance, fractures of the hand were, according to our figures, 25 times, and fractures of the foot 50 times more frequent in men than in women, and when we consider that these fracture are most liable to occur to persons engaged in working about the moving parts of machinery, or in handling heavy weights, we can easily see why men are more likely to sustain such injuries than women.

The two sides of the body are remarkably evenly represented in this series of cases, 271 of the fractures occurring on the right, and 229 on the left side.

The age columns are also of interest. Of the 47 fractures occurring between 1 to 10 the greatest number, 19, were fractures of the elbow, with fractures of the arm and the leg of equal frequency. From 11 to 20 there were 103, and from 21 to 30 there were 119 cases. In both of these columns fractures of the wrist predominate, while among the patients ranging in age from 31 to 40 the predominating fracture was one of the ankle, with fracture of the wrist second in frequency; on the other hand, fracture of the wrist comes into prominence again among the 73 cases from 41 to 50, as well as in the 17 cases from 61 to 70.

Of the 4 cases above 70 years of age, one was a man who said he was 83 years of age, a stonecutter by trade and still regularly at work. While at work on a large stone, or in attempting to move it, the stone slipped and struck him over the metatarsal bones, and, as was subsequently shown, fracturing the 2, 3, and 4, metatarsals about the middle. Fractures of the hand seem to be distinctly more frequent between the ages of 11 to 50, while those of the wrist seem to extend to 70; the reason for this would appear to be that fractures of the hand, as a rule, are the results of blows or crushes, while fractures of the wrist usually follow or occur as a result of a fall on the hand or wrist.

Fractures about the elbow were most frequent in the first decade, and appear to decrease progressively for each successive period. Fractures of the foot, as would be expected, are most common between the ages of 21 to 50, or during the years when men would most likely be employed in the hauling or handling of heavy weights.

Fractures of the ankle, like the corresponding injury about the wrist, are divided over a longer period of time, occurring in slightly varying proportions from 11 to 70 years of age. The additional diagram of the arm and leg is added to facilitate reference, and comparison as to the frequency of fractures.

SUMMARY OF FRACTURES REPORTED IN THIS SERIES.

Upper Extremity.			Lower Extremity.		
Hand	53		Thigh and hip	15	
Phalanges	12		Shaft of femur	8	
Metacarpals	41		Head and neck	7	
Wrist	114		Knee	18	
Radius	38		Femur	4	
Radius and styloid process of ulna	28		Patella	5	
Radius and ulna, high	4		Tibia	7	
Ulna	8		Tibia and fibula	2	
Carpus	28		Leg	34	
Carpus and ulna	3		Tibia	4	
Carpus and radius	4		Fibula	6	
Carpus, radius, and ulna	1		Both bones	24	
Arm	26		Ankle	76	
Radius	9		Inner malleolus	17	
" and ulna	12		Outer malleolus	23	
Ulna	5		Both malleoli	17	
Elbow	65		Tarsus	15	
Olecranon	5		Tarsus and tibia	3	
Olecranon and coronoid	2		Tarsus and fibula	1	
Coronoid	7		Foot	53	
Coronoid and head of radius	1		Metatarsal and tarsal	5	
Coronoid and humerus	2		Metatarsal	25	
Head of radius	5		Metatarsal and phalanges	1	
Head of radius and humerus	2		Phalanges	22	
Inner condyle	9				
Outer condyle	16				
Both condyles	15				
Intercondyloid	1				
Humerus shaft	10				
Shoulder	36				
Humerus	8				
Clavicle	9				
Scapula	8				
Acromion	3				
Coronoid	2				
Clavicle and acromion	4				
Acromion and humerus	2				

OVARIAN CYSTS IN COLORED WOMEN, WITH NOTES ON THE RELATIVE FREQUENCY OF FIBROMAS IN BOTH RACES.

By DANIEL H. WILLIAMS, M.D.,

of Chicago, Ills.

Attending Surgeon to the Cook County and Provident Hospitals.

IT HAS been held by surgeons and gynecologists since the time of MacDowell, and until a very recent period, that colored women did not develop cystic tumors of the ovaries. This "impression" has been reiterated and handed down from one generation to another without any attempt, until recently, at scientific investigation and report. Men of large experience in the fields of surgery and gynecology, teaching in the best schools of the country, repeated this statement from year to year to their classes, that colored women "did not have ovarian cysts."

Brown,¹ in his carefully prepared paper, says: "One frequently hears surgeons say: 'The tumor before us presents all the features of an ovarian cyst, but inasmuch as the patient is a negress, it is certainly not so, but a tumor of different origin (cystic myoma, etc.), as multilocular cysts are unknown in the negress.'" E. Tipton² also states that he has never seen an ovarian tumor in a pure negress.

This "impression" would undoubtedly have gone on unchecked had not methods of study and diagnosis changed. He is an indifferent surgeon who would today extirpate a tumor and base his diagnosis on the naked-eye appearance of the specimen. An opinion expressed on a pathologic specimen by a distinguished operator, 50 years ago, was never called in question. It is not so today, for the opinion of the most learned operator in the world would not be accepted until the

specimen had been worked through a pathologic laboratory, and a written report submitted on it. It is the difference between the old and the new methods of studying cases; on the one hand, an opinion is founded upon a laboratory report; on the other, the diagnosis is guessed at from the naked-eye appearance of the specimen in the operating room. Comparatively few operators have the necessary laboratory facilities for studying their own cases in all of their bearings. The number of those who have taken up the study of ovarian cysts in colored women is very few. They have shown us, however, that colored women do have ovarian cysts of every variety. Not only the fair-skinned woman, but the woman of the blackest skin furnishes many excellent specimens of multilocular adenocystoma that she was thought not to develop.

After it was found that colored women did develop ovarian tumors, it was still held by some that the tumors were found only in fair-skinned women, and as C. H. Mastin said, in discussing Stone's³ paper: "Possibly the Alabama negro has not evolved to the cyst-bearing age, and, as yet, is not enjoying the full benefit of their white cousins in this pathologic particular."

In the collection of cases I will submit, it will be shown that the majority of these are in women of black skin, and three of them hail from Alabama.

Dr. I. S. Stone wrote a circular letter to the members of the Southern Surgical and Gynecological Association, inquiring "if they had operated for multilocular ovarian cysts in colored women, and, if so, to state the exact color of the patient." This proves that the theory that colored women do not have ovarian cysts of any variety, has been of necessity abandoned. The collection of cases submitted in this paper, of multilocular adenocystomata in black women ought to, and I think will, satisfy the keenest searcher after truth, that the dark-skinned negro women "have evolved to the cyst-bearing age."

The literature on this subject is very meager. Few articles can be found in the Index Catalog of the library of the Surgeon-General's office at Washington.

Dr. Thomas R. Brown's article is valuable from the fact that the cases he reports have been worked through the Pathological Laboratory at the Johns Hopkins Hospital, and are microscopically differentiated. Specimens with but one cavity are not called unilocular, because they appear to have but one cavity. In the table which is given here, Dr. Brown recorded the cases from January 31, 1892, to January 31, 1898.

OVARIAN CYSTS IN THE NEGRESS.

By THOMAS R. BROWN, from January 31, 1892, until January 31, 1898.

VARIETY OF CYSTS.													
Total number of cases of all kinds treated in the gynecological service.		Dermoid cysts.		Simple cysts (Graafian follicle and corpus luteum cysts).		Unilocular and Multilocular cysts.		Papillary cysts.		Parovarian cysts.		Intraligamentary cysts.	
W.	C.	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.
3996	589	17	7	88	3	53	2	14	0	4	0	3	0

Of the 4,585 women who entered the service for treatment, 3,996 were white and 589 colored. This

table shows that of unilocular and multilocular cysts, of the 55 cases only 2 were in colored women, *i. e.*, a proportion of 1 in 26.5. Dr. Brown says: "This is of special importance, because this form of cyst of the ovary grows to the largest size, and it is this variety of cyst which many surgeons declare never occurs in the negress." He says further: "It will be seen that with the exception of dermoid cysts, ovarian cysts are really much less common in the colored race, the result being more or less indefinite, due to the fact that the diagnosis was made clinically and macroscopically, and not microscopically."

In another table Dr. Brown analyzes 244 ovarian and parovarian cysts, operated upon in the hospital from the latter part of 1893 to October, 1898. These cases were analyzed microscopically and diagnosed in the gynecologic pathologic laboratory. I mention only his unilocular and multilocular cysts. He gives 94 cases, 88 in white and 6 in colored women, *i. e.*, 1 in 14.7, or more than twice as common among white women. Of these 6 cases in black women, 1 was unilocular, 4 multilocular, and 1 undecided. He concludes by saying: "The possibility of their being present should always be considered, when the physical examination points in that direction."

When a laboratory examination determines that over 75% of the so-called unilocular ovarian cysts are multilocular, Kelly⁴ shows clearly the fallacy of operating-room diagnosis by presenting two tables, showing the marked contrast between operating-room and laboratory diagnosis—36 cases unilocular and 38 cases multilocular ovarian cysts, differentiated macroscopically in the operating room. In another table of 60 cases, he presents 57 cases multilocular cysts, and 3 unilocular cysts, examined in the pathologic laboratory. Showing the contrast of the two methods of diagnosis, he adds the group of unilocular cysts in the ovary; after having been more carefully examined these tumors were reclassified and put with the multilocular cysts. Such a reclassification was also made necessary by the frequent discovery of trabeculae on the inner cyst-wall. These were clearly the remains of partitions between originally separate cysts, which later became fused by pressure and atrophy of the septa, or by spontaneous rupture from tension."

Stone's³ paper is valuable from the fact that it will stimulate observation and encourage study in a quarter where the colored population is largest. The answers sent in by the most distinguished surgeons and gynecologists in the South, on this interesting as well as important subject, do not tell us that these growths had been studied outside the operating room. The large number of unilocular cysts reported make it possible, in the light of Kelly's analysis, that a sifting of these cases would have gone far toward fixing the frequency of multilocular cysts in colored women. That ovarian tumors in colored women are not rare has been shown already by Dr. Brown's paper, and this fact was made still more clear by Kelly's table already given in this paper, in which microscopic examination shows that over 75% of unilocular tumors are really multilocular.

A point referred to by the few writers and observers is the comparative infrequency of these tumors in negroes, assuming that this refers to a person of dark skin. It is stated by the Census Bureau that it is thought that the number of negroes in this country will reach 12,000,000; of this number it is said not one-fourth are full-blooded. It is a well-known fact

that in the same family are often found brothers and sisters—black, mulatto, and white—born of the same parents. The color of the skin in this country furnishes no correct index of the purity of the blood of a colored person any more than it does the purity of the blood of a white person; therefore it may be pertinent to inquire if this interesting question is to be confined to negroes of black skins, brown skins, olive skins, or to any shade of color in the negro. Who is to determine where the line is to be drawn? For a further study of the relative shades of color of the native African, I refer you to a colored plate in Meyer's *Konversations-Lexicon*, published in Leipzig, giving types of all the principal tribes of Africa. This plate shows complexions varying from a clear mulatto to those of ebony black.

That a greater interest has been taken in the surgical diseases of the negro is evident from the classical paper of Dr. Rudolph Matas. Before the war, and for years afterwards, little attention, if any, was paid to the surgical diseases of the negro. Very few had been operated upon, and very small was the number of hospitals in the South for either white or colored people. Now all this has changed to a great extent, and surgery in the negro is no longer neglected, since we find hospitals for colored people all over the North, and in the South as well. Trained physicians and surgeons of the race have taken up this work among the colored people, and the work of investigation and study of diseases in the colored race, inaugurated by the white profession, is continued by the colored scientists. The reason so few ovarian tumors have been found in negro women is manifold. First, I would mention the presence of inborn superstition in colored people. The ignorant and uneducated colored people have an abiding faith in liniments, ointments, plasters, and a long list of most repulsive panaceas. Second, they have a natural dislike and horror of hospitals; they shun the hospital. Of this I was convinced while in charge of a large hospital devoted almost entirely to the care of colored patients. A great many of those who entered were moribund, incurable, or past the operative stage of their diseases; others were kept away on account of poverty or inability to get to a hospital. But the hospital is losing its terrors for colored women, and they begin to flock to these places where their cases will meet with proper treatment and a correct diagnosis. How often do we find faulty diagnosis where colored people have presented themselves for examination? It often happened that their cases were diagnosed as "dropsy" and treated as such. Dr. D. S. Lamb, in the paper in which he records 183 autopsies made on colored women, refers to such cases.

The fear of the ailment being suspected to be pregnancy also prevents many ignorant women from presenting themselves to be examined, a fact which has come under my own observation. A ruptured cyst, a twisted pedicle, or a hemorrhage would cause death, and only by an autopsy would we be acquainted with the real cause.

The statements and tables of Dr. Rudolph Matas, and Dr. D. S. Lamb, and Dr. Brown, are interesting and convincing, on the relative frequency of ovarian cysts in colored women. They show that these cases exist in nearly equal numbers in New Orleans, and are almost as frequently found in Chicago and Washington, and that these cases had been studied and reported 35 years ago, by Dr. W. C. Miner, of Alexandria, Va.

Table given by Dr. Rudolph Matas, of New Orleans, in a communication to Dr. Stone (Washington, D. C.), November 27, 1897, taken from the Charity Hospital Reports.

		White.	Colored.
1890	Ovarian cysts.....	0	2
1891.	"	3	3
1892.	"	5	3
1893.	"	5	3
1894.	"	8	9
1895.	"	16	10
1896.	"	9	4
Total in six years		46	34

In addition in six years, 1890 to 1896.

	White.	Colored.
Multiple cysts.....	0	1
Multilocular cysts.....	1	2
Dermoid cysts.....	4	3
Cyst of broad ligament.....	1	2
Parovarian cyst	0	3
	6	11
Total cysts	52	45

The population of the Charity Hospital during the 10 years, 1886–1896, was 45,563 whites and 23,409 colored. Total 68,972.

The question of the frequency or the possibility of ovarian tumors in colored women, came up during an operation on a woman in Washington, referred to in the paper of Dr. Stone. Dr. Lamb kindly looked through the Museum of the U. S. Army shortly afterwards with me, and we had no trouble in locating several fine specimens of ovarian tumors, mentioned in his report. Dr. Matas' statement and tables are so important that they are given in full. He says: "When a student, I saw at least two ovarian cysts in colored women. In reports of 'Charity Hospital,' 1896, I find 2 simple and 1 multilocular cyst in colored women, all presumably operated upon. I have not looked up older reports, but am satisfied that it is the general impression here that the ovarian tumors are not considered very rare in the colored race."

Dr. Michinard says: "I remember having removed at least 10 ovarian cysts when I had charge of the colored section of the gynecological department of the Charity Hospital. I saw 5 or 6 more requiring surgical treatment." Continuing, he says: "I do not remember the purity of the race of the colored women in whom the cysts were, nor do I recollect how many of the cysts were multilocular. I am satisfied that the colored woman is as subject to cystic degeneration of the ovaries as the white."

Dr. Fortier, of the Charity Hospital of New Orleans, says: "From September, 1894, to November, 1896, there were 8 cases of ovarian cysts in colored women admitted into the Charity Hospital. Four was operated upon successfully; one was a double cyst; the others were not operated upon."

Dr. H. R. Black⁶ also operated upon a perfectly black woman, aged 23, March 11, 1892, for ovarian cyst. The cystic tumor was about the size of a pregnant uterus at 7 months. Patient recovered.

Dr. H. A. Royster,⁷ in his article, "Ovarian Cysts in the Negress," has this to say: "The occurrence of ovarian cysts in negro women is sufficiently rare to at least justify reports of cases as they are seen from time to time. Many surgeons of large experience in operations on colored people have never met with these tumors.

As compared to uterine fibroids in the same race they are exceedingly uncommon, and are likely to be slighted in the diagnosis of doubtful abdominal enlargements. Dr. George Ben Johnson, who was reported by Dr. Stone as not having seen a case of this kind, has sent to Dr. Royster the histories of 4 cases since operated on successfully by him, 1 being a multilocular cyst in a mulatto woman."

Dr. Royster himself, during a practice of 4 years, mentions 3 ovarian cysts in the colored women which came under his observation. The first case was that of a black woman with a large multilocular cyst, the second a mulatto, who refused surgical interference. Diagnosis: Very large cystic tumor, but could not be confirmed. The last case was a unilocular cyst in a black woman. Operations were successful, and both patients recovered.

At the last meeting of the Mississippi Valley Medical Association, Dr. A. H. Cordier,⁸ of Kansas City, Mo., mentioned the case of a woman, colored, 43 years of age, who had carried an ovarian cyst for 11 years. The cyst, with its contents, weighed 160 pounds. The patient died on the ninth day following operation, from exhaustion.

Dr. William T. Briggs,⁹ of Nashville, Tenn., discussing the paper read by Dr. Tiffany, "Comparison Between the Surgical Diseases of the White and Colored Races," stated that he had one case of regular ovarian tumor in a negro, weighing 100 pounds. It was probably the second case he had seen in the negro.

Dr. Davis W. Yandell,¹⁰ of Louisville, Ky., has seen but two ovarian tumors in the black race. (*Ibid.*, p. 271.)

I give here a table showing all the cases as I found them. Another general table tells if they were unilocular or multilocular cysts.

I. OVARIAN CYSTS IN COLORED WOMEN.

Cases reported and collected by:

Dr. R. Matas	45	Dr. W. I. Briggs.....	1
Dr. T. R. Brown.....	32	Dr. D. W. Yandell.....	2
Dr. I. S. Stone *	54	Dr. A. H. Cordier	1
Dr. H. A. Royster.....	7	Dr. R. Peterson	1
Dr. D. S. Lamb	30	Dr. A. F. Perry	2
Dr. H. A. Kelly	7	Dr F. E. Maxey.....	1
Dr. W. C. Miner.....	2	The Author.....	33
Dr. H. R. Black.....	1		
Total.....		220	

Out of 220, 64 were unilocular or multilocular cysts.

II. UNILOCULAR AND MULTILOCULAR CYSTS IN COLORED WOMEN.

	Unilocular.	Multilocular.	Uni. & Multi.
Dr. Matas	0.....	2.....	0
Dr. Stone	5.....	10.....	0
Dr. Royster	1.....	2.....	0
Dr. Lamb	2.....	1	0
Dr. Brown.....	1.....	6.....	1
The Author.....	0.....	33.....	0
	9	54	1

Total, 64.

In my first year of practice I had a woman with a large abdomen present herself for diagnosis. She was operated on at the Woman's Hospital and found to have multilocular cyst. Within 6 months I saw another and referred her to Dr. Henry T. Byford. From 1886 to 1893 I had 11 cases that I operated upon

* Stone finds only 15 cases outside of New Orleans, where a dark-skinned woman was operated upon for ovarian tumors, multilocular or unilocular. In Dr. Lamb's cases, the predominance of involvement of the right ovary is striking.

for unilocular or multilocular cyst. From 1893 to 1898 I saw 6 cases in the morgue at Washington and 5 in wards, which were diagnosed as ovarian cysts, but who refused operation, and 3 who were operated upon. Since my return from Washington I have had a number of unilocular and multilocular ovarian tumors—14 in white and 6 in colored women. Of the 6 colored women operated on within the past 2½ years, in Chicago, 3 were from the South. Of the uni- or multilocular cysts referred to in this paper, only 9 were found in light-skinned women. I have intentionally omitted to refer to a list of ovarian tumors of other varieties operated on during the last 14 years, for the very reason that it is no longer a question as to their relative frequency in colored women of any shade of color. During the early period of the appearance of colored women in hospitals as patients, the mortality in ovariectomy was appallingly high, and while there were many skilled ovariectomists doing excellent operative work, their results were bad on account of the almost certainty of septic infection. On account of this high mortality many white women would carry their tumors, have them tapped, and worry along until death, hastened often by some intercurrent trouble, would relieve them of their burden. This being a fact, it is no wonder that the poor colored woman, unable to receive the advantages of proper diagnosis and treatment, died without operation. There was no place where she could present her case for a full hearing, and little or no attention was ever paid to her condition. Doubtless hundreds of them have had their cysts and died a natural death rather than an operative one.

In keeping with the impression which prevailed everywhere in the profession concerning the infrequency of ovarian cystomas in colored women, and which inspired this article, is another deep-rooted "impression," that uterine fibromas were very much more frequently found in colored than in white women. I listened to this teaching while in school; I have heard it from every teacher, and met with the same statement in every textbook. In fact, it is so generally accepted that one may not be prepared to read any statements leading to the contrary. My most extensive experience has been in this line of gynecologic work, and for a number of years I worked in the Freedmen's Hospital, entirely on colored women. This period was followed by a similar one among the white and colored people of Chicago. Had it not been for an equal service in both races, I would have accepted the opinion of the profession as a whole, with a few notable exceptions, and agreed that colored women had about 4 times as many fibroid tumors as white women. I was ready to bow to this conclusion until I began to compare the number in both races. I have operated in 16 years, 357 times on both races for uterine fibromas and have found about 2% more fibrous tumors in colored women than in white. Should I complete 500 operations for uterine fibromas, I will be able to prepare some tables and statistics which may serve to indicate the relative frequency of these tumors in each race, and may perhaps correct the false "impression" which is met with everywhere. I find myself in as good a geographic position, perhaps, to study and investigate this important and interesting matter, as any one in this country, save perhaps, those on the border line between the North and the South. I agree perfectly, with Dr. Kelly, on the position he takes, and the statements he makes in regard to the relative frequency of these fibroid

tumors in both races. His position geographically, is one of the best for studying any surgical conditions affecting both races. The facilities afforded him for observing, studying, and recording the conditions referred to, will cause his statistics and statements to go a long way toward establishing correct views on this subject. To illustrate this, I quote him verbatim: "From the standpoint of the relative frequency of myoma in the white and colored race, this analysis of 50 cases, while small in number, yet serves to bear out the statement made by me some months ago before the South Carolina Medical Society, that myomas were as frequent in white as black women. A number of those present at that meeting took exception to this remark, claiming that white women were able, being better situated financially, to come greater distances for treatment, than were the impoverished colored women, who, per force of circumstances, must remain at home. But according to this table (*i. e.* the table presented by Kelly) the proportion is as $6\frac{1}{7}$ to 1, there being 43 whites to 7 blacks. Of the latter, 6 appeared to be of pure African descent, the seventh was a mulatto.

While the criticism offered by these gentlemen bears a certain weight, yet from the very fact that we are in the center of a large negro-population in Maryland and the adjacent States of Virginia and Delaware, the proportion should be very different from this which I present, if the statement that myomas are more frequent in the colored than in the white race, is to be sustained.

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ON THE USE OF FORMALIN IN THE DISSECTING ROOM.

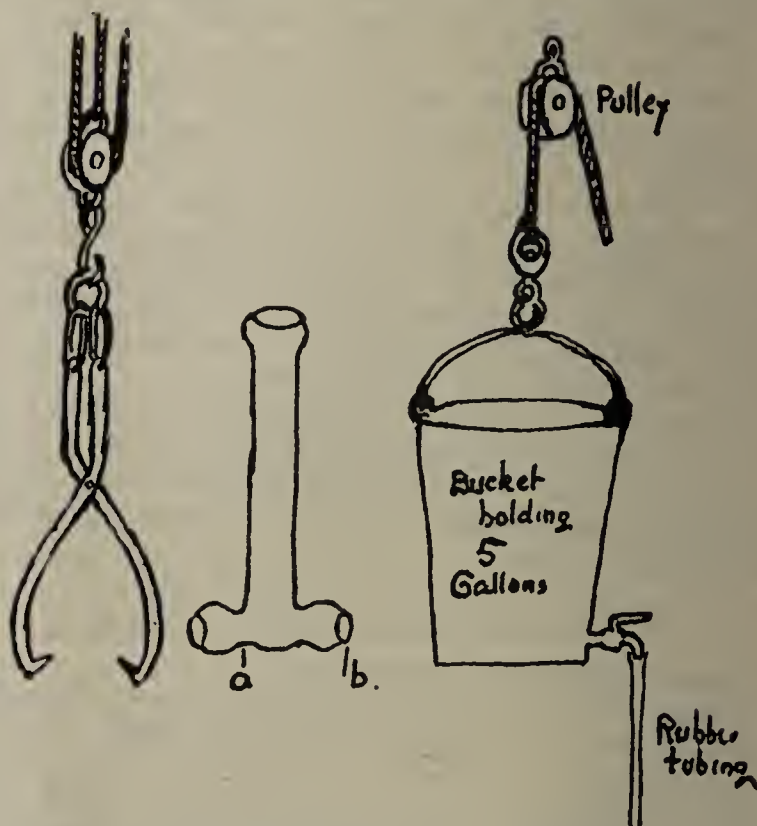
By WILLIAM KEILLER, F.R.C.S. Ed.,

of Galveston, Tex.

Professor of Anatomy, Medical Department University of Texas.

THE problem of preserving the human body for dissection is an exceedingly important one, and on its successful solution depends to a great extent the comfort and thoroughness of anatomic teaching. More especially is it important here in the South, where a combination of heat and moisture through 9 months of the year furnishes the best possible conditions for decomposition and the growth of molds. After many experiments I have succeeded in preserving bodies throughout the summer for dissection during the college session. They keep perfectly on the tables in all weather, at all temperatures, and for indefinite periods. They are free from odor, and pleasant to handle. It is true that they are harder and stiffer than normal, but I scarcely consider that a disadvantage. The muscles retain their prismatic form instead of stretching out into flabby

shapelessness; the viscera are perfect demonstrations of the truth of His's models. The liver, kidneys, spleen, pancreas, heart, and even the lungs, are firm and perfect in form, and the abdomen presents every organ in as true relation as is found on the operating table. The brain is hardened in situ and its form is perfect. It is also elastic and maintains its form after removal from the body, while dissections of the white fibers made by tearing give wonderful ocular demonstrations of their course, as in the corona radiata, peduncle of the cerebellum, anterior commissure and cingulum. I have tried chlorid of zinc, arsenious acid, and perchlorid of mercury, and given them all up. Of these the last gave me the best results, and I described fully my method of using it in an article, on the Teaching of Anatomy, in the *New York Medical Journal* of September 8, 1894. Cold storage I have no personal experience of, but I believe it far inferior to my method of embalming. I do not consider it a matter of any moment to preserve the red

FIG. 1.
Tongs to suspend body.FIG. 2.
T tube for injection.FIG. 3.
Apparatus.

color of the muscles, but the method about to be described causes less alteration in color than any other method with which I am conversant.

General Directions.—It is important, especially in warm weather, to preserve the cadaver as soon after death as possible, certainly within 48 hours, unless the mortuary be artificially cooled; but a subject need not be despaired of because it is beginning to turn greenish over the abdomen, occasionally it may be successfully preserved even then.

The necessary apparatus is a set of T-tubes the size represented in Fig. 1. These may be of glass or brass, the brass tube being preferable. The ends *a* and *b* should be the proper size to fit the average common carotid artery, the length from *a* to *b* not more than $\frac{3}{4}$ inch, so that the tube may be slipped into the shortest possible slit in the artery. A galvanized iron pail holding 5 gallons, with handle, swivel, and stopcock, as in Fig. 2; 15 feet of rubber tubing with a stopcock 1 foot from its lower extremity, and a strong pair of tongs, like ice tongs (Fig. 3), to suspend the body by the ears during part of the process, with the necessary rope and

pulleys to suspend the injecting fluid and body from the ceiling complete the equipment.

After trying the common femoral artery and intrapericardial aorta, I fixed on the right common carotid as the most suitable artery for our purpose. It is easily reached by a dissecting-room attendant of average intelligence. A very small portion of the body is disturbed and made unfit for dissection, and that is sufficiently compensated for by the preservation of the other side; by it the whole arterial system and especially the brain is readily injected; the heart and its relations are not disturbed as in aortic injections, and the internal jugular vein can be readily used for washing the blood out of the body if it be so desired. Expose the vessel in the usual way just where it is crossed by the omohyoid; clear an inch of the artery, pass two ligatures beneath it, cut a vertical slit $\frac{3}{4}$ inch long in the vessel, introduce one end of the short piece of the T-tube into the artery and then the other, and tie both in securely. Having the fluid ready, empty the air out of your rubber tubing, connect with the body and introduce five gallons of the fluid (Formula 1) into the subject while it lies horizontally under a pressure of 9 to 10 feet. The whole body should swell up and the skin become tense, with the possible exception of the legs below the knees.

After the full measure of 5 gallons has been injected the body is to be suspended by the tongs in the external auditory canal, for 12 to 24 hours, till the feet are swollen and edematous, and then it may be taken down and either put in a tank where it is immersed in a formalin mixture (Formula 2), or wrapped in a waterproof sheet and laid on a shelf till required for dissection.

Occasionally I find it desirable to use more than 5 gallons, following up the first injection with another 5 gallons in 24 hours, or at least with as much more fluid as the body will hold. This second injection is usually given with the body suspended, as the legs are the regions most difficult to reach.

In the following formulae I use the term formalin as the equivalent of 40% formaldehyd in water:

Formula 1.—For preservative arterial injection:

R.—Formalin 2½% or..... 1 pint.
Carbolic acid (crystals) 2½% or..... 1 pint.
Glycerin 10% or..... 4 pints.
Water up to..... 5 gallons.

Formula 2.—For tank to hold preserved bodies till required for dissection:

R.—Formalin..... 1.
Carbolic acid..... 1.
Glycerin..... 2½.
Sodium chlorid..... 1.
Water to make..... 100.

The brain, after removal from the body, is best preserved in a fluid of the composition of Formula 1, but if quite firm may be preserved in Formula 2.

In the above formulae the carbolic acid is used because I find that formalin in 2½% solution is a very inefficient preservative against molds, while carbolic acid is strongly antagonistic to them. It is impossible to use stronger solutions of formalin than 2½%, as the tissues would be hardened too much for dissection. The glycerin is added to prevent the parts drying too rapidly in the dissecting-room, and also to lessen the hardening effect of the formalin. In dry climates, such as that of Denver, I should recommend higher percentages of glycerin, even as much as 20%

For the injection of the arteries with a solid mass to facilitate their dissection, I use the following formula:

Formula 3.—Arterial injection mass:

R.—A. Potassium bichromate..... 3 ounces.
Water..... 1 pint.
B. Lead acetate (commercial)..... 6½ ounces.
Water..... 1 pint.
C. Gelatin..... 4½ ounces.
Water..... 1 pint.

Dissolve A, B, and C in separate vessels and keep them all at a temperature just a little below the boiling point by immersion of the vessels in a large pot of water. Strain the gelatin solution through a fine wire strainer into a vessel capable of holding 2 quarts; add to this the bichromate solution; heat *almost* (not quite) to boiling point and add gradually the acetate of lead solution, stirring all the time. A rich orange or yellow fluid (according to the temperature) will be formed (chromate of lead). Allow the mixture to cool till you can just bear the heat with your hand (110° or thereabout), and inject into the arteries with a brass anatomic syringe, using considerable force. The colored injection should not be used in less than a week after the preservative injection.

This is an excellent arterial injection for formalin bodies. Even the finest arterial twigs will frequently be found beautifully demonstrated, and the formalin combines with the gelatin to make an insoluble, elastic substance. The yellow shows up very distinctly, and the chemical union of the fluids in the gelatin medium gives very perfect division and distribution of the coloring agent. A reddish mass can be similarly formed with bichromate of potash and sulfate of copper, but I have not tried it.

For bodies that are to be used for operative surgery, 2½% formalin causes too much hardening, so that it is difficult to reach the arteries through short incisions, and excisions of joints are impossible. Therefore, in preserving bodies for the operative surgery class I use only 1% formalin, the proportion of carbolic acid and glycerin remaining the same as in Formula 1.

One of the best operative surgery bodies I ever prepared was preserved by first washing all the blood that I could get out of the body with a large quantity of 1% formalin, 1% carbolic acid, and 1% common salt; the internal jugular vein being opened to drain the blood, and the fluid being allowed to run till clear, after which the body was injected with Formula 1, the vein being ligatured.

It occasionally happens that no fluid will pass into one or both legs. They can then be perfectly preserved by suspending the subject and introducing the fluid into the cellular tissue by an aspirator needle thrust deeply into the limb, first in the buttocks, then in the thigh, calf and front of the leg, filling each fascial compartment. Such a body cannot be used for dissection, as the arteries cannot be injected with the colored mass; but it is good for operative surgery.

When the subjects are placed on the dissecting table, the limbs separately and then the whole trunk are wrapped in unbleached domestic dipped in Formula 2, outside of which is wrapped waterproof sheeting made of oiled domestic for the limbs, and oiled duck for the whole subject. A little attention on the part of the student will keep the parts indefinitely. The appearance of any mold calls for temporary immersion in a tank containing Formula 2.

Waterproof sheeting is easily prepared by saturating

domestic or duck with boiled linseed oil and drying, the least possible quantity of oil being used. Such oiled sheets must not be folded up or they will heat and become charred; they must be hung loosely on lines. Lastly, each body has attached to the lobule of the ear a brass tag with a number, the number referring to a record of the name, diagnosis, etc., sent from the hospital, and the record is completed by noting pathological findings in the course of dissection. At the end of a couple of months or more the organs are found in good condition for microscopic examination.

SOME ANOMALOUS CASES OF TYPHOID FEVER.*

By AUGUSTUS A. ESHNER, M.D.,

Professor of Clinical Medicine in the Philadelphia Polyclinic; Physician to the Philadelphia Hospital; Assistant Physician to the Orthopedic Hospital and Infirmary for Nervous Diseases.

In any community provided with a water-supply constantly exposed to the danger of contamination, cases of typhoid fever will always occur, and while, perhaps, no other disease is as common or as well known, the clinician must ever be on the alert lest he overlook mild or anomalous cases or mistake for typhoid other diseases that simulate it. The possibility of confusion is not diminished by the fact that typhoid fever is exceptionally unattended with elevation of temperature, nor that the disease is at times unassociated with intestinal lesions. The liability to error has, however, been much reduced in recent years through the employment of the Gruber-Widal serum-test, which, although it may be considered the most trustworthy among the diagnostic phenomena of typhoid fever, on the one hand, cannot be relied upon at an early stage of the disease, and occasionally fails to yield a positive reaction in genuine cases, while on the other hand a positive reaction may be due to an earlier attack of typhoid unnoticed or forgotten. Even in the absence of the blood-serum reaction it seems yet permissible, though obviously not entirely safe, in temperate climates, to consider as typhoid any continued fever not explicable upon other grounds. The symptoms of the disease will necessarily vary with the degree of virulence of the typhoid-bacilli on the one hand and the degree of susceptibility or immunity of the infected individual on the other hand.

The following cases are briefly reported for the purpose of evoking discussion and a recital of personal experience. The first two are noteworthy for the striking contrast with each other they exhibit, the one being extremely severe and the other unusually mild.

CASE 1.—An unmarried woman, 38 years old, was admitted to the Philadelphia Polyclinic August 22, 1899, after a week's illness, attended with fever, diarrhea, and delirium. She had just come from Atlantic City, where she had been but a short time, and was on her way home to Long Island, whither she had been sent on account of her illness. She had previously been in Washington. Her temperature was 104.8°, the pulse 104, the respirations 28. Her face was flushed and presented a dull, heavy expression. Sordes were present on the teeth, and the tongue was covered with a brownish crust. The abdomen was soft; the spleen enlarged. Heart and liver exhibited no abnormality. No rosespts could be discovered at the time, although they appeared a little later. The patient was in a state of profound depression, with muttering delirium. The urine, examined in the course of a day or two, was found free from albumin and sugar, containing a small amount of indican and yielding the diazo-reaction; and the blood responded positively

to the Gruber-Widal test. Tub-bathing was at once begun in water at a temperature of 68° F. for 10 minutes whenever the temperature in the rectum reached 102.2°, and half an ounce of whisky was given before and after each bath. An ice-bag was applied to the head and one to the abdomen, and $\frac{1}{10}$ grain of strychnin was administered every 3 hours, together with peptonized milk every 2 hours. The temperature persisted at its high level. The bowels moved involuntarily, and the bladder was catheterized on account of failure to void urine normally. On the twenty-third day after admission blood was observed in the stools, and the baths were suspended temporarily, being replaced by sponging with dilute alcohol. Later in the day a hemorrhage of 6 ounces, and subsequently a second of 16 ounces took place from the bowel. Morphin, $\frac{1}{4}$ grain, and ergotin, $\frac{1}{2}$ grain, were given hypodermically. On August 25, sponging for 20 minutes was begun when the temperature was above 102°. Tub-bathing was, however, resumed on the 29th, and was continued as required until September 13. Sixty tubs and 44 sponges in all were given.

The temperature did not begin to waver until August 30. On September 1, it fell below 99°, and thereafter it continued irregular until September 4, when again it reached the 103° level, continuing somewhat irregularly thereabouts until October 2, when it once more began to decline; but it did not reach the normal, to remain there, until November 13. Cough was a troublesome symptom from the beginning, but only signs of bronchitis could be discovered until about September 11, when signs of pneumonia at the base of the left lung appeared, with rusty sputum containing diplococci, but no tubercle-bacilli, and after a few days also signs of pleurisy. This condition yielded with extreme reluctance. It was thought the period between September 2 and 15 was occupied by a relapse. On October 10, the urine contained albumin and hyaline and granular tube casts; and on the 24th a slight trace of albumin, without casts, and it yielded the diazo-reaction. On the 12th, the blood responded positively to the Gruber-Widal test. The patient was discharged November 26, completely recovered.

The intoxication in this case evidently was profound, delirium, restlessness, tremulousness, sleeplessness, and nausea being marked features. For a time perforation of the bowel was feared, and the services of a surgeon were held in readiness for needed intervention at a moment's notice. Oxygen-inhalations were employed for a part of the night of August 26, and the morning of August 27.

CASE 2.—A driver, 30 years old, was admitted to the Polyclinic Hospital September 5, 1899, on account of a fracture of the fibula, which received appropriate treatment and pursued an uncomplicated course. The temperature was 100.6° on admission, and continued at this level for a week, when it rose to a slightly higher plane, running between 101° and 103°, in the neighborhood of which it continued for 10 days, when it began gradually to decline, reaching the normal on the twenty-fifth day, and so remaining. Throughout all of this period the patient was perfectly comfortable and made no complaint whatever. The urine was found free from albumin and sugar, and on September 18 it failed to yield the diazo-reaction, although this was found present subsequently, on September 19, and October 6, 12, and 17. No malarial plasmodia were found in the blood, but a positive reaction to the Gruber-Widal test was obtained on September 16 and 18, and again on the 22d. On September 18, there had been nosebleed, the spleen was found enlarged, and rosespts were detected upon the abdomen. The patient was dismissed, perfectly well, on October 24.

The original rise of temperature in this case was attributed to the traumatism inflicted, together with the consequent disturbances attendant upon the fracture, particularly as the general condition was so slightly affected as not to attract the attention of the patient, whose diet had thus far not been specially restricted. The persistence of the pyrexia, however, together with the development of the remaining symptoms, left no doubt as to the diagnosis, although it cannot be asserted

* Read before the Philadelphia County Medical Society, October 24, 1900.

with certainty whether or not the patient was suffering from typhoid fever on admission. The case is noteworthy only for the extreme mildness of the constitutional manifestations throughout.

The next two cases are interesting by reason of their hemorrhagic character. They are to be reported in detail at a later date.

CASE 3.—A heavy drinker, 39 years old, was admitted to the Philadelphia Hospital July 13, 1900, in a delirious state, after an illness of 3 weeks' duration, which the symptoms indicated to be typhoid fever. In the course of a few days a hemorrhagic eruption appeared all over the body; the urine became bloody, and hemorrhage from the bowel took place. Death resulted and blood was found in the peritoneal, pleural and pericardial cavities; in the stomach and intestines; in the bladder, the lungs, the kidneys and their pelves, the adrenal bodies and the pancreas. The ileum, besides, was the seat of typhoid ulceration.

CASE 4.—A laborer, 28 years old, was admitted to the Philadelphia Hospital on July 14, 1900, with symptoms of typhoid fever. Five days later a petechial eruption appeared on the chest and the abdomen and persisted for several days. Death took place on the eighth day of observation, and postmortem examination disclosed the existence of typhoid ulceration of the intestines.

The next case that I shall report I believe to have been one of typhoid fever without intestinal lesions. I was, unfortunately, unable to secure permission for an autopsy, and cannot, therefore, verify the correctness of the diagnosis, which was based upon the presence of the Gruber-Widal reaction and the total absence of intestinal symptoms.

CASE 5.—I was called on August 18, 1900, to see a young man, 19 years old, who had been employed as a waiter and had complained of headache and weakness for a few days. Other than elevation of temperature and slight roughness of breathing, no objective abnormality could be detected, and, apart from a few rosespts and slight enlargement of the spleen, nothing special developed in the further course of the case. On August 20, 24, and 27 the blood failed to yield the Widal reaction; on September 6, clumping was present and an incomplete reaction was obtained; finally, on September 9, the reaction was complete and immediate. Death took place on September 12, from progressive asthenia.

A considerable number of cases of typhoid fever without intestinal lesions have now been reported, and such a diagnosis seems entirely legitimate. Of course, the recognition, as well after death as during life, is possible only by bacteriologic methods, and is to be based upon the presence of typhoid-bacilli in the intestinal discharges or contents or in blood from the spleen, or upon a positive response of the blood to the Gruber-Widal test. When it is reflected that infection with other microorganisms is not confined to a single viscus, it should not occasion surprise that infection with typhoid-bacilli should not be confined to the intestine, and it may safely be concluded, I think, that no organ or tissue exhibits a specific predisposition to infection with any one microorganism. There is, thus, justification for the view that typhoid fever is not inherently an intestinal disorder. That it is so in the vast majority of cases may be due to the mode of infection.

The difficulty in the differentiation between typhoid fever and acute miliary tuberculosis is perfectly well known, the latter disease being the more often mistaken for the former. I have elsewhere dwelt upon the differential diagnosis in connection with the report of a probable case of miliary tuberculosis simulating typhoid fever.¹ I recall, distinctly, however, the case of a boy

at the Philadelphia Hospital during the past summer, who presented symptoms that led me at first to make a diagnosis of miliary tuberculosis as against typhoid fever, but in which, as the disease developed, it became perfectly clear that the latter was the condition really present.

I have within a few days seen a woman in whom premature delivery resulted partly in consequence of an attack of malarial intermittent fever, and partly in consequence of the large doses of quinin administered, and who, after an uncomplicated labor without puerperal infection, developed symptoms of typhoid fever, at the conclusion of which those of intermittent fever reappeared, and these in turn yielded to the administration of quinin.

I wish, finally, to make brief reference to 2 cases previously reported, in which typhoid fever coexisted with two other infections. In one of these typhoid fever developed in a syphilitic subject presenting also symptoms of pulmonary tuberculosis;² in the other typhoid fever developed in the course of pulmonary tuberculosis and was complicated by pneumonia.³

AN UNUSUAL CASE OF ACHYLIA GASTRICA.

By FRANK H. MURDOCH, M.D.,

of Pittsburg, Pa.

ON April 1, 1897, a patient 54 years of age, came to me complaining of loss of appetite, constipation, lassitude and almost constant dull pain in the frontal region. Physical examination revealed nothing wrong excepting gastroptosis, the lower border of the stomach reaching the navel. Examination of the stomach contents showed that the patient was suffering from achylia gastrica, the rennet zymogen even being absent, and subsequent examinations, made at intervals during the year, gave a similar result. Two examinations made in January, 1898, proved that achylia still existed, but now rennet zymogen was present though tardy, curdling not taking place for 3 hours after the addition of the calcium solution. During these 10 months lavage had been used for some time, and afterwards intragastric faradization, which benefited the patient, but had no appreciable effect towards restoring the gastric secretions. At the end of this time all treatment was abandoned as useless, and no examination was made until May 30, 1900, when he came to me complaining that 3 days before, one evening, after supper, he became suddenly dizzy, and had to lie down, and soon afterwards was nauseated and tried to vomit, but did not. For the next three days he continued to feel dizzy, so that he staggered when walking and was unable to work. Examination of the stomach contents showed that free HCl was now present in about normal amount, and has continued so up to the present time.

In this case I am chemically certain that achylia existed for 10 months, and morally certain that there was no gastric juice in this man's stomach for three years, and I believe its unexpected return was responsible for the sudden attack of nausea and vertigo experienced by the patient. Achylia gastrica is a common enough disease, but it is quite unusual for the gastric secretions to be restored after having been absent for so long a time. Hemmeter says: "To our knowledge there is no case of well-authenticated achylia on record in which a cure or an improvement in the neurasthenia was reported to have cured or improved the secretory defect." This case, however, proves that when achylia is due to nervous disturbances, and not to any anatomic change in the gastric mucous membrane, the secretion

² PHILADELPHIA MEDICAL JOURNAL, March 25, 1899.

³ American Journal of the Medical Sciences, July, 1899.

¹ International Medical Magazine, February 15, 1898.

of the gastric juice may be restored after long absence. Einhorn also has reported one case in which the gastric secretions were reestablished after an absence of 5 years.

NEW SLIDE LIFTER AND HOLDER.

By A. H. STEWART, M.D.

Laboratory of Bureau of Health, Philadelphia.

As there is, at the present time, no instrument of this character on the market of any practical value, this instrument, I believe, will prove entirely satisfactory.

The demand for a slide forceps has been brought about by the rapid diagnostic bacteriological work of the clinical and bacteriological laboratories.

Staining on coverslips, although much more cleanly and less dangerous for pathogenic organisms, and, in fact, the only method of making good, permanent mounts, yet it is not absolutely necessary when the consideration of accuracy and time are taken into account.

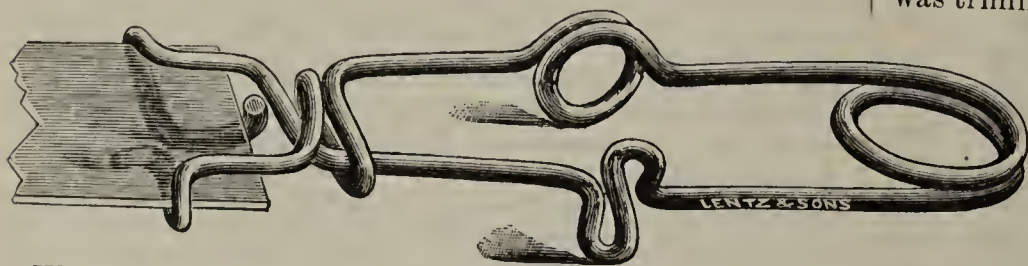
The general design of this instrument is somewhat similar to the coverslip forceps made for me five years ago, which has become so generally used, and of which several inferior and cheaper modifications have been made to sell to students.

This slide lifter and holder lifts the slide from a glass or wood surface by a sharpened blade and holds it firmly. The slide is prevented from slipping backward upon the body of the forceps by an upward curve of the second blade.

Only about one-half inch of the slide is grasped by the blades of the forceps, which is quite sufficient to hold the slide firmly, and when the slide is heated there is no danger of breakage.

The microscopic slides of the present day are only about one-half as thick as those made only five years ago, and are consequently more difficult to handle.

When a slide is partly covered with stain, in order to lift it with the fingers, the slide must be drawn to the edge of the table.



With these forceps, any thickness of slide, covered with stain, can be lifted without soiling the hands or spilling any stain whatever upon the table or one's clothes.

To use the forceps properly, prevent the slide from moving with the index finger of left hand, and press upon the sides of the forceps, and when the slide is lifted the blades will grasp and hold it firmly.

AMPUTATION OF BOTH FEET, THE LEFT HAND AND THE RIGHT HAND, SAVING THE LITTLE FINGER AND PART OF THE THUMB.

By J. S. WIGHT, M.D., LL.D.,
of Brooklyn, N. Y.

Professor of Operative and Clinical Surgery at the Long Island College Hospital.

JOSEPH GILLIGAN, 6 years of age, having both hands and both feet crushed by a trolley-car, was admitted to the Long Island College Hospital on the afternoon of October 30, 1899.

The shock was very severe. Under treatment he reacted somewhat. On the next day, October 31, I operated, amputating both feet and the left hand, saving the little finger and part of the thumb of the right hand. These amputations were performed in 12 minutes. I was assisted by Drs.



Cochran, Rogers and Rae. On the third day mortification began in the left leg stump. On November 8, I operated on the left lower limb, first disarticulating at the knee-joint, and then, finding the blood-supply imperfect, I amputated at the middle of the thigh. Subsequently the thigh-stump was trimmed and put in better shape. On January 10, 1900, I reoperated on the right leg-stump. On January 31, 1900, I operated again on the left forearm; these reamputations were necessary on account of necrosis of parts of the flaps and the portions of the ends of the bones. No further operation was required on what was left of the right hand. The patient was discharged from the Hospital on April 19, 1900.

It may be noted that a rapid operation may save life by diminishing shock and shortening the time of anesthesia. The primary amputations were performed as rapidly as possible, as well as the amputations for mortification of the left leg. The patient can feed himself with his abbreviated hand. He can also render much aid in putting on and taking off his clothes.

Epigaea for Eructation.—Aaron (*The American Therapist*, September, 1900) recommends epigaea for belching up of tasteless or offensive gases. Epigaea is commonly known as trailing arbutus. The author does not know how the drug acts, but states that he has had many prompt and happy results with it in some very obstinate cases of eructation of gas. He usually prescribes 1 dram of the fluid extract, three or more times a day, after meals. If the eructations be due to fermentation it may be that the aromatic oil acts as anti-ferment, yet results are equally seen in nervous eructation or in cases in which the patient belches up air that has been swallowed.

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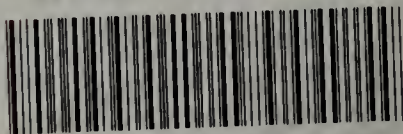
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